Wakanda Studio Extensions

Creating an extension in two minutes

Want to create your first extension in just two minutes? Go to the My first Extension section.

What are extensions?

Wakanda Studio Extensions are software programs that can add new functionalities to the Wakanda Studio. For example, an extension can write automatically a set of predefined comment lines at the beginning of scripts.

Extensions are written using standard Web technologies such as JavaScript, HTML, CSS, and JPEG. Everyone can write Wakanda Studio extensions, for their own needs or for sharing with the Wakanda community. The Wakanda Development team provides built-in pre-installed extensions such as "Beautifier" that you can use as standard Studio features.

Extensions can add contextual functionnalities to various toobars and menus of the Wakanda Studio, including the main toolbar and the solution explorer contextual menu.

Where to add extensions?

Commands for executing extensions can be toolbar buttons or contextual menu commands. These interface elements can be added to the following parts of the Wakanda Studio:

- Solution manager toolbar
- Solution explorer contextual menu (Tree view)
- Solution explorer contextual menu (List view)
- Solution explorer contextual menu (Thumbnail view)
- Code editor toolbar
- Code editor contextual menu

You can combine these locations and create any feature you need:

- a single extension can provide several buttons and/or menu commands in one or several areas
- a single feature can be associated to a button and a menu command

How to use this manual?

- You want to create an extension in two minutes using a template:
  -> go to **My first Extension**
- You want to install an extension in your Wakanda Studio:
  -> go to **Installing Extensions**
- You want to see quickly how to write an extension:
  -> go to **Getting started**
- You want to access the detailed reference documentation for creating Wakanda studio extensions:
  -> go to **Creating Extensions** and **API: Basic**.

My first Extension

Here are the instructions to make your first Wakanda extension in less than 2 minutes by following these 7 steps:

1. Download the Extension Template from our server and unzip it in the **Extensions** folder:
   - On Windows: *{Disk}:\Users\{User name}\AppData\Roaming\Wakanda Studio\Extensions*
   - On Mac OS: */Users/{User name}/Library/Application Support/Wakanda Studio/Extensions/*

   You may have to create the **Extensions** folder manually.
   For more information, refer to the **Installing Extensions** section.

2. Open **manifest.json** in a text editor and define your extension name by replacing YOUR_EXTENSION_NAME.

3. Replace YOUR_EXTENSION_DESCRIPTION with a brief description of your extension.

4. Define your extension action name by replacing YOUR_ACTION in **manifest.json**.

5. Replace YOUR_ACTION_TITLE in **manifest.json** with an easy-to-understand title.

6. Open **index.js** in a code editor and replace YOUR_ACTION to rename the action.

7. Write the function body in **index.js** to define your action.

Voilà! Restart your Wakanda Studio and you will see your first extension appear in the main toolbar. You can place your extension icon/menu in other places -- in **manifest.json**, just replace "studioToolbar" with another valid value (please refer to the **senders** paragraph).

A good example illustrates the whole picture better than detailed documentation. You can check the Wakanda Studio Extension Demo to learn how to make certain commands more complex.

However, knowledge of Wakanda Studio Extension System is required if you want to accomplish sophisticated extensions. Check the Wakanda Studio Extension online documentation for more detailed information.

You can use the Wakanda Studio Extension development forum for any technical questions/answers and for the announcement your new extension.

Installing Extensions

A Wakanda Studio Extension is a set of files grouped in a single folder. To install the extension in your Wakanda Studio, you just need to copy the extension folder (whose name is free) in the **Extensions** folder at the appropriate location. The **Extensions** folder can exist in two different places:

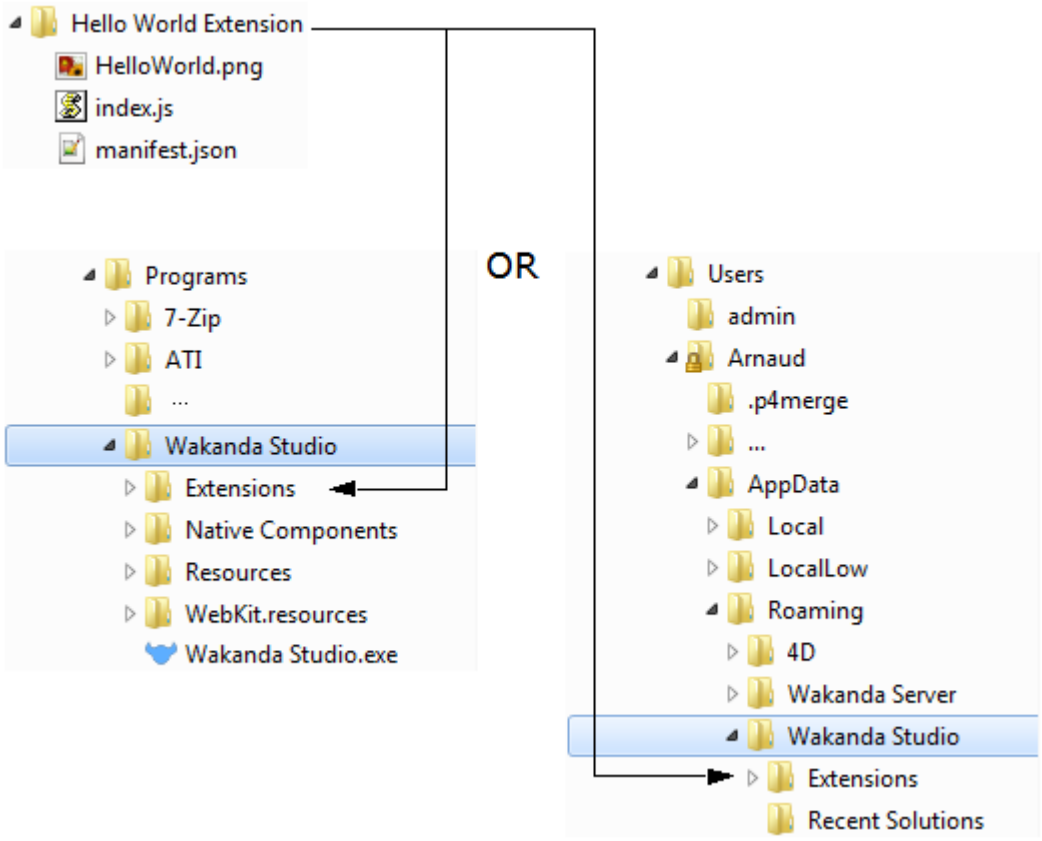
- **In the Wakanda Studio application folder**:
  - On Windows: next to the *Wakanda Studio.exe* file
  - On Mac OS: at the first level of the *Contents* folder inside the application package.

  In this case, extensions are available only in this Wakanda Studio application.
  Installing files or folders at this location requires administrator access rights, and can make subsequent updates an issue. It is usually not recommanded to install custom extensions in the application.

- **In the user data of Wakanda Studio**:
  - On Windows: *{Disk}:\Users\{User name}\AppData\Roaming\Wakanda Studio*
  - On Mac OS: */Users/{User name}/Library/Application Support/Wakanda Studio/*

  In this case, extensions are available for any Wakanda Studio application running on the machine in the user session, including subsequent updates. This location does not need specific access rights.
  Note: *Under Mac OS 10.7 ("Lion"), you need to expand the* ***Go*** *menu in the Finder while holding down the* ***Option*** *key to reveal the* ***Library*** *command that you must use to open the corresponding folder.*

The following diagram illustrates the installation options (Windows):



Priority is given to the user data location: if the same extension exists at both locations (same folder name), Wakanda Studio will only load the files from the user data.

Getting started

As a first step to discover how to create an extension to the Wakanda Studio, we will write a very classic and basic example: adding a button to the code editor toolbar that displays "Hello, World!".

