
Flare
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FLARE

1 About	3
Python Module Index	171
Index	173



Web-App development framework for Python

ABOUT

flare is an app development framework for Python-based web-apps running on top of [Pyodide](#) in the browser.

It has integrations to concepts with [ViUR](#), an MVC-framework for the Google App Engine platform, but can also be used stand-alone.

Fire up the tiny [Hello World](#) live demo.

1.1 Getting started

1.1.1 System requirements

soon...

Serving own Pyodide

The script `bin/get-pyodide.py` downloads a minimal Pyodide with only `micropip` and `setuptools` from the Pyodide CDN. Pyodide can also be entirely built and configured on your own, for this check [the documentation](#).

Depending on the location where you want to serve your app, some more configuration might be necessary regarding the WASM mimetype.

Google App Engine

To serve your own Pyodide via Google App Engine, add the following lines to your `app.yaml` file and modify them when needed, as Google App Engine doesn't recognize WASM files correctly.

```
handlers:  
- url: /pyodide/(.*\.wasm)$  
  static_files: pyodide/\\1  
  upload: pyodide/.*/\\.wasm$  
  mime_type: application/wasm  
- url: /pyodide  
  static_dir: pyodide
```

Apache Webserver

For apache web-server, this .htaccess configuration helped to serve the app correctly.

```
RewriteEngine off
Options -ExecCGI +Indexes
IndexOrderDefault Descending Date

#Header always set Access-Control-Allow-Origin "*"
#Header always set Access-Control-Allow-Methods GET

<FilesMatch "\.py$">
    Options +Indexes -ExecCGI -Multiviews
    Order allow,deny
    Allow from all
    RemoveHandler .py
    AddType text/plain .py
</FilesMatch>

<FilesMatch "\.data$">
    Options +Indexes -ExecCGI -Multiviews
    Order allow,deny
    Allow from all
    RemoveHandler .data
    AddType application/octet-stream .data
</FilesMatch>

<FilesMatch "\.wasm$">
    Options +Indexes -ExecCGI -Multiviews
    Order allow,deny
    Allow from all
    RemoveHandler .wasm
    AddType application/wasm .wasm
</FilesMatch>
```

1.1.2 Setup and installation

Linux or WSL

soon...

Mac OS

soon...

1.1.3 Testproject

Setting up a new Python web-app with *flare* is fairly easy. This section describes several things and ways how *flare* can be used and configured.

HTML skeleton

Below is a shortened version of the code from *hello.html* delivered together with the *flare* repo. Such a skeleton must be individually created for an app written with *flare*.

Caution: Depending on where you put the html files, you need to change the source paths:

- <link rel="stylesheet" href="{path-to-flare-directory}/assets/css/style.css"/>
- <script src="{path-to-flare-directory}/assets/js/flare.js"></script>
- “path”: “{path-to-flare-directory}/flare”

```
<!doctype html>
<html>
<head>
    <meta charset="UTF-8">
    <link rel="stylesheet" href="assets/css/style.css"/>

    <!-- (1) -->
    <script src="https://pyodide-cdn2.iodide.io/v0.16.1/full/pyodide.js"></script>
    <!-- <script src="pyodide/pyodide.js"></script> -->

    <!-- (2) -->
    <script src="assets/js/flare.js"></script>

    <script>
        window.addEventListener(
            "load",
            (event) => {
                window.init = new flare({
                    prelude: // (3)
` 

print("I'm before any fetch")
` ,
            fetch: { // (4)
                "flare": {
                    "path": "flare"
                }
            },
            kickoff: // (5)
` 

from flare import *
html5.Body().appendChild('<a href="https://www.viur.dev">Hello World</a>')
flare.popup.Alert("Hello World")
` 

        });
    );
</script>
```

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```
</head>
<body class="is-loading"> <!-- (6) -->
</body>
</html>
```

Notable are the following sections:

1. This is the include for the used Pyodide version. When quickly setting up a project, the default CDN version of Pyodide can be used and is loaded from here. Indeed, it is also possible to serve Pyodide on your own. For this, the utility script `bin/get-pyodide.py` can be used. This script downloads a minimal version of Pyodide delivered from the CDN and stores it into a folder named `pyodide/`. In such a case, the CDN-include here must be removed, and replaced by the local include. `get-pyodide.py` patches some Pyodide-files to directly run from the URL `/pyodide`. You can override this setting by specifying a variable `window.languagePluginLoader` before including the `pyodide.js`.
2. `flare` serves a piece of JavaScript code that is necessary to pre-load flare itself and the Python application. For development, it was useful to directly fetch the `py`-files from the server and store them into a browser-internal filesystem when the Python interpreter from Pyodide can find it. This is done using the module in `init.js` and the configuration described next.
3. `prelude` is some Python code that is executed before any modules are fetched. It can be omitted, if not wanted.
4. `fetch` describes Python source modules that are being fetched before the application starts. This is very useful for development purposes. For every entry (which is the name of the Python package to be created), a further object describing the fetch path and an optional `optional` attribute is provided. Using the `path`-attribute, the `flare` init script looks for a file `files.json` which provides a listing of the files being fetched. This file is generated using `bin/gen-files-json.py` which is described below. A Pyodide package can also be pre-compiled from source files, but this is not described in detail here, yet.
5. `kickoff` is the Python code that is executed when all fetching is done and nothing failed. It is used as the entry point to start the web-app. In the `hello.html` file, it is just some “Hello World” stuff dumped out using `flare`.
6. The class `is-loading` is automatically removed when the kickoff code successfully executed. It can be used to show a loading animation or something similar.

Writing huger apps

When writing huger apps with multiple Python files, the above example doesn't satisfy. For this case, an HTML-file like above still serves as the entry point for the app, but requires a little more configuration.

Let's think about the following minimal setup for a huger app:

- `/flare` is the flare repo serving as a library `_ /myapp` contains our app, which exists only of the files
 - `index.html` the app entry HTML
 - `__init__.py` the app source code
 - `files.json` which is the index file for the `flare` init script to find its sources

We only describe the files in `/myapp`:

`index.html`

```
<!doctype html>
<html>
<head>
    <meta charset="UTF-8">
```

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```

<script src="https://pyodide-cdn2.iodide.io/v0.16.1/full/pyodide.js"></script>
<script src="/flare/assets/js/flare.js"></script>
<script>
    window.addEventListener(
        "load",
        (event) => {
            window.init = new flare({
                fetch: {
                    "flare": {
                        "path": "/flare/flare"
                    },
                    "myapp": {
                        "path": "."
                    }
                }
            });
        }
    );
</script>
</head>
<body class="is-loading">
</body>
</html>

```

init.py:

```

from flare import *

if __name__ == "myapp":
    html5.Body().appendChild('<a href="https://www.viur.dev">Hello World</a>')
    popup.Alert("Hello World")

```

files.json:

```

[
    "__init__.py"
]

```

The `files.json` was simply generated using the by `./flare/bin/gen-files-json.py`. Whenever a Python file is added, this must be done once. The `files.json` should also be added to version control, to make the app run out-of-the-box.

1.2 Reference Guide

1.2.1 Terminology

Originally, Flare was developed for ViUR. Because of these roots, some terms or objects may cause confusion without further explanation.

Lets start with a quick overview of some main components.

config.py

This is a central location where you can store data or information that needs to be shared by the entire application.
Some Examples are

- paths
- caches
- configurations
- versions

network.py

The default format used for data exchange is json. Each query is made via the NetworkService class in network.py.

views

Views are used to divide content within the application. There is always one view that is active. They are saved after their instantiation in a object and are only hooked into the DOM when this view is activated. A view can contain multiple widgets that replace the existing content when activated.

safeeval

Executes a string containing Python code. The possible operations are strongly limited for security reasons.
With safeeval *flare-if* can show and hide content without the need of coding, and *{} expressions {}* can directly be interpreted inside of HTML-code.

icons

The icon class can use any of the common image types. In most cases, you want to have icons that match the font color. In this case flare requires svg icons.

priorityqueues

PriorityQueues are used to provide a plugin capability. For each type there is somewhere centrally an instance of such a PriorityQueue. In this the options are added with the insert function and prioritized with a numerical value and validation function. If now a suitable option is searched, the select function is called with parameters which are passed to the validation function. The first matching option in the prioritized list is then returned.

Only relevant if used with ViUR

bones

Bones are in the ViUR ecosystem data field definitions. There are different types and hold besides the type information also display information like a description and tooltips.

moduleInfo

Modules are the controllers of a ViUR application, and implement the application logic. In the case of relations, information about the target module may be required, which can be found in the module info.

1.2.2 Configuration

Flare is divided into different components, which have different complexity. In addition to a flare config, the forms and views components have their own config.

Flare config

Here are some default values configured.

- **flare.icon.svg.embedding.path**
 - defines the basepath for the used svg icons.
- **flare.icon.fallback.error**
 - defines the fallback icon name
- **flare.language.current**
 - sets the current active language

The views config will be merged on top.

Bind App

An app that uses flare often has its own config object. Flare provides a bindApp function that, in addition to setting the app instance in the configuration, also allows overriding the flare configuration. For example, you can change the default language in your app configuration and all Flare components will use that value instead of the default flare settings.

1.2.3 html5 (core library)

Any **flare** components are entirely established on top of the *html5*-library.

The *html5 library* is flare's core module and key feature, and manages access to the browser's DOM and its items, by implementing a Python object wrapper class for any HTML-element. Such an element is called *widget*. For example, `html5.Div()` is the widget representing a div-element, or `html5.A()` a widget representing an a-element. Widgets can be sub-classed into specialized components, which contain other widgets and components and interact together.

The document's body and head can directly be accessed by the static widgets `html5.Head()` and `html5.Body()`.

All these widgets are inheriting from an abstract widget wrapper called `html5.Widget`. `html5.Widget` is the overall superclass which contains most of the functions used when working with DOM elements. Therefore, all widgets are usually handled the same way, except leaf-type widgets, which may not contain any children.

First steps

When working with native html5-widgets, every widget must be created separately and stacked together in the desired order. This is well known from JavaScript's createElement-function.

Here's a little code sample.

```
from flare import html5

# Creating a new a-widget
a = html5.A()
a["href"] = "https://www.viur.dev" # assign value to href-attribute
```

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```
a["target"] = "_blank"           # assign value to target-attribute
a.addClass("link")              # Add style class "link" to element

# Append text node "Hello World" to the a-element
a.appendChild(html5.TextNode("Hello World"))

# Append the a-widget to the body-widget
html5.Body().appendChild(a)
```

Summarized:

- `html5.Xyz()` creates an instance of the desired widget. The notation is that the first letter is always in uppercase-order, the rest is hold in lowercase-order, therefore e.g. `html5.Textarea()` is used for a textarea.
- Attributes are accessible via the attribute indexing syntax, like `widget["attribute"]`. There are some special attributes like `style` or `data` that are providing a dict-like access, so `widget["style"]["border"] = "1px solid red"` is used.
- Stacking is performed with `widget.appendChild()`. There are also some additional functions for easier element stacking and child modification, these are - `widget.prependChild()` to prepend children, - `widget.insertBefore()` to insert a child before another child, - `widget.removeChild()` to remove a child.
- To access existing child widgets, use `widget.children(n)` to access the *n*-th child, or without *n* to retrieve a list of a children.

Parsing widgets from HTML-code

Above result can also be achieved much faster, by using the build-in `html5-parser and renderer`.

```
from flare import *

html5.Body().appendChild(
    "<a href='https://www.viur.dev' target='_blank' class='viur'>Hello World</a>"
)
```

That's quite simpler, right? This is a very handy feature for prototyping and to quickly integrate new HTML layouts.

`Widget.appendChild()` and other, corresponding functions, allow for an arbitrary number of elements to be added. HTML-code, widgets, text or even lists or tuples of those can be given, like so

```
ul = html5.Ul()
ul.appendChild("<li class='is-active'>lol</li>")
ul.prependChild(html5.Li(1337 * 42))
ul.appendChild("<li>me too</li>", html5.Li("and same as I"))
```

The HTML parser can also do more: When component classes (any class that inherits directly from `html5.Widget`, like `html5.Div` or so) are decorated with the `html5.tag`-decorator, these are automatically made available in the HTML-parser for recognition.

Inheritance is normal

In most cases, both methods shown above are used together where necessary and useful. Especially when creating new components with a custom behavior inside your app, knowledge of both worlds is required.

To create new components, inheriting from existing widgets is usual. If we would like to add our link multiple times within our app, with additional click tracking, we can make it a separate component, like so:

```
import logging
from flare import *

class Link(html5.A): # inherit Link from html5.A widget
    def __init__(self, url, *args, target="_blank", **kwargs):
        super().__init__()
        self.addClass("link")
        self["href"] = url
        self["target"] = "_blank"

        self.appendChild(*args, **kwargs)
        self.sinkEvent("onClick")

    def onClick(self, event):
        logging.info(f"The link to {self['href']} has been clicked")

html5.Body().appendChild(
    # Create a link with text
    Link("https://www.viur.dev", "ViUR Framework"),

    "<br>",

    # Create link with logo
    Link("https://www.python.org", """
        
        """)
)
```

In this example, we just made our first custom component: The `Link`-class can be arbitrarily used.

Widget basics

Following sections describe the most widely used functions of the :class:`html5.Widget <flare.html5.Widget>`-class which are inherited by any widget or huger component in flare.

Constructor

All widgets share the same `__init__`-function, having the following signature:

```
def __init__(self, *args, appendTo=None, style=None, **kwargs)
```

- `*args` are any positional arguments that are passed to `self.appendChild()`. These can be either other widgets or strings containing HTML-code. Non-container widgets like `html5.Br()` or `html5.Hr()` don't allow anything passed to this parameter, and throw an Exception.
- `appendTo` can be set to another `html5.Widget` where the constructed widget automatically will be appended to. It substitutes an additional `appendChild()`-call to insert the constructed Widget to the parent.
- `style` allows to specify CSS-classes which are added to the constructed widget using
- `**kwargs` specifies any other parameters that are passed to `appendChild()`, like variables.

Insertion and removal

These methods manipulate the DOM and it's nodes

appendChild()

Appends another `html5.Widget` as child to the parent element:

```
self.appendChild("""<ul class='navlist'></ul>""")
self.nav.appendChild("""<li>Navigation Point 1</li>""")
```

prependChild()

Prepends a new child to the parent element

```
self.appendChild("""<ul class='navlist'></ul>""")
navpoint2 = self.nav.appendChild("""<li>Navigation Point 2</li>""")
navpoint2.prependChild("""<li>Navigation Point 1</li>""")
```

replaceChild()

Same as appendChild(), but removes the current children of the Widget first.

insertBefore()

Inserts a new child element before the target child element

```
self.appendChild(""

</ul>"")  
navpoint = self.nav.appendChild(""navpoint3 = self.nav.appendChild(""navpoint2 = self.nav.insertBefore(""
```

If the child element that the new element is supposed to be inserted before does not exist, the new element is appended to the parent instead.

removeChild(), removeAllChildren()

Either removes one child from the parent element or any available children.

Visibility and usability

Widgets can be switched hidden or disabled. Form elements, for example, might be disabled when a specific condition isn't met. These functions here help to quickly change visibility and usability of widgets, including their child widgets which are switched recursively.

hide(), show()

Hides or shows a widget on demand.

To check whether a widget is hidden or not, evaluate `widget["hidden"]`. In the HTML-parser, this flag can be set using the `hidden` attribute, e.g. `<div hidden>You can't see me.</div>`.

enable(), disable()

Enable or disable the widget in the DOM. Useful for forms and similar UI applications.

To check whether a widget is disabled or not, evaluate `widget["disabled"]`. In the HTML-parser, this flag can be set using the `disabled` attribute, e.g. `<div disabled>I'm disabled</div>`.

class-attribute modification

These methods are helpful for adding CSS-classes quickly.

addClass()

Adds a class to the html5.Widget and checks to prevent adding the same class multiple times.

```
nav = self.appendChild(""""<ul></ul>"""")  
nav.addClass('navlist')
```

Adding a class multiple times might be wanted and is valid. In this case, modify the widget's class-attribute directly by assigning a list to it.

removeClass()

Checks if the widget has that class and removes it

```
nav = self.appendChild(""""<ul class='big-red-warning-border-color'></ul>"""")  
nav.removeClass('big-red-warning-border-color')
```

toggleClass()

Toggles a class *on* or *off*, depending on whether it has the specified class already or not.

hasClass()

Checks if the element has a given class or not. Returns True if class name is found and False otherwise.

```
nav = self.appendChild(""""<ul class='big-red-warning-border-color'></ul>"""")  
if nav.hasClass('big-red-warning-border-color'):  
    print("Help! There is a big red border around this element! Remove the class so we  
    ↵can feel safe again")
```

HTML parser reference

The html5-library built into flare brings its own HTML-parser. Using this parser, any HTML-code can directly be turned into a flare DOM.

Additionally, some nice extensions regarding flare component and widget customization and conditional rendering is supported, as the HTML-renderer automatically creates the DOM from a parsed input and serves as some kind of template processor.

Data-based rendering

Using variables

Any variables provided via kwargs to `html5.fromHTML()` can be inserted in attributes or as TextNode-elements with their particular content when surrounded by {{ and }}. Inside this notation, full Python expression syntax is allowed, so that even calculations or concatenations can be done.

```
html5.Body().appendChild("""
    <div class="color-{{ l[1] + 40 }}">{{ d["world"] }} + "World" * 3 {{ d }}</div>
""", l=[1,2,3], d={"world": "Hello"})
```

renders into

```
<div class="color-42">HelloWorldWorldWorld and {'world': 'Hello'}</div>
```

flare-if, flare-elif, flare-else

The attributes `flare-if`, `flare-elif` and `flare-else` can be used on all tags for conditional rendering.

This allows for any simple Python expression that evaluates to True or any computed non-boolean value representing True.

```
html5.Body().appendChild("""
    <div>begin</div>
    <div flare-if="i <= 10">i is just low</div>
    <div flare-elif="i <= 50 and j >= 100">i and j have normal values</div>
    <div flare-elif="i > 50 and j >= 50">i and j have moderate values</div>
    <div flare-else>i and j are something different</div>
    <div>end</div>
""", i=50, j=151)
```

As variables, any arguments given to `html5.fromHTML()` (or related functions) as kwargs can be used.

html5.parseHTML()

```
def parseHTML(html: str, debug: bool=False) -> HtmlAst
```

Parses the provided HTML-code according to the tags registered by `html5.registerTag()` or components that use the `@tag`-decorator.

The function returns an abstract syntax tree representation (HtmlAst) of the HTML-code that can be rendered by `html5.fromHTML()`.

html5.fromHTML()

```
def fromHTML(html: [str, HtmlAst], appendTo: Widget=None, bindTo: Widget=None, debug: bool=False, **kwargs) -> [Widget]
```

Renders HTML-code or compiled HTML-code (HtmlAst).

- appendTo: Defines the Widget where to append the generated widgets to
- bindTo: Defines the Widget where to bind widgets using the [name]-attribute to
- debug: Debugging output
- **kwargs: Any specified kwargs are available as *variables to any expressions*.

HTML-code can optionally be pre-compiled with `html5.parseHTML()`, and then executed multiple times (but with different variables) by fromHTML. This is useful when generating lists of same elements with only replaced variable data.

@html5.tag

Decorator to register a sub-class of `html5.Widget` either under its class-name, or an associated tag-name.

Examples:

```
from flare import html5

# register class Foo as <foo>-Tag
@html5.tag
class Foo(html5.Div):
    pass

# register class Bar as <baz>-Tag
@html5.tag("baz")
class Bar(html5.Div):
    pass
```

1.2.4 Ignite

Ignite is a CSS-framework written in LESS and serving as the base for all components used in flare. <https://ignite.viur.dev/>

In Flare, some simpler and more complex components are already implemented with appropriate CSS-classes.

Button

The Button can be used with `<flare-button>` tag und provides the possibility to add an icon before the Button text.

Input

The Input can be used with <flare-input> tag and provides the basis input element with ignite specific css classes.

Label

The Label can be used with <flare-label> tag and provides the basis label element with ignite specific css classes.

Switch

The switch is an on/off slide-control and can be used with <flare-switch> tag. The component stores the current state internally in a checkbox input field.

Check

The Check Component can be used with <flare-check> tag. Like the switch, the internal state is stored in a checkbox input field. Through this component the display of the checkbox can be customized via css.

Radio

The Radio Component can be used with <flare-radio> tag. The internal state is stored in a radio input field. Through this component the display of the checkbox can be customized via css.

Select

The Select can be used with <flare-select> tag and provides the basis select element with ignite specific css classes. In addition it adds per default a unselectable default option.

Textarea

The Textarea can be used with <flare-textarea> tag and provides the basis textarea element with ignite specific css classes.

Progress

The Progress can be used with <flare-progress> tag and provides the basis progress element with ignite specific css classes.

Item

The Item component can be used with the tag <flare-item> and provides a simple box component. It can contain an image as well as a title and a description

Table

The Table component can be used with the <flare-table> tag and provides the basis table element with ignite specific css classes. In additon this component provides the functions prepareRow and prepareCol to generate the table grid.

Popout

The Popout component can be used with the <flare-popout> tag. This component is a floating box and is often used as a tooltip or contextmenu. With the css classes “popout–sw”, “popout–nw”.. you can change the direction.

Popup

There are several types of popups windows. All popups are based on the base Popup Class. Each popup provides a close button, a header, a body and a footer. All Popups are automatically added to the <body>-tag.

Prompt

The Prompt is a simple Input box with a cancel and ok button. Use this to get some user Input.

Alert

The Alert is a simple Messagebox with an ok button. Use this for some Feedback.

Confirm

The Confirm is a Messagebox with a yes / no selection. Each button has its own callback so you can bump different actions based on the selection that was made

Textarea Dialog

This Popup basically does the same as the Prompt, but it uses a textarea field instead of an input field.

1.2.5 Network

The *network*-module contains some classes and functions that allow to communicate or work with other services.

Requesting data

The following classes are used to request data from another service.

HTTPRequest

HTTPRequest is a tiny wrapper around the Javascript object XMLHttpRequest. Only the OPENED (1) and DONE (4) statuses are used. In case of OPENED the payload is sent. If it is a post request, a possibly existing content type header is also set. Depending on the status, the success callback or the failure callback specified during instantiation is called.

```
HTTPRequest("GET", url, mySuccessFunction, myFailureFunction)
```

This tiny wrapper is used by the NetworkService, which encapsulates some ViUR-related request types

NetworkService

This function can be passed the following parameters in addition to the callback functions for success, failure and finished:

- module (str): Name of the target ViUR Module or None
- url (str): Path (relative to Module)
- params (dict): Dictionary of key-values paired url parameters
- modifies (bool): previously registered classes can be notified with a onDataChanged event
- secure (bool): for this ViUR request is an skey need, so fetch it before the request
- kickoff (bool): by default this value is true, but you can use it to wait before to start a request
- group (requestGroup): use this to bundle multiple requests and get at the end a final callback

This could be a simple request to test on a ViUR System if a user is logged in

```
NetworkService.request( "user", "view/self",
    successHandler=iamAlreadyLoggedInFunction,
    failureHandler=loginFunction)
```

Sometimes you need to do a bunch of requests with a callback at the end

```
agroup = requestGroup( allRequestsSuccessFunction )

for aKey in dbKeyListToDelete:
    NetworkService.request( amodule, "delete", { "key": aKey },
        secure = True, #in case of deletion ViUR needs an skey
        modifies = False, #avoids the onDataChanged event
        group=agroup,
        successHandler = singleItemSuccessFunction,
        failureHandler = singleItemFailureFunction )
```

requestGroup

This class is used to execute several requests of the NetworkService one by one and finally call the callback specified during instantiation. In this case, be sure to set kickoff to False.

Other useful functions

The following functions were often used in connection with data queries and were therefore placed here.

DeferredCall

This is a wrapper around the setTimeout JavascriptObject. After a delay time (default:25ms) the given function is called with the given parameters. This function is called outside the surrounding application flow! Two hidden parameters can be specified during initialization and will not be passed to the function:

- _delay: modifies the Timeout delay
- _callback: will be called after handling the deferred Funktion

```
DeferredCall(doSomeStuffLaterFunction,  
           anArgumentForMyFunction,  
           _delay=1000,  
           _callback=sayHelloWennFinishedFunction)
```

1.2.6 Utils

soon...

1.2.7 Url handling

Flare Applications are SPA (Single Page Applications) the navigation is done via the #hash part of the url. This part is treated by Flare like a normal url. The hash should have a form like this.

```
#/path/pathPart2.../pathEnd?param1=value&param2=value
```

The following functions split the hash into the corresponding url components or reassemble them.

getUrlHashAsString

This function takes the hash of the url and splits it into args and kwargs. The return value is a tuple of the args string and the kwargs string. In most cases you want to use getUrlHashAsObject instead.

getUrlHashAsObject

Uses the return value of getUrlHashAsString and also creates a tuple consisting of args and kwargs. But now the first value is a list and the second is a dictionary.

setUrlHash

This function takes the objects from getUrlHashAsObject and reassembles them into a valid hash and finally sets the new url.

```
urlHash, urlParams = getUrlHashAsObject() #read hash
urlParams.update({"key": "newValue"}) #modify
setUrlHash(urlHash, urlParams) #write back
```

example

```
# current URL:
# http://localhost:8080/app/app.html#/user/list?amount=99&status=10
urlHash, urlParams = getUrlHashAsObject() #read hash
print(urlHash, urlParams)
#[{"user": "list", "amount": "99", "status": "10"}]
urlParams.update({"status": "5"}) # change query
setUrlHash(urlHash, urlParams) #write back to Url
# new URL:
# http://localhost:8080/app/app.html#/user/list?amount=99&status=5
```

1.2.8 i18n

Flare provides the possibility to translate texts depending on the selected language. For each language a Python file with the language abbreviation is created in a folder called ‘translations’. A dictionary with the following name format is then expected in the file:

```
lngDe
lngEn
lngNl
lngFr
...
```

The dictionary itself contains a mapping between a keyword and the translation in the corresponding language.

```
lngDe = {
    "List": "Liste",
    "Username": "Nutzernname ist {name}"
    ...
}
```

To use these dictionaries they have to be initialized when starting the application.

```
from flare.i18n import buildTranslations, translate
buildTranslations("app") #the parameter is the name of the root folder
```

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```
#now you can use the translate function to get the translated text  
  
print(translate('List'))  
# "Liste"
```

translate

The Translate function can additionally have a fallback and any other parameters, which then replace marked positions in a template string.

```
print(translate('Username', {"name": "Alice"}))  
# "Nutzername is Alice"
```

addTranslation

You can also update a translation at runtime. For this you have to specify the language, the keyword and the translation.

```
addTranslation("de", "user", "Nutzer")
```

more functions

the functions getLanguage and setLanguage(lang) allow to change and request the current language. After changing the language, it must be ensured that templates are rebuilt.

1.2.9 SVG Icons

Icons are dependent on css styling in flare. So icons in a text can have the same color as the surrounding text. This is possible by embedding svg icons. If the tag flare-svg-icon is used, the parameter value can be used to specify a path or name to an icon.

```
<flare-svg-icon value="/static/icons/my-icon.svg">
```

To keep the code in flare clear, only the icon name can be specified. If only the name is specified, the config variable conf["flare.icon.svg.embedding.path"] is used to compose the path of flare.

```
<flare-svg-icon value="my-icon">
```

It is also possible to define a fallback icon in case the icon cannot be loaded. If the title is set it will be transferred to the svg and in case the fallback icon is not set the first character of the text will be used as placeholder.

```
<flare-svg-icon value="my-icon" fallbackIcon="error" title="My Icon">  
!-- shows my-icon or on error the error icon -->  
  
<flare-svg-icon value="my-icon" title="My Icon">  
!-- shows my-icon or the letter M -->
```

Icon

In practice icons can come in different file types. flare-icon can also handle other images and even use filebones directly. In case the icon is not an svg, it is not embedded, but included using img-tag. flare-icon can use the following image types:

- *.svg, *.jpg, *.png, *.gif, *.bmp, *.webp, *.jpeg

```
<flare-icon value="{{skel['image']}}>
<!--loads a filebone-->
```

The Svg-icon parameters fallbackIcon and title are also supported.

1.2.10 Views

Views allow switching between different widgets. A view must inherit from the View class abd can update multiple View-Widgets of the conf["app"]. Additionally, the dictOfWidgets must be filled in the constructor before the super call. The key of the dictionary must be present in the conf["app"] widget.

A view widget is the actual content that is then inserted into a widget in the main app. These view widgets must inherit from ViewWidget.

The currently active view is stored in a global state under conf["views_state"].

create a View

```
from flare.views.view import View, ViewWidget

class myView(View):

    def __init__(self):
        dictOfWidgets = {
            "content" : myViewContent
            #each key muss exists as instancevariable in conf["app"]
        }
        super().__init__(dictOfWidgets)

class myViewContent(ViewWidget):

    def initWidget( self ):
        self.appendChild("Hello View")

    def onViewfocusedChanged( self, viewname, *args, **kwargs ):
        pass #here we can execute code, which muss be called wenn e View gets
             focus
```

register a View

At this point, we have created a view. We have defined that the widget content from the main app should be replaced by the one from myViewContent. Now we need to register this view.

```
from flare.views.helpers import addView, removeView  
  
addView(myView, "page1")
```

In this example, the view myView is registered under the name page1. A view can also be registered under multiple names. removeView removes the view again.

activate / switch a view

To activate a view the view instance of the state conf["views_state"] must be updated. The status stores the name of the view that is currently displayed and can be updated as follows.

```
conf["views_state"].updateState("activeView", "page1")
```

Views with ViUR

In ViUR, modules have different views depending on the handler. generateView here encapsulates module name, actionname and data away in a params dictionary, which is then available in the view and can be loaded from the view in any ViewWidget.

```
#item is a adminInfo Entry  
  
# generate a unique instancename, because a edit can be opened multiple times with same  
# parameters  
instancename = "%s__%s" % (item[ "moduleName" ]+item[ "handler" ], str( time.time() )  
#replace( ".", "_" ))  
  
#create new viewInstance  
viewInst = generateView( myView, item[ "moduleName" ], item[ "handler" ], data = item,  
#name=instancename )  
  
#register this new view  
conf[ "views_registered" ].update( { instancename: viewInst } )  
  
# somewhere else in code, i.e in a Navigation  
conf["views_state"].updateState("activeView", instancename)
```

1.2.11 ViUR

soon...

1.2.12 Safeeval

soon...

1.3 Tutorials

1.3.1 Hello World

In this tutorial, we will create a basic project that makes use of flare to create a simple web-app.

Project setup

In order to make flare accessible in your project, either download the flare master branch from github and extract it into a `flare` subdirectory in your project, or - if you are using git - clone it into a git submodule of your project by calling `git submodule add git@github.com:viur-framework/flare.git`.

Once this is done, you can create an `index.html` file that will make use of the now available flare assets.

The HTML

Basically all you need to do is add the flare CSS sheet and javascript file to your HTML file and you are good to go.

```
<link rel="stylesheet" href="flare/assets/css/style.css"/>
<script src="flare/assets/js/flare.js"></script>
```

A simple `index.html` file that uses flare might now look like this:

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Hello World</title>
  <link rel="stylesheet" href="flare/assets/css/style.css"/>
  <script src="flare/assets/js/flare.js"></script>
  <script>
    window.addEventListener("load", () => {
      new flare({
        fetch: {
          "flare": {
            "path": "flare/flare"
          }
        },
        kickoff:
      });

      from flare import *
      flare.popup.Alert("Hello World")
    })
  </script>
</head>
<body>
  <h1>Hello World!</h1>
</body>
</html>
```

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```
`  
    });  
});  
</script>  
</head>  
<body class="is-loading">  
</body>  
</html>
```

Building from there

The `fetch` block is where the flare python modules are being loaded at application start. It is advisable to add your own python module structure fairly quickly.

1. Add a subdirectory `helloworld` next to your `index.html`.
2. Add a file `__init__.py`:

```
from . import helloworld
```

3. Add a file `helloworld.py`:

```
from flare import *  
  
class HelloWorld(object):  
    _message = None  
  
    def __init__(self, message="Hello World"):  
        self._message = message  
  
    def show(self):  
        popup.Alert(self._message)
```

4. Create a `files.json` file in your module directory and add the following content:

```
[  
    "__init__.py",  
    "helloworld.py"  
]
```

5. Add a second block to the `fetch` in your `index.html`:

```
fetch: {  
    "flare": {  
        "path": "flare/flare"  
    },  
    "helloworld": {  
        "path": "helloworld"  
    }  
},
```

6. Change your kickoff script to run the code in your module, instead:

```
from helloworld import *
helloworld.HelloWorld("Hello module world!").show()
```

To execute your hello world sample you can use the test webserver located in the `flare/tools/` folder. Just run `test-server.py` in your project directory and open `http://localhost:8080/index.html` in your browser.

1.3.2 Request JSON data

In this tutorial, we will use flares API to load some JSON data from an API and process it.

Project setup

Please refer to the “Hello World” tutorial on how to set up a basic project with flare.

Using XMLHttpRequest

Flare comes with a high level API to request data. The `flare.network` module contains a class `HTTPRequest`, whose constructor takes six parameters:

1. `method`: The HTTP method to use for the request (i.e. GET, POST, ...)
2. `url`: The URL to request
3. `callbackSuccess` (optional): A reference to the function which is to be called when the request succeeds (takes a response parameter)
4. `callbackFailure` (optional): A reference to the function which is to be called when the request fails (take the parameters `responseText` and `status`)
5. `payload` (optional): The body of the request, if one is to be sent
6. `content_type` (optional): A value for a Content-Type header (e.g. `application/json`)

Using this constructor immediately sends the request.

Handling the response

In order to parse a JSON response in a success callback, simply use the default `json` functionality:

```
def successCallback(result):
    data = json.loads(result)
```

This will simply turn the response into the appropriate native structure, based on what kind of JSON has been returned:

- Objects will be turned into `dict`
- Arrays will be turned into `list`
- `null` will be turned into `None`
- atomar values will be turned into their respective python counterpart

Example

As an example, we will request the current time of the time zone Europe/Berlin from a public API, then display it in a popup.

```
<!doctype html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Fetching data</title>
    <link rel="stylesheet" href="flare/assets/css/style.css"/>
    <script src="flare/assets/js/flare.js"></script>
    <script>
        window.addEventListener("load", () => {
            new flare({
                fetch: {
                    "flare": {
                        "path": "flare/flare"
                    }
                },
                kickoff:
            }

import json
import logging
from flare import *
from flare.network import HTTPRequest

def _successCallback(result):
    data = json.loads(result)
    flare.popup.Alert(data["datetime"])

def _failureCallback(responseText, status):
    logging.error("Failure: %s %d", responseText, status)

HTTPRequest(
    "GET",
    "http://worldtimeapi.org/api/timezone/Europe/Berlin",
    _successCallback,
    _failureCallback
)
{
    });
});
</script>
</head>
<body class="is-loading">
</body>
</html>
```

1.3.3 Widgets

In this tutorial, we will introduce the widgets of flare.

Reusable UI components

Flare widgets are UI components that encapsulate one HTML element. They render their content using a template, other widgets or a mixture of both. When using templates, placeholders can be used to fill in dynamic data, elements can be qualified with a name to make them accessible, and events - such as a click - can have a handlers registered to.

Note that the template rendering will be performed only once, initially. After that, any changes to the content of the widget need to be performed programmatically. This should be kept in mind, especially when deciding where to draw the line between putting more complexity in the template and creating sub widgets.

Simple Widget

To get acquainted with widgets, we will create a simple one that just contains some static HTML.

```
from flare import html5

class SimpleWidget(html5.Div):
    def __init__(self):
        super().__init__(
            # language=HTML
            """
            <span style="color: red;">I am a </span><span style="color: blue;">Widget!</
            span>
            """
        )
```

As we can see, our SimpleWidget contains just two basic HTML ``'s, wrapped in a ```<div>` (as denoted by the derivation from `html5.Div`). That means, that our widget fundamentally is a `<div>`, and can be treated as such. For example, it can now simply be put into the DOM somewhere. Try it out by just appending it to the `<body>`:

```
html5.Body().appendChild(SimpleWidget())
```

Placeholders

Static widgets like the one we just created do have their uses, but most of the time, you will want to display some dynamic data as well. For this, the template provided in the super constructor call can be enriched with placeholders, which are then replaced with the given data when the template is being rendered.

```
class ParametrizedWidget(html5.Div):
    def __init__(self, number: int):
        super().__init__(
            # language=HTML
            """
            My parameter is <span style="color: red;">{{number}}</span>
            """, number=number
        )
```

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```
html5.Body().appendChild(ParametrizedWidget(5))
```

Now our widget expects a “number” parameter, which is then passed into the template. However, you need to tell the template, which parameter is to be supplied with what value, which is a bit awkward. A much better approach is to expect a dict in your constructor signature, and unpack it when passing it to the super constructor.

```
class ParametrizedWidget(html5.Div):
    def __init__(self, parameters: dict):
        super().__init__(
            # language=HTML
            """
            My parameter is <span style="color: red;">{{number}}</span>
            """, **parameters
        )
```

```
html5.Body().appendChild(ParametrizedWidget({"number": 5}))
```

Note that the rendering of the template happens only once. If the parameters change after that, there is no built in reactivity; you have to handle these cases yourself. Let’s look into that now.

Placeholders

What we’re gonna build now is a widget that reacts to an event by increasing a number and displaying it. We will create a counter widget that displays a number, with a button that increases the number whenever it is clicked.

```
class CounterWidget(html5.Div):
    value = 0

    def __init__(self):
        super().__init__(
            # language=HTML
            """
            Counter: <span [name]="valueDisplay">{{value}}</span> <button @click=
            &gt;Increase!</button>
            """, value=self.value
        )

    def increase(self):
        self.value += 1
        self.valueDisplay.replaceChild(self.value)
```

First, let’s take a look at the [name] attribute. This attribute registers the element on which it is defined as a field of your widget class. As a result of that, we can simply access the that contains the number in the increase method with the field name given by the [name] attribute value, which in this case is valueDisplay.

Next, we are registering the increase method as a handler on the click event of the button, by using the @click attribute on the <button> element.

What the increase method then does, is increase value by one. But since, as stated, this will not do anything by itself, it also updates the content of the called valueDisplay, by replacing its content with the new value.

Conditional elements

When working with widgets, you often want to exclude elements from being rendered in certain conditions. As an example, your widget might combine a picture and a text, but you want to support the case that just one of both is provided.

You do not need to manipulate the DOM manually after rendering to achieve this. You can use the `flare-if` attribute instead. If the expression you provide as its value is not truthy, the element on which it is placed is excluded from rendering.

Let's build that widget that combines a picture and text.

```
class ImageAndTextWidget(html5.Div):
    def __init__(self, parameters: dict):
        super().__init__(
            # language=HTML
            """
            <div flare-if="pictureUrl" style="text-align: center;">
                
            </div>
            <p flare-if="text">{{text}}</p>
            """, **parameters
        )

    html5.Body().appendChild(ImageAndTextWidget(
        {
            "pictureUrl": "https://upload.wikimedia.org/wikipedia/commons/thumb/4/46/A_kitten_on_the_lawn_%28Pixabay%29.jpg/640px-A_kitten_on_the_lawn_%28Pixabay%29.jpg",
            "text": "Look! Kitty likes the flowers!"
        }
    ))
```

Running this, you get a picture of a kitten with some text below. If you now play around with it, you will notice that by omitting the `pictureUrl`, you do not get a broken image, but the entire `<div>` that contains the image is gone. The same goes for the `<p>` if you provide no text.

1.3.4 Views

In this tutorial, we will introduce flare's concept of views.

Building blocks

There are two basic concepts in flare in regards to views: The view itself, and the view widgets.

In essence, a view has a name, and it consists of a collection of view widgets, with the information on where in the DOM to actually display them. A view widget is a special kind of widget based on a `html5 <div>`, that is being hooked into and removed from the appropriate place in the DOM. It also gets a notification whenever view switching occurs.

Views rely on the concept of a central “app” class. Since the view mostly just contains a dictionary on which view widget to place where, it expects to find an app class which has the target elements as fields. The view will then use the field name as key in its view widget dictionary.

Example

As an example, we are going to create simple flip flop views: Two views, each containing a button to show the other view.

For this, we create a new file `views.py` where we put all the following code. We start off with the view widgets of the two views:

```
from flare import html5, bindApp
from flare.button import Button
from flare.config import conf, updateConf
from flare.views.view import View, ViewWidget
from flare.views.helpers import addView, removeView, updateDefaultView

class FlipViewContent(ViewWidget):
    def initWidget(self):
        self.appendChild(Button("Flip!", self.switch))
        self.appendChild(" - Flop!")

    def onViewFocusedChanged(self, viewname, *args, **kwargs):
        pass

    def switch(self):
        conf["views_state"].updateState("activeView", "flop")

class FlopViewContent(ViewWidget):
    def initWidget(self):
        self.appendChild("Flip! - ")
        self.appendChild(Button("Flop!", self.switch))

    def onViewFocusedChanged(self, viewname, *args, **kwargs):
        pass

    def switch(self):
        conf["views_state"].updateState("activeView", "flip")
```

These two view widgets are virtually identical. They both contain a button that calls their `switch` method, which triggers the switch over to the other view, by changing `activeView` to the name of the other view. Next, we define the view classes themselves.