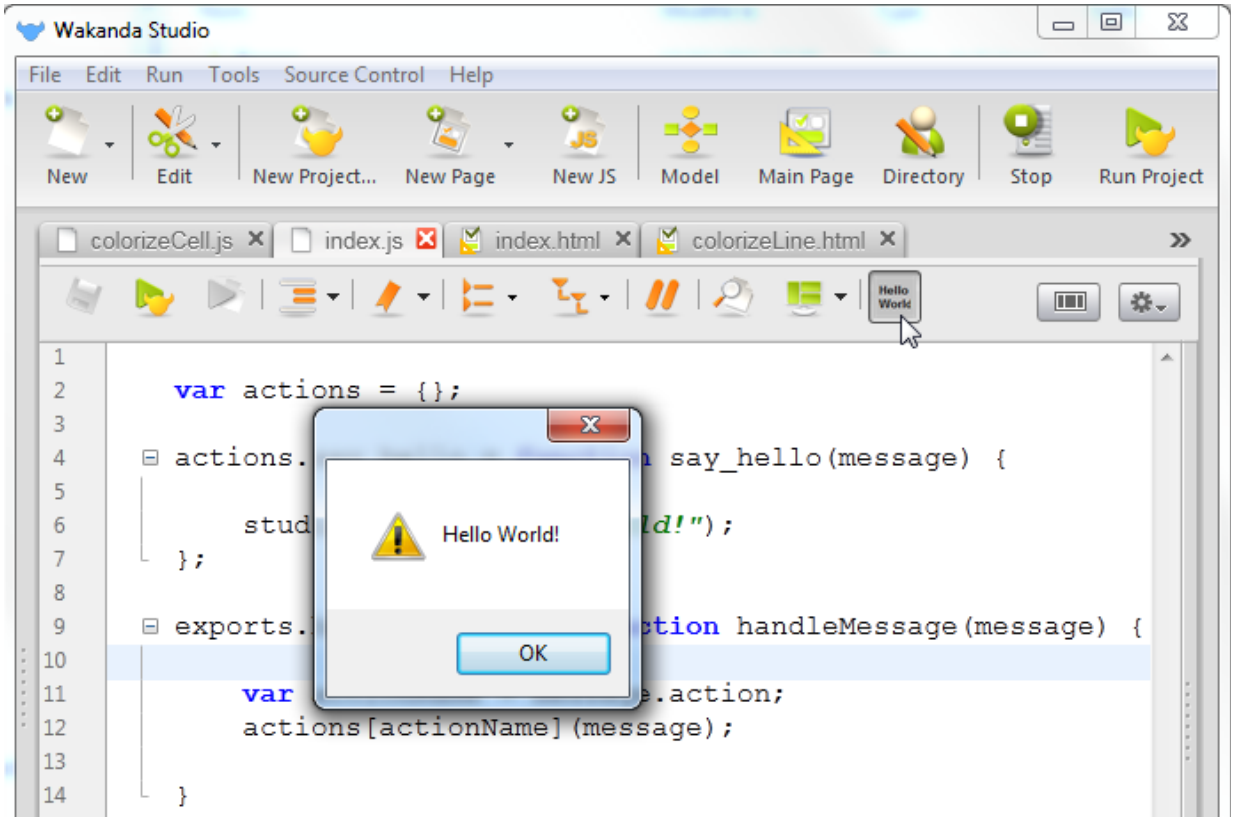
1. Using any text editor (for example the Wakanda Studio code editor), create a new file named **manifest.json** and write the following code:

```
{
    "extension":
    {
        "name": "Hello World",
        "version": "1.0.0",
        "description": "Hello World Demo for Wakanda Extensions",
        "icon": "HelloWorld.png",
        "senders": [
                    {
                        "location": "codeEditorToolbar",
                        "icon": "HelloWorld.png",
                        "actionName": "say_hello"
                    }
        ],
        "actions": [
                    {
                        "name": "say_hello",
                        "title": "hello"
                    }
        ],
        "lifetime": "action_lifetime"
    }
}
```

   This code describes our extension. For more information on how to write the manifest.json file, please refer to the **Configuring the manifest.json file** section.
2. Create another file named **index.js** and write the following code:

```
exports.handleMessage = function handleMessage(message) {
    if(message.action == "say_hello")
        studio.alert("Hello World!");
    };
```

   This file will contain the action(s) to execute and the unique entry point of the extension. For this tutorial, we write the basic contents of the file, but it is generally much faster to use a "template" index.js file and add your own actions.
   For more information on how to write the index.js file, please refer to the **Configuring the index.js file** section.
3. Create a new folder, name it for example "Hello Word", and save your **manifest.json** and **index.js** files in that folder. Add also a picture button file named "HelloWorld.png" (you can download a little icon here).
4. Copy the "Hello World" folder in the Wakanda Studio **Extensions** folder, as described in the **Installing Extensions** section (choose the user data folder for more convenience).
5. Relaunch Wakanda Studio if it was already opened and load any file in the Code editor.
   You should see the new button: click on the button, that's it!


Wakanda Studio
File Edit Run Tools Source Control Help
New
Edit
New Project...
New Page
New JS
Model
Main Page
Directory
Stop
Run Project
colorizeCell.js
index.js
index.html
colorizeLine.html
Hello World
var actions = {};
actions.
say_hello(message) {
stud
ld!");
};
exports.
tion handleMessage(message) {
var
.action;
actions[actionName](message);
}
Hello World!
OK

Creating Extensions

A Walanda Studio extension is defined through two mandatory files:

- **manifest.json**: declares the actions and their location in the Wakanda studio interface.
  Objects to write in this file are detailed in the **Configuring the manifest.json file** section.
- **index.js**: contains the code to execute in response to actions. The **API: Basic** is provided for extensions to communicate with Wakanda Studio internal components (for example, the code editor).
  This file is described in the **Configuring the index.js file** section.

An extension can use a unlimited number of additional files (HTML, pictures, scripts...). All the extension files must be gathered in a single folder.

Configuring the manifest.json file

The **manifest.json** file is one of the mandatory pieces of a Wakanda Studio extension: it describes the extension and declares the actions and their locations in the available two toolbars and four contextual menus (see **Where to add extensions?**).

In this file, you can define the extension name and properties, the name of each action and the locations where Wakanda Studio should display these action commands. A single extension can add several menu items and buttons in different locations.

The **manifest.json** file is a JSON format file, it only handles strings.

extension

"extension" is the main object of the manifest.json file. It contains 7 objects, described below:

- name
- version
- description
- icon
- actions
- senders
- lifetime
- compatibleBuildVersion (optional)

Configuring the index.js file

The **index.js** file is the entry point of an extension for Wakanda Studio. All features (actions) provided by the extension are defined in this JavaScript file. You can use standard JavaScript code as well as a specific **Extensions API**. All the Wakanda Studio components are available through this API in **index.js**.

handleMessage Function

The main entry function in **index.js** is named *handleMessage*. All the actions you declared in **manifest.json** will be passed to this callback function and should be processed here.

The *handleMessage* should be set as the *handleMessage* property of an *exports* object.