```
class FlipView(View):
    def __init__(self):
        super().__init__({
            "content": FlipViewContent
        })

class FlopView(View):
    def __init__(self):
        super().__init__({
            "content": FlopViewContent
        })
```

Again, these two views are virtually identical. All they do is contain the information on where to put their respective content. In this case, they both only have one view widget, and they both bind it to the same place: An element named `content`. In order for this resolution to work, there needs to be an app class, which has a field named `content` which points to the element where the view shall be rendered. Let's build one.

```
class App(html5.Div):
    def __init__(self):
        super(App, self).__init__()
        html5.Body().appendChild(self)
        bindApp(self, conf)
```

As you can see, we derive our app class from a div, hook it into the DOM, and call `bindApp` to register it in the configuration, so that the view system can access it. Now we add the `content` field to it, and make sure that it is properly connected to the DOM:

```
class App(html5.Div):
    content = html5.Div()

    def __init__(self):
        super(App, self).__init__()
        html5.Body().appendChild(self)
        bindApp(self, conf)
        self.appendChild(self.content)
```

Only one final step remains: Registering the two views, setting the flip view to active, and actually running the app.

```
class App(html5.Div):
    content = html5.Div()

    def __init__(self):
        super(App, self).__init__()
        html5.Body().appendChild(self)
        bindApp(self, conf)
        self.appendChild(self.content)
        addView(FlipView, "flip")
        addView(FlopView, "flop")
        conf["views_state"].updateState("activeView", "flip")

app = App()
```

As seen with the `addView` calls, we register the two view classes, giving them the names “flip” and “flop”. These names are then used to switch the `activeView`, as we already did earlier in the `switch` methods of the view widgets. That's it. Make flare load your `views.py` by adding the following lines of code to you `__init__.py` file:

```
from . import views
views.App()
```

Now and you can have fun with flipping and flopping the two views.

1.3.5 Translation

soon...

1.3.6 Update url

soon...

1.4 API Reference

This page contains auto-generated API reference documentation¹.

1.4.1 flare

Flare is an application development framework for writing software frontends in pure Python.

Subpackages

`flare.html5`

Submodules

`flare.html5.core`

HTML5 Widget abstraction library.

- Provides a Widget-abstraction for each HTML-element
- Routing of attribute getter/setter and Jquery-style helpers
- Fully-integrated HTML-parser for quick Widget prototyping

Module Contents

Classes

<code>TextNode</code>	Represents a piece of text inside the DOM.
<code>_WidgetClassWrapper</code>	Built-in mutable sequence.
<code>_WidgetDataWrapper</code>	<code>dict()</code> -> new empty dictionary
<code>_WidgetStyleWrapper</code>	<code>dict()</code> -> new empty dictionary
<code>Widget</code>	
<code>_attrLabel</code>	
<code>_attrCharset</code>	

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¹ Created with sphinx-autoapi

Table 1 – continued from previous page

_attrCite
_attrDatetime
_attrForm
_attrAlt
_attrAutofocus
_attrDisabled
_attrChecked
_attrIndeterminate
_attrName
_attrValue
_attrAutocomplete
_attrRequired
_attrMultiple
_attrSize
_attrFor
_attrInputs
_attrFormhead
_attrHref
_attrTarget
_attrType
_attrMedia
_attrDimensions
_attrUsemmap
_attrMultimedia
_attrRel
_attrSrc

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Table 1 – continued from previous page

A
Area
Audio
Bdo
Blockquote
BodyCls
Canvas
Command
_Del
Dialog
Abbr
Address
Article
Aside
B
Bdi
Br
Caption
Cite
Code
Datalist
Dfn
Div
Em
Embed
Figcaption

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Table 1 – continued from previous page

<i>Figure</i>
<i>Footer</i>
<i>Header</i>
<i>H1</i>
<i>H2</i>
<i>H3</i>
<i>H4</i>
<i>H5</i>
<i>H6</i>
<i>Hr</i>
<i>I</i>
<i>Kdb</i>
<i>Legend</i>
<i>Mark</i>
<i>Noscript</i>
<i>P</i>
<i>Rq</i>
<i>Rt</i>
<i>Ruby</i>
<i>S</i>
<i>Samp</i>
<i>Section</i>
<i>Small</i>
<i>Strong</i>
<i>Sub</i>
<i>Summary</i>

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Table 1 – continued from previous page

<i>Sup</i>
<i>U</i>
<i>Var</i>
<i>Wbr</i>
<i>Button</i>
<i>Fieldset</i>
<i>Form</i>
<i>Input</i>
<i>Label</i>
<i>Optgroup</i>
<i>Option</i>
<i>Output</i>
<i>Select</i>
<i>Textarea</i>
<i>HeadCls</i>
<i>Iframe</i>
<i>Img</i>
<i>Ins</i>
<i>Keygen</i>
<i>Link</i>
<i>Ul</i>
<i>Ol</i>
<i>Li</i>
<i>Dl</i>
<i>Dt</i>
<i>Dd</i>

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Table 1 – continued from previous page

<i>Map</i>
<i>Menu</i>
<i>Meta</i>
<i>Meter</i>
<i>Nav</i>
<i>Object</i>
<i>Param</i>
<i>Progress</i>
<i>Q</i>
<i>Script</i>
<i>Source</i>
<i>Span</i>
<i>Details</i>
<i>Summary</i>
<i>Style</i>
<i>Tr</i>
<i>Td</i>
<i>Th</i>
<i>Thead</i>
<i>Tbody</i>
<i>ColWrapper</i>
<i>RowWrapper</i>
<i>Table</i>
<i>Time</i>
<i>Track</i>
<i>Video</i>

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Table 1 – continued from previous page

<i>Template</i>	
<i>HtmlAst</i>	Abstract syntax tree element used by parseHTML().
Functions	
<i>domCreateAttribute(tag[, ns])</i>	Creates a new HTML/SVG/... attribute.
<i>domCreateElement(tag[, ns])</i>	Creates a new HTML/SVG/... tag.
<i>domCreateTextNode([txt])</i>	
<i>domGetElementById(idTag)</i>	
<i>domElementFromPoint(x, y)</i>	
<i>domGetElementsByTagName(tag)</i>	
<i>domParseString(string[, mimetype])</i>	Parses the given string with the optionally given mime-type using JavaScript's DOM parser.
<i>domConvertEncodedText(txt)</i>	Convert HTML-encoded text (containing HTML entities) into its decoded string representation.
<i>Body()</i>	
<i>Head()</i>	
<i>unescape(val[, maxLength])</i>	Unquotes several HTML-quoted characters in a string.
<i>doesEventHitWidgetOrParents(event, widget)</i>	Test if event 'event' hits widget 'widget' (or <i>any</i> of its parents).
<i>doesEventHitWidgetOrChildren(event, widget)</i>	Test if event 'event' hits widget 'widget' (or <i>any</i> of its children).
<i>textToHtml(node, text)</i>	Generates html nodes from text by splitting text into content and into line breaks html5.Br.
<i>parseInt(s[, ret])</i>	Parses a value as int.
<i>parseFloat(s[, ret])</i>	Parses a value as float.
<i>getKey(event)</i>	Returns the Key Identifier of the given event.
<i>isArrowLeft(event)</i>	
<i>isArrowUp(event)</i>	
<i>isArrowRight(event)</i>	
<i>isArrowDown(event)</i>	
<i>isEscape(event)</i>	
<i>isReturn(event)</i>	
<i>isControl(event)</i>	

continues on next page

Table 2 – continued from previous page

<code>isShift(event)</code>	
<code>isMeta(event)</code>	
<code>registerTag(tagName, widgetClass[, override])</code>	
<code>tag(arg)</code>	Decorator to register a sub-class of html5.Widget either under its class-name or an associated tag-name.
<code>_buildTags([debug])</code>	Generates a dictionary of all to the html5-library known tags and their associated objects and attributes.
<code>parseHTML(→ HtmlAst)</code>	Parses the provided HTML-code according to the tags registered by <code>html5.registerTag()</code> or components that used the <code>html5.tag</code> -decorator.
<code>fromHTML(→ [Widget])</code>	Parses the provided HTML code according to the objects defined in the html5-library.

Attributes

<code>htmlExpressionEvaluator</code>	
<code>document</code>	
<code>--domParser</code>	
<code>_body</code>	
<code>_head</code>	
<code>--tags</code>	
<code>--reVarReplacer</code>	

`flare.html5.core.htmlExpressionEvaluator`

`flare.html5.core.document`

`flare.html5.core.domCreateAttribute(tag, ns=None)`

Creates a new HTML/SVG/... attribute.

Parameters

`ns` – the namespace. Default: HTML. Possible values: HTML, SVG, XBL, XUL

`flare.html5.core.domCreateElement(tag, ns=None)`

Creates a new HTML/SVG/... tag.

Parameters

`ns` – the namespace. Default: HTML. Possible values: HTML, SVG, XBL, XUL

`flare.html5.core.domCreateTextNode(txt="")`

```
flare.html5.core.domGetElementById(idTag)
flare.html5.core.domElementFromPoint(x, y)
flare.html5.core.domGetElementsByTagName(tag)
flare.html5.core.__domParser
flare.html5.core.domParseString(string, mimetype='text/html')
```

Parses the given string with the optionally given mimetype using JavaScript's DOM parser. :param string: Any XML/HTML string processable by DOMParser. :param mimetype: The mimetype to use.

Returns

Returns the parsed document DOM.

```
flare.html5.core.domConvertEncodedText(txt)
```

Convert HTML-encoded text (containing HTML entities) into its decoded string representation.

The reason for this function is the handling of HTML entities, which is not properly supported by native JavaScript.

We use the browser's DOM parser to do this, according to <https://stackoverflow.com/questions/3700326/decode-amp-back-to-in-javascript>

Parameters

txt – The encoded text.

Returns

The decoded text.

```
class flare.html5.core.TextNode(txt=None, *args, **kwargs)
```

Bases: object

Represents a piece of text inside the DOM.

This is the *only* object not deriving from “Widget”, as it does not support any of its properties.

_setText(*txt*)

_getText()

__str__()

Return str(self).

onAttach()

onDetach()

_setDisabled(*disabled*)

_getDisabled()

children()

```
class flare.html5.core._WidgetClassWrapper(targetWidget)
```

Bases: list

Built-in mutable sequence.

If no argument is given, the constructor creates a new empty list. The argument must be an iterable if specified.

set(*value*)

_updateElem()

append(*p_object*)
Append object to the end of the list.

clear()
Remove all items from list.

remove(*value*)
Remove first occurrence of value.
Raises ValueError if the value is not present.

extend(*iterable*)
Extend list by appending elements from the iterable.

insert(*index, p_object*)
Insert object before index.

pop(*index=None*)
Remove and return item at index (default last).
Raises IndexError if list is empty or index is out of range.

class flare.html5.core._WidgetDataWrapper(*targetWidget*)
Bases: dict
dict() -> new empty dictionary dict(mapping) -> new dictionary initialized from a mapping object's
(key, value) pairs

dict(*iterable*) -> new dictionary initialized as if via:
d = { } for k, v in iterable:
 d[k] = v

dict(*kwargs*) -> new dictionary initialized with the name=value pairs**
in the keyword argument list. For example: dict(one=1, two=2)

__setitem__(*key, value*)
Set self[key] to value.

update(*E=None, **F*)
D.update([E,]**F) -> None. Update D from dict/iterable E and F. If E is present and has a .keys() method, then does: for k in E: D[k] = E[k] If E is present and lacks a .keys() method, then does: for k, v in E: D[k] = v In either case, this is followed by: for k in F: D[k] = F[k]

class flare.html5.core._WidgetStyleWrapper(*targetWidget*)
Bases: dict
dict() -> new empty dictionary dict(mapping) -> new dictionary initialized from a mapping object's
(key, value) pairs

dict(*iterable*) -> new dictionary initialized as if via:
d = { } for k, v in iterable:
 d[k] = v

dict(*kwargs*) -> new dictionary initialized with the name=value pairs**
in the keyword argument list. For example: dict(one=1, two=2)

```
__setitem__(key, value)
    Set self[key] to value.

update(E=None, **F)
    D.update([E, ]**F) -> None. Update D from dict/iterable E and F. If E is present and has a .keys() method,
    then does: for k in E: D[k] = E[k] If E is present and lacks a .keys() method, then does: for k, v in E: D[k]
    = v In either case, this is followed by: for k in F: D[k] = F[k]

class flare.html5.core.Widget(*args, appendTo=None, style=None, **kwargs)
    Bases: object

    _namespace

    _tagName

    _leafTag = False

    style = []

    sinkEvent(*args)

    unsinkEvent(*args)

    addEventListener(event, callback)
        Adds an event listener callback to an event on a Widget.

        Parameters
            • event – The event string, e.g. “click” or “mouseover”
            • callback – The callback function to be called on the given event. This callback function can either accept no parameters, receive the pure Event-object from JavaScript as one parameter, or receive both the pure Event-object from JavaScript and the Widget-instance where the event was triggered on.

    removeEventListener(event, callback)
        Removes an event listener callback from a Widget.

        The event listener must be previously added by Widget.addEventListener().

        Parameters
            • event – The event string, e.g. “click” or “mouseover”
            • callback – The callback function to be removed

    disable()
        Disables an element, in case it is not already disabled.

        On disabled elements, events are not triggered anymore.

    enable()
        Enables an element, in case it is not already enabled.

    _getTargetfuncName(key, type)

    _getitem_(key)

    __setitem__(key, value)

    __str__()
        Return str(self).
```

__iter__()**_getData()**

Custom data attributes are intended to store custom data private to the page or application, for which there are no more appropriate attributes or elements.

Parameters

name –

Returns**_getTranslate()**

Specifies whether an elements attribute values and contents of its children are to be translated when the page is localized, or whether to leave them unchanged.

Returns

True | False

_setTranslate(val)

Specifies whether an elements attribute values and contents of its children are to be translated when the page is localized, or whether to leave them unchanged.

Parameters

val – True | False

_getTitle()

Advisory information associated with the element.

Returns

str

_setTitle(val)

Advisory information associated with the element.

Parameters

val – str

_getTabIndex()

Specifies whether the element represents an element that is is focusable (that is, an element which is part of the sequence of focusable elements in the document), and the relative order of the element in the sequence of focusable elements in the document.

Returns

number

_setTabIndex(val)

Specifies whether the element represents an element that is is focusable (that is, an element which is part of the sequence of focusable elements in the document), and the relative order of the element in the sequence of focusable elements in the document.

Parameters

val – number

_getSpellcheck()

Specifies whether the element represents an element whose contents are subject to spell checking and grammar checking.

Returns

True | False

_setSpellcheck(*val*)

Specifies whether the element represents an element whose contents are subject to spell checking and grammar checking.

Parameters

val – True | False

_getLang()

Specifies the primary language for the contents of the element and for any of the elements attributes that contain text.

Returns

language tag e.g. de|en|fr|es|it|ru|

_setLang(*val*)

Specifies the primary language for the contents of the element and for any of the elements attributes that contain text.

Parameters

val – language tag

_getHidden()

Specifies that the element represents an element that is not yet, or is no longer, relevant.

Returns

True | False

_setHidden(*val*)

Specifies that the element represents an element that is not yet, or is no longer, relevant.

Parameters

val – True | False

_getDisabled()

_setDisabled(*disable*)

_getDropzone()

Specifies what types of content can be dropped on the element, and instructs the UA about which actions to take with content when it is dropped on the element.

Returns

“copy” | “move” | “link”

_setDropzone(*val*)

Specifies what types of content can be dropped on the element, and instructs the UA about which actions to take with content when it is dropped on the element.

Parameters

val – “copy” | “move” | “link”

_getDraggable()

Specifies whether the element is draggable.

Returns

True | False | “auto”

_setDraggable(*val*)

Specifies whether the element is draggable.

Parameters
val – True | False | “auto”

_getDir()
Specifies the elements text directionality.

Returns
ltr | rtl | auto

_setDir(val)
Specifies the elements text directionality.

Parameters
val – ltr | rtl | auto

_getContextmenu()
The value of the id attribute on the menu with which to associate the element as a context menu.

Returns

_setContextMenu(val)
The value of the id attribute on the menu with which to associate the element as a context menu.

Parameters
val –

_getContenteditable()
Specifies whether the contents of the element are editable.

Returns
True | False

_setContenteditable(val)
Specifies whether the contents of the element are editable.

Parameters
val – True | False

_getAccesskey()
A key label or list of key labels with which to associate the element; each key label represents a keyboard shortcut which UAs can use to activate the element or give focus to the element.

Parameters
self –

Returns

_setAccesskey(val)
A key label or list of key labels with which to associate the element; each key label represents a keyboard shortcut which UAs can use to activate the element or give focus to the element.

Parameters

- **self** –
- **val** –

_getId()
Specifies a unique id for an element.

Parameters
self –

Returns

_setId(val)

Specifies a unique id for an element.

Parameters

- **self** –
- **val** –

_getClass()

The class attribute specifies one or more classnames for an element.

Returns

_setClass(value)

The class attribute specifies one or more classnames for an element.

Parameters

- **self** –
- **value** –

@raise ValueError:

_getStyle()

The style attribute specifies an inline style for an element.

Parameters

self –

Returns

_getRole()

Specifies a role for an element.

@param self: @return:

_setRole(val)

Specifies a role for an element.

@param self: @param val:

hide()

Hide element, if shown.

Returns

show()

Show element, if hidden.

Returns

isHidden()

Checks if a widget is hidden.

Returns

True if hidden, False otherwise.

isVisible()

Checks if a widget is visible.

Returns

True if visible, False otherwise.

onBind(widget, name)

Event function that is called on the widget when it is bound to another widget with a name.

This is only done by the HTML parser, a manual binding by the user is not triggered.

onAttach()**onDetach()****__collectChildren(*args, **kwargs)**

Internal function for collecting children from args.

This is used by appendChild(), prependChild(), insertChild() etc.

insertBefore(insert, child, **kwargs)**insertAfter(insert, child, **kwargs)****prependChild(*args, **kwargs)****appendChild(*args, **kwargs)****replaceChild(*args, **kwargs)****removeChild(child)****removeAllChildren()**

Removes all child widgets of the current widget.

isParentOf(widget)

Checks if an object is the parent of widget.

Parameters

widget ([Widget](#)) – The widget to check for.

Returns

True, if widget is a child of the object, else False.

isChildOf(widget)

Checks if an object is the child of widget.

Parameters

widget ([Widget](#)) – The widget to check for.

Returns

True, if object is a child of widget, else False.

hasClass(className)

Determine whether the current widget is assigned the given class.

Parameters

className (*str*) – The class name to search for.

addClass(*args)

Adds a class or a list of classes to the current widget.

If the widget already has the class, it is ignored.

Parameters

args(*list of str / list of list of str*)—A list of class names. This can also be a list.

removeClass(*args)

Removes a class or a list of classes from the current widget.

Parameters

args(*list of str / list of list of str*)—A list of class names. This can also be a list.

toggleClass(on, off=None)

Toggles the class on.

If the widget contains a class *on*, it is toggled by *off*. *off* can either be a class name that is substituted, or nothing.

Parameters

- **on**(*str*) – Classname to test for. If *on* does not exist, but *off*, *off* is replaced by *on*.
- **off**(*str*) – Classname to replace if *on* existed.

Returns

Returns True, if *on* was switched, else False.

Return type

bool

onBlur(*event*)

onChange(*event*)

onContextMenu(*event*)

onFocus(*event*)

onFocusIn(*event*)

onFocusOut(*event*)

onFormChange(*event*)

onFormInput(*event*)

onInput(*event*)

onInvalid(*event*)

onReset(*event*)

onSelect(*event*)

onSubmit(*event*)

onKeyDown(*event*)

```
onKeyPress(event)
onKeyUp(event)
onClick(event, wdg=None)
onDblClick(event)
onDrag(event)
onDragEnd(event)
onDragEnter(event)
onDragLeave(event)
onDragOver(event)
onDragStart(event)
onDrop(event)
onMouseDown(event)
onMouseMove(event)
onMouseOut(event)
onMouseOver(event)
onMouseUp(event)
onMouseWheel(event)
onScroll(event)
onTouchStart(event)
onTouchEnd(event)
onTouchMove(event)
onTouchCancel(event)
focus()
blur()
parent()
children(n=None)
```

Access children of widget.

If n is omitted, it returns a list of all child-widgets; Else, it returns the N'th child, or None if its out of bounds.

Parameters

n (*int*) – Optional offset of child widget to return.

Returns

Returns all children or only the requested one.

Return type

list | [Widget](#) | None

sortChildren(key, reversed=False)

Sorts our direct children. They are rearranged on DOM level.

Key must be a function accepting one widget as parameter and must return the key used to sort these widgets.

fromHTML(html, appendTo=None, bindTo=None, replace=False, vars=None, **kwargs)

Parses html and constructs its elements as part of self.

Parameters

- **html** – HTML code.
- **appendTo** – The entity where the HTML code is constructed below. This defaults to self in usual case.
- **bindTo** – The entity where the named objects are bound to. This defaults to self in usual case.
- **replace** – Clear entire content of appendTo before appending.
- **vars** – Deprecated; Same as kwargs.
- ****kwargs** – Additional variables provided as a dict for {placeholders} inside the HTML

Returns

class flare.html5.core._attrLabel

Bases: object

_getLabel()

_setLabel(val)

class flare.html5.core._attrCharset

Bases: object

_getCharset()

_setCharset(val)

class flare.html5.core._attrCite

Bases: object

_getCite()

_setCite(val)

class flare.html5.core._attrDatetime

Bases: object

_getDatetime()

_setDatetime(val)

class flare.html5.core._attrForm

Bases: object

_getForm()

```
_setForm(val)

class flare.html5.core._attrAlt
    Bases: object
        _getAlt()
        _setAlt(val)

class flare.html5.core._attrAutofocus
    Bases: object
        _getAutofocus()
        _setAutofocus(val)

class flare.html5.core._attrDisabled
    Bases: object

class flare.html5.core._attrChecked
    Bases: object
        _getChecked()
        _setChecked(val)

class flare.html5.core._attrIndeterminate
    Bases: object
        _getIndeterminate()
        _setIndeterminate(val)

class flare.html5.core._attrName
    Bases: object
        _getName()
        _setName(val)

class flare.html5.core._attrValue
    Bases: object
        _getValue()
        _setValue(val)

class flare.html5.core._attrAutocomplete
    Bases: object
        _getAutocomplete()
        _setAutocomplete(val)

class flare.html5.core._attrRequired
    Bases: object
        _getRequired()
        _setRequired(val)
```

```
class flare.html5.core._attrMultiple
Bases: object
_getMultiple()
_setMultiple(val)

class flare.html5.core._attrSize
Bases: object
_getSize()
_setSize(val)

class flare.html5.core._attrFor
Bases: object
_getFor()
_setFor(val)

class flare.html5.core._attrInputs
Bases: _attrRequired
_getmaxlength()
_setmaxlength(val)
_getPlaceholder()
_setPlaceholder(val)
_getReadonly()
_setReadonly(val)

class flare.html5.core._attrFormhead
Bases: object
_getFormaction()
_setFormaction(val)
_getFormenctype()
_setFormenctype(val)
_getFormmethod()
_setFormmethod(val)
_getFormtarget()
_setFormtarget(val)
_getFormnovalidate()
_setFormnovalidate(val)
```

```
class flare.html5.core._attrHref
Bases: object
_getHref()
Url of a Page.

    Parameters
        self –

_setHref(val)
Url of a Page.

    Parameters
        val – URL

_getHreflang()
_setHreflang(val)

class flare.html5.core._attrTarget
Bases: object
_getTarget()
_setTarget(val)

class flare.html5.core._attrType
Bases: object
_getType()
_setType(val)

class flare.html5.core._attrMedia
Bases: _attrType
_getMedia()
_setMedia(val)

class flare.html5.core._attrDimensions
Bases: object
_getWidth()
_setWidth(val)
_getHeight()
_setHeight(val)

class flare.html5.core._attrUsemap
Bases: object
_getUsemap()
_setUsemap(val)

class flare.html5.core._attrMultimedia
Bases: object
```

```
_getAutoplay()
_setAutoplay(val)

_getPlaysinline()
_setPlaysinline(val)

_getControls()
_setControls(val)

_getLoop()
_setLoop(val)

_getMuted()
_setMuted(val)

_getPreload()
_setPreload(val)

class flare.html5.core._attrRel
Bases: object
_getRel()
_setRel(val)

class flare.html5.core._attrSrc
Bases: object
_getSrc()
_setSrc(val)

class flare.html5.core.A(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrHref, _attrTarget, _attrMedia, _attrRel, _attrName
TagName = 'a'

_getDownload()
The download attribute specifies the path to a download.

Returns
filename

_setDownload(val)
The download attribute specifies the path to a download.

Parameters
val – filename

class flare.html5.core.Area(*args, appendTo=None, style=None, **kwargs)
Bases: A, _attrAlt
TagName = 'area'
```

```
_leafTag = True
_getCoords()
_setCoords(val)
_getShape()
_setShape(val)

class flare.html5.core.Audio(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrSrc, _attrMultimedia
    _tagName = 'audio'

class flare.html5.core.Bdo(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'bdo'

class flare.html5.core.Blockquote(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'blockquote'
    _getBlockquote()
    _setBlockquote(val)

class flare.html5.core.BodyCls(*args, **kwargs)
    Bases: Widget
flare.html5.core._body
flare.html5.core.Body()

class flare.html5.core.Canvas(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrDimensions
    _tagName = 'canvas'

class flare.html5.core.Command(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrLabel, _attrType, _attrDisabled, _attrChecked
    _tagName = 'command'
    _getIcon()
    _setIcon(val)
    _getRadiogroup()
    _setRadiogroup(val)

class flare.html5.core._Del(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrCite, _attrDatetime
    _tagName = '_del'
```

```
class flare.html5.core.Dialog(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'dialog'

        _getOpen()
        _setOpen(val)

class flare.html5.core.Abr(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'abbr'

class flare.html5.core.Address(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'address'

class flare.html5.core.Article(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'article'

class flare.html5.core.Aside(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'aside'

class flare.html5.core.B(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'b'

class flare.html5.core.Bdi(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'bdi'

class flare.html5.core.Br(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'br'
        _leafTag = True

class flare.html5.core.Caption(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'caption'

class flare.html5.core.Cite(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'cite'

class flare.html5.core.Code(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
```

```
_tagName = 'code'

class flare.html5.core.Datalist(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'datalist'

class flare.html5.core.Dfn(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'dfn'

class flare.html5.core.Div(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'div'

class flare.html5.core.Em(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'em'

class flare.html5.core.Embed(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrSrc, _attrType, _attrDimensions
    _tagName = 'embed'
    _leafTag = True

class flare.html5.core.Figcaption(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'figcaption'

class flare.html5.core.Figure(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'figure'

class flare.html5.core.Footer(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'footer'

class flare.html5.core.Header(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'header'

class flare.html5.core.H1(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'h1'

class flare.html5.core.H2(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'h2'
```

```
class flare.html5.core.H3(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'h3'
```

```
class flare.html5.core.H4(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'h4'
```

```
class flare.html5.core.H5(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'h5'
```

```
class flare.html5.core.H6(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'h6'
```

```
class flare.html5.core.Hr(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'hr'
```

```
_leafTag = True
```

```
class flare.html5.core.I(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'i'
```

```
class flare.html5.core.Kdb(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'kdb'
```

```
class flare.html5.core.Legend(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'legend'
```

```
class flare.html5.core.Mark(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'mark'
```

```
class flare.html5.core.Noscript(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'noscript'
```

```
class flare.html5.core.P(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'p'
```

```
class flare.html5.core.Rq(*args, appendTo=None, style=None, **kwargs)
```

Bases: [Widget](#)

```
_tagName = 'rq'

class flare.html5.core.Rt(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'rt'

class flare.html5.core.Ruby(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'ruby'

class flare.html5.core.S(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 's'

class flare.html5.core.Samp(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'samp'

class flare.html5.core.Section(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'section'

class flare.html5.core.Small(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'small'

class flare.html5.core.Strong(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'strong'

class flare.html5.core.Sub(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'sub'

class flare.html5.core.Summary(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'summary'

class flare.html5.core.Sup(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'sup'

class flare.html5.core.U(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'u'

class flare.html5.core.Var(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
```

```
_tagName = 'var'

class flare.html5.core.Wbr(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'wbr'

class flare.html5.core.Button(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrDisabled, _attrType, _attrForm, _attrAutofocus, _attrName, _attrValue,
        _attrFormhead
        _tagName = 'button'

class flare.html5.core.Fieldset(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrDisabled, _attrForm, _attrName
        _tagName = 'fieldset'

class flare.html5.core.Form(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrDisabled, _attrName, _attrTarget, _attrAutocomplete
        _tagName = 'form'
        _getNovalidate()
        _setNovalidate(val)
        _getAction()
        _setAction(val)
        _getMethod()
        _setMethod(val)
        _getEnctype()
        _setEnctype(val)
        _getAccept_attrCharset()
        _setAccept_attrCharset(val)

class flare.html5.core.Input(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrDisabled, _attrType, _attrForm, _attrAlt, _attrAutofocus,
        _attrChecked, _attrIndeterminate, _attrName, _attrDimensions, _attrValue, _attrFormhead,
        _attrAutocomplete, _attrInputs, _attrMultiple, _attrSize, _attrSrc
        _tagName = 'input'
        _leafTag = True
        _getAccept()
        _setAccept(val)
        _getList()
        _setList(val)
```

```
_getMax()
_setMax(val)

_getMin()
_setMin(val)

_getPattern()
_setPattern(val)

_getStep()
_setStep(val)

class flare.html5.core.Label(*args, forElem=None, **kwargs)
Bases: Widget, _attrForm, _attrFor
 tagName = 'label'

autoIdCounter = 0

class flare.html5.core.Optgroup(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrLabel
 tagName = 'optgroup'

class flare.html5.core.Option(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrLabel, _attrValue
 tagName = 'option'

getSelected()
 setSelected(val)

class flare.html5.core.Output(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrForm, _attrName, _attrFor
 tagName = 'output'

class flare.html5.core.Select(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrForm, _attrAutofocus, _attrName, _attrRequired,
 _attrMultiple, _attrSize
 tagName = 'select'

getSelectedIndex()
 getOptions()

class flare.html5.core.Textarea(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrForm, _attrAutofocus, _attrName, _attrInputs, _attrValue
 tagName = 'textarea'

getCols()
 setCols(val)
```

```
_getRows()
_setRows(val)

_getWrap()
_setWrap(val)

class flare.html5.core.HeadCls(*args, **kwargs)
Bases: Widget

flare.html5.core._head

flare.html5.core.Head()

class flare.html5.core.Iframe(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrSrc, _attrName, _attrDimensions
 tagName = 'iframe'

_getSandbox()
_setSandbox(val)

_getSrcdoc()
_setSrcdoc(val)

_getSeamless()
_setSeamless(val)

class flare.html5.core.Img(src=None, *args, **kwargs)
Bases: Widget, _attrSrc, _attrDimensions, _attrUsemap, _attrAlt
 tagName = 'img'

_leafTag = True
_getCrossorigin()
_setCrossorigin(val)

_getIsmap()
_setIsmap(val)

class flare.html5.core.Ins(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrCite, _attrDatetime
 tagName = 'ins'

class flare.html5.core.Keygen(*args, appendTo=None, style=None, **kwargs)
Bases: Form, _attrAutofocus, _attrDisabled
 tagName = 'keygen'

_getChallenge()
_setChallenge(val)
```

```
_getKeytype()
_setKeytype(val)

class flare.html5.core.Link(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrHref, _attrMedia, _attrRel
_tagName = 'link'

_leafTag = True

_getSizes()
_setSizes(val)

class flare.html5.core.Ul(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
_tagName = 'ul'

class flare.html5.core.Ol(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
_tagName = 'ol'

class flare.html5.core.Li(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
_tagName = 'li'

class flare.html5.core.Dl(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
_tagName = 'dl'

class flare.html5.core.Dt(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
_tagName = 'dt'

class flare.html5.core.Dd(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
_tagName = 'dd'

class flare.html5.core.Map(*args, forElem=None, **kwargs)
Bases: Label, _attrType
_tagName = 'map'

class flare.html5.core.Menu(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
_tagName = 'menu'

class flare.html5.core.Meta(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrName, _attrCharset
_tagName = 'meta'
```

```
_leafTag = True
_getContent()
_setContent(val)

class flare.html5.core.Meter(*args, appendTo=None, style=None, **kwargs)
    Bases: Form, _attrValue
    _tagName = 'meter'

    _getHigh()
    _setHigh(val)

    _getLow()
    _setLow(val)

    _getMax()
    _setMax(val)

    _getMin()
    _setMin(val)

    _getOptimum()
    _setOptimum(val)

class flare.html5.core.Nav(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
    _tagName = 'nav'

class flare.html5.core.Object(*args, appendTo=None, style=None, **kwargs)
    Bases: Form, _attrType, _attrName, _attrDimensions, _attrUsemmap
    _tagName = 'object'

class flare.html5.core.Param(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrName, _attrValue
    _tagName = 'param'

    _leafTag = True

class flare.html5.core.Progress(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrValue
    _tagName = 'progress'

    _getMax()
    _setMax(val)

class flare.html5.core.Q(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrCite
```

```
_tagName = 'q'

class flare.html5.core.Script(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrSrc, _attrCharset
        _tagName = 'script'

        _getAsync()
        _setAsync(val)
        _getDefer()
        _setDefer(val)

class flare.html5.core.Source(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrMedia, _attrSrc
        _tagName = 'source'

        _leafTag = True

class flare.html5.core.Span(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'span'

class flare.html5.core.Details(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'details'

        _getOpen()
        _setOpen(val)

class flare.html5.core.Summary(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'summary'

class flare.html5.core.Style(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrMedia
        _tagName = 'style'

        _getScoped()
        _setScoped(val)

class flare.html5.core.Tr(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'tr'

        _getRowspan()
        _setRowspan(span)
```

```
class flare.html5.core.Td(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
    _tagName = 'td'
    _getColspan()
    _setColspan(span)
    _getRowspan()
    _setRowspan(span)

class flare.html5.core.Th(*args, appendTo=None, style=None, **kwargs)
Bases: Td
    _tagName = 'th'

class flare.html5.core.Thead(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
    _tagName = 'thead'

class flare.html5.core.Tbody(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
    _tagName = 'tbody'

class flare.html5.core.ColWrapper(parentElem, *args, **kwargs)
Bases: object
    __getitem__(item)
    __setitem__(key, value)

class flare.html5.core.RowWrapper(parentElem, *args, **kwargs)
Bases: object
    __getitem__(item)

class flare.html5.core.Table(*args, **kwargs)
Bases: Widget
    _tagName = 'table'
    prepareRow(row)
    prepareCol(row, col)
    prepareGrid(rows, cols)
    clear()
    _getCell()
    getRowCount()

class flare.html5.core.Time(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDatetime
```

```

_tagName = 'time'

class flare.html5.core.Track(*args, forElem=None, **kwargs)
    Bases: Label, _attrSrc
        _tagName = 'track'
        _leafTag = True
        _getKind()
        _setKind(val)
        _getSrcLang()
        _setSrcLang(val)
        _getDefault()
        _setDefault(val)

class flare.html5.core.Video(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget, _attrSrc, _attrDimensions, _attrMultimedia
        _tagName = 'video'
        _getPoster()
        _setPoster(val)

class flare.html5.core.Template(*args, appendTo=None, style=None, **kwargs)
    Bases: Widget
        _tagName = 'template'

flare.html5.core.unescape(val, maxLength=0)
    Unquotes several HTML-quoted characters in a string.

```

Parameters

- **val** (str) – The value to be unescaped.
- **maxLength** (int) – Cut-off after maxLength characters. A value of 0 means “unlimited”. (default)

Returns

The unquoted string.

Return type

str

```
flare.html5.core.doesEventHitWidgetOrParents(event, widget)
```

Test if event ‘event’ hits widget ‘widget’ (or *any* of its parents).

```
flare.html5.core.doesEventHitWidgetOrChildren(event, widget)
```

Test if event ‘event’ hits widget ‘widget’ (or *any* of its children).

```
flare.html5.core.textToHtml(node, text)
```

Generates html nodes from text by splitting text into content and into line breaks html5.Br.

Parameters

- **node** – The node where the nodes are appended to.
- **text** – The text to be inserted.

`flare.html5.core.parseInt(s, ret=0)`

Parses a value as int.

`flare.html5.core.parseFloat(s, ret=0.0)`

Parses a value as float.

`flare.html5.core.getKey(event)`

Returns the Key Identifier of the given event.

Available Codes: <https://www.w3.org/TR/2006/WD-DOM-Level-3-Events-20060413/keyset.html#KeySet-Set>

`flare.html5.core.isArrowLeft(event)`

`flare.html5.core.isArrowUp(event)`

`flare.html5.core.isArrowRight(event)`

`flare.html5.core.isArrowDown(event)`

`flare.html5.core.isEscape(event)`

`flare.html5.core.isReturn(event)`

`flare.html5.core.isControl(event)`

`flare.html5.core.isShift(event)`

`flare.html5.core.isMeta(event)`

`flare.html5.core.__tags`

`flare.html5.core.__reVarReplacer`

`flare.html5.core.registerTag(tagName, widgetClass, override=True)`

`flare.html5.core.tag(arg)`

Decorator to register a sub-class of html5.Widget either under its class-name or an associated tag-name.

Examples

```
```python # register class Foo as <foo>-Tag @html5.tag class Foo(html5.Div):
```

```
 pass
```

```
register class Bar as <baz>-Tag @html5.tag("baz") class Bar(html5.Div):
```

```
 pass
```

```
```
```

`flare.html5.core._buildTags(debug=False)`

Generates a dictionary of all to the html5-library known tags and their associated objects and attributes.

class flare.html5.core.HtmlAst

Bases: list

Abstract syntax tree element used by parseHTML().

flare.html5.core.parseHTML(html: str, debug: bool = False) → HtmlAst

Parses the provided HTML-code according to the tags registered by html5.registerTag() or components that used the html5.tag-decorator.

flare.html5.core.fromHTML(html: [str, HtmlAst], appendTo: Widget = None, bindTo: Widget = None, debug: bool = False, **kwargs) → [Widget]

Parses the provided HTML code according to the objects defined in the html5-library.

html can also be pre-compiled by *parseHTML()* so that it executes faster.

Constructs all objects as DOM nodes. The first level is chained into appendTo. If no appendTo is provided, appendTo will be set to html5.Body().

If bindTo is provided, objects are bound to this widget.

```python from vi import html5

div = html5.Div() html5.parse.fromHTML("")

**<div>Yeah!**

&lt;a href="hello world" [name]="myLink" class="trullman bernd" disabled&gt; hah ala malla" bababtschga" &lt;img src="/static/images/icon\_home.svg" style="background-color: red;"&gt;st&lt;em&gt;ah&lt;/em&gt;ralla &lt;i&gt;malla tralla&lt;/i&gt; da &lt;/a&gt;lala

&lt;/div&gt;"", div)

div.myLink.appendChild("appended!") ````

**flare.html5.svg**

SVG abstraction layer integrations for HTML5.

## Module Contents

### Classes

`_attrSvgViewBox`

`_attrSvgDimensions`

`_attrSvgPoints`

`_attrSvgTransform`

`_attrSvgXlink`

`_attrSvgStyles`

`SvgWidget`

`Svg`

`SvgCircle`

`SvgEllipse`

`SvgG`

`SvgImage`

`SvgLine`

`SvgPath`

`SvgPolygon`

`SvgPolyline`

`SvgRect`

`SvgText`

---

```
class flare.html5.svg._attrSvgViewBox
```

Bases: object

`_getViewbox()`

`_setViewbox(val)`

`_getPreserveaspectratio()`

`_setPreserveaspectratio(val)`

```
class flare.html5.svg._attrSvgDimensions
Bases: object
 _getWidth()
 _setWidth(val)
 _getHeight()
 _setHeight(val)
 _getX()
 _setX(val)
 _getY()
 _setY(val)
 _getR()
 _setR(val)
 _getRx()
 _setRx(val)
 _getRy()
 _setRy(val)
 _getCx()
 _setCx(val)
 _getCy()
 _setCy(val)

class flare.html5.svg._attrSvgPoints
Bases: object
 _getPoints()
 _setPoints(val)
 _getX1()
 _setX1(val)
 _getY1()
 _setY1(val)
 _getX2()
 _setX2(val)
 _getY2()
 _setY2(val)
```

```
class flare.html5.svg._attrSvgTransform
Bases: object
 _getTransform()
 _setTransform(val)

class flare.html5.svg._attrSvgXlink
Bases: object
 _getXlinkhref()
 _setXlinkhref(val)

class flare.html5.svg._attrSvgStyles
Bases: object
 _getFill()
 _setFill(val)
 _getStroke()
 _setStroke(val)

class flare.html5.svg.SvgWidget(*args, appendTo=None, style=None, **kwargs)
Bases: flare.html5.core.Widget
 _namespace = 'SVG'

class flare.html5.svg.Svg(*args, appendTo=None, style=None, **kwargs)
Bases: SvgWidget, _attrSvgViewBox, _attrSvgDimensions, _attrSvgTransform
 _tagName = 'svg'
 _getVersion()
 _setVersion(val)
 _getXmlns()
 _setXmlns(val)

class flare.html5.svg.SvgCircle(*args, appendTo=None, style=None, **kwargs)
Bases: SvgWidget, _attrSvgTransform, _attrSvgDimensions
 _tagName = 'circle'

class flare.html5.svg.SvgEllipse(*args, appendTo=None, style=None, **kwargs)
Bases: SvgWidget, _attrSvgTransform, _attrSvgDimensions
 _tagName = 'ellipse'

class flare.html5.svg.SvgG(*args, appendTo=None, style=None, **kwargs)
Bases: SvgWidget, _attrSvgTransform, _attrSvgStyles
 _tagName = 'g'
 _getSvgTransform()
```

```

_setSvgTransform(val)

class flare.html5.svg.SvgImage(*args, appendTo=None, style=None, **kwargs)
 Bases: SvgWidget, _attrSvgViewBox, _attrSvgDimensions, _attrSvgTransform, _attrSvgXlink
 _tagName = 'image'

class flare.html5.svg.SvgLine(*args, appendTo=None, style=None, **kwargs)
 Bases: SvgWidget, _attrSvgTransform, _attrSvgPoints
 _tagName = 'line'

class flare.html5.svg.SvgPath(*args, appendTo=None, style=None, **kwargs)
 Bases: SvgWidget, _attrSvgTransform
 _tagName = 'path'

_getD()
_setD(val)
_getPathLength()
_setPathLength(val)

class flare.html5.svg.SvgPolygon(*args, appendTo=None, style=None, **kwargs)
 Bases: SvgWidget, _attrSvgTransform, _attrSvgPoints
 _tagName = 'polygon'

class flare.html5.svg.SvgPolyline(*args, appendTo=None, style=None, **kwargs)
 Bases: SvgWidget, _attrSvgTransform, _attrSvgPoints
 _tagName = 'polyline'

class flare.html5.svg.SvgRect(*args, appendTo=None, style=None, **kwargs)
 Bases: SvgWidget, _attrSvgDimensions, _attrSvgTransform, _attrSvgStyles
 _tagName = 'rect'

class flare.html5.svg.SvgText(*args, appendTo=None, style=None, **kwargs)
 Bases: SvgWidget, _attrSvgDimensions, _attrSvgTransform, _attrSvgStyles
 _tagName = 'text'

```

## Package Contents

### Classes

|                            |                                            |
|----------------------------|--------------------------------------------|
| <i>TextNode</i>            | Represents a piece of text inside the DOM. |
| <i>_WidgetClassWrapper</i> | Built-in mutable sequence.                 |
| <i>_WidgetDataWrapper</i>  | dict() -> new empty dictionary             |
| <i>_WidgetStyleWrapper</i> | dict() -> new empty dictionary             |
| <i>Widget</i>              |                                            |

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Table 3 – continued from previous page

|                    |
|--------------------|
| _attrLabel         |
| _attrCharset       |
| _attrCite          |
| _attrDatetime      |
| _attrForm          |
| _attrAlt           |
| _attrAutofocus     |
| _attrDisabled      |
| _attrChecked       |
| _attrIndeterminate |
| _attrName          |
| _attrValue         |
| _attrAutocomplete  |
| _attrRequired      |
| _attrMultiple      |
| _attrSize          |
| _attrFor           |
| _attrInputs        |
| _attrFormhead      |
| _attrHref          |
| _attrTarget        |
| _attrType          |
| _attrMedia         |
| _attrDimensions    |
| _attrUsemmap       |
| _attrMultimedia    |

continues on next page

Table 3 – continued from previous page

|                   |
|-------------------|
| <i>_attrRel</i>   |
| <i>_attrSrc</i>   |
| <i>A</i>          |
| <i>Area</i>       |
| <i>Audio</i>      |
| <i>Bdo</i>        |
| <i>Blockquote</i> |
| <i>BodyCls</i>    |
| <i>Canvas</i>     |
| <i>Command</i>    |
| <i>_Del</i>       |
| <i>Dialog</i>     |
| <i>Abbr</i>       |
| <i>Address</i>    |
| <i>Article</i>    |
| <i>Aside</i>      |
| <i>B</i>          |
| <i>Bdi</i>        |
| <i>Br</i>         |
| <i>Caption</i>    |
| <i>Cite</i>       |
| <i>Code</i>       |
| <i>Datalist</i>   |
| <i>Dfn</i>        |
| <i>Div</i>        |
| <i>Em</i>         |

continues on next page

Table 3 – continued from previous page

|                   |
|-------------------|
| <i>Embed</i>      |
| <i>Figcaption</i> |
| <i>Figure</i>     |
| <i>Footer</i>     |
| <i>Header</i>     |
| <i>H1</i>         |
| <i>H2</i>         |
| <i>H3</i>         |
| <i>H4</i>         |
| <i>H5</i>         |
| <i>H6</i>         |
| <i>Hr</i>         |
| <i>I</i>          |
| <i>Kdb</i>        |
| <i>Legend</i>     |
| <i>Mark</i>       |
| <i>Noscript</i>   |
| <i>P</i>          |
| <i>Rq</i>         |
| <i>Rt</i>         |
| <i>Ruby</i>       |
| <i>S</i>          |
| <i>Samp</i>       |
| <i>Section</i>    |
| <i>Small</i>      |
| <i>Strong</i>     |

continues on next page

Table 3 – continued from previous page

|                 |
|-----------------|
| <i>Sub</i>      |
| <i>Summary</i>  |
| <i>Sup</i>      |
| <i>U</i>        |
| <i>Var</i>      |
| <i>Wbr</i>      |
| <i>Button</i>   |
| <i>Fieldset</i> |
| <i>Form</i>     |
| <i>Input</i>    |
| <i>Label</i>    |
| <i>Optgroup</i> |
| <i>Option</i>   |
| <i>Output</i>   |
| <i>Select</i>   |
| <i>Textarea</i> |
| <i>HeadCls</i>  |
| <i>Iframe</i>   |
| <i>Img</i>      |
| <i>Ins</i>      |
| <i>Keygen</i>   |
| <i>Link</i>     |
| <i>Ul</i>       |
| <i>Ol</i>       |
| <i>Li</i>       |
| <i>Dl</i>       |

continues on next page

Table 3 – continued from previous page

|                   |
|-------------------|
| <i>Dt</i>         |
| <i>Dd</i>         |
| <i>Map</i>        |
| <i>Menu</i>       |
| <i>Meta</i>       |
| <i>Meter</i>      |
| <i>Nav</i>        |
| <i>Object</i>     |
| <i>Param</i>      |
| <i>Progress</i>   |
| <i>Q</i>          |
| <i>Script</i>     |
| <i>Source</i>     |
| <i>Span</i>       |
| <i>Details</i>    |
| <i>Summary</i>    |
| <i>Style</i>      |
| <i>Tr</i>         |
| <i>Td</i>         |
| <i>Th</i>         |
| <i>Thead</i>      |
| <i>Tbody</i>      |
| <i>ColWrapper</i> |
| <i>RowWrapper</i> |
| <i>Table</i>      |
| <i>Time</i>       |

continues on next page

Table 3 – continued from previous page

|                 |                                                   |
|-----------------|---------------------------------------------------|
| <i>Track</i>    |                                                   |
| <i>Video</i>    |                                                   |
| <i>Template</i> |                                                   |
| <i>HtmlAst</i>  | Abstract syntax tree element used by parseHTML(). |

## Functions

|                                                          |                                                                                              |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <code>domCreateAttribute(tag[, ns])</code>               | Creates a new HTML/SVG/... attribute.                                                        |
| <code>domCreateElement(tag[, ns])</code>                 | Creates a new HTML/SVG/... tag.                                                              |
| <code>domCreateTextNode([txt])</code>                    |                                                                                              |
| <code>domGetElementById(idTag)</code>                    |                                                                                              |
| <code>domElementFromPoint(x, y)</code>                   |                                                                                              |
| <code>domGetElementsByTagName(tag)</code>                |                                                                                              |
| <code>domParseString(string[, mimetype])</code>          | Parses the given string with the optionally given mime-type using JavaScript's DOM parser.   |
| <code>domConvertEncodedText(txt)</code>                  | Convert HTML-encoded text (containing HTML entities) into its decoded string representation. |
| <i>Body()</i>                                            |                                                                                              |
| <i>Head()</i>                                            |                                                                                              |
| <code>unescape(val[, maxLength])</code>                  | Unquotes several HTML-quoted characters in a string.                                         |
| <code>doesEventHitWidgetOrParents(event, widget)</code>  | Test if event 'event' hits widget 'widget' (or <i>any</i> of its parents).                   |
| <code>doesEventHitWidgetOrChildren(event, widget)</code> | Test if event 'event' hits widget 'widget' (or <i>any</i> of its children).                  |
| <code>textToHtml(node, text)</code>                      | Generates html nodes from text by splitting text into content and into line breaks html5.Br. |
| <code>parseInt(s[, ret])</code>                          | Parses a value as int.                                                                       |
| <code>parseFloat(s[, ret])</code>                        | Parses a value as float.                                                                     |
| <code>getKey(event)</code>                               | Returns the Key Identifier of the given event.                                               |
| <code>isArrowLeft(event)</code>                          |                                                                                              |
| <code>isArrowUp(event)</code>                            |                                                                                              |
| <code>isArrowRight(event)</code>                         |                                                                                              |
| <code>isArrowDown(event)</code>                          |                                                                                              |
| <code>isEscape(event)</code>                             |                                                                                              |

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Table 4 – continued from previous page

|                                                            |                                                                                                                                        |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <code>isReturn(event)</code>                               |                                                                                                                                        |
| <code>isControl(event)</code>                              |                                                                                                                                        |
| <code>isShift(event)</code>                                |                                                                                                                                        |
| <code>isMeta(event)</code>                                 |                                                                                                                                        |
| <code>registerTag(tagName, widgetClass[, override])</code> |                                                                                                                                        |
| <code>tag(arg)</code>                                      | Decorator to register a sub-class of html5.Widget either under its class-name or an associated tag-name.                               |
| <code>_buildTags([debug])</code>                           | Generates a dictionary of all to the html5-library known tags and their associated objects and attributes.                             |
| <code>parseHTML(→ HtmlAst)</code>                          | Parses the provided HTML-code according to the tags registered by html5.registerTag() or components that used the html5.tag-decorator. |
| <code>fromHTML(→ [Widget])</code>                          | Parses the provided HTML code according to the objects defined in the html5-library.                                                   |

## Attributes

|                                      |  |
|--------------------------------------|--|
| <code>htmlExpressionEvaluator</code> |  |
| <code>document</code>                |  |
| <code>--domParser</code>             |  |
| <code>_body</code>                   |  |
| <code>_head</code>                   |  |
| <code>--tags</code>                  |  |
| <code>--reVarReplacer</code>         |  |

`flare.html5.htmlExpressionEvaluator`

`flare.html5.document`

`flare.html5.domCreateAttribute(tag, ns=None)`

Creates a new HTML/SVG/... attribute.

### Parameters

`ns` – the namespace. Default: HTML. Possible values: HTML, SVG, XBL, XUL

`flare.html5.domCreateElement(tag, ns=None)`

Creates a new HTML/SVG/... tag.

### Parameters

`ns` – the namespace. Default: HTML. Possible values: HTML, SVG, XBL, XUL

```
flare.html5.domCreateTextNode(txt= '')
flare.html5.domGetElementById(idTag)
flare.html5.domElementFromPoint(x, y)
flare.html5.domGetElementsByTagName(tag)
flare.html5.__domParser
flare.html5.domParseString(string, mimetype='text/html')
```

Parses the given string with the optionally given mimetype using JavaScript's DOM parser. :param *string*: Any XML/HTML string processable by DOMParser. :param *mimetype*: The mimetype to use.

#### Returns

Returns the parsed document DOM.

```
flare.html5.domConvertEncodedText(txt)
```

Convert HTML-encoded text (containing HTML entities) into its decoded string representation.

The reason for this function is the handling of HTML entities, which is not properly supported by native JavaScript.

We use the browser's DOM parser to do this, according to <https://stackoverflow.com/questions/3700326/decode-amp-back-to-in-javascript>

#### Parameters

**txt** – The encoded text.

#### Returns

The decoded text.

```
class flare.html5.TextNode(txt=None, *args, **kwargs)
```

Bases: object

Represents a piece of text inside the DOM.

This is the *only* object not deriving from “Widget”, as it does not support any of its properties.

**\_setText(*txt*)**

**\_getText()**

**\_\_str\_\_()**

Return str(self).

**onAttach()**

**onDetach()**

**\_setDisabled(*disabled*)**

**\_getDisabled()**

**children()**

```
class flare.html5._WidgetClassWrapper(targetWidget)
```

Bases: list

Built-in mutable sequence.

If no argument is given, the constructor creates a new empty list. The argument must be an iterable if specified.

```
set(value)
_updateElem()
append(p_object)
Append object to the end of the list.

clear()
Remove all items from list.

remove(value)
Remove first occurrence of value.
Raises ValueError if the value is not present.

extend(iterable)
Extend list by appending elements from the iterable.

insert(index, p_object)
Insert object before index.

pop(index=None)
Remove and return item at index (default last).
Raises IndexError if list is empty or index is out of range.

class flare.html5._WidgetDataWrapper(targetWidget)
Bases: dict
dict() -> new empty dictionary dict(mapping) -> new dictionary initialized from a mapping object's
(key, value) pairs

dict(iterable) -> new dictionary initialized as if via:
d = { } for k, v in iterable:
 d[k] = v

dict(**kwargs) -> new dictionary initialized with the name=value pairs
in the keyword argument list. For example: dict(one=1, two=2)

__setitem__(key, value)
Set self[key] to value.

update(E=None, **F)
D.update([E,]**F) -> None. Update D from dict/iterable E and F. If E is present and has a .keys() method,
then does: for k in E: D[k] = E[k] If E is present and lacks a .keys() method, then does: for k, v in E: D[k]
= v In either case, this is followed by: for k in F: D[k] = F[k]

class flare.html5._WidgetStyleWrapper(targetWidget)
Bases: dict
dict() -> new empty dictionary dict(mapping) -> new dictionary initialized from a mapping object's
(key, value) pairs

dict(iterable) -> new dictionary initialized as if via:
d = { } for k, v in iterable:
 d[k] = v
```

**dict(\*\*kwargs) -> new dictionary initialized with the name=value pairs**  
 in the keyword argument list. For example: dict(one=1, two=2)

#### **\_\_setitem\_\_(key, value)**

Set self[key] to value.

#### **update(E=None, \*\*F)**

D.update([E, ]\*\*F) -> None. Update D from dict/iterable E and F. If E is present and has a .keys() method, then does: for k in E: D[k] = E[k] If E is present and lacks a .keys() method, then does: for k, v in E: D[k] = v In either case, this is followed by: for k in F: D[k] = F[k]

### **class flare.html5.Widget(\*args, appendTo=None, style=None, \*\*kwargs)**

Bases: object

#### **\_namespace**

#### **\_tagName**

#### **\_leafTag = False**

#### **style = []**

#### **sinkEvent(\*args)**

#### **unsinkEvent(\*args)**

#### **addEventListener(event, callback)**

Adds an event listener callback to an event on a Widget.

#### **Parameters**

- **event** – The event string, e.g. “click” or “mouseover”
- **callback** – The callback function to be called on the given event. This callback function can either accept no parameters, receive the pure Event-object from JavaScript as one parameter, or receive both the pure Event-object from JavaScript and the Widget-instance where the event was triggered on.

#### **removeEventListener(event, callback)**

Removes an event listener callback from a Widget.

The event listener must be previously added by Widget.addEventListener().

#### **Parameters**

- **event** – The event string, e.g. “click” or “mouseover”
- **callback** – The callback function to be removed

#### **disable()**

Disables an element, in case it is not already disabled.

On disabled elements, events are not triggered anymore.

#### **enable()**

Enables an element, in case it is not already enabled.

#### **\_getTargetfuncName(key, type)**

#### **\_\_getitem\_\_(key)**

`__setitem__(key, value)`

`__str__()`

Return str(self).

`__iter__()`

`_getData()`

Custom data attributes are intended to store custom data private to the page or application, for which there are no more appropriate attributes or elements.

**Parameters**

`name` –

**Returns**

`_getTranslate()`

Specifies whether an elements attribute values and contents of its children are to be translated when the page is localized, or whether to leave them unchanged.

**Returns**

True | False

`_setTranslate(val)`

Specifies whether an elements attribute values and contents of its children are to be translated when the page is localized, or whether to leave them unchanged.

**Parameters**

`val` – True | False

`_getTitle()`

Advisory information associated with the element.

**Returns**

str

`_setTitle(val)`

Advisory information associated with the element.

**Parameters**

`val` – str

`_getTabIndex()`

Specifies whether the element represents an element that is focusable (that is, an element which is part of the sequence of focusable elements in the document), and the relative order of the element in the sequence of focusable elements in the document.

**Returns**

number

`_setTabIndex(val)`

Specifies whether the element represents an element that is focusable (that is, an element which is part of the sequence of focusable elements in the document), and the relative order of the element in the sequence of focusable elements in the document.

**Parameters**

`val` – number

**\_getSpellcheck()**

Specifies whether the element represents an element whose contents are subject to spell checking and grammar checking.

**Returns**

True | False

**\_setSpellcheck(*val*)**

Specifies whether the element represents an element whose contents are subject to spell checking and grammar checking.

**Parameters**

**val** – True | False

**\_getLang()**

Specifies the primary language for the contents of the element and for any of the elements attributes that contain text.

**Returns**

language tag e.g. de|en|fr|es|it|ru|

**\_setLang(*val*)**

Specifies the primary language for the contents of the element and for any of the elements attributes that contain text.

**Parameters**

**val** – language tag

**\_getHidden()**

Specifies that the element represents an element that is not yet, or is no longer, relevant.

**Returns**

True | False

**\_setHidden(*val*)**

Specifies that the element represents an element that is not yet, or is no longer, relevant.

**Parameters**

**val** – True | False

**\_getDisabled()****\_setDisabled(*disable*)****\_getDropzone()**

Specifies what types of content can be dropped on the element, and instructs the UA about which actions to take with content when it is dropped on the element.

**Returns**

“copy” | “move” | “link”

**\_setDropzone(*val*)**

Specifies what types of content can be dropped on the element, and instructs the UA about which actions to take with content when it is dropped on the element.

**Parameters**

**val** – “copy” | “move” | “link”

**\_getDraggable()**

Specifies whether the element is draggable.

**Returns**

True | False | “auto”

**\_setDraggable(val)**

Specifies whether the element is draggable.

**Parameters**

**val** – True | False | “auto”

**\_getDir()**

Specifies the elements text directionality.

**Returns**

ltr | rtl | auto

**\_setDir(val)**

Specifies the elements text directionality.

**Parameters**

**val** – ltr | rtl | auto

**\_getContextmenu()**

The value of the id attribute on the menu with which to associate the element as a context menu.

**Returns**

**\_setContextMenu(val)**

The value of the id attribute on the menu with which to associate the element as a context menu.

**Parameters**

**val** –

**\_getContenteditable()**

Specifies whether the contents of the element are editable.

**Returns**

True | False

**\_setContenteditable(val)**

Specifies whether the contents of the element are editable.

**Parameters**

**val** – True | False

**\_getAccesskey()**

A key label or list of key labels with which to associate the element; each key label represents a keyboard shortcut which UAs can use to activate the element or give focus to the element.

**Parameters**

**self** –

**Returns**

**\_setAccesskey(val)**

A key label or list of key labels with which to associate the element; each key label represents a keyboard shortcut which UAs can use to activate the element or give focus to the element.

**Parameters**

- **self** –

- **val** –

### **\_getId()**

Specifies a unique id for an element.

#### **Parameters**

- **self** –

#### **Returns**

### **\_setId(val)**

Specifies a unique id for an element.

#### **Parameters**

- **self** –

- **val** –

### **\_getClass()**

The class attribute specifies one or more classnames for an element.

#### **Returns**

### **\_setClass(value)**

The class attribute specifies one or more classnames for an element.

#### **Parameters**

- **self** –

- **value** –

@raise ValueError:

### **\_getStyle()**

The style attribute specifies an inline style for an element.

#### **Parameters**

- **self** –

#### **Returns**

### **\_getRole()**

Specifies a role for an element.

@param self: @return:

### **\_setRole(val)**

Specifies a role for an element.

@param self: @param val:

### **hide()**

Hide element, if shown.

#### **Returns**

### **show()**

Show element, if hidden.

#### **Returns**

**isHidden()**

Checks if a widget is hidden.

**Returns**

True if hidden, False otherwise.

**isVisible()**

Checks if a widget is visible.

**Returns**

True if visible, False otherwise.

**onBind(widget, name)**

Event function that is called on the widget when it is bound to another widget with a name.

This is only done by the HTML parser, a manual binding by the user is not triggered.

**onAttach()**

**onDetach()**

**\_\_collectChildren(\*args, \*\*kwargs)**

Internal function for collecting children from args.

This is used by appendChild(), prependChild(), insertChild() etc.

**insertBefore(insert, child, \*\*kwargs)**

**insertAfter(insert, child, \*\*kwargs)**

**prependChild(\*args, \*\*kwargs)**

**appendChild(\*args, \*\*kwargs)**

**replaceChild(\*args, \*\*kwargs)**

**removeChild(child)**

**removeAllChildren()**

Removes all child widgets of the current widget.

**isParentOf(widget)**

Checks if an object is the parent of widget.

**Parameters**

**widget** ([Widget](#)) – The widget to check for.

**Returns**

True, if widget is a child of the object, else False.

**isChildOf(widget)**

Checks if an object is the child of widget.

**Parameters**

**widget** ([Widget](#)) – The widget to check for.

**Returns**

True, if object is a child of widget, else False.

**hasClass(*className*)**

Determine whether the current widget is assigned the given class.

**Parameters**

**className** (*str*) – The class name to search for.

**addClass(\**args*)**

Adds a class or a list of classes to the current widget.

If the widget already has the class, it is ignored.

**Parameters**

**args** (*list of str / list of list of str*) – A list of class names. This can also be a list.

**removeClass(\**args*)**

Removes a class or a list of classes from the current widget.

**Parameters**

**args** (*list of str / list of list of str*) – A list of class names. This can also be a list.

**toggleClass(*on, off=None*)**

Toggles the class on.

If the widget contains a class *on*, it is toggled by *off*. *off* can either be a class name that is substituted, or nothing.

**Parameters**

- **on** (*str*) – Classname to test for. If *on* does not exist, but *off*, *off* is replaced by *on*.
- **off** (*str*) – Classname to replace if *on* existed.

**Returns**

Returns True, if *on* was switched, else False.

**Return type**

bool

**onBlur(*event*)****onChange(*event*)****onContextMenu(*event*)****onFocus(*event*)****onFocusIn(*event*)****onFocusOut(*event*)****onFormChange(*event*)****onFormInput(*event*)****onInput(*event*)****onInvalid(*event*)****onReset(*event*)**

```
onSelect(event)
onSubmit(event)
onKeyDown(event)
onKeyPress(event)
onKeyUp(event)
onClick(event, wdg=None)
onDblClick(event)
onDrag(event)
onDragEnd(event)
onDragEnter(event)
onDragLeave(event)
onDragOver(event)
onDragStart(event)
onDrop(event)
onMouseDown(event)
onMouseMove(event)
onMouseOut(event)
onMouseOver(event)
onMouseUp(event)
onMouseWheel(event)
onScroll(event)
onTouchStart(event)
onTouchEnd(event)
onTouchMove(event)
onTouchCancel(event)
focus()
blur()
parent()
```

**children(*n=None*)**

Access children of widget.

If **n** is omitted, it returns a list of all child-widgets; Else, it returns the N'th child, or None if its out of bounds.

**Parameters**

**n** (*int*) – Optional offset of child widget to return.

**Returns**

Returns all children or only the requested one.

**Return type**

list | *Widget* | None

**sortChildren(*key, reversed=False*)**

Sorts our direct children. They are rearranged on DOM level.

Key must be a function accepting one widget as parameter and must return the key used to sort these widgets.

**fromHTML(*html, appendTo=None, bindTo=None, replace=False, vars=None, \*\*kwargs*)**

Parses html and constructs its elements as part of self.

**Parameters**

- **html** – HTML code.
- **appendTo** – The entity where the HTML code is constructed below. This defaults to self in usual case.
- **bindTo** – The entity where the named objects are bound to. This defaults to self in usual case.
- **replace** – Clear entire content of appendTo before appending.
- **vars** – Deprecated; Same as kwargs.
- **\*\*kwargs** – Additional variables provided as a dict for {{placeholders}} inside the HTML

**Returns****class flare.html5.\_attrLabel**

Bases: object

\_getLabel()

\_setLabel(*val*)

**class flare.html5.\_attrCharset**

Bases: object

\_getCharset()

\_setCharset(*val*)

**class flare.html5.\_attrCite**

Bases: object

\_getCite()

\_setCite(*val*)

```
class flare.html5._attrDatetime
Bases: object
_getDatetime()
_setDatetime(val)

class flare.html5._attrForm
Bases: object
_getForm()
_setForm(val)

class flare.html5._attrAlt
Bases: object
_getAlt()
_setAlt(val)

class flare.html5._attrAutofocus
Bases: object
_getAutofocus()
_setAutofocus(val)

class flare.html5._attrDisabled
Bases: object

class flare.html5._attrChecked
Bases: object
_getChecked()
_setChecked(val)

class flare.html5._attrIndeterminate
Bases: object
_getIndeterminate()
_setIndeterminate(val)

class flare.html5._attrName
Bases: object
_getName()
_setName(val)

class flare.html5._attrValue
Bases: object
_getValue()
SetValue(val)
```

```
class flare.html5._attrAutocomplete
Bases: object
 _getAutocomplete()
 _setAutocomplete(val)

class flare.html5._attrRequired
Bases: object
 _getRequired()
 _setRequired(val)

class flare.html5._attrMultiple
Bases: object
 _getMultiple()
 _setMultiple(val)

class flare.html5._attrSize
Bases: object
 _getSize()
 _setSize(val)

class flare.html5._attrFor
Bases: object
 _getFor()
 _setFor(val)

class flare.html5._attrInputs
Bases: _attrRequired
 _getmaxlength()
 _setmaxlength(val)
 _getPlaceholder()
 _setPlaceholder(val)
 _getreadonly()
 _setreadonly(val)

class flare.html5._attrFormhead
Bases: object
 _getFormaction()
 _setFormaction(val)
 _getFormenctype()
 _setFormenctype(val)
```

```
_getFormmethod()
_setFormmethod(val)
_getFormtarget()
_setFormtarget(val)
_getFormnovalidate()
_setFormnovalidate(val)

class flare.html5._attrHref
Bases: object
_getHref()
 Url of a Page.

 Parameters
 self –
_setHref(val)
 Url of a Page.

 Parameters
 val – URL
_getHreflang()
_setHreflang(val)

class flare.html5._attrTarget
Bases: object
_getTarget()
_setTarget(val)

class flare.html5._attrType
Bases: object
_getType()
_setType(val)

class flare.html5._attrMedia
Bases: _attrType
_getMedia()
_setMedia(val)

class flare.html5._attrDimensions
Bases: object
_getWidth()
_setWidth(val)
_getHeight()
```

```
_setHeight(val)

class flare.html5._attrUsemap
 Bases: object
 _getUsemap()
 _setUsemap(val)

class flare.html5._attrMultimedia
 Bases: object
 _getAutoplay()
 _setAutoplay(val)
 _getPlaysinline()
 _setPlaysinline(val)
 _getControls()
 _setControls(val)
 _getLoop()
 _setLoop(val)
 _getMuted()
 _setMuted(val)
 _getPreload()
 _setPreload(val)

class flare.html5._attrRel
 Bases: object
 _getRel()
 _setRel(val)

class flare.html5._attrSrc
 Bases: object
 _getSrc()
 _setSrc(val)

class flare.html5.A(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget, _attrHref, _attrTarget, _attrMedia, _attrRel, _attrName
 _tagName = 'a'
 _getDownload()

The download attribute specifies the path to a download.
```

**Returns**  
filename

```
_setDownload(val)
The download attribute specifies the path to a download.

Parameters
 val – filename

class flare.html5.Area(*args, appendTo=None, style=None, **kwargs)
Bases: A, _attrAlt
 _tagName = 'area'
 _leafTag = True
 _getCoords()
 _setCoords(val)
 _getShape()
 _setShape(val)

class flare.html5.Audio(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrSrc, _attrMultimedia
 _tagName = 'audio'

class flare.html5.Bdo(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 _tagName = 'bdo'

class flare.html5.Blockquote(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 _tagName = 'blockquote'
 _getBlockquote()
 _setBlockquote(val)

class flare.html5.BodyCls(*args, **kwargs)
Bases: Widget
flare.html5._body

flare.html5.Body()

class flare.html5.Canvas(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDimensions
 _tagName = 'canvas'

class flare.html5.Command(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrLabel, _attrType, _attrDisabled, _attrChecked
 _tagName = 'command'
 _getIcon()
 _setIcon(val)
```

```
_getRadiogroup()
_setRadiogroup(val)

class flare.html5._Del(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget, _attrCite, _attrDatetime
 _tagName = '_del'

class flare.html5.Dialog(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'dialog'

_getOpen()
_setOpen(val)

class flare.html5.Aabbr(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'abbr'

class flare.html5.Address(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'address'

class flare.html5.Article(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'article'

class flare.html5.Aside(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'aside'

class flare.html5.B(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'b'

class flare.html5.Bdi(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'bdi'

class flare.html5.Br(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'br'
 _leafTag = True

class flare.html5.Caption(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'caption'
```

```
class flare.html5.Cite(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'cite'

class flare.html5.Code(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'code'

class flare.html5.Datalist(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'datalist'

class flare.html5.Dfn(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'dfn'

class flare.html5.Div(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'div'

class flare.html5.Em(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'em'

class flare.html5.Embed(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget, _attrSrc, _attrType, _attrDimensions
 _tagName = 'embed'
 _leafTag = True

class flare.html5.Figcaption(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'figcaption'

class flare.html5.Figure(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'figure'

class flare.html5.Footer(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'footer'

class flare.html5.Header(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'header'

class flare.html5.H1(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
```

```
_tagName = 'h1'

class flare.html5.H2(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'h2'

class flare.html5.H3(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'h3'

class flare.html5.H4(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'h4'

class flare.html5.H5(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'h5'

class flare.html5.H6(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'h6'

class flare.html5.Hr(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'hr'
 _leafTag = True

class flare.html5.I(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'i'

class flare.html5.Kdb(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'kdb'

class flare.html5.Legend(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'legend'

class flare.html5.Mark(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'mark'

class flare.html5.Noscript(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'noscript'
```

```
class flare.html5.P(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'p'

class flare.html5.Rq(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'rq'

class flare.html5.Rt(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'rt'

class flare.html5.Ruby(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'ruby'

class flare.html5.S(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 's'

class flare.html5.Samp(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'samp'

class flare.html5.Section(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'section'

class flare.html5.Small(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'small'

class flare.html5.Strong(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'strong'

class flare.html5.Sub(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'sub'

class flare.html5.Summary(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'summary'

class flare.html5.Sup(*args, appendTo=None, style=None, **kwargs)
 Bases: Widget
 _tagName = 'sup'
```

```
class flare.html5.U(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'u'

class flare.html5.Var(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'var'

class flare.html5.Wbr(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'wbr'

class flare.html5.Button(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrType, _attrForm, _attrAutofocus, _attrName, _attrValue,
_attrFormhead
 tagName = 'button'

class flare.html5.Fieldset(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrForm, _attrName
 tagName = 'fieldset'

class flare.html5.Form(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrName, _attrTarget, _attrAutocomplete
 tagName = 'form'

_getNovalidate()
_setNovalidate(val)
_getAction()
_setAction(val)
_getMethod()
_setMethod(val)
_getEnctype()
_setEnctype(val)
_getAccept_attrCharset()
_setAccept_attrCharset(val)

class flare.html5.Input(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrType, _attrForm, _attrAlt, _attrAutofocus,
_attrChecked, _attrIndeterminate, _attrName, _attrDimensions, _attrValue, _attrFormhead,
_attrAutocomplete, _attrInputs, _attrMultiple, _attrSize, _attrSrc
 tagName = 'input'
_leafTag = True
```

```
_getAccept()
_setAccept(val)

_getList()
_setList(val)

_getMax()
_setMax(val)

_getMin()
_setMin(val)

_getPattern()
_setPattern(val)

_getStep()
_setStep(val)

class flare.html5.Label(*args, forElem=None, **kwargs)
Bases: Widget, _attrForm, _attrFor
 tagName = 'label'

autoIdCounter = 0

class flare.html5.Optgroup(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrLabel
 tagName = 'optgroup'

class flare.html5.Option(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrLabel, _attrValue
 tagName = 'option'

_getSelected()
_setSelected(val)

class flare.html5.Output(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrForm, _attrName, _attrFor
 tagName = 'output'

class flare.html5.Select(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrForm, _attrAutofocus, _attrName, _attrRequired,
 _attrMultiple, _attrSize
 tagName = 'select'

_getSelectedIndex()
_getOptions()
```

```
class flare.html5.Textarea(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDisabled, _attrForm, _attrAutofocus, _attrName, _attrInputs, _attrValue
 tagName = 'textarea'

_getCols()
_setCols(val)

_getRows()
_setRows(val)

_getWrap()
_setWrap(val)

class flare.html5.HeadCls(*args, **kwargs)
Bases: Widget

flare.html5._head

flare.html5.Head()

class flare.html5.Iframe(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrSrc, _attrName, _attrDimensions
 tagName = 'iframe'

_getSandbox()
_setSandbox(val)

_getSrcdoc()
_setSrcdoc(val)

_getSeamless()
_setSeamless(val)

class flare.html5.Img(src=None, *args, **kwargs)
Bases: Widget, _attrSrc, _attrDimensions, _attrUsemap, _attrAlt
 tagName = 'img'

_leafTag = True
_getCrossorigin()
_setCrossorigin(val)

_getIsmap()
_setIsmap(val)

class flare.html5.Ins(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrCite, _attrDatetime
 tagName = 'ins'
```

```
class flare.html5.Keygen(*args, appendTo=None, style=None, **kwargs)
Bases: Form, _attrAutofocus, _attrDisabled
 tagName = 'keygen'

_getChallenge()
_setChallenge(val)

_getKeytype()
_setKeytype(val)

class flare.html5.Link(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrHref, _attrMedia, _attrRel
 tagName = 'link'

_leafTag = True

_getSizes()
_setSizes(val)

class flare.html5.Ul(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'ul'

class flare.html5.Ol(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'ol'

class flare.html5.Li(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'li'

class flare.html5.Dl(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'dl'

class flare.html5.Dt(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'dt'

class flare.html5.Dd(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'dd'

class flare.html5.Map(*args, forElem=None, **kwargs)
Bases: Label, _attrType
 tagName = 'map'
```

```
class flare.html5.Menu(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'menu'

class flare.html5.Meta(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrName, _attrCharset
 tagName = 'meta'
 leafTag = True
getContent()
setContent(val)

class flare.html5.Meter(*args, appendTo=None, style=None, **kwargs)
Bases: Form, _attrValue
 tagName = 'meter'
getHigh()
setHigh(val)
getLow()
setLow(val)
getMax()
setMax(val)
getMin()
setMin(val)
getOptimum()
setOptimum(val)

class flare.html5.Nav(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'nav'

class flare.html5.Object(*args, appendTo=None, style=None, **kwargs)
Bases: Form, _attrType, _attrName, _attrDimensions, _attrUsemmap
 tagName = 'object'

class flare.html5.Param(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrName, _attrValue
 tagName = 'param'
leafTag = True

class flare.html5.Progress(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrValue
```

```
_tagName = 'progress'

_getMax()
_setMax(val)

class flare.html5.Q(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrCite
 tagName = 'q'

class flare.html5.Script(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrSrc, _attrCharset
 tagName = 'script'

_getAsync()
_setAsync(val)

_getDefer()
_setDefer(val)

class flare.html5.Source(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrMedia, _attrSrc
 tagName = 'source'

_leafTag = True

class flare.html5.Span(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'span'

class flare.html5.Details(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'details'

_getOpen()
_setOpen(val)

class flare.html5.Summary(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 tagName = 'summary'

class flare.html5.Style(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrMedia
 tagName = 'style'

_getScoped()
_setScoped(val)
```

```
class flare.html5.Tr(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 _tagName = 'tr'
 _getRowspan()
 _setRowspan(span)

class flare.html5.Td(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 _tagName = 'td'
 _getColspan()
 _setColspan(span)
 _getRowspan()
 _setRowspan(span)

class flare.html5.Th(*args, appendTo=None, style=None, **kwargs)
Bases: Td
 _tagName = 'th'

class flare.html5.Thead(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 _tagName = 'thead'

class flare.html5.Tbody(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
 _tagName = 'tbody'

class flare.html5.ColWrapper(parentElem, *args, **kwargs)
Bases: object
 __getitem__(item)
 __setitem__(key, value)

class flare.html5.RowWrapper(parentElem, *args, **kwargs)
Bases: object
 __getitem__(item)

class flare.html5.Table(*args, **kwargs)
Bases: Widget
 _tagName = 'table'
 prepareRow(row)
 prepareCol(row, col)
 prepareGrid(rows, cols)
```

```
clear()
_getCell()
getRowCount()

class flare.html5.Time(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrDatetime
 tagName = 'time'

class flare.html5.Track(*args, forElem=None, **kwargs)
Bases: Label, _attrSrc
 tagName = 'track'

leafTag = True
_getKind()
_setKind(val)
_getSrcLang()
_setSrcLang(val)
_getDefault()
_setDefault(val)

class flare.html5.Video(*args, appendTo=None, style=None, **kwargs)
Bases: Widget, _attrSrc, _attrDimensions, _attrMultimedia
tagName = 'video'

_getPoster()
_setPoster(val)

class flare.html5.Template(*args, appendTo=None, style=None, **kwargs)
Bases: Widget
tagName = 'template'

flare.html5.unescape(val, maxLength=0)
Unquotes several HTML-quoted characters in a string.
```

**Parameters**

- **val** (str) – The value to be unescaped.
- **maxLength** (int) – Cut-off after maxLength characters. A value of 0 means “unlimited”. (default)

**Returns**

The unquoted string.

**Return type**

str

`flare.html5.doesEventHitWidgetOrParents(event, widget)`

Test if event ‘event’ hits widget ‘widget’ (or *any* of its parents).

`flare.html5.doesEventHitWidgetOrChildren(event, widget)`

Test if event ‘event’ hits widget ‘widget’ (or *any* of its children).

`flare.html5.textToHtml(node, text)`

Generates html nodes from text by splitting text into content and into line breaks html5.Br.

#### Parameters

- **node** – The node where the nodes are appended to.
- **text** – The text to be inserted.

`flare.html5.parseInt(s, ret=0)`

Parses a value as int.

`flare.html5.parseFloat(s, ret=0.0)`

Parses a value as float.

`flare.html5.getKey(event)`

Returns the Key Identifier of the given event.

Available Codes: <https://www.w3.org/TR/2006/WD-DOM-Level-3-Events-20060413/keyset.html#KeySet-Set>

`flare.html5.isArrowLeft(event)`

`flare.html5.isArrowUp(event)`

`flare.html5.isArrowRight(event)`

`flare.html5.isArrowDown(event)`

`flare.html5.isEscape(event)`

`flare.html5.isReturn(event)`

`flare.html5.isControl(event)`

`flare.html5.isShift(event)`

`flare.html5.isMeta(event)`

`flare.html5.__tags`

`flare.html5.__reVarReplacer`

`flare.html5.registerTag(tagName, widgetClass, override=True)`

`flare.html5.tag(arg)`

Decorator to register a sub-class of html5.Widget either under its class-name or an associated tag-name.