The *handleMessage* function receives a *message* object as parameter. The *message* object has three properties, "action", "event" and "source":

- *message.action* contains the name of the action declared in **manifest.json** (for example, "js-if").
- *message.event* indicates the source of triggered *message* object. It can contain:
  - "fromSender" if the message is triggered by the Wakanda Studio interface (ie. user clicks on a button or menu item).
  - "onSave", "onFileDirty", "onFilesAddedInSolution" or "onFilesRemovedFromSolution" if the action is defined through a trigger and the user triggered the action.
  - "fromExtension" if the message is triggered by another extension (see **sendCommand( )**).
- *message.source* contains an object with two properties, "name" and "data", which are used only if the event value is "fromSender".
  - "name" value is the event source name (string). Possible values are:
    - *fromSender*: the message is triggered by the Wakanda GUI (ie. user clicks on a button or menu item).
    - *fromExtension*: the message is triggered by another extension (see **sendCommand( )**).
    - *fromCodeEditor*: the message is triggered by the Code editor.
    - *fromWebDesigner*: the message is triggered by the Web Designer.
    - *fromSolutionExplorer*: the message is triggered by Solution Explorer.
    - *fromSolutionList*: the message is triggered by Solution List.
    - *fromSolutionThumbnails*: the message is triggered by Solution Thumbnails.

- "data" value can be any kind of data passed by the source. It depends on the event.
  For example, when the sender name is "Solution Explorer", "data" is an array of filepaths representing all files listed in the Solution Explorer.

Within this entry function, you will usually call any appropriate function depending on the *message.action* value.

Using the Extension API

In the **index.js** file, you can use a dedicated set of API. This API gives access to the Wakanda Studio components and allows you to benefit from all the features and capacities of the Studio.

The following API themes are available:

- **API: Basic**
- **API: Code Editor**
- **API: GUI**
- **API: Storage**
- **API: Studio**
- **API: Web Zone Dialog**

API: Basic

The "basic" theme methods allow you to display standard JavaScript dialogs.

Using 'studio' Object

All Wakanda Extension APIs are available through the "studio" object. Thus, you must prefix each API call with '**studio.**'
For example, to call the **alert( )** method, you should write:

```
studio.alert("Hello World!");
```

alert( )

void **alert**(String *message*)

Parameter	Type	Description
message	String	Alert message

Description

The **alert( )** method displays a warning text in a standard alert dialog box.

Example

```
studio.alert("Hello World!");
```

Displays:

confirm( )

Boolean **confirm**(String *message*)

Parameter	Type	Description
message	String	Confirmation message
Returns	Boolean	true if the answer is Yes, false otherwise

Description

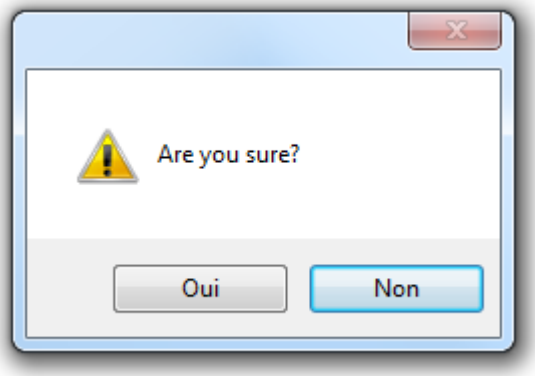
The **confirm( )** method displays a confirmation dialog box and returns **true** if the user clicked on the **yes** button, and **false** if the user clicked **no**. Yes and No labels are based on the current system language.

Example

The following code:

```
var isok = studio.confirm("Are you sure?");
```

displays:



prompt( )

String **prompt**(String *message* [, String *defaultAnswer*])

Parameter	Type	Description
message	String	Prompt message
defaultAnswer	String	Pre-entered string for the reply
Returns	String	String entered by the user

Description

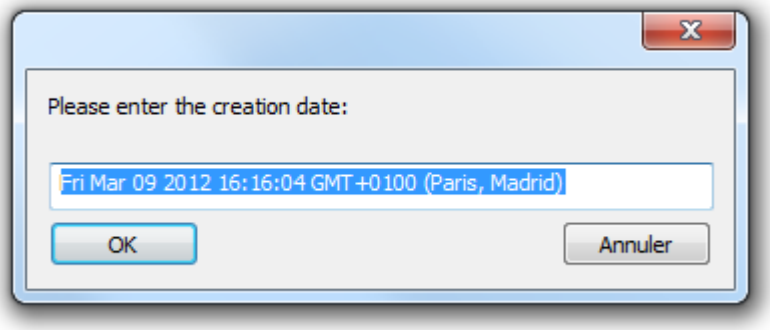
The **prompt( )** method prompts the user to enter a value in response to a *message* and returns the entered value. You can pass in *defaultAnswer* a string showing an example of the value to enter or proposing a standard answer.

Example

The following code:

```
var vaDate = new Date();
var userDate = studio.prompt("Please enter the creation date:",vaDate);
```

displays:



API: Code Editor

Methods in this theme allows reading and modifying the text displayed in the Wakanda Studio Code Editor.

Methods support JavaScript, HTML, XML, and any source code displayed in the editor.

Using 'studio' Object

All Wakanda Extension APIs are available through the "studio" object. Thus, you must prefix each API call with '**studio.**'

For example, to call the **alert( )** method, you should write:

```
studio.alert("Hello World!");
```

currentEditor.clearAnnotations( )

void **currentEditor.clearAnnotations**( )

Description

The **currentEditor.clearAnnotations( )** method removes all warning symbols from the annotation bar of the open document.

This method will clear symbols added by any Wakanda extension using . However, it will not remove system warnings indicating, for example, syntax errors.

currentEditor.getContent( )

String **currentEditor.getContent**( )

Returns	String	Contents of the edited document

Description

The **currentEditor.getContent( )** method returns the whole content of the document currently displayed in the Code editor.

Example

You want to store temporarily a specific version of your code and be able to view it at any moment. You add two buttons to the code editor associated with the "store_copy" and "show_copy" actions. In the **index.js** file, you can write:

```
actions.store_copy= function store_copy() {

    var content = studio.currentEditor.getContent(); // gets the current content
    studio.extension.currentDialog.setItem("codeCopy" , content); // put it in the storag
};

actions.show_copy= function show_copy() {

     var copied = studio.extension.currentDialog.getItem("codeCopy"); //read the storage
     studio.alert(copied); // show the contents of the codeCopy attribute
 };
```

currentEditor.getPath( )

String **currentEditor.getPath**( )

Returns	String	File path of the edited document

Description

The **currentEditor.getPath( )** method returns the full path of the document currently opened in the Code editor.

Example

```
var docPath = studio.currentEditor.getPath();
    // docPath returns for example
    // 'C:/Wakanda Solutions/My Solution/MyProject/MyScript.js
```

currentEditor.getSelectedText( )

String | Null **currentEditor.getSelectedText**( )

Returns	Null, String	Currently selected text

Description

The **currentEditor.getSelectedText( )** method returns the text selected in the document currently displayed in the Code editor. If nothing is selected in the document, **currentEditor.getSelectedText( )** returns Null.

currentEditor.getSelectionInfo( )

Object **currentEditor.getSelectionInfo**( )

Returns	Object	Definition of the selection in the document

Description

The **currentEditor.getSelectionInfo( )** method returns information about the selection in the document currently displayed in the Code editor.

Information depends on the number of line(s) selected as well as the cursor position.