### Examples

```
```python # register class Foo as <foo>-Tag @html5.tag class Foo(html5.Div):
```

```
    pass
```

```
# register class Bar as <baz>-Tag @html5.tag("baz") class Bar(html5.Div):
```

```
    pass
```

```
```
```

```
flare.html5._buildTags(debug=False)
```

Generates a dictionary of all to the html5-library known tags and their associated objects and attributes.

```
class flare.html5.HtmlAst
```

Bases: list

Abstract syntax tree element used by parseHTML().

```
flare.html5.parseHTML(html: str, debug: bool = False) → HtmlAst
```

Parses the provided HTML-code according to the tags registered by html5.registerTag() or components that used the html5.tag-decorator.

```
flare.html5.fromHTML(html: [str, HtmlAst], appendTo: Widget = None, bindTo: Widget = None, debug: bool = False, **kwargs) → [Widget]
```

Parses the provided HTML code according to the objects defined in the html5-library.

html can also be pre-compiled by *parseHTML()* so that it executes faster.

Constructs all objects as DOM nodes. The first level is chained into appendTo. If no appendTo is provided, appendTo will be set to html5.Body().

If bindTo is provided, objects are bound to this widget.

```
```python from vi import html5
```

```
div = html5.Div() html5.parse.fromHTML("")
```

```
<div>Yeah!
```

```
  <a href="hello world" [name]="myLink" class="trullman bernd" disabled> hah ala malla" bababtschga" st <em>ah</em>ralla <i>malla tralla</i> da </a>lala
```

```
  </div>"", div)
```

```
div.myLink.appendChild("appended!")``
```

```
flare.translations
```

Submodules

```
flare.translations.de
```

Module Contents

```
flare.translations.de.lngDe
```

`flare.translations.en`

Module Contents

`flare.translations.en.lngEn`

Package Contents

`flare.translations.lngDe`

`flare.translations.lngEn`

`flare.views`

Submodules

`flare.views.helpers`

Module Contents

Functions

<code>generateView(view, moduleName, actionPerformed[, name, data])</code>	
<code>addView(view[, name])</code>	Add a View and make it available.
<code>updateDefaultView(name)</code>	
<code>removeView(name[, targetView])</code>	
<code>registerViews(root, path)</code>	Add all Views in a folder.
<code>zip_listdir(zip_file, target_dir)</code>	

Attributes

`sitepackagespath`

`flare.views.helpers.sitepackagespath`

`flare.views.helpers.generateView(view: flare.views.view.View, moduleName, actionPerformed, name=None, data=())`

`flare.views.helpers.addView(view: flare.views.view.View, name=None)`

Add a View and make it available.

```
flare.views.helpers.updateDefaultView(name)
flare.views.helpers.removeView(name, targetView=None)
flare.views.helpers.registerViews(root, path)
    Add all Views in a folder.
flare.views.helpers.zip_listdir(zip_file, target_dir)
```

flare.views.view

Module Contents

Classes

View

ViewWidget

```
class flare.views.view.View(dictOfWidgets=None, name=None)
    onActiveViewChanged(viewName, *args, **kwargs)
    loadView()

class flare.views.view.ViewWidget(view)
    Bases: flare.html5.Div
    onViewfocusedChanged(viewname, *args, **kwargs)
    initWidget()
    onDetach()
```

Package Contents

Classes

StateHandler

Attributes

```
conf
```

```
class flare.views.StateHandler(initialize=(), widget=None)

updateState(key, value)
getState(key, empty=None)
register(key, widget)
unregister(key, widget)

flare.views.conf
```

```
flare.viur
```

Subpackages

```
flare.viur.bones
```

Expose all bones.

Submodules

```
flare.viur.bones.base
```

Collection of Basebone related classes.

Module Contents

Classes

<code>ReadFromClientErrorSeverity</code>	Enum for Errors.
<code>BaseEditWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>BaseViewWidget</code>	Base class for a bone-compliant view widget implementation using a div.
<code>BaseMultiEditWidgetEntry</code>	Base class for an entry in a MultiBone container.
<code>BaseMultiEditWidget</code>	Class for encapsulating multiple bones inside a container.
<code>BaseMultiViewWidget</code>	
<code>BaseLanguageEditWidget</code>	Class for encapsulating a bone for each language inside a container.
<code>BaseBone</code>	

```
class flare.viur.bones.base.ReadFromClientErrorSeverity
    Bases: enum.IntEnum
        Enum for Errors.

    NotSet = 0
    InvalidatesOther = 1
    Empty = 2
    Invalid = 3

class flare.viur.bones.base.BaseEditWidget(bone, **kwargs)
    Bases: flare.ignite.html5.Div
        Base class for a bone-compliant edit widget implementation using an input field.

        This widget defines the general interface of a bone edit control.

    style = ['flr-value']

    createWidget()
        Function for creating the Widget or multiple Widgets that represent the bone.

    updateWidget()
        Function for updating the Widget or multiple Widgets that represent the bone.

    unserialize(value=None)
        Unserialize the widget value.

    serialize()
        Serialize the widget value.

class flare.viur.bones.base.BaseViewWidget(bone, **kwargs)
    Bases: flare.ignite.html5.Div
        Base class for a bone-compliant view widget implementation using a div.
```

```
style = ['flr-value']

unserialize(value=None)
    Deserialize the widget value.

serialize()
    Serialize the widget value.

class flare.viur.bones.base.BaseMultiEditWidgetEntry(widget: flare.ignite.html5.Widget,
                                                       errorInformation=None)

Bases: flare.ignite.html5.Div
Base class for an entry in a MultiBone container.

style = ['flr-bone-widgets-item']

onRemoveBtnClick()

onDragStart(event)

onDragOver(event)

onDragLeave(event)

onDragEnd(event)

onDrop(event)

class flare.viur.bones.base.BaseMultiEditWidget(bone, widgetFactory: callable, **kwargs)
Bases: flare.ignite.html5.Div
Class for encapsulating multiple bones inside a container.

entryFactory

style = ['flr-value-container']

onAddBtnClick()

onRemoveBtnClick()

addEntry(value=None)

unserialize(value)

serialize()

class flare.viur.bones.base.BaseMultiViewWidget(bone, widgetFactory: callable, **kwargs)
Bases: flare.ignite.html5.Ul
unserialize(value)

serialize()

class flare.viur.bones.base.BaseLanguageEditWidget(bone, widgetFactory: callable, **kwargs)
Bases: flare.ignite.html5.Div
Class for encapsulating a bone for each language inside a container.

onLangBtnClick(sender)
```

```
    unserialize(value)
    serialize()

class flare.viur.bones.base.BaseBone(moduleName, boneName, skelStructure, errors=None,
                                         errorQueue=None, *args, **kwargs)

Bases: object
editWidgetFactory
viewWidgetFactory
multiEditWidgetFactory
multiViewWidgetFactory
languageEditWidgetFactory
languageViewWidgetFactory

Base “Catch-All” delegate for everything not handled separately.

editWidget(value=None, errorInformation=None) → flare.ignite.html5.Widget
viewWidget(value=None)
labelWidget()
tooltipWidget()
errorWidget()
boneWidget(*args, **kwargs)
```

`flare.viur.bones.boolean`

Module Contents

Classes

<code>BooleanEditWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>BooleanViewWidget</code>	Base class for a bone-compliant view widget implementation using a div.
<code>BooleanBone</code>	

```
class flare.viur.bones.boolean.BooleanEditWidget(bone, **kwargs)
Bases: flare.viur.bones.base.BaseEditWidget

Base class for a bone-compliant edit widget implementation using an input field.

This widget defines the general interface of a bone edit control.

style = ['flr-value', 'flr-value--boolean']
```

createWidget()

Function for creating the Widget or multiple Widgets that represent the bone.

updateWidget()

Function for updating the Widget or multiple Widgets that represent the bone.

unserialize(*value=None*)

Deserialize the widget value.

serialize()

Serialize the widget value.

class flare.viur.bones.boolean.BooleanViewWidget(*bone, **kwargs*)

Bases: *flare.viur.bones.base.BaseViewWidget*

Base class for a bone-compliant view widget implementation using a div.

unserialize(*value=None*)

Deserialize the widget value.

class flare.viur.bones.boolean.BooleanBone(*moduleName, boneName, skelStructure, errors=None, errorQueue=None, *args, **kwargs*)

Bases: *flare.viur.bones.base.BaseBone*

editWidgetFactory**viewWidgetFactory****static checkFor(*moduleName, boneName, skelStructure, *args, **kwargs*)****flare.viur.bones.color****Module Contents****Classes****ColorEditWidget**

Base class for a bone-compliant edit widget implementation using an input field.

ColorViewWidget

Base class for a bone-compliant view widget implementation using a div.

ColorBone**class flare.viur.bones.color.ColorEditWidget(*bone, **kwargs*)**

Bases: *flare.viur.bones.base.BaseEditWidget*

Base class for a bone-compliant edit widget implementation using an input field.

This widget defines the general interface of a bone edit control.

style = ['flr-value', 'flr-value--color']

createWidget()

Function for creating the Widget or multiple Widgets that represent the bone.

updateWidget()

Function for updating the Widget or multiple Widgets that represent the bone.

onUnsetBtnClick()

serialize()

Serialize the widget value.

class flare.viur.bones.color.ColorViewWidget(bone, **kwargs)

Bases: *flare.viur.bones.base.BaseViewWidget*

Base class for a bone-compliant view widget implementation using a div.

unserialize(value=None)

Unserialize the widget value.

class flare.viur.bones.color.ColorBone(moduleName, boneName, skelStructure, errors=None, errorQueue=None, *args, **kwargs)

Bases: *flare.viur.bones.base.BaseBone*

editWidgetFactory

viewWidgetFactory

static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

flare.viur.bones.date

Module Contents

Classes

DateEditWidget

Base class for a bone-compliant edit widget implementation using an input field.

DateViewWidget

Base class for a bone-compliant view widget implementation using a div.

DateBone

class flare.viur.bones.date.DateEditWidget(bone, **kwargs)

Bases: *flare.viur.bones.base.BaseEditWidget*

Base class for a bone-compliant edit widget implementation using an input field.

This widget defines the general interface of a bone edit control.

style = ['flr-value', 'flr-value--date']

createWidget()

Function for creating the Widget or multiple Widgets that represent the bone.

updateWidget()

Function for updating the Widget or multiple Widgets that represent the bone.

```
unserialize(value=None)
    Unserialize the widget value.

serialize()
    Serialize the widget value.

class flare.viur.bones.date.DateViewWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseViewWidget
    Base class for a bone-compliant view widget implementation using a div.

unserialize(value=None)
    Unserialize the widget value.

class flare.viur.bones.date.DateBone(moduleName, boneName, skelStructure, errors=None, errorQueue=None, *args, **kwargs)
    Bases: flare.viur.bones.base.BaseBone
    editWidgetFactory
    viewWidgetFactory
    static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

flare.viur.bones.email**Module Contents****Classes**

<i>EmailEditWidget</i>	Base class for a bone-compliant edit widget implementation using an input field.
<i>EmailViewWidget</i>	Base class for a bone-compliant view widget implementation using a div.
<i>EmailBone</i>	

```
class flare.viur.bones.email.EmailEditWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseEditWidget
    Base class for a bone-compliant edit widget implementation using an input field.
    This widget defines the general interface of a bone edit control.

updateWidget()
    Function for updating the Widget or multiple Widgets that represent the bone.

class flare.viur.bones.email.EmailViewWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseViewWidget
    Base class for a bone-compliant view widget implementation using a div.

unserialize(value=None)
    Unserialize the widget value.
```

```
class flare.viur.bones.email.EmailBone(moduleName, boneName, skelStructure, errors=None,  
errorQueue=None, *args, **kwargs)
```

Bases: *flare.viur.bones.base.BaseBone*

editWidgetFactory

viewWidgetFactory

static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

flare.viur.bones.numeric

Module Contents

Classes

<i>NumericEditWidget</i>	Base class for a bone-compliant edit widget implementation using an input field.
<i>NumericViewWidget</i>	Base class for a bone-compliant view widget implementation using a div.
<i>NumericBone</i>	

Functions

<i>_formatCurrencyValue</i> (value, bone)	Internal helper function that formats a numeric value which is a string according to the bone's formatting
---	--

flare.viur.bones.numeric._formatCurrencyValue(*value, bone*)

Internal helper function that formats a numeric value which is a string according to the bone's formatting

class flare.viur.bones.numeric.NumericEditWidget(*bone, **kwargs*)

Bases: *flare.viur.bones.base.BaseEditWidget*

Base class for a bone-compliant edit widget implementation using an input field.

This widget defines the general interface of a bone edit control.

style = ['flr-value', 'flr-value--numeric']

createWidget()

Function for creating the Widget or multiple Widgets that represent the bone.

updateWidget()

Function for updating the Widget or multiple Widgets that represent the bone.

setValue(*value*)

onChange(*event*)

```
deserialize(value=None)
    Deserialize the widget value.

serialize()
    Serialize the widget value.

class flare.viur.bones.numeric.NumericViewWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseViewWidget
    Base class for a bone-compliant view widget implementation using a div.

deserialize(value=None)
    Deserialize the widget value.

class flare.viur.bones.numeric.NumericBone(*args, **kwargs)
    Bases: flare.viur.bones.base.BaseBone
    editWidgetFactory
    viewWidgetFactory

    static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

flare.viur.bones.password**Module Contents****Classes**

<i>PasswordEditWidget</i>	Base class for a bone-compliant edit widget implementation using an input field.
<i>PasswordBone</i>	

```
class flare.viur.bones.password.PasswordEditWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseEditWidget
    Base class for a bone-compliant edit widget implementation using an input field.

    This widget defines the general interface of a bone edit control.

    style = ['flr-value', 'flr-value--password', 'flr-value-container', 'input-group']
    createWidget()
        Function for creating the Widget or multiple Widgets that represent the bone.

    updateWidget()
        Function for updating the Widget or multiple Widgets that represent the bone.

    serialize()
        Serialize the widget value.

class flare.viur.bones.password.PasswordBone(moduleName, boneName, skelStructure, errors=None, errorQueue=None, *args, **kwargs)
    Bases: flare.viur.bones.base.BaseBone
```

```
editWidgetFactory  
static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

`flare.viur.bones.raw`

Module Contents

Classes

<code>RawEditWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>RawViewWidget</code>	Base class for a bone-compliant view widget implementation using a div.
<code>RawBone</code>	

```
class flare.viur.bones.raw.RawEditWidget(bone, **kwargs)  
Bases: flare.viur.bones.base.BaseEditWidget  
Base class for a bone-compliant edit widget implementation using an input field.  
This widget defines the general interface of a bone edit control.  
style = ['flr-value', 'flr-value--raw']  
createWidget()  
Function for creating the Widget or multiple Widgets that represent the bone.  
updateWidget()  
Function for updating the Widget or multiple Widgets that represent the bone.  
class flare.viur.bones.raw.RawViewWidget(bone, **kwargs)  
Bases: flare.viur.bones.base.BaseViewWidget  
Base class for a bone-compliant view widget implementation using a div.  
deserialize(value=None)  
Unserialize the widget value.  
class flare.viur.bones.raw.RawBone(moduleName, boneName, skelStructure, errors=None,  
errorQueue=None, *args, **kwargs)  
Bases: flare.viur.bones.base.BaseBone  
editWidgetFactory  
viewWidgetFactory  
static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

flare.viur.bones.record**Module Contents****Classes**

<i>RecordEditWidget</i>	Base class for a bone-compliant edit widget implementation using an input field.
<i>RecordViewWidget</i>	Base class for a bone-compliant view widget implementation using a div.
<i>RecordBone</i>	

```
class flare.viur.bones.record.RecordEditWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseEditWidget
    Base class for a bone-compliant edit widget implementation using an input field.
    This widget defines the general interface of a bone edit control.
    style = ['flr-value', 'flr-value--record']
    createWidget()
        Function for creating the Widget or multiple Widgets that represent the bone.
    updateWidget()
        Function for updating the Widget or multiple Widgets that represent the bone.
    unserialize(value=None)
        Deserialize the widget value.
    serialize()
        Serialize the widget value.

class flare.viur.bones.record.RecordViewWidget(bone, language=None, **kwargs)
    Bases: flare.viur.bones.base.BaseViewWidget
    Base class for a bone-compliant view widget implementation using a div.
    style = ['flr-value', 'flr-value--record']
    unserialize(value=None)
        Deserialize the widget value.

class flare.viur.bones.record.RecordBone(moduleName, boneName, skelStructure, errors=None, errorQueue=None, *args, **kwargs)
    Bases: flare.viur.bones.base.BaseBone
    editWidgetFactory
    viewWidgetFactory
    static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

`flare.viur.bones.relational`

Module Contents

Classes

<code>RelationalEditWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>RelationalViewWidget</code>	
<code>RelationalMultiEditWidget</code>	Class for encapsulating multiple bones inside a container.
<code>RelationalBone</code>	
<code>HierarchyBone</code>	
<code>TreeItemBone</code>	
<code>TreeDirBone</code>	
<code>FileEditDirectWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>FileViewWidget</code>	
<code>FileMultiEditDirectWidget</code>	Class for encapsulating multiple bones inside a container.
<code>FileDirectBone</code>	
<code>FileEditWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>FileBone</code>	

Functions

<code>_getDefaultValue(structure)</code>	Gets defaultValues from a structure.
<hr/>	
<code>flare.viur.bones.relational._getDefaultValue(structure)</code>	
Gets defaultValues from a structure.	
<code>class flare.viur.bones.relational.RelationalEditWidget(bone, language=None, **kwargs)</code>	
Bases: <code>flare.viur.bones.base.BaseEditWidget</code>	
Base class for a bone-compliant edit widget implementation using an input field.	
This widget defines the general interface of a bone edit control.	
<code>style = ['flr-value', 'flr-value--relational']</code>	

```
createWidget()
    Function for creating the Widget or multiple Widgets that represent the bone.

updateWidget()
    Function for updating the Widget or multiple Widgets that represent the bone.

updateString()

onChange(event)

deserialize(value=None)
    Deserialize the widget value.

serialize()
    Serialize the widget value.

onSelectBtnClick()

onDeleteBtnClick()

class flare.viur.bones.relational.RelationalViewWidget(bone, language=None, **kwargs)
    Bases: flare.html5.Div
    style = ['flr-value', 'flr-value--relational']

deserialize(value=None)

serialize()

class flare.viur.bones.relational.RelationalMultiEditWidget(*args, **kwargs)
    Bases: flare.viur.bones.base.BaseMultiEditWidget
    Class for encapsulating multiple bones inside a container.

onAddBtnClick()

_addEntriesFromSelection(selector, selection)

class flare.viur.bones.relational.RelationalBone(*args, **kwargs)
    Bases: flare.viur.bones.base.BaseBone
    editWidgetFactory
    viewWidgetFactory
    multiEditWidgetFactory
    selectorAllow = ()

static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

class flare.viur.bones.relational.HierarchyBone(*args, **kwargs)
    Bases: RelationalBone
    static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

class flare.viur.bones.relational.TreeItemBone(*args, **kwargs)
    Bases: RelationalBone
    selectorAllow
```

```
static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

class flare.viur.bones.relational.TreeDirBone(*args, **kwargs)
    Bases: RelationalBone
    selectorAllow

    static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

class flare.viur.bones.relational.FileEditDirectWidget(bone, language=None, **kwargs)
    Bases: RelationalEditWidget
    Base class for a bone-compliant edit widget implementation using an input field.

    This widget defines the general interface of a bone edit control.

    style = ['flr-value', 'flr-value--file']

    createWidget()
        Function for creating the Widget or multiple Widgets that represent the bone.

    updateWidget()
        Function for updating the Widget or multiple Widgets that represent the bone.

    onChange(event)
    startUpload(file)
    onDragEnter(event)
    onDragOver(event)
    onDragLeave(event)
    onDrop(event)
    onUploadSuccess(uploader, entry)
    onUploadFailed(uploader, errorCode)
    unserialize(value=None)
        Deserialize the widget value.

    onDeleteBtnClick()

class flare.viur.bones.relational.FileViewWidget(bone, language=None, **kwargs)
    Bases: RelationalViewWidget
    unserialize(value=None)

class flare.viur.bones.relational.FileMultiEditDirectWidget(bone, widgetFactory: callable,
    **kwargs)
    Bases: flare.html5.Div
    Class for encapsulating multiple bones inside a container.

    entryFactory

    style = ['flr-value-container']
```

```
onChange(event)
startUpload(file)
onDragEnter(event)
onDragOver(event)
onDragLeave(event)
onDrop(event)
onUploadSuccess(uploader, entry)
onUploadFailed(uploader, errorCode)
addEntry(value=None)
unserialize(value)
serialize()

class flare.viur.bones.relational.FileDirectBone(*args, **kwargs)
Bases: TreeItemBone
editWidgetFactory
viewWidgetFactory
multiEditWidgetFactory
static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

class flare.viur.bones.relational.FileEditWidget(bone, language=None, **kwargs)
Bases: RelationalEditWidget
Base class for a bone-compliant edit widget implementation using an input field.
This widget defines the general interface of a bone edit control.
style = ['flr-value', 'flr-value--relational', 'flr-value--file']

createWidget()
Function for creating the Widget or multiple Widgets that represent the bone.

unserialize(value=None)
Unserialize the widget value.

class flare.viur.bones.relational.FileBone(*args, **kwargs)
Bases: TreeItemBone
editWidgetFactory
viewWidgetFactory
static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

`flare.viur.bones.select`

Module Contents

Classes

<code>SelectMultipleEditWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>SelectSingleEditWidget</code>	Base class for a bone-compliant edit widget implementation using an input field.
<code>SelectViewWidget</code>	Base class for a bone-compliant view widget implementation using a div.
<code>SelectMultipleBone</code>	
<code>SelectSingleBone</code>	

`class flare.viur.bones.select.SelectMultipleEditWidget(bone, **kwargs)`

Bases: `flare.viur.bones.base.BaseEditWidget`

Base class for a bone-compliant edit widget implementation using an input field.

This widget defines the general interface of a bone edit control.

`style = ['flr-value-container', 'option-group']`

`entryTemplate`

`createWidget()`

Function for creating the Widget or multiple Widgets that represent the bone.

`updateWidget()`

Function for updating the Widget or multiple Widgets that represent the bone.

`unserialize(value=None)`

Unserialize the widget value.

`serialize()`

Serialize the widget value.

`class flare.viur.bones.select.SelectSingleEditWidget(bone, **kwargs)`

Bases: `flare.viur.bones.base.BaseEditWidget`

Base class for a bone-compliant edit widget implementation using an input field.

This widget defines the general interface of a bone edit control.

`entryTemplate`

`createWidget()`

Function for creating the Widget or multiple Widgets that represent the bone.

`updateWidget()`

Function for updating the Widget or multiple Widgets that represent the bone.

```
deserialize(value=None)
    Unserialize the widget value.

serialize()
    Serialize the widget value.

class flare.viur.bones.select.SelectViewWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseViewWidget
    Base class for a bone-compliant view widget implementation using a div.

deserialize(value=None)
    Unserialize the widget value.

class flare.viur.bones.select.SelectMultipleBone(*args, **kwargs)
    Bases: flare.viur.bones.base.BaseBone

editWidgetFactory
multiEditWidgetFactory
viewWidgetFactory
    Base “Catch-All” delegate for everything not handled separately.

static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

class flare.viur.bones.select.SelectSingleBone(*args, **kwargs)
    Bases: SelectMultipleBone
    editWidgetFactory
    static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

flare.viur.bones.spatial**Module Contents****Classes**

<i>SpatialEditWidget</i>	Base class for a bone-compliant edit widget implementation using an input field.
<i>SpatialBone</i>	

```
class flare.viur.bones.spatial.SpatialEditWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseEditWidget
    Base class for a bone-compliant edit widget implementation using an input field.

    This widget defines the general interface of a bone edit control.

createWidget()
    Function for creating the Widget or multiple Widgets that represent the bone.
```

updateWidget()

Function for updating the Widget or multiple Widgets that represent the bone.

deserialize(value=None)

Unserialize the widget value.

serialize()

Serialize the widget value.

class flare.viur.bones.spatial.SpatialBone(moduleName, boneName, skelStructure, errors=None, errorQueue=None, *args, **kwargs)

Bases: *flare.viur.bones.base.BaseBone*

editWidgetFactory

static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)

flare.viur.bones.string

Module Contents

Classes

StringEditWidget

Base class for a bone-compliant edit widget implementation using an input field.

StringViewWidget

Base class for a bone-compliant view widget implementation using a div.

StringBone

class flare.viur.bones.string.StringEditWidget(bone, **kwargs)

Bases: *flare.viur.bones.base.BaseEditWidget*

Base class for a bone-compliant edit widget implementation using an input field.

This widget defines the general interface of a bone edit control.

style = ['flr-value', 'flr-value--string']

createWidget()

Function for creating the Widget or multiple Widgets that represent the bone.

updateWidget()

Function for updating the Widget or multiple Widgets that represent the bone.

onChange(event)

onKeyUp(event)

renderTimeout()

updateLength()

```
unserialize(value=None)
    Unserialize the widget value.

serialize()
    Serialize the widget value.

class flare.viur.bones.string.StringViewWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseViewWidget
    Base class for a bone-compliant view widget implementation using a div.

unserialize(value=None)
    Unserialize the widget value.

class flare.viur.bones.string.StringBone(moduleName, boneName, skelStructure, errors=None,
                                             errorQueue=None, *args, **kwargs)
    Bases: flare.viur.bones.base.BaseBone

editWidgetFactory
viewWidgetFactory

static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

flare.viur.bones.text**Module Contents****Classes**

<i>TextEditWidget</i>	Base class for a bone-compliant edit widget implementation using an input field.
<i>TextViewWidget</i>	Base class for a bone-compliant view widget implementation using a div.
<i>TextBone</i>	

```
class flare.viur.bones.text.TextEditWidget(bone, **kwargs)
    Bases: flare.viur.bones.base.BaseEditWidget
    Base class for a bone-compliant edit widget implementation using an input field.

    This widget defines the general interface of a bone edit control.

style = ['flr-value', 'flr-value--text']

createWidget()
    Function for creating the Widget or multiple Widgets that represent the bone.

updateWidget()
    Function for updating the Widget or multiple Widgets that represent the bone.

_setDisabled(disable)
```

```
class flare.viur.bones.text.TextViewWidget(bone, **kwargs)
Bases: flare.viur.bones.base.BaseViewWidget
Base class for a bone-compliant view widget implementation using a div.

 unserialize(value=None)
    Unserialize the widget value.

class flare.viur.bones.text.TextBone(moduleName, boneName, skelStructure, errors=None,
                                     errorQueue=None, *args, **kwargs)
Bases: flare.viur.bones.base.BaseBone

 editWidgetFactory
 viewWidgetFactory

 static checkFor(moduleName, boneName, skelStructure, *args, **kwargs)
```

flare.viur.widgets

Submodules

flare.viur.widgets.file

Module Contents

Classes

Search

FileImagePopup

FilePreviewImage

Uploader

Uploads a file to the server while providing visual feedback of the progress.

FileLeafWidget

FileNodeWidget

FileWidget

Base Widget that renders a tree.

Functions

```
getImagePreview(data[, cropped, size])
```

flare.viur.widgets.file.**getImagePreview**(*data*, *cropped=False*, *size=150*)

class flare.viur.widgets.file.**Search**(**args*, ***kwargs*)

Bases: flare.ignite.html5.Div

doSearch(**args*, ***kwargs*)

resetSearch()

onKeyDown(*event*)

resetLoadingState()

reevaluate()

focus()

class flare.viur.widgets.file.**FileImagePopup**(*preview*, **args*, ***kwargs*)

Bases: flare.popup.Popup

onClick(*event*)

onDownloadBtnClick(*sender=None*)

class flare.viur.widgets.file.**FilePreviewImage**(*file=None*, *size=150*, **args*, ***kwargs*)

Bases: flare.ignite.html5.Div

setFile(*file*)

download()

onClick(*sender=None*)

class flare.viur.widgets.file.**Uploader**(*file*, *node*, *context=None*, *showResultMessage=True*, *module='file'*, **args*, ***kwargs*)

Bases: flare.ignite.Progress

Uploads a file to the server while providing visual feedback of the progress.

onUploadUrlAvailable(*req*)

Internal callback - the actual upload url (retrieved by calling /file/getUploadURL) is known.

onLoad(**args*, ***kwargs*)

Internal callback - The state of our upload changed.

onUploadAdded(*req*)

onProgress(*event*)

Internal callback - further bytes have been transmitted.

onSuccess(**args*, ***kwargs*)

Internal callback - The upload succeeded.

```
onFailed(errorCode, *args, **kwargs)
replaceWithMessage(message, isSuccess)

class flare.viur.widgets.file.FileLeafWidget(module, data, structure, widget, *args, **kwargs)
Bases: flare.viur.widgets.tree.TreeLeafWidget

EntryIcon()
    Leafs have a different Icon.

setStyle()
    Leaf have a different color.

class flare.viur.widgets.file.FileNodeWidget(module, data, structure, widget, *args, **kwargs)
Bases: flare.viur.widgets.tree.TreeNodeWidget

setStyle()
    Is used to define the appearance of the element.

class flare.viur.widgets.file.FileWidget(module, rootNode=None, selectMode=None, node=None,
                                         context=None, *args, **kwargs)
Bases: flare.viur.widgets.tree.TreeBrowserWidget

Base Widget that renders a tree.

leafWidget
nodeWidget
searchWidget()
onStartSearch(searchStr, *args, **kwargs)
getKey(widget)
    Derives a string used to sort the entries on each level.

static canHandle(module, moduleInfo)

flare.viur.widgets.htmleditor
```

Module Contents

Classes

<i>TextInsertImageAction</i>	Extended version for a button with a text and icon, which binds itself to an event function.
<i>HtmlEditor</i>	

Attributes

```
summernoteEditor
```

```
flare.viur.widgets.htmleditor.summernoteEditor

class flare.viur.widgets.htmleditor.TextInsertImageAction(summernote, id, *args, **kwargs)
    Bases: flare.button.Button
    Extended version for a button with a text and icon, which binds itself to an event function.

    onClick(sender=None)
    onSelectionActivated(selectWdg, selection)
    static isSuitableFor(modul, handler, actionPerformed)
    resetLoadingState()

class flare.viur.widgets.htmleditor.HtmlEditor(*args, **kwargs)
    Bases: flare.html5.Textarea
    initSources = False
    _attachSummernote(retry=0)
    onAttach()
    onDetach()
    onEditorChange(e, *args, **kwargs)
    _getValue()
    _setValue(val)
    enable()
        Enables an element, in case it is not already enabled.
    disable()
        Disables an element, in case it is not already disabled.
        On disabled elements, events are not triggered anymore.
```

```
flare.viur.widgets.list
```

Module Contents

Classes

<code>ListWidget</code>	Provides the interface to list-applications.
<code>SkellistItem</code>	Extended version for a button with a text and icon, which binds itself to an event function.
<code>ListSelection</code>	

```
class flare.viur.widgets.list.ListWidget(module, filter=None, columns=None, filterID=None,
                                         filterDescr=None, batchSize=None, context=None,
                                         autoload=True, *args, **kwargs)
```

Bases: `flare.html5.Div`

Provides the interface to list-applications.

It acts as a data-provider for a DataTable and binds an action-bar to this table.

`setSelector(callback, multi=True, allow=None)`

Configures the widget as selector for a relationalBone and shows it.

`onAcceptSelectionChanged(event, *args, **kwargs)`

`static canHandle(moduleName, moduleInfo)`

```
class flare.viur.widgets.list.SkellistItem(skel)
```

Bases: `flare.button.Button`

Extended version for a button with a text and icon, which binds itself to an event function.

`buildWidget()`

`onActiveSelectionChanged(event, *args, **kwargs)`

```
class flare.viur.widgets.list.ListSelection(modulname, filter=None, title=None, id=None,
                                             className=None, icon=None, enableShortcuts=True,
                                             closeable=True, footer=True, *args, **kwargs)
```

Bases: `flare.popup.Popup`

`requestClients()`

`onRequestList(skellist)`

`onActiveSelectionChanged(event, *args, **kwargs)`

`activateSelection(widget)`

`reloadList()`

`buildListSelection()`

`onApplyfilterChanged(value, *args, **kwargs)`

`onAcceptSelectionChanged(event, *args, **kwargs)`

`onActiveButtonChanged(event, *args, **kwargs)`

`acceptSelection()`

`setContent(widget)`

flare.viur.widgets.tree**Module Contents****Classes**

<i>TreeWidgetItem</i>	
<i>TreeLeafWidget</i>	
<i>TreeNodeWidget</i>	
<i>TreeWidget</i>	Base Widget that renders a tree.
<i>BrowserLeafWidget</i>	
<i>BrowserNodeWidget</i>	
<i>BreadcrumbNodeWidget</i>	
<i>TreeBrowserWidget</i>	Base Widget that renders a tree.

class flare.viur.widgets.tree.TreeWidgetItem(*module, data, structure, widget, *args, **kwargs*)

Bases: *flare.html5.Li*

setStyle()

Is used to define the appearance of the element.

additionalDropAreas()

Drag and Drop areas.

markDraggedElement()

Mark the current dragged Element.

unmarkDraggedElement()**onDragStart(*event*)****onDragEnd(*event*)****onDragOver(*event*)**

Test wherever the current drag would mean.

“make it a child of us”, “insert before us” or “insert after us” and apply the correct classes.

onDragLeave(*event*)

Remove all drop indicating classes.

disableDragMarkers()**moveRequest(*params*)**

Performs the move operation with the provided params.

onDrop(event)

We received a drop.

Test wherever its means “make it a child of us”, “insert before us” or “insert after us” and initiate the corresponding NetworkService requests.

EntryIcon()**toggleArrow()****buildDescription()**

Creates the visual representation of our entry.

onClick(event)**onDb1Click(event)****toggleExpand()**

Toggle a Node and request if needed child elements.

class flare.viur.widgets.tree.TreeLeafWidget(module, data, structure, widget, *args, **kwargs)

Bases: *TreeItemWidget*

skelType = 'leaf'

setStyle()

Leaf have a different color.

toggleArrow()

Leafes cant be toggled.

EntryIcon()

Leafs have a different Icon.

moveRequest(params)

Performs the move operation with the provided params.

onDragOver(event)

Test wherever the current drag would mean.

“make it a child of us”, “insert before us” or “insert after us” and apply the correct classes.

class flare.viur.widgets.tree.TreeNodeWidget(module, data, structure, widget, *args, **kwargs)

Bases: *TreeItemWidget*

skelType = 'node'

class flare.viur.widgets.tree.TreeWidget(module, rootNode=None, node=None, context=None, *args, **kwargs)

Bases: *flare.html5.Div*

Base Widget that renders a tree.

nodeWidget

leafWidget

requestStructure()**receivedStructure(resp)**

setSelector(*callback, multi=True, allow=None*)
 Configures the widget as selector for a relationalBone and shows it.

selectorReturn()
 Returns the current selection to the callback configured with *setSelector*.

onKeyDown(*event*)

onKeyUp(*event*)

getActions()
 Returns a list of actions that are being set for the ActionBar. Override this to provide additional actions.

clearSelection()
 Empties the current selection.

extendSelection(*element*)
 Extends the current selection to element.
 This is normally done by clicking or tabbing on an element.

activateSelection(*element*)
 Activates the current selection or element.
 An activation mostly is an action like selecting or editing an item. This is normally done by double-clicking an element.

requestChildren(*element*)

_showErrorMsg(*req=None, code=None*)
 Removes all currently visible elements and displays an error message

onDataChanged(*module, *args, **kwargs*)

onAttach()

onDetach()

itemForKey(*key, elem=None*)
 Returns the HierarchyWidget displaying the entry with the given key. :param key: The key (id) of the item.
 :type key: str :returns: HierarchyItem

onSetDefaultRootNode(*req*)
 We requested the list of rootNodes for that module and that request just finished. Parse the response and set our rootNode to the first rootNode received.

setRootNode(*rootNode, node=None*)
 Set the currently displayed hierarchy to ‘rootNode’. :param rootNode: Key of the rootNode which children we shall display :type rootNode: str

reloadData()
 Reload the data we’re displaying.

loadNode(*node, skelType=None, cursor=None, overrideParams=None*)
 Fetch the (direct) children of the given node. Once the list is received, append them to their parent node.
 :param node: Key of the node to fetch :type node: str

_onRequestSucceeded(*req*)
 The NetworkRequest for a (sub)node finished. Create a new HierarchyItem for each entry received and add them to our view

onDrop(event)

We got a drop event. Make that item a direct child of our rootNode

onDragOver(event)

Allow dropping children on the rootNode

getChildKey(widget)

Order by sortindex

static canHandle(moduleName, moduleInfo)

class flare.viur.widgets.tree.BrowserLeafWidget(module, data, structure, widget, *args, **kwargs)

Bases: *TreeLeafWidget*

setStyle()

Leaf have a different color.

class flare.viur.widgets.tree.BrowserNodeWidget(module, data, structure, widget, *args, **kwargs)

Bases: *TreeNodeWidget*

setStyle()

Is used to define the appearance of the element.

class flare.viur.widgets.tree.BreadcrumbNodeWidget(module, data, structure, widget, *args, **kwargs)

Bases: *TreeNodeWidget*

setStyle()

Is used to define the appearance of the element.

class flare.viur.widgets.tree.TreeBrowserWidget(module, rootNode=None, node=None, context=None, *args, **kwargs)

Bases: *TreeWidget*

Base Widget that renders a tree.

leafWidget**nodeWidget****reloadData()**

Reload the data were displaying.

rebuildPath()

Rebuild the displayed path-list.

onPathRequestSucceeded(req)

Rebuild the displayed path-list according to request data

activateSelection(element)

Activates the current selection or element.

An activation mostly is an action like selecting or editing an item. This is normally done by double-clicking an element.

static canHandle(module, moduleInfo)

Submodules

`flare.viur.formatString`

Module Contents

Functions

<code>formatString(format, data[, structure, language])</code>	Central entryPoint
<code>formatStringHandler(→ str)</code>	

<code>displayStringHandler(→ [flare.html5.Widget])</code>	
---	--

<code>evalStringHandler(format, data, structure, language)</code>	
---	--

`flare.viur.formatString.formatString(format: str, data: Dict, structure=None, language=None)`

Central entryPoint

if string contains \$(we use old formatstrings else we use evalStrings (core 3.0 draft)

displayStrings actually only used in relations and records. This handler can be used with display param

`flare.viur.formatString.formatStringHandler(format: str, value: Dict, structure: Dict, language: str = 'de') → str`

`flare.viur.formatString.displayStringHandler(display: str, value: Dict, structure: Dict, language: str = 'de') → [flare.html5.Widget]`

`flare.viur.formatString.evalStringHandler(format, data, structure, language)`

flare.viur.formconf

Module Contents

`flare.viur.formconf.conf`

```
# A value displayed as “empty value” “emptyValue”: translate(“-“),
# Language settings “flare.language.current”: “de”,
# Global holder to main admin window “mainWindow”: None,
# Modules list “modules”: {“_tasks”: {“handler”: “singleton”, “name”: “Tasks”} },
# Language settings “defaultLanguage”: “de”,
# Cached selector widgets on relationalBones for re-use “selectors”: {} ,
```

flare.viur.formerrors

Module Contents

Functions

<code>collectBoneErrors(errorList, currentKey, boneStructure)</code>	Collect Errors from given errorList.
--	--------------------------------------

`flare.viur.formerrors.collectBoneErrors(errorList, currentKey, boneStructure)`

Collect Errors from given errorList.

severity:

NotSet = 0 InvalidatesOther = 1 Empty = 2 Invalid = 3

flare.viur.forms

Module Contents

Classes

<code>ViurForm</code>	Handles an input form for a VIUR skeleton.
<code>ViurFormBone</code>	
<code>ViurFormSubmit</code>	Extended version for a button with a text and icon, which binds itself to an event function.

`class flare.viur.forms.ViurForm(formName: str = None, moduleName: str = None, actionPerformed: str = 'add', skel=None, structure=None, visible=(), ignore=(), hide=(), errors=None, context=None, *args, **kwargs)`

Bases: `flare.html5.Form`

Handles an input form for a VIUR skeleton.

`onChange(event)`

`onBoneChange(bone)`

`_setModulename(val)`

`_setActionname(val)`

`_setFormname(val)`

`buildForm()`

Builds a form with save button.

`buildInternalForm()`

Builds only the form.

```

registerField(key, widget)

update()
    Updates current form view state regarding conditional input fields.

submitForm()

unserialize(skel: Dict = None)
    Unserializes a dict of values into this form. :param skel: Either a dict of values to be unserialized into this
    form, or None for emptying all values.

serialize(all=False) → Dict
    Serializes all bone's values into a dict to be sent to ViUR or the be evaluated.

actionSuccess(req)

handleErrors()

createFormSuccessMessage()

createFormErrorMessage()

actionFailed(req, *args, **kwargs)

onFormSuccess(event)

onSubmitStatusChanged(value, *args, **kwargs)

class flare.viur.forms.ViurFormBone(boneName=None, form=None, defaultValue=None, hidden=False,
                                         filter=None)
    Bases: flare.html5.Div

onAttach()

onChange(event, *args, **kwargs)

unserialize(data=None)

serialize()

_setBonename(val)

_setLabel(val)

_setPlaceholder(val)

_setHide(val)

_setValue(val)

setInvalid(errors=None)

setValid()

class flare.viur.forms.ViurFormSubmit(text=None, callback=None, className='btn--submit btn--primary',
                                         icon=None, badge=None, form=None)
    Bases: flare.button.Button

    Extended version for a button with a text and icon, which binds itself to an event function.

```

```
onAttach()  
sendViurForm(sender=None)  
onSubmitStatusChanged(value, *args, **kwargs)  
  
flare.viur.formtooltip
```

Module Contents

Classes

<code>ToolTip</code>	Small utility class for providing tooltips.
----------------------	---

```
class flare.viur.formtooltip.ToolTip(shortText='', longText='', *args, **kwargs)  
Bases: flare.html5.Div  
Small utility class for providing tooltips.  
onClick(event)  
_setDisabled(disabled)
```

Package Contents

Classes

<code>PriorityQueue</code>	
----------------------------	--

Functions

<code>formatString(format, data[, structure, language])</code>	Central entryPoint
<code>displayStringHandler(→ [flare.html5.Widget])</code>	

Attributes

<code>conf</code>	# A value displayed as "empty value"
<code>BoneSelector</code>	
<code>ModuleWidgetSelector</code>	
<code>DisplayDelegateSelector</code>	

```

class flare.viur.PriorityQueue
    Bases: object
        insert(priority, validateFunc, generator)
        select(*args, **kwargs)

flare.viur.conf
    # A value displayed as “empty value” “emptyValue”: translate(“ “),
    # Language settings “flare.language.current”: “de”,
    # Global holder to main admin window “mainWindow”: None,
    # Modules list “modules”: {“_tasks”: {“handler”: “singleton”, “name”: “Tasks”} },
    # Language settings “defaultLanguage”: “de”,
    # Cached selector widgets on relationalBones for re-use “selectors”: { },
flare.viur.formatString(format: str, data: Dict, structure=None, language=None)
    Central entryPoint
    if string contains $( we use old formatstrings else we use evalStrings (core 3.0 draft)
    displayStrings actually only used in relations and records. This handler can be used with display param
flare.viur.displayStringHandler(display: str, value: Dict, structure: Dict, language: str = 'de') →
    [flare.html5.Widget]

flare.viur.BoneSelector
flare.viur.ModuleWidgetSelector
flare.viur.DisplayDelegateSelector

exception flare.viur.InvalidBoneValueException
    Bases: ValueError
    Inappropriate argument value (of correct type).

```

flare.widgets

Submodules

flare.widgets.buttonbar

Module Contents

Classes

`ButtonBar`

`ButtonBarButton`

Extended version for a button with a text and icon, which binds itself to an event function.

`ButtonBarSearch`

```
class flare.widgets.buttonbar.ButtonBar
Bases: flare.html5.Div

onActiveButtonChanged(event, *args, **kwargs)

 addButton(name, btnStr)

 buttonClicked(widget)

class flare.widgets.buttonbar.ButtonBarButton
Bases: flare.button.Button

Extended version for a button with a text and icon, which binds itself to an event function.

onActiveButtonChanged(event, *args, **kwargs)

class flare.widgets.buttonbar.ButtonBarSearch
Bases: flare.html5.Div

applyFilter(widget)

onApplyfilterChanged(event, *args, **kwargs)

onActiveButtonChanged(event, *args, **kwargs)
```

Submodules

flare.button

Flare-styled button Widgets.

Module Contents

Classes

Button	Extended version for a button with a text and icon, which binds itself to an event function.
------------------------	--

```
class flare.button.Button(text=None, callback=None, className='', icon=None)
Bases: flare.html5.Button

Extended version for a button with a text and icon, which binds itself to an event function.

onBind(widget, name)
    Event function that is called on the widget when it is bound to another widget with a name.

    This is only done by the HTML parser, a manual binding by the user is not triggered.

onClick(event, widget=None)

resetIcon()

update()
```

```
_setIcon(icon)
_getIcon()
SetText(text)
_getText()
```

flare.cache

The cache module is set on top of the network module and caches any entries read.

When the same entry (identified by module and key) is requested, it first is returned from the cache, when already there.

Module Contents

Classes

Cache
Plan

class flare.cache.Cache

Bases: object

updateStructure(*module, structure*)

update(*module, key, data, structure=None*)

lookup(*module, key='current'*)

struct(*module*)

start(*plan, finishHandler=None, failureHandler=None*)

finish(*plan*)

require(**args*)

invalidate(**args*)

onDataChanged(*module, key=None, **kwargs*)

request(**args, finishHandler=None, failureHandler=None*)

class flare.cache.Plan(*module, action, params=None, follow=None, alias='current', local=True, force=False*)

Bases: object

run(*cache*)

finish(*cache*)

```
_onRequestSuccess(req)
_onRequestFailure(req, code)
```

flare.config

Flare configuration.

Module Contents

Functions

<code>updateConf(other)</code>	Merges other into conf.
--------------------------------	-------------------------

Attributes

<code>conf</code>

`flare.config.updateConf(other: Dict)`

Merges other into conf.

flare.config.conf

flare.debug

still WIP

Module Contents

Functions

<code>debug([element])</code>	Debug popup
<code>debugElement(element)</code>	recursive debug tree

`flare.debug.debug(element=None)`

Debug popup

`flare.debug.debugElement(element)`

recursive debug tree

flare.event

Event dispatcher for non-browser Events which occur on Widget state changes.

Module Contents**Classes**

<i>EventDispatcher</i>	Base class for event notifier.
------------------------	--------------------------------

class flare.event.EventDispatcher(*name*)

Bases: object

Base class for event notifier.

_genTargetFuncName()

Return the name of the function called on the receiving object.

register(*cb*, *reset=False*)

Append “cb” to the list of objects to inform of the given Event.

Does nothing if cb has already subscribed. :param cb: the object to register :type cb: object

unregister(*cb*)

Remove “cb” from the list of objects to inform of the given Event.

Does nothing if cb is not in that list. :param cb: the object to remove :type cb: object

fire(*args, **kwargs)

Fire the event.

Informs all subscribed listeners. All parameters passed to the receiving function.

flare.handler

Flare base handlers for ViUR prototypes.

Module Contents**Classes**

<i>requestHandler</i>

<i>ListHandler</i>

<i>SyncHandler</i>

class flare.handler.requestHandler(*module*, *action*, *params=()*, *eventName='listUpdated'*, *secure=False*)

```
requestData(*args, **kwargs)
requestSuccess(req)
_requestFailed(req, *args, **kwargs)
onListStatusChanged(event, *args, **kwargs)
getDescrFromValue(definition, val)
buildSelectDescr(skel, structure)

class flare.handler.ListHandler(module, action, params=(), eventName='listUpdated', secure=False)
Bases: requestHandler
reload()
filter(filterparams)
getCurrentAmount()
requestNext()
requestSuccess(req)

class flare.handler.SyncHandler
Bases: object
static request(url, params=None, jsonResult=None)
genReqStr(params)
_request(url, params)
onCompletion(text)
onError(text, code)
```

flare.i18n

Internationalization tools to easily implement multi-language applications.

Module Contents

Functions

buildTranslations(pathToFolder)	
translate(key[, fallback])	Tries to translate the given string in the currently selected language.
addTranslation(lang, a[, b])	Adds or updates new translations.
setLanguage(lang)	Sets the current language to lang.
getLanguage()	Returns the current language.

Attributes

```
_currentLanguage
```

```
_currentLanguage
```

```
_currentLanguage
```

```
_currentLanguage
```

```
_runtimeTranslations
```

```
_lngMap
```

```
flare.i18n._currentLanguage
```

```
flare.i18n._currentLanguage
```

```
flare.i18n._currentLanguage = 'en'
```

```
flare.i18n._currentLanguage
```

```
flare.i18n._runtimeTranslations
```

```
flare.i18n._lngMap
```

```
flare.i18n.buildTranslations(pathToFolder)
```

```
flare.i18n.translate(key, fallback=None, **kwargs)
```

Tries to translate the given string in the currently selected language.

Supports replacing markers (using {markerName} syntax).

Parameters

- **key** – The string to translate
- **fallback** – Return string when no translation is found.

Returns

The translated string

```
flare.i18n.addTranslation(lang, a, b=None)
```

Adds or updates new translations.

```
flare.i18n.setLanguage(lang)
```

Sets the current language to lang.

```
flare.i18n.getLanguage()
```

Returns the current language.

flare.icons

Components for displaying icons.

Module Contents

Classes

<i>SvgIcon</i>	A raw, embedded SVG icon-component.
<i>Icon</i>	Icon component with first-letter fallback, normally shown as embedded SVG.
<i>BadgeIcon</i>	A badge icon is an icon-component with a little badge, e.g. a number of new messages or items in the cart or so.

class flare.icons.**SvgIcon**(value=None, fallbackIcon=None, title="")

Bases: flare.html5.svg.Svg

A raw, embedded SVG icon-component.

_leafTag = True

_setValue(value)

_setTitle(val)

Advisory information associated with the element.

Parameters

val – str

getIcon()

replaceSVG(icondata)

requestFallBack(data, status)

class flare.icons.**Icon**(value=None, fallbackIcon=None, title="", classes=[])

Bases: flare.html5.I

Icon component with first-letter fallback, normally shown as embedded SVG.

_leafTag = True

_setValue(value)

_setTitle(val)

Advisory information associated with the element.

Parameters

val – str

_setFallback(val)

onError()

```
class flare.icons.BadgeIcon(title='', value=None, fallbackIcon=None, badge=None)
```

Bases: `Icon`

A badge icon is an icon-component with a little badge, e.g. a number of new messages or items in the cart or so.

```
_setBadge(badge)
```

```
_getBadge()
```

`flare.ignite`

Flare-specific form Widgets with specialized classes and behavior.

Module Contents

Classes

`Label`

`Input`

`Switch`

`Check`

`Radio`

`Select`

`Textarea`

`Progress`

`Item`

`Table`

```
class flare.ignite.Label(*args, **kwargs)
```

Bases: `flare.html5.Label`

```
class flare.ignite.Input(*args, **kwargs)
```

Bases: `flare.html5.Input`

```
class flare.ignite.Switch(*args, **kwargs)
```

Bases: `flare.html5.Div`

```
_setChecked(value)
```

```
_getChecked()
```

```
class flare.ignite.Check(*args, **kwargs)
    Bases: flare.html5.Input

class flare.ignite.Radio(*args, **kwargs)
    Bases: flare.html5.Div

class flare.ignite.Select(*args, **kwargs)
    Bases: flare.html5.Select

class flare.ignite.Textarea(*args, **kwargs)
    Bases: flare.html5.Textarea

class flare.ignite.Progress(*args, **kwargs)
    Bases: flare.html5.Progress

class flare.ignite.Item(title=None, descr=None, className=None, *args, **kwargs)
    Bases: flare.html5.Div

class flare.ignite.Table(*args, **kwargs)
    Bases: flare.html5.Table

    prepareRow(row)
    prepareCol(row, col)
    fastGrid(rows, cols, createHidden=False)
```

flare.input

Input widget with additional event handling.

Module Contents

Classes

Input

```
class flare.input.Input(type='text', placeholder=None, callback=None, id=None, focusCallback=None,
    *args, **kwargs)
    Bases: flare.html5.Input

    onChange(event)
    onFocus(event)
    onDetach()
```

flare.intersectionObserver**Module Contents****Classes**

<i>IntersectionObserver</i>	Python wrapper for IntersectionObserver.
-----------------------------	--

```
class flare.intersectionObserver.IntersectionObserver(callback, rootWidget=None,
rootMargin='0px', threshold=0.2)
```

Python wrapper for IntersectionObserver.

Usage: myObserver = IntersectionObserver(myChangeFunction) myObserver.observe(aWidget)

jsObserver

```
observableWidgets = []
```

```
observe(widget)
```

```
unobserve(widget)
```

flare.log

Generalized Python logging for Pyodide.

Module Contents**Classes**

<i>FlareLogRecord</i>	A LogRecord instance represents an event being logged.
<i>JSCConsoleHandler</i>	Brings our awesome log messages onto the js console.

Functions

<i>prepareLogger(→ None)</i>	Call this before first usage of logging or getLogger().
<i>getLogger(→ Any)</i>	Creates a child logger of our 'root' logger with a name.

Attributes

`loggers`

```
flare.log.loggers = []

class flare.log.FlareLogRecord(name, level, pathname, lineno, msg, args, exc_info, func=None, sinfo=None,
                               mergeArgs=False, **kwargs)
```

Bases: `logging.LogRecord`

A LogRecord instance represents an event being logged.

LogRecord instances are created every time something is logged. They contain all the information pertinent to the event being logged. The main information passed in is in msg and args, which are combined using str(msg) % args to create the message field of the record. The record also includes information such as when the record was created, the source line where the logging call was made, and any exception information to be logged.

NOTE: This is mostly the same as the original LogRecord. Differences:

- Do not use a single dict as keyword args because pyodides' Proxy objects cannot be used

with `isinstance(proxy, collections.abc.Mapping)`. This will be discussed upstream. * User-supplied arguments to logging messages will not be replaced in message, but will be forwarded to js console via separate arguments.

`getMessage() → str`

Optionally merge args into message driven by `mergeArgs` flag in ctor, otherwise this will happen later in js console as objects.

Returns

```
class flare.log.JSConsoleHandler(stream=None)
```

Bases: `logging.StreamHandler`

Brings our awesome log messages onto the js console.

```
emit(record: logging.LogRecord) → None
```

Emit a record.

If a formatter is specified, it is used to format the record. The record is then written to the stream with a trailing newline. If exception information is present, it is formatted using `traceback.print_exception` and appended to the stream. If the stream has an 'encoding' attribute, it is used to determine how to do the output to the stream.

```
flare.log.prepareLogger(level: str, mergeArgs: bool = False) → None
```

Call this before first usage of logging or `getLogger()`.

:param level Log level as str as of all, info, debug, warning, error or critical :param mergeArgs: If True we're merging args into resulting message resulting in possible duplicated output or get the 'raw' message output if False.

```
flare.log.getLogger(name: str) → Any
```

Creates a child logger of our 'root' logger with a name.

Usually it's the `__name__` attribute of the module you want to use a logger for.

Parameters

`name` –

Returns**flare.network**

Tools for handling Ajax/fetch-network requests

Module Contents**Classes**

<i>DeferredCall</i>	Calls the given function with a fixed delay.
<i>HTTPRequest</i>	Wrapper around XMLHttpRequest.
<i>NetworkService</i>	Generic wrapper around ajax requests.
<i>requestGroup</i>	

Functions

<i>fetch_json(url, callback, **kwargs)</i>	Wrapper that performs a fetch request (with all parameters related to [pyfetch](https://pyodide.org/en/stable/usage/api/python-api.html#pyodide.http.pyfetch)).
<i>NiceError(req, code[, params, then])</i>	Displays a descriptive error message using an Alert dialog to the user.
<i>NiceErrorAndThen(function)</i>	Returns a callback which first displays a descriptive error message to the user and then calls another function.
<i>processSkelQueue()</i>	
<i>getUrlHashAsString([urlHash])</i>	
<i>getUrlHashAsObject([urlHash])</i>	
<i>setUrlHash(hash[, param])</i>	

Attributes

<i>skeyRequestQueue</i>

flare.network.fetch_json(url, callback, **kwargs)

Wrapper that performs a fetch request (with all parameters related to [pyfetch](https://pyodide.org/en/stable/usage/api/python-api.html#pyodide.http.pyfetch)).

Parameters

- **url** – URL to fetch from.

- **then** – Callback for getting the JSON object as parameter, status-code and status-text as parameters. JSON is None in case of an error.
- **catch** – Optional callback for failure, getting the [FetchResponse](<https://pyodide.org/en/stable/usage/api/python-api.html#pyodide.http.FetchResponse>) as parameter.
- **kwargs** – Any kwargs being passed to pyfetch.

```
class flare.network.DeferredCall(func, *args, **kwargs)
```

Bases: object

Calls the given function with a fixed delay.

This allows assuming that calls to NetworkService are always asynchronous, so its guaranteed that any initialization code can run before the Network-Call yields results.

```
run()
```

Internal callback that executes the callback function.

```
class flare.network.HTTPRequest(method, url, callbackSuccess=None, callbackFailure=None,  
                                payload=None, content_type=None, response_type=None,  
                                asynchronous=True)
```

Bases: object

Wrapper around XMLHttpRequest.

```
onReadyStateChange(*args, **kwargs)
```

Internal callback.

```
flare.network.NiceError(req, code, params='', then=None)
```

Displays a descriptive error message using an Alert dialog to the user.

```
flare.network.NiceErrorAndThen(function)
```

Returns a callback which first displays a descriptive error message to the user and then calls another function.

```
flare.network.skeyRequestQueue = []
```

```
flare.network.processSkelQueue()
```

```
class flare.network.NetworkService(module, url, params, successHandler, failureHandler, finishedHandler,  
                                  modifies, secure, kickoff, group=None)
```

Bases: object

Generic wrapper around ajax requests.

Handles caching and multiplexing multiple concurrent requests to the same resource. It also acts as the central proxy to notify currently active widgets of changes made to data on the server.

```
changeListeners = []
```

```
host = ''
```

```
prefix = '/json'
```

```
defaultFailureHandler
```

```
retryCodes
```

```
retryMax = 3
```

```
retryDelay = 5000
```

static notifyChange(module, **kwargs)

Broadcasts a change made to data of module ‘module’ to all currently registered changeListeners.

Parameters

- **module (str)** – Name of the module where the change occurred

static registerChangeListener(listener)

Registers object ‘listener’ for change notifications.

‘listener’ must provide an ‘onDataChanged’ function accepting one parameter: the name of the module. Does nothing if that object has already registered. :param listener: The object to register :type listener: object

static removeChangeListener(listener)

Unregisters the object ‘listener’ from change notifications.

Parameters

- **listener (object)** – The object to unregister. It must be currently registered.

static genReqStr(params)**static decode(req)**

Decodes a response received from the server (ie parsing the json).

Returns

object

static isOkay(req)**static urlForArgs(module, path)**

Constructs the final url for that request.

If module is given, it prepends “/prefix” If module is None, path is returned unchanged. :param module: Name of the target module or None :type module: str or None :param path: Path (either relative to ‘module’ or absolute if ‘module’ is None :type path: str :returns: str

kickoff()**static request(module, url, params=None, successHandler=None, failureHandler=None, finishedHandler=None, modifies=False, secure=False, kickoff=True, group=None)**

Performs an AJAX request. Handles caching and security-keys.

Calls made to this function are guaranteed to be async.

Parameters

- **module (str or None)** – Target module on the server. Set to None if you want to call anything else
- **url (str or None)** – The path (relative to module) or a full url if module is None
- **successHandler (callable)** – function being called if the request succeeds. Must take one argument (the request).
- **failureHandler (callable)** – function being called if the request fails. Must take two arguments (the request and an error-code).
- **finishedHandler (callable)** – function being called if the request finished (regardless wherever it succeeded or not). Must take one argument (the request).
- **modifies (bool)** – If set to True, it will automatically broadcast an onDataChanged event for that module.

- **secure** (*bool*) – If true, include a fresh securitykey in this request. Defaults to False.

doFetch(*url, params, skey*)

Internal function performing the actual AJAX request.

onCompletion(*text*)

Internal hook for the AJAX call.

onError(*text, code*)

Internal hook for the AJAX call.

onTimeout(*text*)

Internal hook for the AJAX call.

clear()

onFinished(*success*)

class flare.network.requestGroup(*callback=None*)

addRequest(*request*)

call()

onFinished(*success*)

flare.network.getUrlHashAsString(*urlHash=None*)

flare.network.getUrlHashAsObject(*urlHash=None*)

flare.network.setUrlHash(*hash, param=None*)

flare.observable

Observed values firing events when changed.

Module Contents

Classes

ObservableValue

StateHandler

class flare.observable.ObservableValue(*key, value=None*)

Bases: object

value

setValue(*value*)

class flare.observable.StateHandler(*initialize=()*, *widget=None*)

```
updateState(key, value)
getState(key, empty=None)
register(key, widget)
unregister(key, widget)
```

flare.popout

Popout menu that is expanded when hovering.

Example:

```
'''html <popout icon="icon-arrowhead-down">
  <popout-item @click="onEdit">edit</popout-item> <popout-item @click="onLeave">leave</popout-
  item> <popout-item @click="onDelete">delete</popout-item>
</popout>'''
```

Module Contents

Classes

<i>PopoutItem</i>	It's an item in a popout menu.
<i>Popout</i>	Popout menu.

```
class flare.popout.PopoutItem(*args, appendTo=None, style=None, **kwargs)
  Bases: flare.html5.Div
  It's an item in a popout menu.
  style = ['item', 'has-hover']

class flare.popout.Popout(*args, **kwargs)
  Bases: flare.html5.Div
  Popout menu.
  style = ['popout-opener', 'popout-anchor']
  _setIcon(icon)
  _getIcon()
  _setText(text)
  _getText()
```

flare.popup

Pre-defined dialog widgets for user interaction.

Module Contents

Classes

Popup

Prompt

Alert

Just displaying an alerting message box with OK-button.

Confirm

TextareaDialog

radioButtonDialog

```
class flare.popup.Popup(title='', id=None, className=None, icon=None, enableShortcuts=True,
closeable=True, *args, **kwargs)
```

Bases: *flare.html5.Div*

onAttach()

onDetach()

onDocumentKeyDown(event)

close()

onClose()

```
class flare.popup.Prompt(text, value='', successHandler=None, abortHandler=None, successLbl=None,
abortLbl=None, placeholder='', *args, **kwargs)
```

Bases: *Popup*

onKeyDown(event)

onKeyUp(event)

onDocumentKeyDown(event)

onOkay(*args, **kwargs)

onCancel(*args, **kwargs)

```
class flare.popup.Alert(msg, title=None, className=None, okCallback=None, okLabel=None,
icon='icon-info', closeable=True, *args, **kwargs)
```

Bases: *Popup*

Just displaying an alerting message box with OK-button.

```

drop()
onOkBtnClick()
onKeyDown(event)

class flare.popup.Confirm(question, title=None, yesCallback=None, noCallback=None, yesLabel=None,
                               noLabel=None, icon='icon-question', closeable=True, *args, **kwargs)
Bases: Popup
onKeyDown(event)
onDocumentKeyDown(event)
drop()
onYesClicked(*args, **kwargs)
onNoClicked(*args, **kwargs)

class flare.popup.TextareaDialog(text, value='', successHandler=None, abortHandler=None,
                                    successLbl=None, abortLbl=None, *args, **kwargs)
Bases: Popup
onDocumentKeyDown(event)
onOkay(*args, **kwargs)
onCancel(*args, **kwargs)

class flare.popup.radioButtonDialog(title, radioValues: list, radioButtonGroupName='radioButtonGroup',
                                         checkedValue=None, icon='icon-question', closeable=True,
                                         successHandler=None, abortHandler=None, successLbl=None,
                                         abortLbl=None, *args, **kwargs)
Bases: Popup
onOkay(*args, **kwargs)
onCancel(*args, **kwargs)

```

flare.priorityqueue

Select object generators by priority.

This is used when implementing pluggable features, which can optionally be registered for specific use-cases.

Module Contents

Classes

<i>PriorityQueue</i>

```
class flare.priorityqueue.PriorityQueue
    Bases: object
    insert(priority, validateFunc, generator)
    select(*args, **kwargs)
```

flare.safeeval

Here we are trying to provide an secure and safe space for evaluate simple python expressions on some ‘data’.

If you only need a oneshot evaluation, you call safeEval and enjoy the result. Otherwise call first compile to get the ast representation and execute that compiled expression multiple times with different data. A plain instance of SafeEval without allowedCallables argument will not accept any method/function like call on execution

Module Contents

Classes

<code>SafeEval</code>	Safely evaluate an expression from an untrusted party.
-----------------------	--

`class flare.safeeval.SafeEval(allowedCallables: None | Dict[str, Any] = None)`

Safely evaluate an expression from an untrusted party.

`_BoolOp(node, names)`

Handling ast.BoolOp in a Pythonic style.

`callNode(node: ast.Call, names: Dict[str, Any]) → Any`

Evaluates the call if present in allowed callables.

Parameters

- **node** – The call node to evaluate
- **names** – a mapping of local objects which is used as ‘locals’ namespace

Returns

If allowed to evaluate the node, its result will be returned

`compareNode(node: ast.Compare, names: Dict[str, Any]) → bool`

Evaluates an ‘if’ expression.

These are a bit tricky as they can have more than two operands (eg. “if $1 < 2 < 3$ ”)

Parameters

- **node** – The compare node to evaluate
- **names** – a mapping of local objects which is used as ‘locals’ namespace

`listNode(node, names)`

`execute(node: [str, ast.AST], names: Dict[str, Any]) → Any`

Evaluates the current node with optional data.

Parameters

- **node** – The compare node to evaluate
- **names** – a mapping of local objects which is used as ‘locals’ namespace

Returns

whatever the expression wants to return

compile(expr: str) → ast.AST

Compiles a python expression string to an ast.

Afterwards you can use execute to run the compiled ast with optional data. If you only want to run a ‘oneshot’ expression feel free to use our safeEval method.

Parameters

expr – the expression to compile

Returns

the ready to use ast node

safeEval(expr: str, names: Dict[str, Any]) → Any

Safely evaluate an expression.

If you want to evaluate the expression multiple times with different variables use compile to generate the AST once and call execute for each set of variables.

Parameters

- **expr** – the string to compile and evaluate

- **names** – a mapping of local objects which is used as ‘locals’ namespace

Returns

the result of evaluation of the expression with env provided by names

flare.utils

Utility functions.

Module Contents**Functions**

<code>unescape(val[, maxLength])</code>	Unquotes several HTML-quoted characters in a string.
<code>doesEventHitWidgetOrParents(event, widget)</code>	Test if event ‘event’ hits widget ‘widget’ (or <i>any</i> of its parents).
<code>doesEventHitWidgetOrChildren(event, widget)</code>	Test if event ‘event’ hits widget ‘widget’ (or <i>any</i> of its children).
<code>textToHtml(node, text)</code>	Generates html nodes from text by splitting text into content and into line breaks html5.Br.
<code>parseInt(s[, ret])</code>	Parses a value as int.
<code>parseFloat(s[, ret])</code>	Parses a value as float.
<code>createWorker(pythonCode[, callback, errorCallback, ...])</code>	Generates and starts a Pyodide Webworker.

`flare.utils.unescape(val, maxLength=0)`

Unquotes several HTML-quoted characters in a string.

Parameters

- **val** (*str*) – The value to be unescaped.
- **maxLength** (*int*) – Cut-off after maxLength characters. A value of 0 means “unlimited”. (default)

Returns

The unquoted string.

Return type

str

`flare.utils.doesEventHitWidgetOrParents(event, widget)`

Test if event ‘event’ hits widget ‘widget’ (or *any* of its parents).

`flare.utils.doesEventHitWidgetOrChildren(event, widget)`

Test if event ‘event’ hits widget ‘widget’ (or *any* of its children).

`flare.utils.textToHtml(node, text)`

Generates html nodes from text by splitting text into content and into line breaks html5.Br.

Parameters

- **node** – The node where the nodes are appended to.
- **text** – The text to be inserted.

`flare.utils.parseInt(s, ret=0)`

Parses a value as int.

`flare.utils.parseFloat(s, ret=0.0)`

Parses a value as float.

`flare.utils.createWorker(pythonCode, callback=None, errorCallback=None, context={})`

Generates and starts a Pyodide Webworker.

```
def callog(txt=None):
    result = txt.data.to_py() if "error" in result:
        print(result["error"])

    if "msg" in result:
        print(result["msg"])

    code=""

import statistics,time from js import self as js_self for i in range(0,100):
    js_self.postMessage("POST %s"%i)
"""

createWorker(code,callog,callog)
context can take variables, these are like global startparameters
```

Package Contents

Classes

`Cache`

Functions

<code>updateConf(other)</code>	Merges other into conf.
<code>_html5WidgetSetHidden(widget, hidden)</code>	
<code>_html5WidgetGetHidden(widget)</code>	
<code>_html5WidgetSetDisabled(widget, disabled)</code>	
<code>loadProjectConf(aconf)</code>	Update the default flare config with project configuration.
<code>bindApp(app, injectdata)</code>	Add the app instance as "app" to global config.

Attributes

`conf`

```
class flare.Cache
    Bases: object
        updateStructure(module, structure)
        update(module, key, data, structure=None)
        lookup(module, key='current')
        struct(module)
        start(plan, finishHandler=None, failureHandler=None)
        finish(plan)
        require(*args)
        invalidate(*args)
        onDataChanged(module, key=None, **kwargs)
        request(*args, finishHandler=None, failureHandler=None)

flare.conf
```

```
flare.updateConf(other: Dict)
    Merges other into conf.

flare._html5WidgetSetHidden(widget, hidden)

flare._html5WidgetGetHidden(widget)

flare._html5WidgetSetDisabled(widget, disabled)

flare.loadProjectConf(aconf)
    Update the default flare config with project configuration.

flare.bindApp(app, injectdata)
    Add the app instance as "app" to global config.
```

1.4.2 webworker_scripts

WARNING! THIS SCRIPTS ARE USED IN A SANDBOX SO ALL DEPENDENCIES SHOULD BE HANDELED HERE!

THIS USES PYODIDE V0.17!

Module Contents

Classes