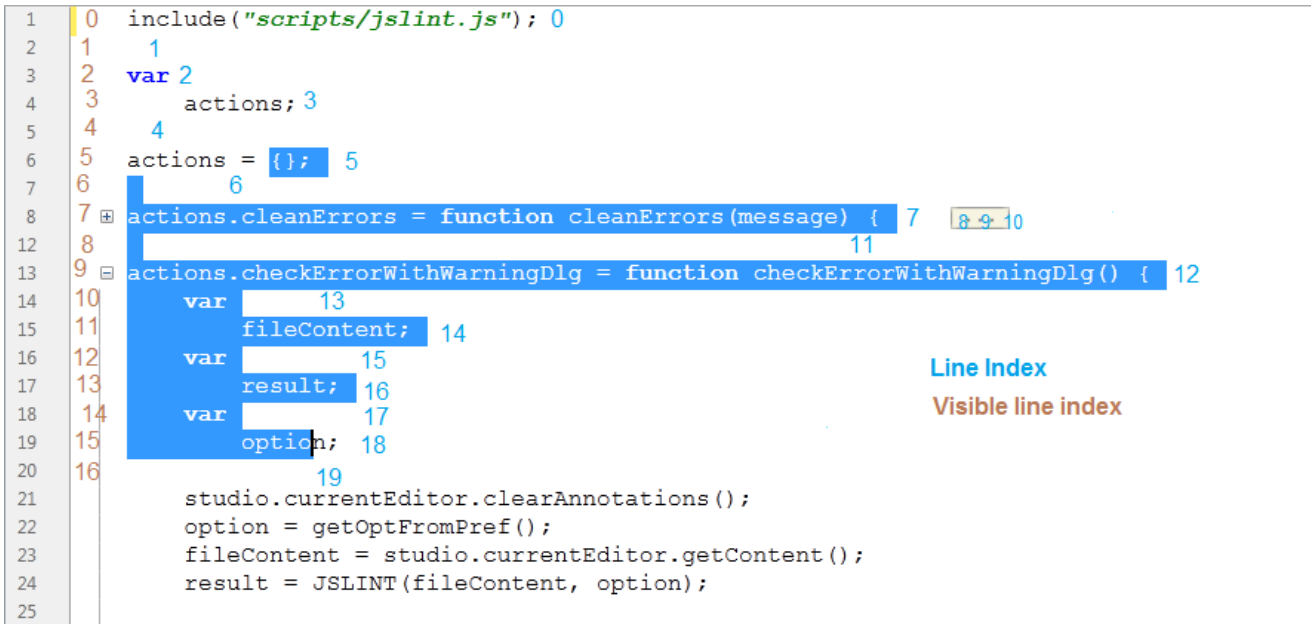
You must also consider the following specificities:

- the Code editor line numbering starts at 1, although the **currentEditor.getSelectionInfo( )** method line numbering starts at 0;
- collapsed or expanded code structures need to be taken into account. This is the reason why the returned object contain different properties for *selected lines* (includes all lines, whatever their expand/collapse status) and *"visible" selected lines* (counts a single line for a collapsed block).

The method returns an object containing the following properties:

Example

Considering the following selection in the code editor:




```
var selObj = studio.currentEditor.getSelectionInfo();
var s1 = selObj.firstLineIndex;          // s1 contains 5
var s2 = selObj.firstVisibleLine;        // s2 contains 5
var s3 = selObj.firstLineOffset;         // s3 contains 10
var s4 = selObj.lastLineIndex;           // s4 contains 18
```

```
var s5 = selObj.lastVisibleLine;        // s5 contains 15
var s6 = selObj.lastLineOffset;         // s6 contains 13
var s7 = selObj.offsetFromStartOfText;  // s7 contains 61
var s8 = selObj.selectionLength;        // s8 contains 251
var isLR = selObj.isLeftToRightSection  // isLR contains true
```

currentEditor.insertText( )

void **currentEditor.insertText**(String *textToInsert*)

Parameter	Type	Description
textToInsert	String	Text to insert in the open document

Description

The **currentEditor.insertText( )** method inserts *textToInsert* into the document currently displayed in the Code editor, at the current cursor position.

If text was selected in the document, it is replaced by *textToInsert*.

Example

You want to be able to insert the current date in your code. You add a button to the code editor associated with the "add_date" action. In the **index.js** file, you can write:

```
actions.add_date= function add_date() {

    var vadate = new Date();
    studio.currentEditor.insertText(vadate);
};
```

currentEditor.selectByLineIndex( )

void **currentEditor.selectByLineIndex**(Number *start*, Number *end*, Number *firstLineIndex*, Number *lastLineIndex*, Boolean *fromLeftToRight*)

Parameter	Type	Description
start	Number	Start line offset
end	Number	End line offset
firstLineIndex	Number	Starting line index
lastLineIndex	Number	Ending line index
fromLeftToRight	Boolean	true for left-to-right selection, otherwise false

Description

The **currentEditor.selectByLineIndex( )** method allows you to change the selection of text in the document currently displayed in the Code editor using line index parameters, that is, without taking the collapsed/expanded status of lines into account. If you want to set the selection of text with respect to the collapsed/expanded status of lines, you should consider using the **currentEditor.selectByVisibleLine( )** method.

Pass in *start*, *end*, *firstLineIndex*, *lastLineIndex* and *fromLeftToRight* parameters the new selection definition. For more information about these parameters, please refer to the **currentEditor.getSelectionInfo( )** method description.

currentEditor.selectByVisibleLine( )

void **currentEditor.selectByVisibleLine**(Number *start*, Number *end*, Number *firstVisibleLineIndex*, Number *lastVisibleLineIndex*, Boolean *fromLeftToRight*)

Parameter	Type	Description
start	Number	Start line offset
end	Number	End line offset
firstVisibleLineIndex	Number	Starting visible line index
lastVisibleLineIndex	Number	Ending visible line index
fromLeftToRight	Boolean	true for left-to-right selection, otherwise false

Description

The **currentEditor.selectByVisibleLine( )** method allows you to change the selection of text in the document currently

displayed in the Code editor using visible line index parameters, that is, by taking the collapsed/expanded status of lines into acount. If you want to set the selection of text without worrying about the collapsed/expanded status of lines, you should consider using the **currentEditor.selectByLineIndex( )** or **currentEditor.selectFromStartOfText** methods.

Pass in *start*, *end*, *firstVisibleLineIndex*, *lastVisibleLineIndex* and *fromLeftToRight* parameters the new selection definition. For more information about these parameters, please refer to the **currentEditor.getSelectionInfo( )** method description.

currentEditor.selectFromStartOfText

void **currentEditor.selectFromStartOfText**(Number *offset*, Number *length*, Boolean *fromLeftToRight*)

Parameter	Type	Description
offset	Number	Starting selection offset
length	Number	Selection length
fromLeftToRight	Boolean	true to select from left to right, false otherwise

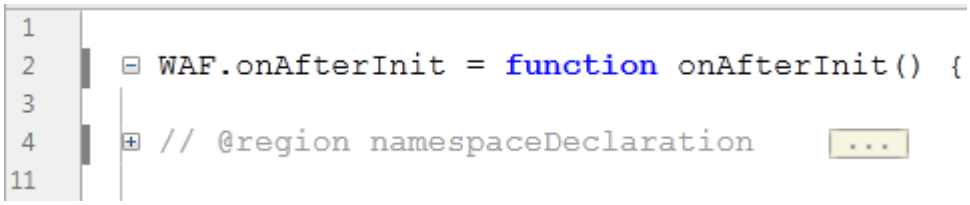
Description

The **currentEditor.selectFromStartOfText** method allows you to change the selection of text in the document currently displayed in the Code editor by selecting the *offset* character to *offset+length* character. You can pass a negative value in *length*, so that the text before the *offset* character will be selected. The *offset* character will be evaluated from the beginning of the text and includes collapsed blocks. If the new selection overlaps a collapsed block, the block is automatically expanded.

Pass **true** in the *fromLeftToRight* parameter to select text from left to right, and **false** to select from right to left.

Example

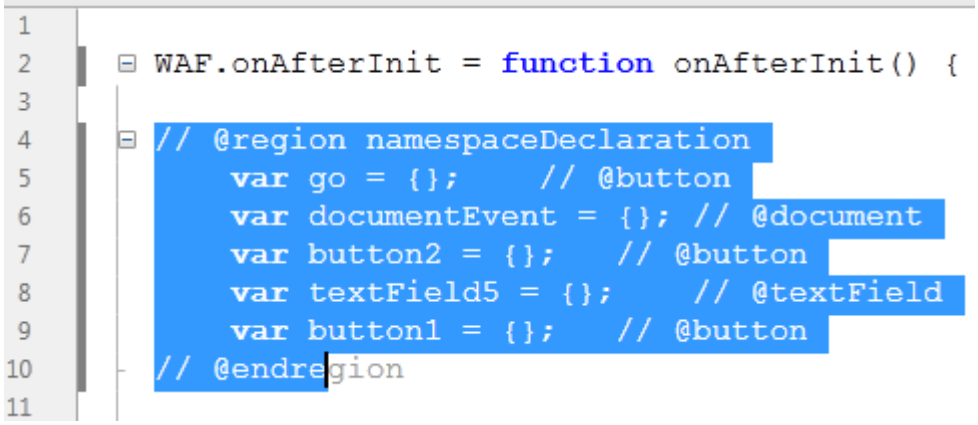
Considering the following content:



If you execute the following code:

```
studio.currentEditor.selectFromStartOfText(45,200,true)
```

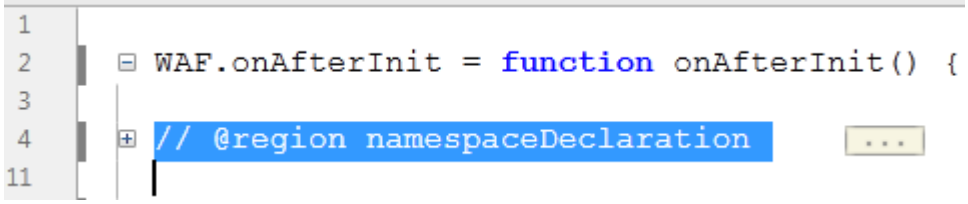
The new selection will be:



But, if you execute the following code:

```
studio.currentEditor.selectFromStartOfText(45,205,true)
```

The new selection will be:



In this case, there is no need to expand the block, it is entirely selected.

currentEditor.setAnnotation( )

void **currentEditor.setAnnotation**(Number *lineIndex*, String *errorMsg*)

Parameter	Type	Description
lineIndex	Number	Line index where to add a warning symbol
errorMsg	String	Tip to display when the mouse hovers on the warning symbol

Description

The **currentEditor.setAnnotation( )** method allows you to add a warning symbol in the vertical annotation bar at the *lineIndex* line in the open document. Keep in mind that Wakanda's Code editor line numbering starts at 1, but JavaScript indexes document lines starting at 0.

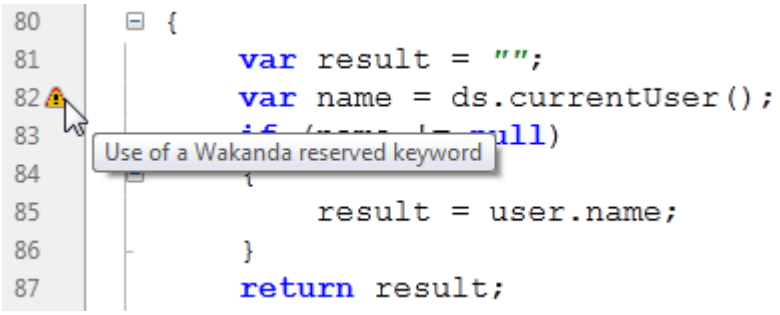
Pass in *errorMsg* the message to display as tip when the mouse hovers on the set symbol.

Example

The following code:

```
studio.currentEditor.setAnnotation(81,"Use of a Wakanda reserved keyword");
```

... will add a warning symbol associated with a message in the open document:



currentEditor.setCaretPosition( )

void **currentEditor.setCaretPosition**(Number *offset*)

Parameter	Type	Description
offset	Number	New position for the caret

Description

The currentEditor.setCaretPosition( ) method moves the caret (**|**) to the defined *offset* position in the document currently opened in the Code editor.

The character position you pass in *offset* will be evaluated from the beginning of the text, including collapsed blocks. If the new caret position is within a collapsed block, it is automatically expanded.

API: GUI

- Each extension action associated to a **button** has two graphical properties:
  - alternative property (Boolean): the extension can change button icon, button title, or button tips by changing the associated action's alternative state.
  - enabled property (Boolean): the extension can make button enabled or disabled by setting enabled state to **true** or **false** respectively.
- Each extension action associated with a **menu item** has two graphical properties as well:
  - checked property (Boolean): the extension can check/uncheck a menu item by changing the associated action's checked state to **true** or **false**.
  - enabled property (Boolean): the extension can show or hide the item by setting the enabled state to **true** or **false** respectively

Using 'studio' Object

All Wakanda Extension APIs are available through the "studio" object. Thus, you must prefix each API call with '**studio.**'
For example, to call the **alert( )** method, you should write:

```
studio.alert("Hello World!");
```

checkMenuItem( )

void **checkMenuItem**(String *actionName*, Boolean *isChecked*)

Parameter	Type	Description
actionName	String	actionName defined in the manifest.json file
isChecked	Boolean	True to check the menu item, false otherwise

Description

The **checkMenuItem( )** method allows you to set the checked state of the menu item associated to the *actionName*.
Pass **true** in the *isChecked* parameter to check the menu item button and **false** to uncheck it.

isActionAlternated( )

Boolean **isActionAlternated**(String *actionName*)

Parameter	Type	Description
actionName	String	actionName defined in the manifest.json file
Returns	Boolean	True if the alternated button action state is on, false otherwise

Description

The **isActionAlternated( )** method returns **true** if the alternated state for the *actionName* of a button is on.
The method returns **false** if the alternated state is off.

isActionEnabled( )

Boolean **isActionEnabled**(String *actionName*)

Parameter	Type	Description
actionName	String	actionName defined in the manifest.json file
Returns	Boolean	True if the enabled button action state is on, false otherwise

Description

The **isActionEnabled( )** method returns **true** if the enabled state for the *actionName* of a button is on.
The method returns **false** if the enabled state is off.

isMenuItemChecked( )

Boolean **isMenuItemChecked**(String *actionName*)

Parameter	Type	Description
actionName	String	actionName defined in the manifest.json file
Returns	Boolean	True if the actionName menu item is checked, false otherwise

Description

The **isMenuItemChecked( )** method returns **true** if the menu item associated to the *actionName* is checked.
The method returns **false** if the menu item is not checked.

setActionAlternated( )

void **setActionAlternated**(String *actionName*, Boolean *isAlternated*)

Parameter	Type	Description
actionName	String	actionName defined in the manifest.json file
isAlternated	Boolean	True to set the alternate state of the button, false otherwise

Description

The **setActionAlternated( )** method allows you to set the alternate state of the button associated to the *actionName*.
Pass **true** in the *isAlternated* parameter to set the alternated state and **false** to remove it.

setActionEnabled( )

void **setActionEnabled**(String *actionName*, Boolean *isEnabled*)

Parameter	Type	Description
actionName	String	actionName defined in the manifest.json file
isEnabled	Boolean	True to enable the button action, false otherwise

Description

The **setActionEnabled( )** method allows you to set the enabled state of the button associated to the *actionName*.
Pass **true** in the *isEnabled* parameter to enable the button and **false** to disable it.

API: Preferences

This set of API allows extension author to read or write extension settings, called preferences. All extension preferences are saved in the following file (optional):

- On Windows: *{Disk}:\Users\{User name}\AppData\Roaming\Wakanda Studio\ExtensionPreference \EXT_FOLDER_NAME\extension.prefs*
- On Mac OS: */Users/{User name}/Library/Application Support/Wakanda Studio/ExtensionPreference /EXT_FOLDER_NAME\extension.prefs*

... where *EXT_FOLDER_NAME* is the extension folder name.