```
weblog
```

Attributes

```
log
```

```
class webworker_scripts.weblog
    static info(text)
    static warn(text)
    static error(text)
    webworker_scripts.log
```

PYTHON MODULE INDEX

f

flare, 34
flare.button, 148
flare.cache, 149
flare.config, 150
flare.debug, 150
flare.event, 151
flare.handler, 151
flare.html5, 34
flare.html5.core, 34
flare.html5.svg, 71
flare.i18n, 152
flare.icons, 154
flare.ignite, 155
flare.input, 156
flare.intersectionObserver, 157
flare.log, 157
flare.network, 159
flare.observable, 162
flare.popout, 163
flare.popup, 164
flare.priorityqueue, 165
flare.safeeval, 166
flare.translations, 112
flare.translations.de, 112
flare.translations.en, 113
flare.utils, 167
flare.views, 113
flare.views.helpers, 113
flare.views.view, 114
flare.viur, 115
flare.viur.bones, 115
flare.viur.bones.base, 115
flare.viur.bones.boolean, 118
flare.viur.bones.color, 119
flare.viur.bones.date, 120
flare.viur.bones.email, 121
flare.viur.bones.numeric, 122
flare.viur.bones.password, 123
flare.viur.bones.raw, 124
flare.viur.bones.record, 125
flare.viur.bones.relational, 126

flare.viur.bones.select, 130
flare.viur.bones.spatial, 131
flare.viur.bones.string, 132
flare.viur.bones.text, 133
flare.viur.formatString, 143
flare.viur.formconf, 143
flare.viur.formerrors, 144
flare.viur.forms, 144
flare.viur.formtooltip, 146
flare.viur.widgets, 134
flare.viur.widgets.file, 134
flare.viur.widgets.htmleditor, 136
flare.viur.widgets.list, 137
flare.viur.widgets.tree, 139
flare.widgets, 147
flare.widgets.buttonbar, 147

W

webworker_scripts, 170

INDEX

Symbols

_BoolOp() (*flare.safeeval.SafeEval method*), 166
_Del (class in *flare.html5*), 99
_Del (class in *flare.html5.core*), 57
_WidgetClassWrapper (class in *flare.html5*), 83
_WidgetClassWrapper (class in *flare.html5.core*), 42
_WidgetDataWrapper (class in *flare.html5*), 84
_WidgetDataWrapper (class in *flare.html5.core*), 43
_WidgetStyleWrapper (class in *flare.html5*), 84
_WidgetStyleWrapper (class in *flare.html5.core*), 43
__collectChildren() (*flare.html5.Widget method*), 90
__collectChildren() (*flare.html5.core.Widget method*), 49
_domParser (in module *flare.html5*), 83
_domParser (in module *flare.html5.core*), 42
__getitem__() (*flare.html5.ColWrapper method*), 109
__getitem__() (*flare.html5.RowWrapper method*), 109
__getitem__() (*flare.html5.Widget method*), 85
__getitem__() (*flare.html5.core.ColWrapper method*), 68
__getitem__() (*flare.html5.core.RowWrapper method*), 68
__getitem__() (*flare.html5.core.Widget method*), 44
__iter__() (*flare.html5.Widget method*), 86
__iter__() (*flare.html5.core.Widget method*), 44
_reVarReplacer (in module *flare.html5*), 111
_reVarReplacer (in module *flare.html5.core*), 70
__setitem__() (*flare.html5.ColWrapper method*), 109
__setitem__() (*flare.html5.Widget method*), 85
__setitem__() (*flare.html5._WidgetDataWrapper method*), 84
__setitem__() (*flare.html5._WidgetStyleWrapper method*), 85
__setitem__() (*flare.html5.core.ColWrapper method*), 68
__setitem__() (*flare.html5.core.Widget method*), 44
__setitem__() (*flare.html5.core._WidgetDataWrapper method*), 43
__setitem__() (*flare.html5.core._WidgetStyleWrapper method*), 44
__str__() (*flare.html5.TextNode method*), 83
__str__() (*flare.html5.Widget method*), 86
__str__() (*flare.html5.core.TextNode method*), 42
__str__() (*flare.html5.core.Widget method*), 44
__tags (in module *flare.html5*), 111
__tags (in module *flare.html5.core*), 70
_addEntriesFromSelection()
 (*flare.viur.bones.relational.RelationalMultiEditWidget method*), 127
_attachSummernote()
 (*flare.viur.widgets.htmleditor.HtmlEditor method*), 137
_attrAlt (class in *flare.html5*), 94
_attrAlt (class in *flare.html5.core*), 53
_attrAutocomplete (class in *flare.html5*), 94
_attrAutocomplete (class in *flare.html5.core*), 53
_attrAutofocus (class in *flare.html5*), 94
_attrAutofocus (class in *flare.html5.core*), 53
_attrCharset (class in *flare.html5*), 93
_attrCharset (class in *flare.html5.core*), 52
_attrChecked (class in *flare.html5*), 94
_attrChecked (class in *flare.html5.core*), 53
_attrCite (class in *flare.html5*), 93
_attrCite (class in *flare.html5.core*), 52
_attrDatetime (class in *flare.html5*), 93
_attrDatetime (class in *flare.html5.core*), 52
_attrDimensions (class in *flare.html5*), 96
_attrDimensions (class in *flare.html5.core*), 55
_attrDisabled (class in *flare.html5*), 94
_attrDisabled (class in *flare.html5.core*), 53
_attrFor (class in *flare.html5*), 95
_attrFor (class in *flare.html5.core*), 54
_attrForm (class in *flare.html5*), 94
_attrForm (class in *flare.html5.core*), 52
_attrFormhead (class in *flare.html5*), 95
_attrFormhead (class in *flare.html5.core*), 54
_attrHref (class in *flare.html5*), 96
_attrHref (class in *flare.html5.core*), 54
_attrIndeterminate (class in *flare.html5*), 94
_attrIndeterminate (class in *flare.html5.core*), 53
_attrInputs (class in *flare.html5*), 95
_attrInputs (class in *flare.html5.core*), 54
_attrLabel (class in *flare.html5*), 93
_attrLabel (class in *flare.html5.core*), 52

`_attrMedia (class in flare.html5)`, 96
`_attrMedia (class in flare.html5.core)`, 55
`_attrMultimedia (class in flare.html5)`, 97
`_attrMultimedia (class in flare.html5.core)`, 55
`_attrMultiple (class in flare.html5)`, 95
`_attrMultiple (class in flare.html5.core)`, 53
`_attrName (class in flare.html5)`, 94
`_attrName (class in flare.html5.core)`, 53
`_attrRel (class in flare.html5)`, 97
`_attrRel (class in flare.html5.core)`, 56
`_attrRequired (class in flare.html5)`, 95
`_attrRequired (class in flare.html5.core)`, 53
`_attrSize (class in flare.html5)`, 95
`_attrSize (class in flare.html5.core)`, 54
`_attrSrc (class in flare.html5)`, 97
`_attrSrc (class in flare.html5.core)`, 56
`_attrSvgDimensions (class in flare.html5.svg)`, 72
`_attrSvgPoints (class in flare.html5.svg)`, 73
`_attrSvgStyles (class in flare.html5.svg)`, 74
`_attrSvgTransform (class in flare.html5.svg)`, 73
`_attrSvgViewBox (class in flare.html5.svg)`, 72
`_attrSvgXlink (class in flare.html5.svg)`, 74
`_attrTarget (class in flare.html5)`, 96
`_attrTarget (class in flare.html5.core)`, 55
`_attrType (class in flare.html5)`, 96
`_attrType (class in flare.html5.core)`, 55
`_attrUsemap (class in flare.html5)`, 97
`_attrUsemap (class in flare.html5.core)`, 55
`_attrValue (class in flare.html5)`, 94
`_attrValue (class in flare.html5.core)`, 53
`_body (in module flare.html5)`, 98
`_body (in module flare.html5.core)`, 57
`_buildTags () (in module flare.html5)`, 112
`_buildTags () (in module flare.html5.core)`, 70
`_currentLanguage (in module flare.i18n)`, 153
`_formatCurrencyValue () (in module flare.viur.bones.numeric)`, 122
`_genTargetFuncName () (flare.event.EventDispatcher method)`, 151
`_getAccept () (flare.html5.Input method)`, 103
`_getAccept () (flare.html5.core.Input method)`, 62
`_getAccept_attrCharset () (flare.html5.Form method)`, 103
`_getAccept_attrCharset () (flare.html5.core.Form method)`, 62
`_getAccesskey () (flare.html5.Widget method)`, 88
`_getAccesskey () (flare.html5.core.Widget method)`, 47
`_getAction () (flare.html5.Form method)`, 103
`_getAction () (flare.html5.core.Form method)`, 62
`_getAlt () (flare.html5._attrAlt method)`, 94
`_getAlt () (flare.html5.core._attrAlt method)`, 53
`_getAsync () (flare.html5.Script method)`, 108
`_getAsync () (flare.html5.core.Script method)`, 67
`_getAutocomplete () (flare.html5._attrAutocomplete method)`, 95
`_getAutocomplete () (flare.html5.core._attrAutocomplete method)`, 53
`_getAutofocus () (flare.html5._attrAutofocus method)`, 94
`_getAutofocus () (flare.html5.core._attrAutofocus method)`, 53
`_getAutoplay () (flare.html5._attrMultimedia method)`, 97
`_getAutoplay () (flare.html5.core._attrMultimedia method)`, 55
`_getBadge () (flare.icons.BadgeIcon method)`, 155
`_getBlockquote () (flare.html5.Blockquote method)`, 98
`_getBlockquote () (flare.html5.core.Blockquote method)`, 57
`_getCell () (flare.html5.Table method)`, 110
`_getCell () (flare.html5.core.Table method)`, 68
`_getChallenge () (flare.html5.Keygen method)`, 106
`_getChallenge () (flare.html5.core.Keygen method)`, 64
`_getCharset () (flare.html5._attrCharset method)`, 93
`_getCharset () (flare.html5.core._attrCharset method)`, 52
`_getChecked () (flare.html5._attrChecked method)`, 94
`_getChecked () (flare.html5.core._attrChecked method)`, 53
`_getChecked () (flare.ignite.Switch method)`, 155
`_getCite () (flare.html5._attrCite method)`, 93
`_getCite () (flare.html5.core._attrCite method)`, 52
`_getClass () (flare.html5.Widget method)`, 89
`_getClass () (flare.html5.core.Widget method)`, 48
`_getCols () (flare.html5.Textarea method)`, 105
`_getCols () (flare.html5.core.Textarea method)`, 63
`_getColspan () (flare.html5.Td method)`, 109
`_getColspan () (flare.html5.core.Td method)`, 68
`_getContent () (flare.html5.Meta method)`, 107
`_getContent () (flare.html5.core.Meta method)`, 66
`_getContenteditable () (flare.html5.Widget method)`, 88
`_getContenteditable () (flare.html5.core.Widget method)`, 47
`_getContextmenu () (flare.html5.Widget method)`, 88
`_getContextmenu () (flare.html5.core.Widget method)`, 47
`_getControls () (flare.html5._attrMultimedia method)`, 97
`_getControls () (flare.html5.core._attrMultimedia method)`, 56
`_getCoords () (flare.html5.Area method)`, 98
`_getCoords () (flare.html5.core.Area method)`, 57
`_getCrossorigin () (flare.html5.Img method)`, 105
`_getCrossorigin () (flare.html5.core.Img method)`, 64
`_getCx () (flare.html5.svg._attrSvgDimensions method)`, 73

`_getCy()` (*flare.html5.svg._attrSvgDimensions method*), 73
`_getD()` (*flare.html5.svg.SvgPath method*), 75
`_getData()` (*flare.html5.Widget method*), 86
`_getData()` (*flare.html5.core.Widget method*), 45
`_getDatetime()` (*flare.html5._attrDatetime method*), 94
`_getDatetime()` (*flare.html5.core._attrDatetime method*), 52
`_getDefault()` (*flare.html5.Track method*), 110
`_getDefault()` (*flare.html5.core.Track method*), 69
`_getDefaultValues()` (in module *flare.viur.bones.relational*), 126
`_getDefer()` (*flare.html5.Script method*), 108
`_getDefer()` (*flare.html5.core.Script method*), 67
`_getDir()` (*flare.html5.Widget method*), 88
`_getDir()` (*flare.html5.core.Widget method*), 47
`_getDisabled()` (*flare.html5.TextNode method*), 83
`_getDisabled()` (*flare.html5.Widget method*), 87
`_getDisabled()` (*flare.html5.core.TextNode method*), 42
`_getDisabled()` (*flare.html5.core.Widget method*), 46
`_getDownload()` (*flare.html5.A method*), 97
`_getDownload()` (*flare.html5.core.A method*), 56
`_getDraggable()` (*flare.html5.Widget method*), 87
`_getDraggable()` (*flare.html5.core.Widget method*), 46
`_getDropzone()` (*flare.html5.Widget method*), 87
`_getDropzone()` (*flare.html5.core.Widget method*), 46
`_getEnctype()` (*flare.html5.Form method*), 103
`_getEnctype()` (*flare.html5.core.Form method*), 62
`_getFill()` (*flare.html5.svg._attrSvgStyles method*), 74
`_getFor()` (*flare.html5._attrFor method*), 95
`_getFor()` (*flare.html5.core._attrFor method*), 54
`_getForm()` (*flare.html5._attrForm method*), 94
`_getForm()` (*flare.html5.core._attrForm method*), 52
`_getFormaction()` (*flare.html5._attrFormhead method*), 95
`_getFormaction()` (*flare.html5.core._attrFormhead method*), 54
`_getFormenctype()` (*flare.html5._attrFormhead method*), 95
`_getFormenctype()` (*flare.html5.core._attrFormhead method*), 54
`_getFormmethod()` (*flare.html5._attrFormhead method*), 95
`_getFormmethod()` (*flare.html5.core._attrFormhead method*), 54
`_getFormnovalidate()` (*flare.html5._attrFormhead method*), 96
`_getFormnovalidate()` (*flare.html5.core._attrFormhead method*), 54
`_getFormtarget()` (*flare.html5._attrFormhead method*), 96
`_getFormtarget()` (*flare.html5.core._attrFormhead method*), 54
`_getHeight()` (*flare.html5._attrDimensions method*), 96
`_getHeight()` (*flare.html5.core._attrDimensions method*), 55
`_getHeight()` (*flare.html5.svg._attrSvgDimensions method*), 73
`_getHidden()` (*flare.html5.Widget method*), 87
`_getHidden()` (*flare.html5.core.Widget method*), 46
`_getHigh()` (*flare.html5.Meter method*), 107
`_getHigh()` (*flare.html5.core.Meter method*), 66
`_getHref()` (*flare.html5._attrHref method*), 96
`_getHref()` (*flare.html5.core._attrHref method*), 55
`_getHreflang()` (*flare.html5._attrHref method*), 96
`_getHreflang()` (*flare.html5.core._attrHref method*), 55
`_getIcon()` (*flare.button.Button method*), 149
`_getIcon()` (*flare.html5.Command method*), 98
`_getIcon()` (*flare.html5.core.Command method*), 57
`_getIcon()` (*flare.popout.Popout method*), 163
`_getId()` (*flare.html5.Widget method*), 89
`_getId()` (*flare.html5.core.Widget method*), 47
`_getIndeterminate()` (*flare.html5._attrIndeterminate method*), 94
`_getIndeterminate()` (*flare.html5.core._attrIndeterminate method*), 53
`_getIsmap()` (*flare.html5.Img method*), 105
`_getIsmap()` (*flare.html5.core.Img method*), 64
`_getKeytype()` (*flare.html5.Keygen method*), 106
`_getKeytype()` (*flare.html5.core.Keygen method*), 64
`_getKind()` (*flare.html5.Track method*), 110
`_getKind()` (*flare.html5.core.Track method*), 69
`_getLabel()` (*flare.html5._attrLabel method*), 93
`_getLabel()` (*flare.html5.core._attrLabel method*), 52
`_getLang()` (*flare.html5.Widget method*), 87
`_getLang()` (*flare.html5.core.Widget method*), 46
`_getList()` (*flare.html5.Input method*), 104
`_getList()` (*flare.html5.core.Input method*), 62
`_getLoop()` (*flare.html5._attrMultimedia method*), 97
`_getLoop()` (*flare.html5.core._attrMultimedia method*), 56
`_getLow()` (*flare.html5.Meter method*), 107
`_getLow()` (*flare.html5.core.Meter method*), 66
`_getMax()` (*flare.html5.Input method*), 104
`_getMax()` (*flare.html5.Meter method*), 107
`_getMax()` (*flare.html5.Progress method*), 108
`_getMax()` (*flare.html5.core.Input method*), 62
`_getMax()` (*flare.html5.core.Meter method*), 66
`_getMax()` (*flare.html5.core.Progress method*), 66
`_getmaxlength()` (*flare.html5._attrInputs method*), 95
`_getmaxlength()` (*flare.html5.core._attrInputs method*), 54
`_getMedia()` (*flare.html5._attrMedia method*), 96

_getMedia() (*flare.html5.core._attrMedia method*), 55
_getMethod() (*flare.html5.Form method*), 103
_getMethod() (*flare.html5.core.Form method*), 62
_getMin() (*flare.html5.Input method*), 104
_getMin() (*flare.html5.Meter method*), 107
_getMin() (*flare.html5.core.Input method*), 63
_getMin() (*flare.html5.core.Meter method*), 66
_getMultiple() (*flare.html5._attrMultiple method*), 95
_getMultiple() (*flare.html5.core._attrMultiple method*), 54
_getMuted() (*flare.html5._attrMultimedia method*), 97
_getMuted() (*flare.html5.core._attrMultimedia method*), 56
_getName() (*flare.html5._attrName method*), 94
_getName() (*flare.html5.core._attrName method*), 53
_getNovalidate() (*flare.html5.Form method*), 103
_getNovalidate() (*flare.html5.core.Form method*), 62
_getOpen() (*flare.html5.Details method*), 108
_getOpen() (*flare.html5.Dialog method*), 99
_getOpen() (*flare.html5.core.Details method*), 67
_getOpen() (*flare.html5.core.Dialog method*), 58
_getOptimum() (*flare.html5.Meter method*), 107
_getOptimum() (*flare.html5.core.Meter method*), 66
_getOptions() (*flare.html5.Select method*), 104
_getOptions() (*flare.html5.core.Select method*), 63
_getPathLength() (*flare.html5.svg.SvgPath method*), 75
_getPattern() (*flare.html5.Input method*), 104
_getPattern() (*flare.html5.core.Input method*), 63
_getPlaceholder() (*flare.html5._attrInputs method*), 95
_getPlaceholder() (*flare.html5.core._attrInputs method*), 54
_getPlaysinline() (*flare.html5._attrMultimedia method*), 97
_getPlaysinline() (*flare.html5.core._attrMultimedia method*), 56
_getPoints() (*flare.html5.svg._attrSvgPoints method*), 73
_getPoster() (*flare.html5.Video method*), 110
_getPoster() (*flare.html5.core.Video method*), 69
_getPreload() (*flare.html5._attrMultimedia method*), 97
_getPreload() (*flare.html5.core._attrMultimedia method*), 56
_getPreserveaspectratio() (*flare.html5.svg._attrSvgViewBox method*), 72
_getR() (*flare.html5.svg._attrSvgDimensions method*), 73
_getRadiogroup() (*flare.html5.Command method*), 98
_getRadiogroup() (*flare.html5.core.Command method*), 57
_getReadonly() (*flare.html5._attrInputs method*), 95
_getReadonly() (*flare.html5.core._attrInputs method*), 54
_getRel() (*flare.html5._attrRel method*), 97
_getRel() (*flare.html5.core._attrRel method*), 56
_getRequired() (*flare.html5._attrRequired method*), 95
_getRequired() (*flare.html5.core._attrRequired method*), 53
_getRole() (*flare.html5.Widget method*), 89
_getRole() (*flare.html5.core.Widget method*), 48
_getRows() (*flare.html5.Textarea method*), 105
_getRows() (*flare.html5.core.Textarea method*), 63
_getRowspan() (*flare.html5.Td method*), 109
_getRowspan() (*flare.html5.Tr method*), 109
_getRowspan() (*flare.html5.core.Td method*), 68
_getRowspan() (*flare.html5.core.Tr method*), 67
_getRx() (*flare.html5.svg._attrSvgDimensions method*), 73
_getRy() (*flare.html5.svg._attrSvgDimensions method*), 73
_getSandbox() (*flare.html5.Iframe method*), 105
_getSandbox() (*flare.html5.core.Iframe method*), 64
_getScoped() (*flare.html5.Style method*), 108
_getScoped() (*flare.html5.core.Style method*), 67
_getSeamless() (*flare.html5.Iframe method*), 105
_getSeamless() (*flare.html5.core.Iframe method*), 64
_getSelected() (*flare.html5.Option method*), 104
_getSelected() (*flare.html5.core.Option method*), 63
_getSelectedIndex() (*flare.html5.Select method*), 104
_getSelectedIndex() (*flare.html5.core.Select method*), 63
_getShape() (*flare.html5.Area method*), 98
_getShape() (*flare.html5.core.Area method*), 57
_getSize() (*flare.html5._attrSize method*), 95
_getSize() (*flare.html5.core._attrSize method*), 54
_getSizes() (*flare.html5.Link method*), 106
_getSizes() (*flare.html5.core.Link method*), 65
_getSpellcheck() (*flare.html5.Widget method*), 86
_getSpellcheck() (*flare.html5.core.Widget method*), 45
_getSrc() (*flare.html5._attrSrc method*), 97
_getSrc() (*flare.html5.core._attrSrc method*), 56
_getSrcdoc() (*flare.html5.Iframe method*), 105
_getSrcdoc() (*flare.html5.core.Iframe method*), 64
_getSrclang() (*flare.html5.Track method*), 110
_getSrclang() (*flare.html5.core.Track method*), 69
_getStep() (*flare.html5.Input method*), 104
_getStep() (*flare.html5.core.Input method*), 63
_getStroke() (*flare.html5.svg._attrSvgStyles method*), 74
_getStyle() (*flare.html5.Widget method*), 89
_getStyle() (*flare.html5.core.Widget method*), 48
_getSvgTransform() (*flare.html5.svg.SvgG method*), 74
_getTabindex() (*flare.html5.Widget method*), 86

`_getTabindex()` (*flare.html5.core.Widget method*), 45
`_getTarget()` (*flare.html5._attrTarget method*), 96
`_getTarget()` (*flare.html5.core._attrTarget method*), 55
`_getTargetfuncName()` (*flare.html5.Widget method*),
 85
`_getTargetfuncName()` (*flare.html5.core.Widget
 method*), 44
`_getText()` (*flare.button.Button method*), 149
`_getText()` (*flare.html5.TextNode method*), 83
`_getText()` (*flare.html5.core.TextNode method*), 42
`_getText()` (*flare.popout.Popout method*), 163
`_getTitle()` (*flare.html5.Widget method*), 86
`_getTitle()` (*flare.html5.core.Widget method*), 45
`_getTransform()` (*flare.html5.svg._attrSvgTransform
 method*), 74
`_getTranslate()` (*flare.html5.Widget method*), 86
`_getTranslate()` (*flare.html5.core.Widget method*), 45
`_getType()` (*flare.html5._attrType method*), 96
`_getType()` (*flare.html5.core._attrType method*), 55
`_getUsemap()` (*flare.html5._attrUsemap method*), 97
`_getUsemap()` (*flare.html5.core._attrUsemap method*),
 55
`_getValue()` (*flare.html5._attrValue method*), 94
`_getValue()` (*flare.html5.core._attrValue method*), 53
`_getValue()` (*flare.viur.widgets.htmleditor.HtmlEditor
 method*), 137
`_getVersion()` (*flare.html5.svg.Svg method*), 74
`_getViewbox()` (*flare.html5.svg._attrSvgViewBox
 method*), 72
`_getWidth()` (*flare.html5._attrDimensions method*), 96
`_getWidth()` (*flare.html5.core._attrDimensions
 method*), 55
`_getWidth()` (*flare.html5.svg._attrSvgDimensions
 method*), 73
`_getWrap()` (*flare.html5.Textarea method*), 105
`_getWrap()` (*flare.html5.core.Textarea method*), 64
`_getX()` (*flare.html5.svg._attrSvgDimensions method*),
 73
`_getX1()` (*flare.html5.svg._attrSvgPoints method*), 73
`_getX2()` (*flare.html5.svg._attrSvgPoints method*), 73
`_getXlinkhref()` (*flare.html5.svg._attrSvgXlink
 method*), 74
`_getXmlns()` (*flare.html5.svg.Svg method*), 74
`_getY()` (*flare.html5.svg._attrSvgDimensions method*),
 73
`_getY1()` (*flare.html5.svg._attrSvgPoints method*), 73
`_getY2()` (*flare.html5.svg._attrSvgPoints method*), 73
`_head` (*in module flare.html5*), 105
`_head` (*in module flare.html5.core*), 64
`_html5WidgetGetHidden()` (*in module flare*), 170
`_html5WidgetSetDisabled()` (*in module flare*), 170
`_html5WidgetSetHidden()` (*in module flare*), 170
`_leafTag` (*flare.html5.Area attribute*), 98
`_leafTag` (*flare.html5.Br attribute*), 99
`_leafTag` (*flare.html5.Embed attribute*), 100
`_leafTag` (*flare.html5.Hr attribute*), 101
`_leafTag` (*flare.html5.Img attribute*), 105
`_leafTag` (*flare.html5.Input attribute*), 103
`_leafTag` (*flare.html5.Link attribute*), 106
`_leafTag` (*flare.html5.Meta attribute*), 107
`_leafTag` (*flare.html5.Param attribute*), 107
`_leafTag` (*flare.html5.Source attribute*), 108
`_leafTag` (*flare.html5.Track attribute*), 110
`_leafTag` (*flare.html5.Widget attribute*), 85
`_leafTag` (*flare.html5.core.Area attribute*), 56
`_leafTag` (*flare.html5.core.Br attribute*), 58
`_leafTag` (*flare.html5.core.Embed attribute*), 59
`_leafTag` (*flare.html5.core.Hr attribute*), 60
`_leafTag` (*flare.html5.core.Img attribute*), 64
`_leafTag` (*flare.html5.core.Input attribute*), 62
`_leafTag` (*flare.html5.core.Link attribute*), 65
`_leafTag` (*flare.html5.core.Meta attribute*), 65
`_leafTag` (*flare.html5.core.Param attribute*), 66
`_leafTag` (*flare.html5.core.Source attribute*), 67
`_leafTag` (*flare.html5.core.Track attribute*), 69
`_leafTag` (*flare.html5.core.Widget attribute*), 44
`_leafTag` (*flare.icons.Icon attribute*), 154
`_leafTag` (*flare.icons.SvgIcon attribute*), 154
`_lngMap` (*in module flare.i18n*), 153
`_namespace` (*flare.html5.Widget attribute*), 85
`_namespace` (*flare.html5.core.Widget attribute*), 44
`_namespace` (*flare.html5.svg.SvgWidget attribute*), 74
`_onRequestFailure()` (*flare.cache.Plan method*), 150
`_onRequestSucceeded()`
 (*flare.viur.widgets.tree.TreeWidget method*),
 141
`_onRequestSuccess()` (*flare.cache.Plan method*), 149
`_request()` (*flare.handler.SyncHandler method*), 152
`_requestFailed()` (*flare.handler.requestHandler
 method*), 152
`_runtimeTranslations` (*in module flare.i18n*), 153
`_setAccept()` (*flare.html5.Input method*), 104
`_setAccept()` (*flare.html5.core.Input method*), 62
`_setAccept_attrCharset()` (*flare.html5.Form
 method*), 103
`_setAccept_attrCharset()` (*flare.html5.core.Form
 method*), 62
`_setAccesskey()` (*flare.html5.Widget method*), 88
`_setAccesskey()` (*flare.html5.core.Widget method*), 47
`_setAction()` (*flare.html5.Form method*), 103
`_setAction()` (*flare.html5.core.Form method*), 62
`_setActionname()` (*flare.viur.forms.ViurForm method*),
 144
`_setAlt()` (*flare.html5._attrAlt method*), 94
`_setAlt()` (*flare.html5.core._attrAlt method*), 53
`_setAsync()` (*flare.html5.Script method*), 108
`_setAsync()` (*flare.html5.core.Script method*), 67

_setAutocomplete() (*flare.html5._attrAutocomplete method*), 95
 _setAutocomplete() (*flare.html5.core._attrAutocomplete method*), 53
 _setAutofocus() (*flare.html5._attrAutofocus method*), 94
 _setAutofocus() (*flare.html5.core._attrAutofocus method*), 53
 _setAutoplay() (*flare.html5._attrMultimedia method*), 97
 _setAutoplay() (*flare.html5.core._attrMultimedia method*), 56
 _setBadge() (*flare.icons.BadgeIcon method*), 155
 _setBlockquote() (*flare.html5.Blockquote method*), 98
 _setBlockquote() (*flare.html5.core.Blockquote method*), 57
 _setBonename() (*flare.viur.forms.ViurFormBone method*), 145
 _setChallenge() (*flare.html5.Keygen method*), 106
 _setChallenge() (*flare.html5.core.Keygen method*), 64
 _setCharset() (*flare.html5._attrCharset method*), 93
 _setCharset() (*flare.html5.core._attrCharset method*), 52
 _setChecked() (*flare.html5._attrChecked method*), 94
 _setChecked() (*flare.html5.core._attrChecked method*), 53
 _setChecked() (*flare.ignite.Switch method*), 155
 _setCite() (*flare.html5._attrCite method*), 93
 _setCite() (*flare.html5.core._attrCite method*), 52
 _setClass() (*flare.html5.Widget method*), 89
 _setClass() (*flare.html5.core.Widget method*), 48
 _setCols() (*flare.html5.Textarea method*), 105
 _setCols() (*flare.html5.core.Textarea method*), 63
 _setColspan() (*flare.html5.Td method*), 109
 _setColspan() (*flare.html5.core.Td method*), 68
 _setContent() (*flare.html5.Meta method*), 107
 _setContent() (*flare.html5.core.Meta method*), 66
 _setContenteditable() (*flare.html5.Widget method*), 88
 _setContenteditable() (*flare.html5.core.Widget method*), 47
 _setContextmenu() (*flare.html5.Widget method*), 88
 _setContextmenu() (*flare.html5.core.Widget method*), 47
 _setControls() (*flare.html5._attrMultimedia method*), 97
 _setControls() (*flare.html5.core._attrMultimedia method*), 56
 _setCoords() (*flare.html5.Area method*), 98
 _setCoords() (*flare.html5.core.Area method*), 57
 _setCrossorigin() (*flare.html5.Img method*), 105
 _setCrossorigin() (*flare.html5.core.Img method*), 64
 _setCx() (*flare.html5.svg._attrSvgDimensions method*), 73
 _setCy() (*flare.html5.svg._attrSvgDimensions method*), 73
 _setD() (*flare.html5.svg.SvgPath method*), 75
 _setDatetime() (*flare.html5._attrDatetime method*), 94
 _setDatetime() (*flare.html5.core._attrDatetime method*), 52
 _setDefault() (*flare.html5.Track method*), 110
 _setDefault() (*flare.html5.core.Track method*), 69
 _setDefer() (*flare.html5.Script method*), 108
 _setDefer() (*flare.html5.core.Script method*), 67
 _setDir() (*flare.html5.Widget method*), 88
 _setDir() (*flare.html5.core.Widget method*), 47
 _setDisabled() (*flare.html5.TextNode method*), 83
 _setDisabled() (*flare.html5.Widget method*), 87
 _setDisabled() (*flare.html5.core.TextNode method*), 42
 _setDisabled() (*flare.html5.core.Widget method*), 46
 _setDisabled() (*flare.viur.bones.text.TextEditWidget method*), 133
 _setDisabled() (*flare.viur.formtooltip.ToolTip method*), 146
 _setDownload() (*flare.html5.A method*), 97
 _setDownload() (*flare.html5.core.A method*), 56
 _setDraggable() (*flare.html5.Widget method*), 88
 _setDraggable() (*flare.html5.core.Widget method*), 46
 _setDropzone() (*flare.html5.Widget method*), 87
 _setDropzone() (*flare.html5.core.Widget method*), 46
 _setEnctype() (*flare.html5.Form method*), 103
 _setEnctype() (*flare.html5.core.Form method*), 62
 _setFallback() (*flare.icons.Icon method*), 154
 _setFill() (*flare.html5.svg._attrSvgStyles method*), 74
 _setFor() (*flare.html5._attrFor method*), 95
 _setFor() (*flare.html5.core._attrFor method*), 54
 _setForm() (*flare.html5._attrForm method*), 94
 _setForm() (*flare.html5.core._attrForm method*), 52
 _setFormaction() (*flare.html5._attrFormhead method*), 95
 _setFormaction() (*flare.html5.core._attrFormhead method*), 54
 _setFormenctype() (*flare.html5._attrFormhead method*), 95
 _setFormenctype() (*flare.html5.core._attrFormhead method*), 54
 _setFormmethod() (*flare.html5._attrFormhead method*), 96
 _setFormmethod() (*flare.html5.core._attrFormhead method*), 54
 _setFormname() (*flare.viur.forms.ViurForm method*), 144
 _setFormnovalidate() (*flare.html5._attrFormhead method*), 96
 _setFormnovalidate() (*flare.html5.core._attrFormhead method*), 54

_setFormtarget() (flare.html5._attrFormhead method), 96
 _setFormtarget() (flare.html5.core._attrFormhead method), 54
 _setHeight() (flare.html5._attrDimensions method), 96
 _setHeight() (flare.html5.core._attrDimensions method), 55
 _setHeight() (flare.html5.svg._attrSvgDimensions method), 73
 _setHidden() (flare.html5.Widget method), 87
 _setHidden() (flare.html5.core.Widget method), 46
 _setHide() (flare.viur.forms.ViurFormBone method), 145
 _setHigh() (flare.html5.Meter method), 107
 _setHigh() (flare.html5.core.Meter method), 66
 _setHref() (flare.html5._attrHref method), 96
 _setHref() (flare.html5.core._attrHref method), 55
 _setHreflang() (flare.html5._attrHref method), 96
 _setHreflang() (flare.html5.core._attrHref method), 55
 _setIcon() (flare.button.Button method), 148
 _setIcon() (flare.html5.Command method), 98
 _setIcon() (flare.html5.core.Command method), 57
 _setIcon() (flare.popout.Popout method), 163
 _setId() (flare.html5.Widget method), 89
 _setId() (flare.html5.core.Widget method), 48
 _setIndeterminate() (flare.html5._attrIndeterminate method), 94
 _setIndeterminate() (flare.html5.core._attrIndeterminate method), 53
 _setIsmap() (flare.html5.Img method), 105
 _setIsmap() (flare.html5.core.Img method), 64
 _setKeytype() (flare.html5.Keygen method), 106
 _setKeytype() (flare.html5.core.Keygen method), 65
 _setKind() (flare.html5.Track method), 110
 _setKind() (flare.html5.core.Track method), 69
 _setLabel() (flare.html5._attrLabel method), 93
 _setLabel() (flare.html5.core._attrLabel method), 52
 _setLabel() (flare.viur.forms.ViurFormBone method), 145
 _setLang() (flare.html5.Widget method), 87
 _setLang() (flare.html5.core.Widget method), 46
 _setList() (flare.html5.Input method), 104
 _setList() (flare.html5.core.Input method), 62
 _setLoop() (flare.html5._attrMultimedia method), 97
 _setLoop() (flare.html5.core._attrMultimedia method), 56
 _setLow() (flare.html5.Meter method), 107
 _setLow() (flare.html5.core.Meter method), 66
 _setMax() (flare.html5.Input method), 104
 _setMax() (flare.html5.Meter method), 107
 _setMax() (flare.html5.Progress method), 108
 _setMax() (flare.html5.core.Input method), 63
 _setMax() (flare.html5.core.Meter method), 66
 _setMax() (flare.html5.core.Progress method), 66
 _setmaxlength() (flare.html5._attrInputs method), 95
 _setmaxlength() (flare.html5.core._attrInputs method), 54
 _setMedia() (flare.html5._attrMedia method), 96
 _setMedia() (flare.html5.core._attrMedia method), 55
 _setMethod() (flare.html5.Form method), 103
 _setMethod() (flare.html5.core.Form method), 62
 _setMin() (flare.html5.Input method), 104
 _setMin() (flare.html5.Meter method), 107
 _setMin() (flare.html5.core.Input method), 63
 _setMin() (flare.html5.core.Meter method), 66
 _setModulename() (flare.viur.forms.ViurForm method), 144
 _setMultiple() (flare.html5._attrMultiple method), 95
 _setMultiple() (flare.html5.core._attrMultiple method), 54
 _setMuted() (flare.html5._attrMultimedia method), 97
 _setMuted() (flare.html5.core._attrMultimedia method), 56
 _setName() (flare.html5._attrName method), 94
 _setName() (flare.html5.core._attrName method), 53
 _setNovalidate() (flare.html5.Form method), 103
 _setNovalidate() (flare.html5.core.Form method), 62
 _setOpen() (flare.html5.Details method), 108
 _setOpen() (flare.html5.Dialog method), 99
 _setOpen() (flare.html5.core.Details method), 67
 _setOpen() (flare.html5.core.Dialog method), 58
 _setOptimum() (flare.html5.Meter method), 107
 _setOptimum() (flare.html5.core.Meter method), 66
 _setPathLength() (flare.html5.svg.SvgPath method), 75
 _setPattern() (flare.html5.Input method), 104
 _setPattern() (flare.html5.core.Input method), 63
 _setPlaceholder() (flare.html5._attrInputs method), 95
 _setPlaceholder() (flare.html5.core._attrInputs method), 54
 _setPlaceholder() (flare.viur.forms.ViurFormBone method), 145
 _setPlaysinline() (flare.html5._attrMultimedia method), 97
 _setPlaysinline() (flare.html5.core._attrMultimedia method), 56
 _setPoints() (flare.html5.svg._attrSvgPoints method), 73
 _setPoster() (flare.html5.Video method), 110
 _setPoster() (flare.html5.core.Video method), 69
 _setPreload() (flare.html5._attrMultimedia method), 97
 _setPreload() (flare.html5.core._attrMultimedia method), 56
 _setPreserveaspectratio()

`_setRx()` (*flare.html5.svg._attrSvgDimensions method*), 73
`_setRy()` (*flare.html5.svg._attrSvgDimensions method*), 73
`_setSandbox()` (*flare.html5.Iframe method*), 105
`_setSandbox()` (*flare.html5.core.Iframe method*), 64
`_setScoped()` (*flare.html5.Style method*), 108
`_setScoped()` (*flare.html5.core.Style method*), 67
`_setSeamless()` (*flare.html5.Iframe method*), 105
`_setSeamless()` (*flare.html5.core.Iframe method*), 64
`_setSelected()` (*flare.html5.Option method*), 104
`_setSelected()` (*flare.html5.core.Option method*), 63
`_setShape()` (*flare.html5.Area method*), 98
`_setShape()` (*flare.html5.core.Area method*), 57
`_setSize()` (*flare.html5._attrSize method*), 95
`_setSize()` (*flare.html5.core._attrSize method*), 54
`_setSizes()` (*flare.html5.Link method*), 106
`_setSizes()` (*flare.html5.core.Link method*), 65
`_setSpellcheck()` (*flare.html5.Widget method*), 87
`_setSpellcheck()` (*flare.html5.core.Widget method*), 45
`_setSrc()` (*flare.html5._attrSrc method*), 97
`_setSrc()` (*flare.html5.core._attrSrc method*), 56
`_setSrcdoc()` (*flare.html5.Iframe method*), 105
`_setSrcdoc()` (*flare.html5.core.Iframe method*), 64
`_setSrcLang()` (*flare.html5.Track method*), 110
`_setSrcLang()` (*flare.html5.core.Track method*), 69
`_setStep()` (*flare.html5.Input method*), 104
`_setStep()` (*flare.html5.core.Input method*), 63
`_setStroke()` (*flare.html5.svg._attrSvgStyles method*), 74
`_setSvgTransform()` (*flare.html5.svg.SvgG method*), 74
`_setTabIndex()` (*flare.html5.Widget method*), 86
`_setTabIndex()` (*flare.html5.core.Widget method*), 45
`_setTarget()` (*flare.html5._attrTarget method*), 96
`_setTarget()` (*flare.html5.core._attrTarget method*), 55
`_setText()` (*flare.button.Button method*), 149
`_setText()` (*flare.html5.TextNode method*), 83
`_setText()` (*flare.html5.core.TextNode method*), 42
`_setText()` (*flare.popout.Popout method*), 163
`_setTitle()` (*flare.html5.Widget method*), 86
`_setTitle()` (*flare.html5.core.Widget method*), 45
`_setTitle()` (*flare.icons.Icon method*), 154
`_setTitle()` (*flare.icons.SvgIcon method*), 154
`_setTransform()` (*flare.html5.svg._attrSvgTransform method*), 74
`_setTranslate()` (*flare.html5.Widget method*), 86
`_setTranslate()` (*flare.html5.core.Widget method*), 45
`_setType()` (*flare.html5._attrType method*), 96
`_setType()` (*flare.html5.core._attrType method*), 55
`_setUsemap()` (*flare.html5._attrUsemap method*), 97
`_setUsemap()` (*flare.html5.core._attrUsemap method*), 55
`_setValue()` (*flare.html5._attrValue method*), 94
`_setValue()` (*flare.html5.core._attrValue method*), 53
`_setValue()` (*flare.icons.Icon method*), 154
`_setValue()` (*flare.icons.SvgIcon method*), 154
`_setValue()` (*flare.viur.forms.ViurFormBone method*), 145
`_setValue()` (*flare.viur.widgets.htmleditor.HtmlEditor method*), 137
`_setVersion()` (*flare.html5.svg.Svg method*), 74
`_setViewbox()` (*flare.html5.svg._attrSvgViewBox method*), 72
`_setWidth()` (*flare.html5._attrDimensions method*), 96
`_setWidth()` (*flare.html5.core._attrDimensions method*), 55
`_setWidth()` (*flare.html5.svg._attrSvgDimensions method*), 73
`_setWrap()` (*flare.html5.Textarea method*), 105
`_setWrap()` (*flare.html5.core.Textarea method*), 64
`_setX()` (*flare.html5.svg._attrSvgDimensions method*), 73
`_setX1()` (*flare.html5.svg._attrSvgPoints method*), 73
`_setX2()` (*flare.html5.svg._attrSvgPoints method*), 73
`_setXlinkHref()` (*flare.html5.svg._attrSvgXlink method*), 74
`_setXmlns()` (*flare.html5.svg.Svg method*), 74
`_setY()` (*flare.html5.svg._attrSvgDimensions method*), 73
`_setY1()` (*flare.html5.svg._attrSvgPoints method*), 73
`_setY2()` (*flare.html5.svg._attrSvgPoints method*), 73
`_showErrorMsg()` (*flare.viur.widgets.tree.TreeWidget method*), 141

- _tagName (*flare.html5.A attribute*), 97
_tagName (*flare.html5.Abr attribute*), 99
_tagName (*flare.html5.Address attribute*), 99
_tagName (*flare.html5.Area attribute*), 98
_tagName (*flare.html5.Article attribute*), 99
_tagName (*flare.html5.Aside attribute*), 99
_tagName (*flare.html5.Audio attribute*), 98
_tagName (*flare.html5.B attribute*), 99
_tagName (*flare.html5.Bdi attribute*), 99
_tagName (*flare.html5.Bdo attribute*), 98
_tagName (*flare.html5.Blockquote attribute*), 98
_tagName (*flare.html5.Br attribute*), 99
_tagName (*flare.html5.Button attribute*), 103
_tagName (*flare.html5.Canvas attribute*), 98
_tagName (*flare.html5.Caption attribute*), 99
_tagName (*flare.html5.Cite attribute*), 100
_tagName (*flare.html5.Code attribute*), 100
_tagName (*flare.html5.Command attribute*), 98
_tagName (*flare.html5.Datalist attribute*), 100
_tagName (*flare.html5.Dd attribute*), 106
_tagName (*flare.html5.Details attribute*), 108
_tagName (*flare.html5.Dfn attribute*), 100
_tagName (*flare.html5.Dialog attribute*), 99
_tagName (*flare.html5.Div attribute*), 100
_tagName (*flare.html5.Dl attribute*), 106
_tagName (*flare.html5.Dt attribute*), 106
_tagName (*flare.html5.Em attribute*), 100
_tagName (*flare.html5.Embed attribute*), 100
_tagName (*flare.html5.Fieldset attribute*), 103
_tagName (*flare.html5.Figcaption attribute*), 100
_tagName (*flare.html5.Figure attribute*), 100
_tagName (*flare.html5.Footer attribute*), 100
_tagName (*flare.html5.Form attribute*), 103
_tagName (*flare.html5.H1 attribute*), 100
_tagName (*flare.html5.H2 attribute*), 101
_tagName (*flare.html5.H3 attribute*), 101
_tagName (*flare.html5.H4 attribute*), 101
_tagName (*flare.html5.H5 attribute*), 101
_tagName (*flare.html5.H6 attribute*), 101
_tagName (*flare.html5.Header attribute*), 100
_tagName (*flare.html5.Hr attribute*), 101
_tagName (*flare.html5.I attribute*), 101
_tagName (*flare.html5.Iframe attribute*), 105
_tagName (*flare.html5.Img attribute*), 105
_tagName (*flare.html5.Input attribute*), 103
_tagName (*flare.html5.Ins attribute*), 105
_tagName (*flare.html5.Kdb attribute*), 101
_tagName (*flare.html5.Keygen attribute*), 106
_tagName (*flare.html5.Label attribute*), 104
_tagName (*flare.html5.Legend attribute*), 101
_tagName (*flare.html5.Li attribute*), 106
_tagName (*flare.html5.Link attribute*), 106
_tagName (*flare.html5.Map attribute*), 106
_tagName (*flare.html5.Mark attribute*), 101
_tagName (*flare.html5.Menu attribute*), 107
_tagName (*flare.html5.Meta attribute*), 107
_tagName (*flare.html5.Meter attribute*), 107
_tagName (*flare.html5.Nav attribute*), 107
_tagName (*flare.html5.Noscript attribute*), 101
_tagName (*flare.html5.Object attribute*), 107
_tagName (*flare.html5.Ol attribute*), 106
_tagName (*flare.html5.Optgroup attribute*), 104
_tagName (*flare.html5.Option attribute*), 104
_tagName (*flare.html5.Output attribute*), 104
_tagName (*flare.html5.P attribute*), 102
_tagName (*flare.html5.Param attribute*), 107
_tagName (*flare.html5.Progress attribute*), 107
_tagName (*flare.html5.Q attribute*), 108
_tagName (*flare.html5.Rq attribute*), 102
_tagName (*flare.html5.Rt attribute*), 102
_tagName (*flare.html5.Ruby attribute*), 102
_tagName (*flare.html5.S attribute*), 102
_tagName (*flare.html5.Samp attribute*), 102
_tagName (*flare.html5.Script attribute*), 108
_tagName (*flare.html5.Section attribute*), 102
_tagName (*flare.html5.Select attribute*), 104
_tagName (*flare.html5.Small attribute*), 102
_tagName (*flare.html5.Source attribute*), 108
_tagName (*flare.html5.Span attribute*), 108
_tagName (*flare.html5.Strong attribute*), 102
_tagName (*flare.html5.Style attribute*), 108
_tagName (*flare.html5.Sub attribute*), 102
_tagName (*flare.html5.Summary attribute*), 108
_tagName (*flare.html5.Summery attribute*), 102
_tagName (*flare.html5.Sup attribute*), 102
_tagName (*flare.html5.Table attribute*), 109
_tagName (*flare.html5.Tbody attribute*), 109
_tagName (*flare.html5.Td attribute*), 109
_tagName (*flare.html5.Template attribute*), 110
_tagName (*flare.html5.Textarea attribute*), 105
_tagName (*flare.html5.Th attribute*), 109
_tagName (*flare.html5.Thead attribute*), 109
_tagName (*flare.html5.Time attribute*), 110
_tagName (*flare.html5.Tr attribute*), 109
_tagName (*flare.html5.Track attribute*), 110
_tagName (*flare.html5.U attribute*), 103
_tagName (*flare.html5.Ul attribute*), 106
_tagName (*flare.html5.Var attribute*), 103
_tagName (*flare.html5.Video attribute*), 110
_tagName (*flare.html5.Wbr attribute*), 103
_tagName (*flare.html5.Widget attribute*), 85
_tagName (*flare.html5._Del attribute*), 99
_tagName (*flare.html5.core.A attribute*), 56
_tagName (*flare.html5.core.Abr attribute*), 58
_tagName (*flare.html5.core.Address attribute*), 58
_tagName (*flare.html5.core.Area attribute*), 56
_tagName (*flare.html5.core.Article attribute*), 58
_tagName (*flare.html5.core.Aside attribute*), 58

_tagName (*flare.html5.core.Audio attribute*), 57
_tagName (*flare.html5.core.B attribute*), 58
_tagName (*flare.html5.core.Bdi attribute*), 58
_tagName (*flare.html5.core.Bdo attribute*), 57
_tagName (*flare.html5.core.Blockquote attribute*), 57
_tagName (*flare.html5.core.Br attribute*), 58
_tagName (*flare.html5.core.Button attribute*), 62
_tagName (*flare.html5.core.Canvas attribute*), 57
_tagName (*flare.html5.core.Caption attribute*), 58
_tagName (*flare.html5.core.Cite attribute*), 58
_tagName (*flare.html5.core.Code attribute*), 58
_tagName (*flare.html5.core.Command attribute*), 57
_tagName (*flare.html5.core.Datalist attribute*), 59
_tagName (*flare.html5.core.Dd attribute*), 65
_tagName (*flare.html5.core.Details attribute*), 67
_tagName (*flare.html5.core.Dfn attribute*), 59
_tagName (*flare.html5.core.Dialog attribute*), 58
_tagName (*flare.html5.core.Div attribute*), 59
_tagName (*flare.html5.core.Dl attribute*), 65
_tagName (*flare.html5.core.Dt attribute*), 65
_tagName (*flare.html5.core.Em attribute*), 59
_tagName (*flare.html5.core.Embed attribute*), 59
_tagName (*flare.html5.core.Fieldset attribute*), 62
_tagName (*flare.html5.core.Figcaption attribute*), 59
_tagName (*flare.html5.core.Figure attribute*), 59
_tagName (*flare.html5.core.Footer attribute*), 59
_tagName (*flare.html5.core.Form attribute*), 62
_tagName (*flare.html5.core.H1 attribute*), 59
_tagName (*flare.html5.core.H2 attribute*), 59
_tagName (*flare.html5.core.H3 attribute*), 60
_tagName (*flare.html5.core.H4 attribute*), 60
_tagName (*flare.html5.core.H5 attribute*), 60
_tagName (*flare.html5.core.H6 attribute*), 60
_tagName (*flare.html5.core.Header attribute*), 59
_tagName (*flare.html5.core.Hr attribute*), 60
_tagName (*flare.html5.core.I attribute*), 60
_tagName (*flare.html5.core.Iframe attribute*), 64
_tagName (*flare.html5.core.Img attribute*), 64
_tagName (*flare.html5.core.Input attribute*), 62
_tagName (*flare.html5.core.Ins attribute*), 64
_tagName (*flare.html5.core.Kdb attribute*), 60
_tagName (*flare.html5.core.Keygen attribute*), 64
_tagName (*flare.html5.core.Label attribute*), 63
_tagName (*flare.html5.core.Legend attribute*), 60
_tagName (*flare.html5.core.Li attribute*), 65
_tagName (*flare.html5.core.Link attribute*), 65
_tagName (*flare.html5.core.Map attribute*), 65
_tagName (*flare.html5.core.Mark attribute*), 60
_tagName (*flare.html5.core.Menu attribute*), 65
_tagName (*flare.html5.core.Meta attribute*), 65
_tagName (*flare.html5.core.Meter attribute*), 66
_tagName (*flare.html5.core.Nav attribute*), 66
_tagName (*flare.html5.core.Noscript attribute*), 60
_tagName (*flare.html5.core.Object attribute*), 66
_tagName (*flare.html5.core.Ol attribute*), 65
_tagName (*flare.html5.core.Optgroup attribute*), 63
_tagName (*flare.html5.core.Option attribute*), 63
_tagName (*flare.html5.core.Output attribute*), 63
_tagName (*flare.html5.core.P attribute*), 60
_tagName (*flare.html5.core.Param attribute*), 66
_tagName (*flare.html5.core.Progress attribute*), 66
_tagName (*flare.html5.core.Q attribute*), 66
_tagName (*flare.html5.core.Rq attribute*), 60
_tagName (*flare.html5.core.Rt attribute*), 61
_tagName (*flare.html5.core.Ruby attribute*), 61
_tagName (*flare.html5.core.S attribute*), 61
_tagName (*flare.html5.core.Samp attribute*), 61
_tagName (*flare.html5.core.Script attribute*), 67
_tagName (*flare.html5.core.Section attribute*), 61
_tagName (*flare.html5.core.Select attribute*), 63
_tagName (*flare.html5.core.Small attribute*), 61
_tagName (*flare.html5.core.Source attribute*), 67
_tagName (*flare.html5.core.Span attribute*), 67
_tagName (*flare.html5.core.Strong attribute*), 61
_tagName (*flare.html5.core.Style attribute*), 67
_tagName (*flare.html5.core.Sub attribute*), 61
_tagName (*flare.html5.core.Summary attribute*), 67
_tagName (*flare.html5.core.Summery attribute*), 61
_tagName (*flare.html5.core.Sup attribute*), 61
_tagName (*flare.html5.core.Table attribute*), 68
_tagName (*flare.html5.core.Tbody attribute*), 68
_tagName (*flare.html5.core.Td attribute*), 68
_tagName (*flare.html5.core.Template attribute*), 69
_tagName (*flare.html5.core.Textarea attribute*), 63
_tagName (*flare.html5.core.Th attribute*), 68
_tagName (*flare.html5.core.Thead attribute*), 68
_tagName (*flare.html5.core.Time attribute*), 68
_tagName (*flare.html5.core.Tr attribute*), 67
_tagName (*flare.html5.core.Track attribute*), 69
_tagName (*flare.html5.core.U attribute*), 61
_tagName (*flare.html5.core.Ul attribute*), 65
_tagName (*flare.html5.core.Var attribute*), 61
_tagName (*flare.html5.core.Video attribute*), 69
_tagName (*flare.html5.core.Wbr attribute*), 62
_tagName (*flare.html5.core.Widget attribute*), 44
_tagName (*flare.html5.core._Del attribute*), 57
_tagName (*flare.html5.svg.Svg attribute*), 74
_tagName (*flare.html5.svg.SvgCircle attribute*), 74
_tagName (*flare.html5.svg.SvgEllipse attribute*), 74
_tagName (*flare.html5.svg.SvgG attribute*), 74
_tagName (*flare.html5.svg.SvgImage attribute*), 75
_tagName (*flare.html5.svg.SvgLine attribute*), 75
_tagName (*flare.html5.svg.SvgPath attribute*), 75
_tagName (*flare.html5.svg.SvgPolygon attribute*), 75
_tagName (*flare.html5.svg.SvgPolyline attribute*), 75
_tagName (*flare.html5.svg.SvgRect attribute*), 75
_tagName (*flare.html5.svg.SvgText attribute*), 75

<code>_updateElem() (flare.html5._WidgetClassWrapper method)</code>	84	<code>Area (class in flare.html5)</code> , 98
<code>_updateElem() (flare.html5.core._WidgetClassWrapper method)</code>	42	<code>Area (class in flare.html5.core)</code> , 56
A		<code>Article (class in flare.html5)</code> , 99
<code>A (class in flare.html5)</code>	97	<code>Article (class in flare.html5.core)</code> , 58
<code>A (class in flare.html5.core)</code>	56	<code>Aside (class in flare.html5)</code> , 99
<code>Abbr (class in flare.html5)</code>	99	<code>Aside (class in flare.html5.core)</code> , 58
<code>Abbr (class in flare.html5.core)</code>	58	<code>Audio (class in flare.html5)</code> , 98
<code>acceptSelection() (flare.viur.widgets.list.ListSelection method)</code>	138	<code>Audio (class in flare.html5.core)</code> , 57
<code>actionFailed() (flare.viur.forms.ViurForm method)</code>	145	<code>autoIdCounter (flare.html5.core.Label attribute)</code> , 63
<code>actionSuccess() (flare.viur.forms.ViurForm method)</code>	145	<code>autoIdCounter (flare.html5.Label attribute)</code> , 104
<code>activateSelection()</code>		B
<code>(flare.viur.widgets.list.ListSelection method)</code>	138	<code>B (class in flare.html5)</code> , 99
<code>activateSelection()</code>		<code>B (class in flare.html5.core)</code> , 58
<code>(flare.viur.widgets.tree.TreeBrowserWidget method)</code>	142	<code>BadgeIcon (class in flare.icons)</code> , 154
<code>activateSelection()</code>		<code>BaseBone (class in flare.viur.bones.base)</code> , 118
<code>(flare.viur.widgets.tree.TreeWidget method)</code>	141	<code>BaseEditWidget (class in flare.viur.bones.base)</code> , 116
<code> addButton() (flare.widgets.buttonbar.ButtonBar method)</code>	148	<code>BaseLanguageEditWidget (class in flare.viur.bones.base)</code> , 117
<code>addClass() (flare.html5.core.Widget method)</code>	49	<code>BaseMultiEditWidget (class in flare.viur.bones.base)</code> , 117
<code>addClass() (flare.html5.Widget method)</code>	91	<code>BaseMultiEditWidgetEntry (class in flare.viur.bones.base)</code> , 117
<code>addEntry() (flare.viur.bones.base.BaseMultiEditWidget method)</code>	117	<code>BaseMultiViewWidget (class in flare.viur.bones.base)</code> , 117
<code>addEntry() (flare.viur.bones.relational.FileMultiEditDirective method)</code>	129	<code>BaseViewWidget (class in flare.viur.bones.base)</code> , 116
<code>addEventListener() (flare.html5.core.Widget method)</code>	44	<code>Bdi (class in flare.html5)</code> , 99
<code>addEventListener() (flare.html5.Widget method)</code>	85	<code>Bdi (class in flare.html5.core)</code> , 58
<code>additionalDropAreas()</code>		<code>Bdo (class in flare.html5)</code> , 98
<code>(flare.viur.widgets.tree.TreeWidgetItem method)</code>	139	<code>Bdo (class in flare.html5.core)</code> , 57
<code>addRequest() (flare.network.requestGroup method)</code>	162	<code>bindApp() (in module flare)</code> , 170
<code>Address (class in flare.html5)</code>	99	<code>Blockquote (class in flare.html5)</code> , 98
<code>Address (class in flare.html5.core)</code>	58	<code>Blockquote (class in flare.html5.core)</code> , 57
<code>addTranslation() (in module flare.i18n)</code>	153	<code>blur() (flare.html5.core.Widget method)</code> , 51
<code>addView() (in module flare.views.helpers)</code>	113	<code>blur() (flare.html5.Widget method)</code> , 92
<code>Alert (class in flare.popup)</code>	164	<code>Body() (in module flare.html5)</code> , 98
<code>append() (flare.html5._WidgetClassWrapper method)</code>	84	<code>Body() (in module flare.html5.core)</code> , 57
<code>append() (flare.html5.core._WidgetClassWrapper method)</code>	43	<code>BodyCls (class in flare.html5)</code> , 98
<code>appendChild() (flare.html5.core.Widget method)</code>	49	<code>BodyCls (class in flare.html5.core)</code> , 57
<code>appendChild() (flare.html5.Widget method)</code>	90	<code>BoneSelector (in module flare.viur)</code> , 147
<code>applyFilter() (flare.widgets.buttonbar.ButtonBarSearch method)</code>	148	<code>boneWidget() (flare.viur.bones.base.BaseBone method)</code> , 118
		<code>BooleanBone (class in flare.viur.bones.boolean)</code> , 119
		<code>BooleanEditWidget (class in flare.viur.bones.boolean)</code> , 118
		<code>BooleanViewWidget (class in flare.viur.bones.boolean)</code> , 119
		<code>Br (class in flare.html5)</code> , 99
		<code>Br (class in flare.html5.core)</code> , 58
		<code>BreadcrumbNodeWidget (class in flare.viur.widgets.tree)</code> , 142
		<code>BrowserLeafWidget (class in flare.viur.widgets.tree)</code> , 142

BrowserNodeWidget (*class in flare.viur.widgets.tree*), 142
buildDescription() (*flare.viur.widgets.tree.TreeItemWidget method*), 140
buildForm() (*flare.viur.forms.ViurForm method*), 144
buildInternalForm() (*flare.viur.forms.ViurForm method*), 144
buildListSelection() (*flare.viur.widgets.list.ListSelection method*), 138
buildSelectDescr() (*flare.handler.requestHandler method*), 152
buildTranslations() (*in module flare.i18n*), 153
buildWidget() (*flare.viur.widgets.list.SkellistItem method*), 138
Button (*class in flare.button*), 148
Button (*class in flare.html5*), 103
Button (*class in flare.html5.core*), 62
ButtonBar (*class in flare.widgets.buttonbar*), 148
ButtonBarButton (*class in flare.widgets.buttonbar*), 148
ButtonBarSearch (*class in flare.widgets.buttonbar*), 148
buttonClicked() (*flare.widgets.buttonbar.ButtonBar method*), 148

C

Cache (*class in flare*), 169
Cache (*class in flare.cache*), 149
call() (*flare.network.requestGroup method*), 162
callNode() (*flare.safeeval.SafeEval method*), 166
canHandle() (*flare.viur.widgets.file.FileWidget static method*), 136
canHandle() (*flare.viur.widgets.list.ListWidget static method*), 138
canHandle() (*flare.viur.widgets.tree.TreeBrowserWidget static method*), 142
canHandle() (*flare.viur.widgets.tree.TreeWidget static method*), 142
Canvas (*class in flare.html5*), 98
Canvas (*class in flare.html5.core*), 57
Caption (*class in flare.html5*), 99
Caption (*class in flare.html5.core*), 58
changeListeners (*flare.network.NetworkService attribute*), 160
Check (*class in flare.ignite*), 155
checkFor() (*flare.viur.bones.boolean.BooleanBone static method*), 119
checkFor() (*flare.viur.bones.color.ColorBone static method*), 120
checkFor() (*flare.viur.bones.date.DateBone static method*), 121
checkFor() (*flare.viur.bones.email.EmailBone static method*), 122
checkFor() (*flare.viur.bones.numeric.NumericBone static method*), 123
checkFor() (*flare.viur.bones.password.PasswordBone static method*), 124
checkFor() (*flare.viur.bones.raw.RawBone static method*), 124
checkFor() (*flare.viur.bones.record.RecordBone static method*), 125
checkFor() (*flare.viur.bones.relational.FileBone static method*), 129
checkFor() (*flare.viur.bones.relational.FileDirectBone static method*), 129
checkFor() (*flare.viur.bones.relational.HierarchyBone static method*), 127
checkFor() (*flare.viur.bones.relational.RelationalBone static method*), 127
checkFor() (*flare.viur.bones.relational.TreeDirBone static method*), 128
checkFor() (*flare.viur.bones.relational.TreeItemBone static method*), 127
checkFor() (*flare.viur.bones.select.SelectMultipleBone static method*), 131
checkFor() (*flare.viur.bones.select.SelectSingleBone static method*), 131
checkFor() (*flare.viur.bones.spatial.SpatialBone static method*), 132
checkFor() (*flare.viur.bones.string.StringBone static method*), 133
checkFor() (*flare.viur.bones.text.TextBone static method*), 134
children() (*flare.html5.core.TextNode method*), 42
children() (*flare.html5.core.Widget method*), 51
children() (*flare.html5.TextNode method*), 83
children() (*flare.html5.Widget method*), 92
Cite (*class in flare.html5*), 99
Cite (*class in flare.html5.core*), 58
clear() (*flare.html5._WidgetClassWrapper method*), 84
clear() (*flare.html5.core._WidgetClassWrapper method*), 43
clear() (*flare.html5.core.Table method*), 68
clear() (*flare.html5.Table method*), 109
clear() (*flare.network.NetworkService method*), 162
clearSelection() (*flare.viur.widgets.tree.TreeWidget method*), 141
close() (*flare.popup.Popup method*), 164
Code (*class in flare.html5*), 100
Code (*class in flare.html5.core*), 58
collectBoneErrors() (*in module flare.viur.formerrors*), 144
ColorBone (*class in flare.viur.bones.color*), 120
ColorEditWidget (*class in flare.viur.bones.color*), 119
ColorViewWidget (*class in flare.viur.bones.color*), 120
ColWrapper (*class in flare.html5*), 109
ColWrapper (*class in flare.html5.core*), 68

C

Command (*class in flare.html5*), 98
 Command (*class in flare.html5.core*), 57
 compareNode() (*flare.safeeval.SafeEval method*), 166
 compile() (*flare.safeeval.SafeEval method*), 167
 conf (*in module flare*), 169
 conf (*in module flare.config*), 150
 conf (*in module flare.views*), 115
 conf (*in module flare.viur*), 147
 conf (*in module flare.viur.formconf*), 143
 Confirm (*class in flare.popup*), 165
 createFormErrorMessage()
 (*flare.viur.forms.ViurForm method*), 145
 createFormSuccessMessage()
 (*flare.viur.forms.ViurForm method*), 145
 createWidget() (*flare.viur.bones.base.BaseEditWidget method*), 116
 createWidget() (*flare.viur.bones.boolean.BooleanEditWidget method*), 118
 createWidget() (*flare.viur.bones.color.ColorEditWidget method*), 119
 createWidget() (*flare.viur.bones.date.DateEditWidget method*), 120
 createWidget() (*flare.viur.bones.numeric.NumericEditWidget method*), 122
 createWidget() (*flare.viur.bones.password.PasswordEditWidget method*), 123
 createWidget() (*flare.viur.bones.raw.RawEditWidget method*), 124
 createWidget() (*flare.viur.bones.record.RecordEditWidget method*), 125
 createWidget() (*flare.viur.bones.relational.FileEditDirective method*), 128
 createWidget() (*flare.viur.bones.relational.FileEditWidget method*), 129
 createWidget() (*flare.viur.bones.relational.RelationalEditWidget method*), 126
 createWidget() (*flare.viur.bones.select.SelectMultipleEditWidget method*), 130
 createWidget() (*flare.viur.bones.select.SelectSingleEditWidget method*), 130
 createWidget() (*flare.viur.bones.spatial.SpatialEditWidget method*), 131
 createWidget() (*flare.viur.bones.string.StringEditWidget method*), 132
 createWidget() (*flare.viur.bones.text.TextEditWidget method*), 133
 createWorker() (*in module flare.utils*), 168

D

Datalist (*class in flare.html5*), 100
 Datalist (*class in flare.html5.core*), 59
 DateBone (*class in flare.viur.bones.date*), 121
 DateEditWidget (*class in flare.viur.bones.date*), 120
 DateViewWidget (*class in flare.viur.bones.date*), 121
 Dd (*class in flare.html5*), 106
 Dd (*class in flare.html5.core*), 65
 debug() (*in module flare.debug*), 150
 debugElement() (*in module flare.debug*), 150
 decode() (*flare.network.NetworkService static method*), 161
 defaultFailureHandler
 (*flare.network.NetworkService attribute*), 160
 DeferredCall (*class in flare.network*), 160
 Details (*class in flare.html5*), 108
 Details (*class in flare.html5.core*), 67
 Dfn (*class in flare.html5*), 100
 Dfn (*class in flare.html5.core*), 59
 Dialog (*class in flare.html5*), 99
 Dialog (*class in flare.html5.core*), 57
 disable() (*flare.html5.core.Widget method*), 44
 disable() (*flare.html5.Widget method*), 85
 disable() (*flare.viur.widgets.htmleditor.HtmlEditor method*), 137
 disableDragMarkers()
 (*flare.viur.widgets.tree.TreeWidgetItem method*), 139
 DisplayDelegateSelector (*in module flare.viur*), 147
 displayStringHandler() (*in module flare.viur*), 147
 (*flare.viur.formatString*), 143
 Div (*class in flare.html5*), 100
 Div (*class in flare.html5.core*), 59
 Dl (*class in flare.html5*), 106
 Widgets (*class in flare.html5.core*), 65
 document (*in module flare.html5*), 82
 document (*in module flare.html5.core*), 41
 doesEventHitWidgetOrChildren() (*in module flare.html5.core*), 111
 doesEventHitWidgetOrChildren() (*in module flare.html5.core*), 111
 doesEventHitWidgetOrChildren() (*in module flare.html5.core*), 111
 doesEventHitWidgetOrParents() (*in module flare.html5.core*), 168
 doFetch() (*flare.network.NetworkService method*), 162
 domConvertEncodedText() (*in module flare.html5*), 83
 domConvertEncodedText() (*in module flare.html5.core*), 42
 domCreateAttribute() (*in module flare.html5*), 82
 domCreateAttribute() (*in module flare.html5.core*), 41
 domCreateElement() (*in module flare.html5*), 82
 domCreateElement() (*in module flare.html5.core*), 41

domCreateTextNode() (*in module flare.html5*), 83
domCreateTextNode() (*in module flare.html5.core*), 41
domElementFromPoint() (*in module flare.html5*), 83
domElementFromPoint() (*in module flare.html5.core*), 42
domGetElementById() (*in module flare.html5*), 83
domGetElementById() (*in module flare.html5.core*), 41
domGetElementsByTagName() (*in module flare.html5*), 83
domGetElementsByTagName() (*in module flare.html5.core*), 42
domParseString() (*in module flare.html5*), 83
domParseString() (*in module flare.html5.core*), 42
doSearch() (*flare.viur.widgets.file.Search method*), 135
download() (*flare.viur.widgets.file.FilePreviewImage method*), 135
drop() (*flare.popup.Alert method*), 164
drop() (*flare.popup.Confirm method*), 165
Dt (*class in flare.html5*), 106
Dt (*class in flare.html5.core*), 65

E

editWidget() (*flare.viur.bones.base.BaseBone method*), 118
editWidgetFactory() (*flare.viur.bones.base.BaseBone attribute*), 118
editWidgetFactory() (*flare.viur.bones.boolean.BooleanBone attribute*), 119
editWidgetFactory() (*flare.viur.bones.color.ColorBone attribute*), 120
editWidgetFactory() (*flare.viur.bones.date.DateBone attribute*), 121
editWidgetFactory() (*flare.viur.bones.email.EmailBone attribute*), 122
editWidgetFactory() (*flare.viur.bones.numeric.NumericBone attribute*), 123
editWidgetFactory() (*flare.viur.bones.password.PasswordBone attribute*), 123
editWidgetFactory() (*flare.viur.bones.raw.RawBone attribute*), 124
editWidgetFactory() (*flare.viur.bones.record.RecordBone attribute*), 125
editWidgetFactory() (*flare.viur.bones.relational.FileBone attribute*), 129
editWidgetFactory() (*flare.viur.bones.relational.FileDirectBone attribute*), 129
editWidgetFactory() (*flare.viur.bones.relational.RelationalBone attribute*), 127
editWidgetFactory() (*flare.viur.bones.select.SelectMultipleBone attribute*), 131
editWidgetFactory() (*flare.viur.bones.select.SelectSingleBone attribute*), 131
editWidgetFactory() (*flare.viur.bones.spatial.SpatialBone attribute*), 132

editWidgetFactory (*flare.viur.bones.string.StringBone attribute*), 133
editWidgetFactory (*flare.viur.bones.text.TextBone attribute*), 134
Em (*class in flare.html5*), 100
Em (*class in flare.html5.core*), 59
EmailBone (*class in flare.viur.bones.email*), 121
EmailEditWidget (*class in flare.viur.bones.email*), 121
EmailViewWidget (*class in flare.viur.bones.email*), 121
Embed (*class in flare.html5*), 100
Embed (*class in flare.html5.core*), 59
emit() (*flare.log.JSConsoleHandler method*), 158
Empty (*flare.viur.bones.base.ReadFromClientErrorSeverity attribute*), 116
enable() (*flare.html5.core.Widget method*), 44
enable() (*flare.html5.Widget method*), 85
enable() (*flare.viur.widgets.htmleditor.HtmlEditor method*), 137
entryFactory (*flare.viur.bones.base.BaseMultiEditWidget attribute*), 117
entryFactory (*flare.viur.bones.relational.FileMultiEditDirectWidget attribute*), 128
EntryIcon() (*flare.viur.widgets.file.FileLeafWidget method*), 136
EntryIcon() (*flare.viur.widgets.tree.TreeItemWidget method*), 140
EntryIcon() (*flare.viur.widgets.tree.TreeLeafWidget method*), 140
entryTemplate() (*flare.viur.bones.select.SelectMultipleEditWidget attribute*), 130
entryTemplate() (*flare.viur.bones.select.SelectSingleEditWidget attribute*), 130
error() (*webworker_scripts.weblog static method*), 170
errorWidget() (*flare.viur.bones.base.BaseBone method*), 118
evalStringHandler() (*in module flare.viur.formatString*), 143
EventDispatcher (*class in flare.event*), 151
execute() (*flare.safeeval.SafeEval method*), 166
extend() (*flare.html5._WidgetClassWrapper method*), 84
extend() (*flare.html5.core._WidgetClassWrapper method*), 43
extendSelection() (*flare.viur.widgets.tree.TreeWidget method*), 141

F

fastGrid() (*flare.ignite.Table method*), 156
fetch_json() (*in module flare.network*), 159
Fieldset (*class in flare.html5*), 103
Fieldset (*class in flare.html5.core*), 62
Figcaption (*class in flare.html5*), 100
Figcaption (*class in flare.html5.core*), 59
Figure (*class in flare.html5*), 100

fastGrid() (*flare.ignite.Table method*), 156
fetch_json() (*in module flare.network*), 159
Fieldset (*class in flare.html5*), 103
Fieldset (*class in flare.html5.core*), 62
Figcaption (*class in flare.html5*), 100
Figcaption (*class in flare.html5.core*), 59
Figure (*class in flare.html5*), 100

Figure (class in flare.html5.core), 59

FileBone (class in flare.viur.bones.relational), 129

FileDirectBone (class in flare.viur.bones.relational), 129

FileEditDirectWidget (class in flare.viur.bones.relational), 128

FileEditWidget (class in flare.viur.bones.relational), 129

FileImagePopup (class in flare.viur.widgets.file), 135

FileLeafWidget (class in flare.viur.widgets.file), 136

FileMultiEditDirectWidget (class in flare.viur.bones.relational), 128

FileNodeWidget (class in flare.viur.widgets.file), 136

FilePreviewImage (class in flare.viur.widgets.file), 135

FileViewWidget (class in flare.viur.bones.relational), 128

FileWidget (class in flare.viur.widgets.file), 136

filter() (flare.handler.ListHandler method), 152

finish() (flare.Cache method), 169

finish() (flare.cache.Cache method), 149

finish() (flare.cache.Plan method), 149

fire() (flare.event.EventDispatcher method), 151

flare

- module, 34**

flare.button

- module, 148**

flare.cache

- module, 149**

flare.config

- module, 150**

flare.debug

- module, 150**

flare.event

- module, 151**

flare.handler

- module, 151**

flare.html5

- module, 34**

flare.html5.core

- module, 34**

flare.html5.svg

- module, 71**

flare.i18n

- module, 152**

flare.icons

- module, 154**

flare.ignite

- module, 155**

flare.input

- module, 156**

flare.intersectionObserver

- module, 157**

flare.log

- module, 157**

flare.network

- module, 159**

flare.observable

- module, 162**

flare.popout

- module, 163**

flare.popup

- module, 164**

flare.priorityqueue

- module, 165**

flare.safeeval

- module, 166**

flare.translations

- module, 112**

flare.translations.de

- module, 112**

flare.translations.en

- module, 113**

flare.utils

- module, 167**

flare.views

- module, 113**

flare.views.helpers

- module, 113**

flare.views.view

- module, 114**

flare.viur

- module, 115**

flare.viur.bones

- module, 115**

flare.viur.bones.base

- module, 115**

flare.viur.bones.boolean

- module, 118**

flare.viur.bones.color

- module, 119**

flare.viur.bones.date

- module, 120**

flare.viur.bones.email

- module, 121**

flare.viur.bones.numeric

- module, 122**

flare.viur.bones.password

- module, 123**

flare.viur.bones.raw

- module, 124**

flare.viur.bones.record

- module, 125**

flare.viur.bones.relational

- module, 126**

flare.viur.bones.select

- module, 130**

flare.viur.bones.spatial

- module, 131**

flare.viur.bones.string
 module, 132
flare.viur.bones.text
 module, 133
flare.viur.formatString
 module, 143
flare.viur.formconf
 module, 143
flare.viur.formerrors
 module, 144
flare.viur.forms
 module, 144
flare.viur.formtooltip
 module, 146
flare.viur.widgets
 module, 134
flare.viur.widgets.file
 module, 134
flare.viur.widgets.htmleditor
 module, 136
flare.viur.widgets.list
 module, 137
flare.viur.widgets.tree
 module, 139
flare.widgets
 module, 147
flare.widgets.buttonbar
 module, 147
FlareLogRecord (*class in flare.log*), 158
focus() (*flare.html5.core.Widget method*), 51
focus() (*flare.html5.Widget method*), 92
focus() (*flare.viur.widgets.file.Search method*), 135
Footer (*class in flare.html5*), 100
Footer (*class in flare.html5.core*), 59
Form (*class in flare.html5*), 103
Form (*class in flare.html5.core*), 62
formatString() (*in module flare.viur*), 147
formatString() (*in module flare.viur.formatString*),
 143
formatStringHandler() (*in module
 flare.viur.formatString*), 143
fromHTML() (*flare.html5.core.Widget method*), 52
fromHTML() (*flare.html5.Widget method*), 93
fromHTML() (*in module flare.html5*), 112
fromHTML() (*in module flare.html5.core*), 71

G

generateView() (*in module flare.views.helpers*), 113
genReqStr() (*flare.handler.SyncHandler method*), 152
genReqStr() (*flare.network.NetworkService static
 method*), 161
getActions() (*flare.viur.widgets.tree.TreeWidget
 method*), 141

getChildKey() (*flare.viur.widgets.file.FileWidget
 method*), 136
getChildKey() (*flare.viur.widgets.tree.TreeWidget
 method*), 142
getCurrentAmount() (*flare.handler.ListHandler
 method*), 152
getDescrFromValue() (*flare.handler.requestHandler
 method*), 152
getIcon() (*flare.icons.SvgIcon method*), 154
getImagePreview() (*in module flare.viur.widgets.file*),
 135
getKey() (*in module flare.html5*), 111
getKey() (*in module flare.html5.core*), 70
getLanguage() (*in module flare.i18n*), 153
getLogger() (*in module flare.log*), 158
getMessage() (*flare.log.FlareLogRecord method*), 158
getRowCount() (*flare.html5.core.Table method*), 68
getRowCount() (*flare.html5.Table method*), 110
getState() (*flare.observable.StateHandler method*),
 163
getState() (*flare.views.StateHandler method*), 115
getUrlHashAsObject() (*in module flare.network*), 162
getUrlHashAsString() (*in module flare.network*), 162

H

H1 (*class in flare.html5*), 100
H1 (*class in flare.html5.core*), 59
H2 (*class in flare.html5*), 101
H2 (*class in flare.html5.core*), 59
H3 (*class in flare.html5*), 101
H3 (*class in flare.html5.core*), 59
H4 (*class in flare.html5*), 101
H4 (*class in flare.html5.core*), 60
H5 (*class in flare.html5*), 101
H5 (*class in flare.html5.core*), 60
H6 (*class in flare.html5*), 101
H6 (*class in flare.html5.core*), 60
handleErrors() (*flare.viur.forms.ViurForm method*),
 145
hasClass() (*flare.html5.core.Widget method*), 49
hasClass() (*flare.html5.Widget method*), 90
Head() (*in module flare.html5*), 105
Head() (*in module flare.html5.core*), 64
HeadCls (*class in flare.html5*), 105
HeadCls (*class in flare.html5.core*), 64
Header (*class in flare.html5*), 100
Header (*class in flare.html5.core*), 59
hide() (*flare.html5.core.Widget method*), 48
hide() (*flare.html5.Widget method*), 89
HierarchyBone (*class in flare.viur.bones.relational*),
 127
host (*flare.network.NetworkService attribute*), 160
Hr (*class in flare.html5*), 101
Hr (*class in flare.html5.core*), 60

`HtmlAst` (*class in flare.html5*), 112
`HtmlAst` (*class in flare.html5.core*), 70
`HtmlEditor` (*class in flare.viur.widgets.htmleditor*), 137
`htmlExpressionEvaluator` (*in module flare.html5*), 82
`htmlExpressionEvaluator` (*in module flare.html5.core*), 41
`HTTPRequest` (*class in flare.network*), 160

|

`I` (*class in flare.html5*), 101
`I` (*class in flare.html5.core*), 60
`Icon` (*class in flare.icons*), 154
`Iframe` (*class in flare.html5*), 105
`Iframe` (*class in flare.html5.core*), 64
`Img` (*class in flare.html5*), 105
`Img` (*class in flare.html5.core*), 64
`info()` (*webworker_scripts.weblog static method*), 170
`initSources` (*flare.viur.widgets.htmleditor.HtmlEditor attribute*), 137
`initWidget()` (*flare.views.view.ViewWidget method*), 114
`Input` (*class in flare.html5*), 103
`Input` (*class in flare.html5.core*), 62
`Input` (*class in flare.ignite*), 155
`Input` (*class in flare.input*), 156
`Ins` (*class in flare.html5*), 105
`Ins` (*class in flare.html5.core*), 64
`insert()` (*flare.html5._WidgetClassWrapper method*), 84
`insert()` (*flare.html5.core._WidgetClassWrapper method*), 43
`insert()` (*flare.priorityqueue.PriorityQueue method*), 166
`insert()` (*flare.viur.PriorityQueue method*), 147
`insertAfter()` (*flare.html5.core.Widget method*), 49
`insertAfter()` (*flare.html5.Widget method*), 90
`insertBefore()` (*flare.html5.core.Widget method*), 49
`insertBefore()` (*flare.html5.Widget method*), 90
`IntersectionObserver` (*class in flare.intersectionObserver*), 157
`Invalid` (*flare.viur.bones.base.ReadFromClientErrorSeverity attribute*), 116
`invalidate()` (*flare.Cache method*), 169
`invalidate()` (*flare.cache.Cache method*), 149
`InvalidatesOther` (*flare.viur.bones.base.ReadFromClientErrorSeverity attribute*), 116
`InvalidBoneValueException`, 147
`isArrowDown()` (*in module flare.html5*), 111
`isArrowDown()` (*in module flare.html5.core*), 70
`isArrowLeft()` (*in module flare.html5*), 111
`isArrowLeft()` (*in module flare.html5.core*), 70
`isArrowRight()` (*in module flare.html5*), 111
`isArrowRight()` (*in module flare.html5.core*), 70
`isArrowUp()` (*in module flare.html5*), 111

`isArrowUp()` (*in module flare.html5.core*), 70
`isChildOf()` (*flare.html5.core.Widget method*), 49
`isChildOf()` (*flare.html5.Widget method*), 90
`isControl()` (*in module flare.html5*), 111
`isControl()` (*in module flare.html5.core*), 70
`isEscape()` (*in module flare.html5*), 111
`isEscape()` (*in module flare.html5.core*), 70
`isHidden()` (*flare.html5.core.Widget method*), 48
`isHidden()` (*flare.html5.Widget method*), 89
`isMeta()` (*in module flare.html5*), 111
`isMeta()` (*in module flare.html5.core*), 70
`isOkay()` (*flare.network.NetworkService static method*), 161
`isParentOf()` (*flare.html5.core.Widget method*), 49
`isParentOf()` (*flare.html5.Widget method*), 90
`isReturn()` (*in module flare.html5*), 111
`isReturn()` (*in module flare.html5.core*), 70
`isShift()` (*in module flare.html5*), 111
`isShift()` (*in module flare.html5.core*), 70
`isSuitableFor()` (*flare.viur.widgets.htmleditor.TextInsertImageAction static method*), 137
`isVisible()` (*flare.html5.core.Widget method*), 48
`isVisible()` (*flare.html5.Widget method*), 90
`Item` (*class in flare.ignite*), 156
`itemForKey()` (*flare.viur.widgets.tree.TreeWidget method*), 141

J

`JSConsoleHandler` (*class in flare.log*), 158
`jsObserver` (*flare.intersectionObserver.IntersectionObserver attribute*), 157

K

`Kdb` (*class in flare.html5*), 101
`Kdb` (*class in flare.html5.core*), 60
`Keygen` (*class in flare.html5*), 105
`Keygen` (*class in flare.html5.core*), 64
`kickoff()` (*flare.network.NetworkService method*), 161

L

`Label` (*class in flare.html5*), 104
`Label` (*class in flare.html5.core*), 63
`Label` (*class in flare.ignite*), 155
`labelWidget()` (*flare.viur.bones.base.BaseBone method*), 118
`languageEditWidgetFactory` (*flare.viur.bones.base.BaseBone attribute*), 118
`languageViewWidgetFactory` (*flare.viur.bones.base.BaseBone attribute*), 118
`leafWidget` (*flare.viur.widgets.file.FileWidget attribute*), 136

leafWidget (*flare.viur.widgets.tree.TreeBrowserWidget attribute*), 142
leafWidget (*flare.viur.widgets.tree.TreeWidget attribute*), 140
Legend (*class in flare.html5*), 101
Legend (*class in flare.html5.core*), 60
Li (*class in flare.html5*), 106
Li (*class in flare.html5.core*), 65
Link (*class in flare.html5*), 106
Link (*class in flare.html5.core*), 65
ListHandler (*class in flare.handler*), 152
listNode() (*flare.safeeval.SafeEval method*), 166
ListSelection (*class in flare.viur.widgets.list*), 138
ListWidget (*class in flare.viur.widgets.list*), 138
lngDe (*in module flare.translations*), 113
lngDe (*in module flare.translations.de*), 112
lngEn (*in module flare.translations*), 113
lngEn (*in module flare.translations.en*), 113
loadNode() (*flare.viur.widgets.tree.TreeWidget method*), 141
loadProjectConf() (*in module flare*), 170
loadView() (*flare.views.view.View method*), 114
log (*in module webworker_scripts*), 170
loggers (*in module flare.log*), 158
lookup() (*flare.Cache method*), 169
lookup() (*flare.cache.Cache method*), 149

M

Map (*class in flare.html5*), 106
Map (*class in flare.html5.core*), 65
Mark (*class in flare.html5*), 101
Mark (*class in flare.html5.core*), 60
markDraggedElement()
 (*flare.viur.widgets.tree.TreeWidgetItem method*), 139
Menu (*class in flare.html5*), 106
Menu (*class in flare.html5.core*), 65
Meta (*class in flare.html5*), 107
Meta (*class in flare.html5.core*), 65
Meter (*class in flare.html5*), 107
Meter (*class in flare.html5.core*), 66
module
 flare, 34
 flare.button, 148
 flare.cache, 149
 flare.config, 150
 flare.debug, 150
 flare.event, 151
 flare.handler, 151
 flare.html5, 34
 flare.html5.core, 34
 flare.html5.svg, 71
 flare.i18n, 152
 flare.icons, 154
 flare.ignite, 155
 flare.input, 156
 flare.intersectionObserver, 157
 flare.log, 157
 flare.network, 159
 flare.observable, 162
 flare.popout, 163
 flare.popup, 164
 flare.priorityqueue, 165
 flare.safeeval, 166
 flare.translations, 112
 flare.translations.de, 112
 flare.translations.en, 113
 flare.utils, 167
 flare.views, 113
 flare.views.helpers, 113
 flare.views.view, 114
 flare.viur, 115
 flare.viur.bones, 115
 flare.viur.bones.base, 115
 flare.viur.bones.boolean, 118
 flare.viur.bones.color, 119
 flare.viur.bones.date, 120
 flare.viur.bones.email, 121
 flare.viur.bones.numeric, 122
 flare.viur.bones.password, 123
 flare.viur.bones.raw, 124
 flare.viur.bones.record, 125
 flare.viur.bones.relational, 126
 flare.viur.bones.select, 130
 flare.viur.bones.spatial, 131
 flare.viur.bones.string, 132
 flare.viur.bones.text, 133
 flare.viur.formatString, 143
 flare.viur.formconf, 143
 flare.viur.formerrors, 144
 flare.viur.forms, 144
 flare.viur.tooltip, 146
 flare.viur.widgets, 134
 flare.viur.widgets.file, 134
 flare.viur.widgets.htmleditor, 136
 flare.viur.widgets.list, 137
 flare.viur.widgets.tree, 139
 flare.widgets, 147
 flare.widgets.buttonbar, 147
 webworker_scripts, 170
ModuleWidgetSelector (*in module flare.viur*), 147
moveRequest() (*flare.viur.widgets.tree.TreeWidgetItem method*), 139
moveRequest() (*flare.viur.widgets.tree.TreeLeafWidget method*), 140
multiEditWidgetFactory
 (*flare.viur.bones.base.BaseBone attribute*), 118

`multiEditWidgetFactory`
`(flare.viur.bones.relational.FileDirectBone attribute), 129`

`multiEditWidgetFactory`
`(flare.viur.bones.relational.RelationalBone attribute), 127`

`multiEditWidgetFactory`
`(flare.viur.bones.select.SelectMultipleBone attribute), 131`

`multiViewWidgetFactory`
`(flare.viur.bones.base.BaseBone attribute), 118`

N

`Nav (class in flare.html5), 107`

`Nav (class in flare.html5.core), 66`

`NetworkService (class in flare.network), 160`

`NiceError() (in module flare.network), 160`

`NiceErrorAndThen() (in module flare.network), 160`

`nodeWidget (flare.viur.widgets.file.FileWidget attribute), 136`

`nodeWidget (flare.viur.widgets.tree.TreeBrowserWidget attribute), 142`

`nodeWidget (flare.viur.widgets.tree.TreeWidget attribute), 140`

`Noscript (class in flare.html5), 101`

`Noscript (class in flare.html5.core), 60`

`notifyChange() (flare.network.NetworkService static method), 160`

`NotSet (flare.viur.bones.base.ReadFromClientErrorSeverity attribute), 116`

`NumericBone (class in flare.viur.bones.numeric), 123`

`NumericEditWidget (class in flare.viur.bones.numeric), 122`

`NumericViewWidget (class in flare.viur.bones.numeric), 123`

O

`Object (class in flare.html5), 107`

`Object (class in flare.html5.core), 66`

`ObservableValue (class in flare.observable), 162`

`observableWidgets (flare.intersectionObserver.IntersectionObserver attribute), 157`

`observe() (flare.intersectionObserver.IntersectionObserver method), 157`

`Ol (class in flare.html5), 106`

`Ol (class in flare.html5.core), 65`

`onAcceptSelectionChanged()`
`(flare.viur.widgets.list.ListSelection method), 138`

`onAcceptSelectionChanged()`
`(flare.viur.widgets.list.ListWidget method), 138`

`onActiveButtonChanged()`
`(flare.viur.widgets.list.ListSelection method), 138`

`onActiveButtonChanged()`
`(flare.widgets.buttonbar.ButtonBar method), 148`

`onActiveButtonChanged()`
`(flare.widgets.buttonbar.ButtonBarButton method), 148`

`onActiveButtonChanged()`
`(flare.widgets.buttonbar.ButtonBarSearch method), 148`

`onActiveSelectionChanged()`
`(flare.viur.widgets.list.ListSelection method), 138`

`onActiveSelectionChanged()`
`(flare.viur.widgets.list.SkellistItem method), 138`

`onActiveViewChanged()`
`(flare.views.view.View method), 114`

`onAddBtnClick() (flare.viur.bones.base.BaseMultiEditWidget method), 117`

`onAddBtnClick() (flare.viur.bones.relational.RelationalMultiEditWidget method), 127`

`onApplyfilterChanged()`
`(flare.viur.widgets.list.ListSelection method), 138`

`onApplyfilterChanged()`
`(flare.widgets.buttonbar.ButtonBarSearch method), 148`

`onAttach() (flare.html5.core.TextNode method), 42`

`onAttach() (flare.html5.core.Widget method), 49`

`onAttach() (flare.html5.TextNode method), 83`

`onAttach() (flare.html5.Widget method), 90`

`onAttach() (flare.popup.Popup method), 164`

`onAttach() (flare.viur.forms.ViurFormBone method), 145`

`onAttach() (flare.viur.forms.ViurFormSubmit method), 145`

`onAttach() (flare.viur.widgets.htmleditor.HtmlEditor method), 137`

`onAttach() (flare.viur.widgets.tree.TreeWidget method), 141`

`onBind() (flare.button.Button method), 148`

`onBind() (flare.html5.core.Widget method), 49`

`onBind() (flare.html5.Widget method), 90`

`onBlur() (flare.html5.core.Widget method), 50`

`onBlur() (flare.html5.Widget method), 91`

`onBoneChange() (flare.viur.forms.ViurForm method), 144`

`onCancel() (flare.popup.Prompt method), 164`

`onCancel() (flare.popup.radioButtonDialog method), 165`

`onCancel() (flare.popup.TextareaDialog method), 165`

onChange() (*flare.html5.core.Widget* method), 50
onChange() (*flare.html5.Widget* method), 91
onChange() (*flare.input.Input* method), 156
onChange() (*flare.viur.bones.numeric.NumericEditWidget* method), 122
onChange() (*flare.viur.bones.relational.FileEditDirectWidget* method), 128
onChange() (*flare.viur.bones.relational.FileMultiEditDirectWidget* method), 128
onChange() (*flare.viur.bones.relational.RelationalEditWidget* method), 127
onChange() (*flare.viur.bones.string.StringEditWidget* method), 132
onChange() (*flare.viur.forms.ViurForm* method), 144
onChange() (*flare.viur.forms.ViurFormBone* method), 145
onClick() (*flare.button.Button* method), 148
onClick() (*flare.html5.core.Widget* method), 51
onClick() (*flare.html5.Widget* method), 92
onClick() (*flare.viur.formtooltip.ToolTip* method), 146
onClick() (*flare.viur.widgets.file.FileImagePopup* method), 135
onClick() (*flare.viur.widgets.file.FilePreviewImage* method), 135
onClick() (*flare.viur.widgets.htmleditor.TextInsertImageAction* method), 137
onClick() (*flare.viur.widgets.tree.TreeWidgetItem* method), 140
onClose() (*flare.popup.Popup* method), 164
onCompletion() (*flare.handler.SyncHandler* method), 152
onCompletion() (*flare.network.NetworkService* method), 162
onContextMenu() (*flare.html5.core.Widget* method), 50
onContextMenu() (*flare.html5.Widget* method), 91
onDataChanged() (*flare.Cache* method), 169
onDataChanged() (*flare.cache.Cache* method), 149
onDataChanged() (*flare.viur.widgets.tree.TreeWidget* method), 141
onDbClick() (*flare.html5.core.Widget* method), 51
onDbClick() (*flare.html5.Widget* method), 92
onDbClick() (*flare.viur.widgets.tree.TreeWidgetItem* method), 140
onDeleteBtnClick() (*flare.viur.bones.relational.FileEditDirectWidget* method), 128
onDeleteBtnClick() (*flare.viur.bones.relational.RelationalEditWidget* method), 127
onDetach() (*flare.html5.core.TextNode* method), 42
onDetach() (*flare.html5.core.Widget* method), 49
onDetach() (*flare.html5.TextNode* method), 83
onDetach() (*flare.html5.Widget* method), 90
onDetach() (*flare.input.Input* method), 156
onDetach() (*flare.popup.Popup* method), 164
onDetach() (*flare.views.view.ViewWidget* method), 114
onDetach() (*flare.viur.widgets.htmleditor.HtmlEditor* method), 137
onDetach() (*flare.viur.widgets.tree.TreeWidget* method), 141
onDocumentKeyDown() (*flare.popup.Confirm* method), 165
onDocumentKeyDown() (*flare.popup.Popup* method), 164
onDocumentKeyDown() (*flare.popup.Prompt* method), 164
onDocumentKeyDown() (*flare.popup.TextareaDialog* method), 165
onDownloadBtnClick() (*flare.viur.widgets.file.FileImagePopup* method), 135
onDrag() (*flare.html5.core.Widget* method), 51
onDrag() (*flare.html5.Widget* method), 92
onDragEnd() (*flare.html5.core.Widget* method), 51
onDragEnd() (*flare.html5.Widget* method), 92
onDragEnd() (*flare.viur.bones.base.BaseMultiEditWidgetEntry* method), 117
onDragEnd() (*flare.viur.widgets.tree.TreeWidgetItem* method), 139
onDragEnter() (*flare.html5.core.Widget* method), 51
onDragEnter() (*flare.html5.Widget* method), 92
onDragEnter() (*flare.viur.bones.relational.FileEditDirectWidget* method), 128
onDragEnter() (*flare.viur.bones.relational.FileMultiEditDirectWidget* method), 129
onDragLeave() (*flare.html5.core.Widget* method), 51
onDragLeave() (*flare.html5.Widget* method), 92
onDragLeave() (*flare.viur.bones.base.BaseMultiEditWidgetEntry* method), 117
onDragLeave() (*flare.viur.bones.relational.FileEditDirectWidget* method), 128
onDragLeave() (*flare.viur.bones.relational.FileMultiEditDirectWidget* method), 129
onDragLeave() (*flare.viur.widgets.tree.TreeWidgetItem* method), 139
onDragOver() (*flare.html5.core.Widget* method), 51
onDragOver() (*flare.html5.Widget* method), 92
onDragOver() (*flare.viur.bones.base.BaseMultiEditWidgetEntry* method), 117
onDragOver() (*flare.viur.bones.relational.FileEditDirectWidget* method), 128
onDragOver() (*flare.viur.bones.relational.FileMultiEditDirectWidget* method), 129
onDragOver() (*flare.viur.widgets.tree.TreeWidgetItem* method), 139
onDragOver() (*flare.viur.widgets.tree.TreeLeafWidget* method), 140
onDragOver() (*flare.viur.widgets.tree.TreeWidget* method), 142
onDragStart() (*flare.html5.core.Widget* method), 51

onDragStart() (*flare.html5.Widget method*), 92
 onDragStart() (*flare.viur.bones.base.BaseMultiEditWidget method*), 117
 onDragStart() (*flare.viur.widgets.tree.TreeWidgetItem method*), 139
 onDrop() (*flare.html5.core.Widget method*), 51
 onDrop() (*flare.html5.Widget method*), 92
 onDrop() (*flare.viur.bones.base.BaseMultiEditWidgetEntry method*), 117
 onDrop() (*flare.viur.bones.relational.FileEditDirectWidget method*), 128
 onDrop() (*flare.viur.bones.relational.FileMultiEditDirectWidget method*), 129
 onDrop() (*flare.viur.widgets.tree.TreeWidgetItem method*), 139
 onDrop() (*flare.viur.widgets.tree.TreeWidget method*), 141
 onEditorChange() (*flare.viur.widgets.htmleditor.HtmlEditor method*), 137
 onError() (*flare.handler.SyncHandler method*), 152
 onError() (*flare.icons.Icon method*), 154
 onError() (*flare.network.NetworkService method*), 162
 onFailed() (*flare.viur.widgets.file.Uploader method*), 135
 onFinished() (*flare.network.NetworkService method*), 162
 onFinished() (*flare.network.requestGroup method*), 162
 onFocus() (*flare.html5.core.Widget method*), 50
 onFocus() (*flare.html5.Widget method*), 91
 onFocus() (*flare.input.Input method*), 156
 onFocusIn() (*flare.html5.core.Widget method*), 50
 onFocusIn() (*flare.html5.Widget method*), 91
 onFocusOut() (*flare.html5.core.Widget method*), 50
 onFocusOut() (*flare.html5.Widget method*), 91
 onFormChange() (*flare.html5.core.Widget method*), 50
 onFormChange() (*flare.html5.Widget method*), 91
 onFormInput() (*flare.html5.core.Widget method*), 50
 onFormInput() (*flare.html5.Widget method*), 91
 onFormSuccess() (*flare.viur.forms.ViurForm method*), 145
 onInput() (*flare.html5.core.Widget method*), 50
 onInput() (*flare.html5.Widget method*), 91
 onInvalid() (*flare.html5.core.Widget method*), 50
 onInvalid() (*flare.html5.Widget method*), 91
 onKeyDown() (*flare.html5.core.Widget method*), 50
 onKeyDown() (*flare.html5.Widget method*), 92
 onKeyDown() (*flare.popup.Alert method*), 165
 onKeyDown() (*flare.popup.Confirm method*), 165
 onKeyDown() (*flare.popup.Prompt method*), 164
 onKeyDown() (*flare.viur.widgets.file.Search method*), 135
 onKeyDown() (*flare.viur.widgets.tree.TreeWidget method*), 141
 onKeyPress() (*flare.html5.core.Widget method*), 50
 onKeyPress() (*flare.html5.Widget method*), 92
 onKeyUp() (*flare.html5.core.Widget method*), 51
 onKeyUp() (*flare.html5.Widget method*), 92
 onKeyUp() (*flare.popup.Prompt method*), 164
 onKeyUp() (*flare.viur.bones.string.StringEditWidget method*), 132
 onKeyUp() (*flare.viur.widgets.tree.TreeWidget method*), 141
 onLangBtnClick() (*flare.viur.bones.base.BaseLanguageEditWidget method*), 117
 onListStatusChanged()
 onListStatusChanged() (*flare.handler.requestHandler method*), 152
 onLoad() (*flare.viur.widgets.file.Uploader method*), 135
 onMouseDown() (*flare.html5.core.Widget method*), 51
 onMouseDown() (*flare.html5.Widget method*), 92
 onMouseMove() (*flare.html5.core.Widget method*), 51
 onMouseMove() (*flare.html5.Widget method*), 92
 onMouseOut() (*flare.html5.core.Widget method*), 51
 onMouseOut() (*flare.html5.Widget method*), 92
 onMouseOver() (*flare.html5.core.Widget method*), 51
 onMouseOver() (*flare.html5.Widget method*), 92
 onMouseUp() (*flare.html5.core.Widget method*), 51
 onMouseUp() (*flare.html5.Widget method*), 92
 onMouseWheel() (*flare.html5.core.Widget method*), 51
 onMouseWheel() (*flare.html5.Widget method*), 92
 onNoClicked() (*flare.popup.Confirm method*), 165
 onOkay() (*flare.popup.Prompt method*), 164
 onOkay() (*flare.popup.radioButtonDialog method*), 165
 onOkay() (*flare.popup.TextareaDialog method*), 165
 onOkBtnClick() (*flare.popup.Alert method*), 165
 onPathRequestSucceeded()
 onPathRequestSucceeded() (*flare.viur.widgets.tree.TreeBrowserWidget method*), 142
 onProgress() (*flare.viur.widgets.file.Uploader method*), 135
 onReadyStateChange() (*flare.network.HTTPRequest method*), 160
 onRemoveBtnClick() (*flare.viur.bones.base.BaseMultiEditWidget method*), 117
 onRemoveBtnClick() (*flare.viur.bones.base.BaseMultiEditWidgetEntry method*), 117
 onRequestList() (*flare.viur.widgets.list.ListSelection method*), 138
 onReset() (*flare.html5.core.Widget method*), 50
 onReset() (*flare.html5.Widget method*), 91
 onScroll() (*flare.html5.core.Widget method*), 51
 onScroll() (*flare.html5.Widget method*), 92
 onSelect() (*flare.html5.core.Widget method*), 50
 onSelect() (*flare.html5.Widget method*), 91
 onSelectBtnClick() (*flare.viur.bones.relational.RelationalEditWidget method*), 127
 onSelectionActivated()
 onSelectionActivated() (*flare.viur.widgets.htmleditor.TextInsertImageAction method*), 137