A preference is a combination of a key and a value.

Using 'studio' Object

All Wakanda Extension APIs are available through the "studio" object. Thus, you must prefix each API call with '**studio.**'

For example, to call the **alert( )** method, you should write:

```
studio.alert("Hello World!");
```

extension.deletePrefFile( )

Boolean **extension.deletePrefFile**( )

Returns	Boolean	True if the preference file was successfully deleted, false otherwise

Description

The **extension.deletePrefFile( )** method removes the preference file from the disk. If the file was successfully deleted, the method returns **True**, otherwise (for example, if the file is locked), it returns **False**.

extension.getPref( )

String **extension.getPref**(String *keyName*)

Parameter	Type	Description
keyName	String	Name of the preference key to read
Returns	String	Current value of the preference key

Description

The **extension.getPref( )** method returns the current value of the *keyName* preference key in the extension preference file.

If the *keyName* key does not exist in the file, an empty string is returned.

extension.getPrefFolderPath( )

String **extension.getPrefFolderPath**( )

Returns	String	Extension preference folder path

Description

The **extension.getPrefFolderPath( )** method returns the extension preference folder full path, where the extension can add its files.

If the extension preference folder does not exist yet when the method is called, it is created.

Example

```
var prefPath = studio.extension.getPrefFolderPath();
// returns for example under Windows:
// 'C:\Users\{Name}\AppData\Roaming\Wakanda Studio\ExtensionPreference\Hello World Extens
```

extension.isPrefFileExisting( )

Boolean **extension.isPrefFileExisting**( )

Returns	Boolean	True if a preference file exists, False otherwise

Description

The **extension.isPrefFileExisting( )** method returns **true** if a preference file exists for the extension, and **false** otherwise.

It can be useful for example to restore the factory default settings.

extension.setPref( )

Boolean **extension.setPref**(String *keyName*, String *keyValue*)

Parameter	Type	Description
keyName	String	Name of the preference key to write
keyValue	String	New value for the preference key

Returns	Boolean	True if the value was successfully set, false otherwise

Description

The **extension.setPref( )** method writes a *keyName*/*keyValue* preference pair in the extension preference file. If the *keyName* preference was already defined in the file, its value is replaced by *keyValue*. If it was not defined, a new *keyName*/*keyValue* preference pair is added to the file.

The method returns **true** if it was successful and **false** otherwise.

API: Solution

The "Solution" theme methods allow you to get information from the Solution level.

Using 'studio' Object

All Wakanda Extension APIs are available through the "studio" object. Thus, you must prefix each API call with '**studio.**'
For example, to call the **alert( )** method, you should write:

```
studio.alert("Hello World!");
```

currentSolution.getPath( )

String **currentSolution.getPath**( )

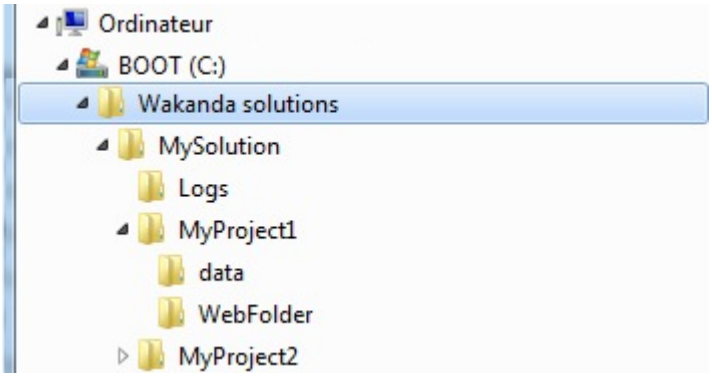
Returns	String	Path of the solution file

Description

The **currentSolution.getPath( )** method returns the absolute path of the current solution file (named '*SolutionName*.waSolution').

Example

Considering the following organization of files and folders on disk:




```
var solPath=studio.currentSolution.getPath();
    // returns C:\Wakanda solutions\MySolution\MySolution.waSolution
```

currentSolution.getSelectedItems( )

Array **currentSolution.getSelectedItems**( )

Returns	Array	Paths of selected item(s)

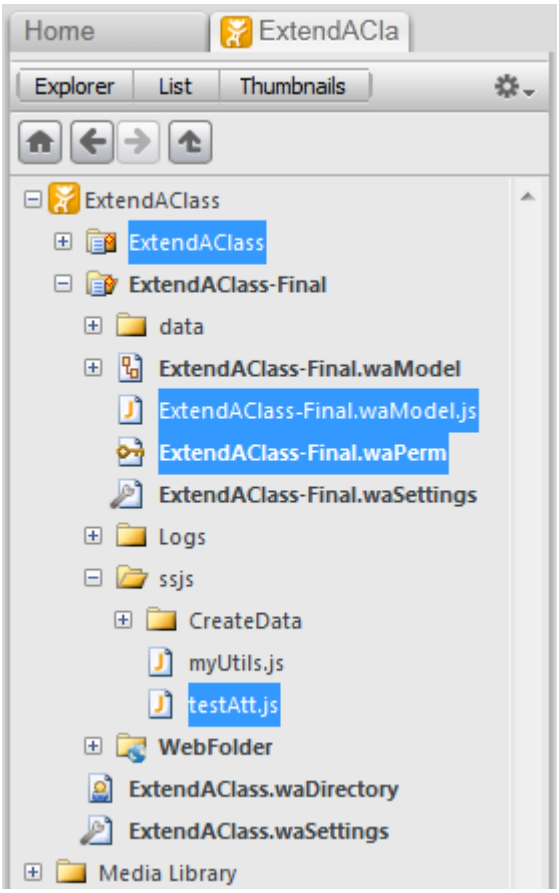
Description

The **currentSolution.getSelectedItems( )** method returns an array of selected file and folder paths in the Solution Explorer window. This information is useful when you need to execute an action to the selected items.

The array order is based on the user selection sequence: first selected items are in the first positions in the array. If no item is selected in the Solution Explorer, **currentSolution.getSelectedItems( )** returns an empty array.

Example

Given the following selected items in the Solution Explorer, if your solutions are located at the root folder:




```
var arrSel = studio.currentSolution.getSelectedItems();
// arrSel[0] contains "C:/ExtendAClass/ExtendAClass/"
// arrSel[1] contains "C:/ExtendAClass/ExtendAClass-Final/ExtendAClass-Final.waPerm"
// arrSel[2] contains "C:/ExtendAClass/ExtendAClass-Final/ExtendAClass-Final.waModel.js"
// arrSel[3] contains "C:/ExtendAClass/ExtendAClass-Final/ssjs/testAtt.js"
```

API: Storage

Storage features are useful when an extension needs to share information between **index.js** and the Web Zone Dialog. The Wakanda Studio Extension proposes a *Storage* object simply named **storage**, thus available through:

```
studio.extension.storage //extension storage object
```

Note: *For more information about Storage objects in Wakanda, please refer to the* ***Storage*** *section.*

Using 'studio' Object

All Wakanda Extension APIs are available through the "studio" object. Thus, you must prefix each API call with '**studio.**'
For example, to call the **alert( )** method, you should write:

```
studio.alert("Hello World!");
```

extension.storage.clear( )

void **extension.storage.clear**( )

Description

The **extension.storage.clear( )** method removes all the key/value pairs defined in the *storage* object.

extension.storage.getItem( )

String | Null **extension.storage.getItem**(String *keyName*)

Parameter	Type	Description
keyName	String	Name of key to get the value
Returns	Null, String	Value associated to the key

Description

The **extension.storage.getItem( )** method returns the current value associated with the given *keyName*.
If *keyName* is not an existing key in the *storage* object, the method returns **Null**.

extension.storage.key( )

String **extension.storage.key**(Number *keyIndex*)

Parameter	Type	Description
keyIndex	Number	Key index number
Returns	String	Key name

Description

The **extension.storage.key( )** method returns the key name for a given *keyIndex* in the *storage* object.

extension.storage.removeItem( )

void **extension.storage.removeItem**(String *keyName*)

Parameter	Type	Description
keyName	String	Name of the key to remove

Description

The **extension.storage.removeItem( )** method removes the *keyName* key and its associated value from the *storage* object.

extension.storage.setItem( )

void **extension.storage.setItem**(String *keyName*, String *keyValue*)

Parameter	Type	Description
keyName	String	Name of the key to set
keyValue	String	Value of the key to set

Description

The **extension.storage.setItem( )** method associates the *keyValue* to the given *keyName* in the *storage* object.