```

onSetDefaultRootNode()
    (flare.viur.widgets.tree.TreeWidget method), 141
onStartSearch()      (flare.viur.widgets.file.FileWidget method), 136
onSubmit()          (flare.html5.core.Widget method), 50
onSubmit()          (flare.html5.Widget method), 92
onSubmitStatusChanged() (flare.viur.forms.ViurForm method), 145
onSubmitStatusChanged()
    (flare.viur.forms.ViurFormSubmit method), 146
onSuccess()         (flare.viur.widgets.file.Uploader method), 135
onTimeout()         (flare.network.NetworkService method), 162
onTouchCancel()     (flare.html5.core.Widget method), 51
onTouchCancel()     (flare.html5.Widget method), 92
onTouchEnd()        (flare.html5.core.Widget method), 51
onTouchEnd()        (flare.html5.Widget method), 92
onTouchMove()       (flare.html5.core.Widget method), 51
onTouchMove()       (flare.html5.Widget method), 92
onTouchStart()      (flare.html5.core.Widget method), 51
onTouchStart()      (flare.html5.Widget method), 92
onUnsetBtnClick()   (flare.viur.bones.color.ColorEditWidget method), 120
onUploadAdded()     (flare.viur.widgets.file.Uploader method), 135
onUploadFailed()    (flare.viur.bones.relational.FileEditDir method), 128
onUploadFailed()    (flare.viur.bones.relational.FileMultiEditDir method), 129
onUploadSuccess()   (flare.viur.bones.relational.FileEditDir method), 128
onUploadSuccess()   (flare.viur.bones.relational.FileMultiEditDir method), 129
onUploadUrlAvailable()
    (flare.viur.widgets.file.Uploader method), 135
onViewFocusedChanged()
    (flare.views.view.ViewWidget method), 114
onYesClicked()      (flare.popup.Confirm method), 165
Optgroup (class in flare.html5), 104
Optgroup (class in flare.html5.core), 63
Option (class in flare.html5), 104
Option (class in flare.html5.core), 63
Output (class in flare.html5), 104
Output (class in flare.html5.core), 63

P
P (class in flare.html5), 101
P (class in flare.html5.core), 60
Param (class in flare.html5), 107
Param (class in flare.html5.core), 66

Q
parent()          (flare.html5.core.Widget method), 51
parent()          (flare.html5.Widget method), 92
parseFloat()       (in module flare.html5), 111
parseFloat()       (in module flare.html5.core), 70
parseFloat()       (in module flare.utils), 168
parseHTML()        (in module flare.html5), 112
parseHTML()        (in module flare.html5.core), 71
parseInt()         (in module flare.html5), 111
parseInt()         (in module flare.html5.core), 70
parseInt()         (in module flare.utils), 168
PasswordBone (class in flare.viur.bones.password), 123
PasswordEditWidget (class in flare.viur.bones.password), 123
Plan (class in flare.cache), 149
pop()              (flare.html5._WidgetClassWrapper method), 84
pop()              (flare.html5.core._WidgetClassWrapper method), 43
Popout (class in flare.popout), 163
PopoutItem (class in flare.popout), 163
Popup (class in flare.popup), 164
prefix (flare.network.NetworkService attribute), 160
prepareCol()       (flare.html5.core.Table method), 68
prepareCol()       (flare.html5.Table method), 109
prepareCol()       (flare.ignite.Table method), 156
prepareGrid()      (flare.html5.core.Table method), 68
prepareGrid()      (flare.html5.Table method), 109
prepareLogger()    (in module flare.log), 158
prepareRow()       (flare.html5.core.Table method), 68
prepareRow()       (flare.html5.Table method), 109
prepareRow()       (flare.ignite.Table method), 156
prependChild()     (flare.html5.core.Widget method), 49
prependChild()     (flare.html5.Widget method), 90
PriorityQueue (class in flare.priorityqueue), 165
PriorityQueue (class in flare.viur), 147
ProcessSkewQueue () (in module flare.network), 160
Progress (class in flare.html5), 107
Progress (class in flare.html5.core), 66
Progress (class in flare.ignite), 156
Prompt (class in flare.popup), 164

R
Radio (class in flare.ignite), 156
radioButtonDialog (class in flare.popup), 165
RawBone (class in flare.viur.bones.raw), 124
RawEditTextWidget (class in flare.viur.bones.raw), 124
RawViewWidget (class in flare.viur.bones.raw), 124
ReadFromClientErrorSeverity (class in flare.viur.bones.base), 116
rebuildPath()      (flare.viur.widgets.tree.TreeBrowserWidget method), 142

```

receivedStructure()
 (flare.viur.widgets.tree.TreeWidget method), 140
RecordBone (class in flare.viur.bones.record), 125
RecordEditWidget (class in flare.viur.bones.record), 125
RecordViewWidget (class in flare.viur.bones.record), 125
reevaluate() (flare.viur.widgets.file.Search method), 135
register() (flare.event.EventDispatcher method), 151
register() (flare.observable.StateHandler method), 163
register() (flare.views.StateHandler method), 115
registerChangeListener()
 (flare.network.NetworkService static method), 161
registerField() (flare.viur.forms.ViurForm method), 144
registerTag() (in module flare.html5), 111
registerTag() (in module flare.html5.core), 70
registerViews() (in module flare.views.helpers), 114
RelationalBone (class in flare.viur.bones.relational), 127
RelationalEditWidget (class in flare.viur.bones.relational), 126
RelationalMultiEditWidget (class in flare.viur.bones.relational), 127
RelationalViewWidget (class in flare.viur.bones.relational), 127
reload() (flare.handler.ListHandler method), 152
reloadData() (flare.viur.widgets.tree.TreeBrowserWidget method), 142
reloadData() (flare.viur.widgets.tree.TreeWidget method), 141
reloadList() (flare.viur.widgets.list.ListSelection method), 138
remove() (flare.html5._WidgetClassWrapper method), 84
remove() (flare.html5.core._WidgetClassWrapper method), 43
removeAllChildren() (flare.html5.core.Widget method), 49
removeAllChildren() (flare.html5.Widget method), 90
removeChangeListener()
 (flare.network.NetworkService static method), 161
removeChild() (flare.html5.core.Widget method), 49
removeChild() (flare.html5.Widget method), 90
removeClass() (flare.html5.core.Widget method), 50
removeClass() (flare.html5.Widget method), 91
removeEventListener() (flare.html5.core.Widget method), 44
removeEventListener() (flare.html5.Widget method), 85
removeView() (in module flare.views.helpers), 114
renderTimeout() (flare.viur.bones.string.StringEditWidget method), 132
replaceChild() (flare.html5.core.Widget method), 49
replaceChild() (flare.html5.Widget method), 90
replaceSVG() (flare.icons.SvgIcon method), 154
replaceWithMessage()
 (flare.viur.widgets.file.Uploader method), 136
request() (flare.Cache method), 169
request() (flare.cache.Cache method), 149
request() (flare.handler.SyncHandler static method), 152
request() (flare.network.NetworkService static method), 161
requestChildren() (flare.viur.widgets.tree.TreeWidget method), 141
requestClients() (flare.viur.widgets.list.ListSelection method), 138
requestData() (flare.handler.requestHandler method), 151
requestFallBack() (flare.icons.SvgIcon method), 154
requestGroup (class in flare.network), 162
requestHandler (class in flare.handler), 151
requestNext() (flare.handler.ListHandler method), 152
requestStructure() (flare.viur.widgets.tree.TreeWidget method), 140
requestSuccess() (flare.handler.ListHandler method), 152
requestSuccess() (flare.handler.requestHandler method), 152
require() (flare.Cache method), 169
require() (flare.cache.Cache method), 149
resetIcon() (flare.button.Button method), 148
resetLoadingState() (flare.viur.widgets.file.Search method), 135
resetLoadingState()
 (flare.viur.widgets.htmleditor.TextInsertImageAction method), 137
resetSearch() (flare.viur.widgets.file.Search method), 135
retryCodes (flare.network.NetworkService attribute), 160
retryDelay (flare.network.NetworkService attribute), 160
retryMax (flare.network.NetworkService attribute), 160
RowWrapper (class in flare.html5), 109
RowWrapper (class in flare.html5.core), 68
Rq (class in flare.html5), 102
Rq (class in flare.html5.core), 60
Rt (class in flare.html5), 102
Rt (class in flare.html5.core), 61
Ruby (class in flare.html5), 102

Ruby (*class in flare.html5.core*), 61
run() (*flare.cache.Plan method*), 149
run() (*flare.network.DeferredCall method*), 160

S

S (*class in flare.html5*), 102
S (*class in flare.html5.core*), 61
SafeEval (*class in flare.safeeval*), 166
safeEval() (*flare.safeeval.SafeEval method*), 167
Samp (*class in flare.html5*), 102
Samp (*class in flare.html5.core*), 61
Script (*class in flare.html5*), 108
Script (*class in flare.html5.core*), 67
Search (*class in flare.viur.widgets.file*), 135
searchWidget() (*flare.viur.widgets.file.FileWidget method*), 136
Section (*class in flare.html5*), 102
Section (*class in flare.html5.core*), 61
Select (*class in flare.html5*), 104
Select (*class in flare.html5.core*), 63
Select (*class in flare.ignite*), 156
select() (*flare.priorityqueue.PriorityQueue method*), 166
select() (*flare.viur.PriorityQueue method*), 147
SelectMultipleBone (*class in flare.viur.bones.select*), 131
SelectMultipleEditWidget (*class in flare.viur.bones.select*), 130
selectorAllow (*flare.viur.bones.relational.RelationalBone attribute*), 127
selectorAllow (*flare.viur.bones.relational.TreeDirBone attribute*), 128
selectorAllow (*flare.viur.bones.relational.TreeItemBone attribute*), 127
selectorReturn() (*flare.viur.widgets.tree.TreeWidget method*), 141
SelectSingleBone (*class in flare.viur.bones.select*), 131
SelectSingleEditWidget (*class in flare.viur.bones.select*), 130
SelectViewWidget (*class in flare.viur.bones.select*), 131
sendViurForm() (*flare.viur.forms.ViurFormSubmit method*), 146
serialize() (*flare.viur.bones.base.BaseEditWidget method*), 116
serialize() (*flare.viur.bones.base.BaseLanguageEditWidget method*), 118
serialize() (*flare.viur.bones.base.BaseMultiEditWidget method*), 117
serialize() (*flare.viur.bones.base.BaseMultiViewWidget method*), 117
serialize() (*flare.viur.bones.base.BaseViewWidget method*), 117

serialize() (*flare.viur.bones.boolean.BooleanEditWidget method*), 119
serialize() (*flare.viur.bones.color.ColorEditWidget method*), 120
serialize() (*flare.viur.bones.date.DateEditWidget method*), 121
serialize() (*flare.viur.bones.numeric.NumericEditWidget method*), 123
serialize() (*flare.viur.bones.password.PasswordEditWidget method*), 123
serialize() (*flare.viur.bones.record.RecordEditWidget method*), 125
serialize() (*flare.viur.bones.relational.FileMultiEditDirectWidget method*), 129
serialize() (*flare.viur.bones.relational.RelationalEditWidget method*), 127
serialize() (*flare.viur.bones.relational.RelationalViewWidget method*), 127
serialize() (*flare.viur.bones.select.SelectMultipleEditWidget method*), 130
serialize() (*flare.viur.bones.select.SelectSingleEditWidget method*), 131
serialize() (*flare.viur.bones.spatial.SpatialEditWidget method*), 132
serialize() (*flare.viur.bones.string.StringEditWidget method*), 133
serialize() (*flare.viur.forms.ViurForm method*), 145
serialize() (*flare.viur.forms.ViurFormBone method*), 145
set() (*flare.html5._WidgetClassWrapper method*), 83
set() (*flare.html5.core._WidgetClassWrapper method*), 42
setContent() (*flare.viur.widgets.list.ListSelection method*), 138
setFile() (*flare.viur.widgets.file.FilePreviewImage method*), 135
setInvalid() (*flare.viur.forms.ViurFormBone method*), 145
setLanguage() (*in module flare.i18n*), 153
setRootNode() (*flare.viur.widgets.tree.TreeWidget method*), 141
setSelector() (*flare.viur.widgets.list.ListWidget method*), 138
setSelector() (*flare.viur.widgets.tree.TreeWidget method*), 140
setStyle() (*flare.viur.widgets.file.FileLeafWidget method*), 136
setStyle() (*flare.viur.widgets.file.FileNodeWidget method*), 136
setStyle() (*flare.viur.widgets.tree.BreadcrumbNodeWidget method*), 142
setStyle() (*flare.viur.widgets.tree.BrowserLeafWidget method*), 142
setStyle() (*flare.viur.widgets.tree.BrowserNodeWidget method*)

method), 142
setStyle() (*flare.viur.widgets.tree.TreeItemWidget method*), 139
setStyle() (*flare.viur.widgets.tree.TreeLeafWidget method*), 140
setUrlHash() (*in module flare.network*), 162
isValid() (*flare.viur.forms.ViurFormBone method*), 145
setValue() (*flare.observable.ObservableValue method*), 162
setValue() (*flare.viur.bones.numeric.NumericEditWidget method*), 122
show() (*flare.html5.core.Widget method*), 48
show() (*flare.html5.Widget method*), 89
sinkEvent() (*flare.html5.core.Widget method*), 44
sinkEvent() (*flare.html5.Widget method*), 85
sitepackagespath (*in module flare.views.helpers*), 113
SkellistItem (*class in flare.viur.widgets.list*), 138
skelType (*flare.viur.widgets.tree.TreeLeafWidget attribute*), 140
skelType (*flare.viur.widgets.tree.TreeNodeWidget attribute*), 140
skeyRequestQueue (*in module flare.network*), 160
Small (*class in flare.html5*), 102
Small (*class in flare.html5.core*), 61
sortChildren() (*flare.html5.core.Widget method*), 52
sortChildren() (*flare.html5.Widget method*), 93
Source (*class in flare.html5*), 108
Source (*class in flare.html5.core*), 67
Span (*class in flare.html5*), 108
Span (*class in flare.html5.core*), 67
SpatialBone (*class in flare.viur.bones.spatial*), 132
SpatialEditWidget (*class in flare.viur.bones.spatial*), 131
start() (*flare.Cache method*), 169
start() (*flare.cache.Cache method*), 149
startUpload() (*flare.viur.bones.relational.FileEditDirectWidget method*), 128
startUpload() (*flare.viur.bones.relational.FileMultiEditDirectWidget attribute*), 129
StateHandler (*class in flare.observable*), 162
StateHandler (*class in flare.views*), 115
StringBone (*class in flare.viur.bones.string*), 133
StringEditWidget (*class in flare.viur.bones.string*), 132
StringViewWidget (*class in flare.viur.bones.string*), 133
Strong (*class in flare.html5*), 102
Strong (*class in flare.html5.core*), 61
struct() (*flare.Cache method*), 169
struct() (*flare.cache.Cache method*), 149
Style (*class in flare.html5*), 108
Style (*class in flare.html5.core*), 67
style (*flare.html5.core.Widget attribute*), 44
style (*flare.html5.Widget attribute*), 85
style (*flare.popout.Popout attribute*), 163
style (*flare.popout.PopoutItem attribute*), 163
style (*flare.viur.bones.base.BaseEditWidget attribute*), 116
style (*flare.viur.bones.base.BaseMultiEditWidget attribute*), 117
style (*flare.viur.bones.base.BaseMultiEditWidgetEntry attribute*), 117
style (*flare.viur.bones.base.BaseViewWidget attribute*), 116
style (*flare.viur.bones.boolean.BooleanEditWidget attribute*), 118
style (*flare.viur.bones.color.ColorEditWidget attribute*), 119
style (*flare.viur.bones.date.DateEditWidget attribute*), 120
style (*flare.viur.bones.numeric.NumericEditWidget attribute*), 122
style (*flare.viur.bones.password.PasswordEditWidget attribute*), 123
style (*flare.viur.bones.raw.RawEditWidget attribute*), 124
style (*flare.viur.bones.record.RecordEditWidget attribute*), 125
style (*flare.viur.bones.record.RecordViewWidget attribute*), 125
style (*flare.viur.bones.relational.FileEditDirectWidget attribute*), 128
style (*flare.viur.bones.relational.FileEditWidget attribute*), 129
style (*flare.viur.bones.relational.FileMultiEditDirectWidget attribute*), 128
style (*flare.viur.bones.relational.RelationalEditWidget attribute*), 126
style (*flare.viur.bones.relational.RelationalViewWidget attribute*), 127
style (*flare.viur.bones.select.SelectMultipleEditWidget attribute*), 130
style (*flare.viur.bones.string.StringEditWidget attribute*), 132
style (*flare.viur.bones.text.TextEditWidget attribute*), 133
Sub (*class in flare.html5*), 102
Sub (*class in flare.html5.core*), 61
submitForm() (*flare.viur.forms.ViurForm method*), 145
Summary (*class in flare.html5*), 108
Summary (*class in flare.html5.core*), 67
summernoteEditor (*in module flare.viur.widgets.htmleditor*), 137
Summary (*class in flare.html5*), 102
Summary (*class in flare.html5.core*), 61
Sup (*class in flare.html5*), 102
Sup (*class in flare.html5.core*), 61

Svg (*class in flare.html5.svg*), 74
SvgCircle (*class in flare.html5.svg*), 74
SvgEllipse (*class in flare.html5.svg*), 74
SvgG (*class in flare.html5.svg*), 74
SvgIcon (*class in flare.icons*), 154
SvgImage (*class in flare.html5.svg*), 75
SvgLine (*class in flare.html5.svg*), 75
SvgPath (*class in flare.html5.svg*), 75
SvgPolygon (*class in flare.html5.svg*), 75
SvgPolyline (*class in flare.html5.svg*), 75
SvgRect (*class in flare.html5.svg*), 75
SvgText (*class in flare.html5.svg*), 75
SvgWidget (*class in flare.html5.svg*), 74
Switch (*class in flare.ignite*), 155
SyncHandler (*class in flare.handler*), 152

T

Table (*class in flare.html5*), 109
Table (*class in flare.html5.core*), 68
Table (*class in flare.ignite*), 156
tag() (*in module flare.html5*), 111
tag() (*in module flare.html5.core*), 70
Tbody (*class in flare.html5*), 109
Tbody (*class in flare.html5.core*), 68
Td (*class in flare.html5*), 109
Td (*class in flare.html5.core*), 67
Template (*class in flare.html5*), 110
Template (*class in flare.html5.core*), 69
Textarea (*class in flare.html5*), 104
Textarea (*class in flare.html5.core*), 63
Textarea (*class in flare.ignite*), 156
TextareaDialog (*class in flare.popup*), 165
TextBone (*class in flare.viur.bones.text*), 134
TextEditWidget (*class in flare.viur.bones.text*), 133
TextInsertImageAction (*class in flare.viur.widgets.htmleditor*), 137
TextNode (*class in flare.html5*), 83
TextNode (*class in flare.html5.core*), 42
textToHtml() (*in module flare.html5*), 111
textToHtml() (*in module flare.html5.core*), 69
textToHtml() (*in module flare.utils*), 168
TextViewWidget (*class in flare.viur.bones.text*), 133
Th (*class in flare.html5*), 109
Th (*class in flare.html5.core*), 68
Thead (*class in flare.html5*), 109
Thead (*class in flare.html5.core*), 68
Time (*class in flare.html5*), 110
Time (*class in flare.html5.core*), 68
toggleArrow() (*flare.viur.widgets.tree.TreeWidgetItem method*), 140
toggleArrow() (*flare.viur.widgets.tree.TreeLeafWidget method*), 140
toggleClass() (*flare.html5.core.Widget method*), 50
toggleClass() (*flare.html5.Widget method*), 91

toggleExpand() (*flare.viur.widgets.tree.TreeWidgetItem method*), 140
ToolTip (*class in flare.viur.formtooltip*), 146
tooltipWidget() (*flare.viur.bones.base.BaseBone method*), 118
Tr (*class in flare.html5*), 108
Tr (*class in flare.html5.core*), 67
Track (*class in flare.html5*), 110
Track (*class in flare.html5.core*), 69
translate() (*in module flare.i18n*), 153
TreeBrowserWidget (*class in flare.viur.widgets.tree*), 142
TreeDirBone (*class in flare.viur.bones.relational*), 128
TreeItemBone (*class in flare.viur.bones.relational*), 127
TreeWidgetItem (*class in flare.viur.widgets.tree*), 139
TreeLeafWidget (*class in flare.viur.widgets.tree*), 140
TreeNodeWidget (*class in flare.viur.widgets.tree*), 140
TreeWidget (*class in flare.viur.widgets.tree*), 140

U

U (*class in flare.html5*), 102
U (*class in flare.html5.core*), 61
Ul (*class in flare.html5*), 106
Ul (*class in flare.html5.core*), 65
unescape() (*in module flare.html5*), 110
unescape() (*in module flare.html5.core*), 69
unescape() (*in module flare.utils*), 167
unmarkDraggedElement() (*flare.viur.widgets.tree.TreeWidgetItem method*), 139
unobserve() (*flare.intersectionObserver.IntersectionObserver method*), 157
register() (*flare.event.EventDispatcher method*), 151
register() (*flare.observable.StateHandler method*), 163
register() (*flare.views.StateHandler method*), 115
deserialize() (*flare.viur.bones.base.BaseEditWidget method*), 116
deserialize() (*flare.viur.bones.base.BaseLanguageEditWidget method*), 117
deserialize() (*flare.viur.bones.base.BaseMultiEditWidget method*), 117
deserialize() (*flare.viur.bones.base.BaseMultiViewWidget method*), 117
deserialize() (*flare.viur.bones.base.BaseViewWidget method*), 117
deserialize() (*flare.viur.bones.boolean.BooleanEditWidget method*), 119
deserialize() (*flare.viur.bones.boolean.BooleanViewWidget method*), 119
deserialize() (*flare.viur.bones.color.ColorViewWidget method*), 120

unserialize() (*flare.viur.bones.date.DateEditWidget method*), 120
unserialize() (*flare.viur.bones.date.DateViewWidget method*), 121
unserialize() (*flare.viur.bones.email.EmailViewWidget method*), 121
unserialize() (*flare.viur.bones.numeric.NumericEditWidget method*), 122
unserialize() (*flare.viur.bones.numeric.NumericViewWidget method*), 123
unserialize() (*flare.viur.bones.raw.RawViewWidget method*), 124
unserialize() (*flare.viur.bones.record.RecordEditWidget method*), 125
unserialize() (*flare.viur.bones.record.RecordViewWidget method*), 125
unserialize() (*flare.viur.bones.relational.FileEditDirectWidget method*), 128
unserialize() (*flare.viur.bones.relational.FileEditWidget method*), 129
unserialize() (*flare.viur.bones.relational.FileMultiEditDirectWidget method*), 129
unserialize() (*flare.viur.bones.relational.FileViewWidget method*), 128
unserialize() (*flare.viur.bones.relational.RelationalEditWidget method*), 127
unserialize() (*flare.viur.bones.relational.RelationalViewWidget method*), 127
unserialize() (*flare.viur.bones.select.SelectMultipleEditWidget method*), 130
unserialize() (*flare.viur.bones.select.SelectSingleEditWidget method*), 130
unserialize() (*flare.viur.bones.select.SelectViewWidget method*), 131
unserialize() (*flare.viur.bones.spatial.SpatialEditWidget method*), 132
unserialize() (*flare.viur.bones.string.StringEditWidget method*), 132
unserialize() (*flare.viur.bones.string.StringViewWidget method*), 133
unserialize() (*flare.viur.bones.text.TextViewWidget method*), 134
unserialize() (*flare.viur.forms.ViurForm method*), 145
unserialize() (*flare.viur.forms.ViurFormBone method*), 145
unsinkEvent() (*flare.html5.core.Widget method*), 44
unsinkEvent() (*flare.html5.Widget method*), 85
update() (*flare.button.Button method*), 148
update() (*flare.Cache method*), 169
update() (*flare.cache.Cache method*), 149
update() (*flare.html5._WidgetDataWrapper method*), 84
update() (*flare.html5._WidgetStyleWrapper method*), 85
update() (*flare.html5.core._WidgetDataWrapper method*), 43
update() (*flare.html5.core._WidgetStyleWrapper method*), 44
update() (*flare.viur.forms.ViurForm method*), 145
updateConf() (*in module flare*), 169
updateConf() (*in module flare.config*), 150
updateDefaultView() (*in module flare.views.helpers*), 113
updateLength() (*flare.viur.bones.string.StringEditWidget method*), 132
updateState() (*flare.observable.StateHandler method*), 162
updateString() (*flare.viur.bones.relational.RelationalEditWidget method*), 127
updateStructure() (*flare.Cache method*), 169
updateStructure() (*flare.cache.Cache method*), 149
updateWidget() (*flare.viur.bones.base.BaseEditWidget method*), 116
updateWidget() (*flare.viur.bones.boolean.BooleanEditWidget method*), 119
updateWidget() (*flare.viur.bones.color.ColorEditWidget method*), 119
updateWidget() (*flare.viur.bones.date.DateEditWidget method*), 120
updateWidget() (*flare.viur.bones.email.EmailEditWidget method*), 121
updateWidget() (*flare.viur.bones.numeric.NumericEditWidget method*), 122
updateWidget() (*flare.viur.bones.password.PasswordEditWidget method*), 123
updateWidget() (*flare.viur.bones.raw.RawEditWidget method*), 124
updateWidget() (*flare.viur.bones.record.RecordEditWidget method*), 125
updateWidget() (*flare.viur.bones.relational.FileEditDirectWidget method*), 128
updateWidget() (*flare.viur.bones.relational.RelationalEditWidget method*), 127
updateWidget() (*flare.viur.bones.select.SelectMultipleEditWidget method*), 130
updateWidget() (*flare.viur.bones.select.SelectSingleEditWidget method*), 130
updateWidget() (*flare.viur.bones.spatial.SpatialEditWidget method*), 131
updateWidget() (*flare.viur.bones.string.StringEditWidget method*), 132
updateWidget() (*flare.viur.bones.text.TextEditWidget method*), 133
Uploader (*class in flare.viur.widgets.file*), 135
urlForArgs() (*flare.network.NetworkService static method*), 161

V

value (*flare.observable.ObservableValue attribute*), 162
Var (class in *flare.html5*), 103
Var (class in *flare.html5.core*), 61
Video (class in *flare.html5*), 110
Video (class in *flare.html5.core*), 69
View (class in *flare.views.view*), 114
ViewWidget (class in *flare.views.view*), 114
viewWidget() (*flare.viur.bones.base.BaseBone method*), 118
viewWidgetFactory (*flare.viur.bones.base.BaseBone attribute*), 118
viewWidgetFactory (*flare.viur.bones.boolean.BooleanBone attribute*), 119
viewWidgetFactory (*flare.viur.bones.color.ColorBone attribute*), 120
viewWidgetFactory (*flare.viur.bones.date.DateBone attribute*), 121
viewWidgetFactory (*flare.viur.bones.email.EmailBone attribute*), 122
viewWidgetFactory (*flare.viur.bones.numeric.NumericBone attribute*), 123
viewWidgetFactory (*flare.viur.bones.raw.RawBone attribute*), 124
viewWidgetFactory (*flare.viur.bones.record.RecordBone attribute*), 125
viewWidgetFactory (*flare.viur.bones.relational.FileBone attribute*), 129
viewWidgetFactory (*flare.viur.bones.relational.FileDirectBone attribute*), 129
viewWidgetFactory (*flare.viur.bones.relational.RelationalBone attribute*), 127
viewWidgetFactory (*flare.viur.bones.select.SelectMultipleBone attribute*), 131
viewWidgetFactory (*flare.viur.bones.string.StringBone attribute*), 133
viewWidgetFactory (*flare.viur.bones.text.TextBone attribute*), 134
ViurForm (class in *flare.viur.forms*), 144
ViurFormBone (class in *flare.viur.forms*), 145
ViurFormSubmit (class in *flare.viur.forms*), 145

W

warn() (*webworker_scripts.weblog static method*), 170
Wbr (class in *flare.html5*), 103
Wbr (class in *flare.html5.core*), 62
weblog (class in *webworker_scripts*), 170
webworker_scripts
 module, 170
Widget (class in *flare.html5*), 85
Widget (class in *flare.html5.core*), 44

Z

zip_listdir() (*in module flare.views.helpers*), 114