API: Studio

Using 'studio' Object

All Wakanda Extension APIs are available through the "studio" object. Thus, you must prefix each API call with '**studio.**'
For example, to call the **alert( )** method, you should write:

```
studio.alert("Hello World!");
```

Buffer( )

void **Buffer**(Number | Array | String *definition* [, String *encoding*])

Parameter	Type	Description
definition	Number, Array, String	Size (number or array) of the buffer or string to set to the buffer
encoding	String	Encoding method (if a string is passed in definition)

Description

The **Buffer( )** constructor method allows you to create and handle a SSJS *Buffer* type object from your extension code.
For more information about *Buffer* objects, please refer to the **Buffers** class description.

Example

We want to create a new Buffer containing the selected items in the Solution Explorer:

```
var arrSel = studio.currentSolution.getSelectedItems();
var myBuffer = new studio.Buffer(arrSel);
```

File( )

File **File**(String | Folder *path* [, String *fileName*])

Parameter	Type	Description
path	String, Folder	Path of the file to reference
fileName	String	Name of the file to reference
Returns	File	New File object

Description

The **File( )** constructor method allows you to create and handle a SSJS *File* type object from your extension code.
For more information about *File* objects, please refer to the **File Class** description.

Example

We want to create a new *File* object referencing the current opened document:

```
var fileRef = studio.File(studio.currentEditor.getPath());
```

Folder( )

Folder **Folder**(String *path*)

Parameter	Type	Description
path	String	Path of the folder to reference
Returns	Folder	New Folder object

Description

The **Folder( )** constructor method allows you to create and handle a SSJS *Folder* type object from your extension code.
For more information about *Folder* objects, please refer to the **Folder Class** description.

Example

We want to create a new *Folder* object referencing the preferences folder:

```
var folderRef = studio.Folder(studio.extension.getPrefFolderPath());
```

sendCommand( )

void **sendCommand**(String *commandName*)

Parameter	Type	Description
commandName	String	Action to execute

Description

The **sendCommand( )** method runs the Wakanda Studio menu command or another extensions' action defined in the *commandName* parameter.

- To execute a command from the Wakanda Studio, pass one of the following strings in *commandName*:

```
Abort
About
AddExistingProject
ArrangeInFront
AutoInsertBlocks
AutoInsertClosingChars
AutoInsertTabs
AutoSave
Block_MoveToEnd
Block_MoveToStart
Block_Select
BookmarkAll
BringAllToFront
Case_camelCase
Case_CamelCase
Case_LowerCase
Case_UpperCase
Catalog
CheckOutForEdit
Clear
ClearRecentFile
ClearRecentSolutions
Close
CloseSolution
CommentUncomment
Continue
Copy
CopyBBCode
Cut
DebugOther
DirectoryView
DisableAllBreakPoints
EditBreakpoint
EditDirectory
EditInNewTab
EditInNewWindow
EditorSelectBackColor
EditorStyleBold
EditorStyleColor
EditorStyleItalic
EditorStyleUnderline
EditShortcuts
EMCloseAllPanels
EMNewAttribute
EMNewClassMethod
EMNewCollectionMethod
EMNewEntityMethod
EMNewEntityModel
EMNewType
```

```
EMRelationOff
EMRelationSeeAll
EMRelationSeeSelected
EMReloadCatalog
EMToggleBothLayouts
EMToggleFlattenedAttributes
EMToggleInheritedAttributes
EMToggleMethods
EMToggleRelationAttributes
EMToggleStorageAttributes
EnableAllBreakPoints
Encoding_BIG5
Encoding_EUC_KR
Encoding_GB2312
Encoding_GB2312_80
Encoding_IBM437
Encoding_ISO_8859_1
Encoding_ISO_8859_10
Encoding_ISO_8859_13
Encoding_ISO_8859_15
Encoding_ISO_8859_2
Encoding_ISO_8859_3
Encoding_ISO_8859_4
Encoding_ISO_8859_5
Encoding_ISO_8859_6
Encoding_ISO_8859_7
Encoding_ISO_8859_8
Encoding_ISO_8859_9
Encoding_JIS
Encoding_KOI8R
Encoding_MAC_ARABIC
Encoding_MAC_BALTIC
Encoding_MAC_CENTRALEUROPE
Encoding_MAC_CHINESE_SIMP
Encoding_MAC_CHINESE_TRAD
Encoding_MAC_CYRILLIC
Encoding_MAC_GREEK
Encoding_MAC_HEBREW
Encoding_MAC_ROMAN
Encoding_MAC_TURKISH
Encoding_SHIFT_JIS
Encoding_US_ASCII
Encoding_US_EBCDIC
Encoding_UTF_16_BIGENDIAN
Encoding_UTF_16_SMALLENDIAN
Encoding_UTF_32_BIGENDIAN
Encoding_UTF_32_SMALLENDIAN
Encoding_UTF_7
Encoding_UTF_8
Encoding_WIN_ARABIC
Encoding_WIN_BALTIC
Encoding_WIN_CENTRALEUROPE
Encoding_WIN_CHINESE_SIMP
Encoding_WIN_CHINESE_TRAD
Encoding_WIN_CYRILLIC
Encoding_WIN_GREEK
Encoding_WIN_HEBREW
Encoding_WIN_ROMAN
Encoding_WIN_TURKISH
ExcludeFromSolution
ExcludeFromSourceControl
FactorySettings
FactoryShortcuts
Find
FindInFiles
FindNext
FindPrevious
FindResultsList
FindSameNext
```

```
FindSamePrevious
Fold_All
Fold_CurrentLevel
Fold_Selection
FoldersFirst
FreeScript
GetLatestVersion
GetRevision
GotoDefinition
GotoDesign
GotoGroups
GotoLine
GotoNextBookmark
GotoPreviousBookmark
GotoSource
GotoUsers
GUIAlignBottom
GUIAlignLeft
GUIAlignRight
GUIAlignTop
GUICenterHorizontally
GUICenterVertically
GUIDistributeHorizontally
GUIDistributeVertically
GUIMoveBackward
GUIMoveForward
GUIMoveToBack
GUIMoveToFront
GUINewDataSourceArray
GUINewDataSourceEntityModel
GUINewDataSourceObject
GUINewDataSourceRelatedEntityMode
GUINewDataSourceVariable
GUIShowPanels
GUIShowShapes
ImportExternalFile
ImportExternalFolder
LastEdit
LineEnding_CR
LineEnding_CRLF
LineEnding_LF
MainPage
MinimizeAllWindow
MinimizeWindow
MoveSelectionDown
MoveSelectionUp
NewCatalog
NewCSS
NewFile
NewFolder
NewGUI
NewHTML
NewJavascript
NewJSON
NewMobileGUI
NewPHP
NewProject
NewSolution
NewTabletGUI
NewTXT
NewUAG
NewWebComponent
NewXML
NextError
NextTab
OpenDebugger
OpenFile
OpenRecentFile
OpenRecentSolution
```

```
OpenScripts
OpenSolution
OpenWebEditor
PageSetup
Paste
Pause
Preferences
PreviousError
PreviousTab
Print
Quit
Redo
ReferenceExternalFile
ReferenceExternalFolder
RefreshSourceControlStatus
ReloadDirtyCatalogs
RemoveAllBookmark
RemoveUAG
Rename
Replace
ReplaceAll
ReplaceNext
ReplacePrevious
RevealInExplorer
RevealInExplorerFromTabs
RevealInFinder
RevealInFinderFromTabs
RevealParentInExplorer
RunEditorFile
RunExplorerFile
RunProject
Save
SaveAll
SaveAs
SaveAsTemplate
SearchReferences
SelectAll
SelectFont
ServerMonitoring
SetAsDefaultSolution
SetAsStartupProject
SetSolutionServerLocation
SetStartServerOnSolutionOpen
SetStopServerOnSolutionClose
ShiftSelectionLeft
ShiftSelectionRight
ShowImageFolder
ShowMediasLibrary
SortExplorerByName
SortExplorerByType
SourceControlSettings
StartWakandaAdmin
StartWakandaDebugger
StartWakandaServer
StepInto
StepOut
StepOver
SwapExpression
Tabify
ToggleBookmark
ToggleBreakpoint
ToggleRole_Bootstrap
ToggleRole_Catalog
ToggleRole_Data
ToggleRole_RPC_Catalog
ToggleRole_RPC_Functions
ToggleRole_Setting
ToggleRole_Smartphone
ToggleRole_Tablet
```

```
ToggleRole_WebFolder
Undo
UndoCheckOut
Unfold_All
Unfold_CurrentLevel
Unfold_Selection
Untabify
ViewBiggerFont
ViewLineNumbers
ViewOutline
ViewOutput
ViewSearchString
ViewSmallerFont
ViewStatusBar
ViewToolbar
ViewWhiteSpaces
```

- To execute an action from another extension, use the following format in *commandName*:

  ```
  EXTENSIONNAME.ACTIONNAME
  ```

  where EXTENSIONNAME is the folder name of extension and ACTIONNAME is the action message name.
  When running **sendCommand( )** to call the action of another extension, the destination extension will receive "fromExtension" as *message.event* in the handleMessage function. For more information, please refer to **handleMessage Function** paragraph.

SystemWorker( )

void **SystemWorker**(String *commandLine*)

Parameter	Type	Description
commandLine	String	Command line to execute

Description

The **SystemWorker( )** constructor method allows you to create and handle a SSJS *SystemWorker* type object from your extension code.

For more information about *SystemWorker* objects, please refer to the **SystemWorker Class** description.

API: Web Zone Dialog

Wakanda Studio API provides ways to launch modal or non modal Web zones. It could be useful when an extension needs a customizable dialog box.

Use the Wakanda Studio extension *Storage* object (***studio.extension.storage***) to share information between modal/modless dialog boxes and **index.js**. If you want to get values from the dialog in **index.js**, the extension lifetime should be set as *application_lifetime*.

Note: *For more information about* ***studio.extension.storage****, please refer to the* ***API: Storage*** *chapter.*

extension.quitDialog( )

void **extension.quitDialog**( )

Description

The **extension.quitDialog( )** method closes the dialog box opened by **extension.showModelessDialog( )** or **extension.showModalDialog( )**.

After having opened an HTML dialog, it is recommended that you attach this method to an **OK** or a **Cancel** button (or both) in your HTML page code.

extension.showModalDialog( )

Boolean **extension.showModalDialog**(String *htmlPage* [,String *arguments* [,Object *params* [,String *callback*]]])

Parameter	Type	Description
htmlPage	String	Relative file path to the HTML page to load
arguments	String	Arguments to process
params	Object	Window parameters: {title (string), dialogwidth (number), dialogheight (number), resizable (boolean)}
callback	String	Callback function
Returns	Boolean	True if the dialog box was validated, false otherwise

Description

The **extension.showModalDialog( )** method opens a modal dialog box displaying the *htmlPage*.

Pass in the *htmlPage* parameter a file path, relative to the extension folder, indicating which HTML page to load.

arguments is an object or a valid javascript value containing any parameters to pass to the HTML page.
On the HTML page side, you will access these *arguments* through the **userArguments** key of the Studio *Storage* object. For example, you can use an instruction such as:

```
var myArgs = studio.extension.storage.getItem('userArguments');
```

You can pass in *params* an object containing title and size parameters as properties:

- *title* (string): title for the dialog box. Example {title: "Select Settings"}. By default if this parameter is omitted, the title area is empty.
- *dialogwidth* (number): width of the dialog box in pixels. By default if this parameter is omitted, the width is 640 pixels.
- *dialogheight* (number): height of the dialog box in pixels. By default if this parameter is omitted, the height is 400 pixels.
- *resizable* (boolean): true if the dialog box must be resizable, false otherwise. By default if this parameter is omitted, the dialog is resizable.

The HTML modal dialog is executed asynchronously. If you want to get a result from the HTML dialog, you need to define a *callback* function, that will be called when the dialog is closed.
Again, you can use the Studio *Storage* object. For example, you could put the result value into the **studio.extension.storage.returnValue** key and get this value in *callback* function. When the HTML dialog is closed, the *callback* function is executed, then you get back in the **index.js** file any result from your dialog.

Note that the *callback* function should be defined in the same way as the other actions.

Example

We want to open a custom Settings dialog box to allow the user to set parameters.

- In the **index.js** file, we added the following actions:

```
    //the settings action is called when the user clicks a button
actions.settings = function settings(message) {
    var option;
    option = DefaultOption;
    option = getOptFromPref(option); // gets current values from existing preferences
    studio.extension.showModalDialog(
        "settingsDialog.html",
        option,
        {title:"My Settings", dialogwidth:470, dialogheight:380, resizable:false},
        'writeOptions');
};

    //The "writeOptions" callback function
actions.writeOptions = function writeOptions(message) {
    var newOption = studio.extension.storage.returnValue; // gets values from the dialog
    if (newOption) //if there are new values
    {
        studio.extension.setPref("pref1", newOption.pref1);
        studio.extension.setPref("pref2", newOption.pref2);
        //...
    }
}
```

- In the HTML page named "settingsDialog.html", you should have defined the corresponding functions, for example:

```
function init() {
    document.getElementById('pref1').value = studio.extension.storage.dialogArguments.pre
    document.getElementById('pref2').value = studio.extension.storage.dialogArguments.pre
    setValidation();
}

function getValueAndQuitHtmlPage() {
    var hpref1;
    var hpref2;

    hpref1= document.getElementById('pref1').value;
    hpref2= document.getElementById('pref2').value;

    studio.extension.storage.returnValue = {
    "pref1":hpref1,
    "pref2":hpref2
    };
    studio.extension.quitDialog();
}
```

extension.showModelessDialog( )

Boolean **extension.showModelessDialog**(String *htmlPage* [,String *arguments* [,Object *params* [,String *callback*]]])

Parameter	Type	Description
htmlPage	String	Relative file path to the HTML page to load
arguments	String	Arguments to process
params	Object	Window parameters
callback	String	Callback function name
Returns	Boolean	True if the dialog box was validated, false otherwise

Description

The **extension.showModelessDialog( )** method opens a non modal dialog box displaying the *htmlPage*.

This method is similar to the **extension.showModalDialog( )** method, except that it opens a non modal dialog box.