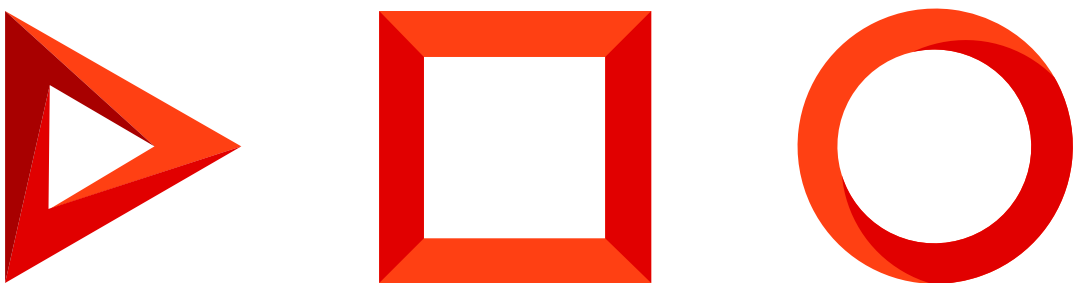
Creatio Academy

Modules

Module types

Version 8.0



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Module types

Advanced

Base modules

Creatio implements the following **base modules**:

- `ext-base`. Implements the `ExtJs` framework functionality.
- `terrasoft` in the `Terrasoft` namespace. Implements access to system operations, core variables, etc.
- `sandbox`. Implements a mechanism that exchanges messages among modules.

Example that accesses the `ext-base`, `terrasoft`, and `sandbox` modules

```
/* Define a module and retrieve links to dependency modules. */
define("ExampleModule", ["ext-base", "terrasoft", "sandbox"],
    /* "Ext" is the link to the object that provides access to the ExtJS framework.
    "Terrasoft" is the link to the object that provides access to system variables, core variabl
    "sandbox" is the link to the object required to exchange messages among modules. */
    function (Ext, Terrasoft, sandbox) {
});
```

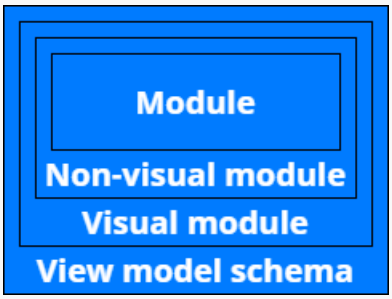
Most client modules use base modules. You do not have to specify base modules in dependencies. After you create a module object, the `Ext`, `Terrasoft`, and `sandbox` objects become available as the `this.Ext`, `this.Terrasoft`, and `this.sandrenderbox` object properties.

Client modules

Client module types

- non-visual module
- visual module
- replacing module

View the client module hierarchy below.



Non-visual module

The **purpose** of a non-visual module is to implement Creatio functionality that is usually not related to binding data and displaying data in the UI. For example, business rule modules (the `BusinessRuleModule` schema in the `NUI` package) and utility modules that implement service functions are non-visual modules.

To **implement a non-visual module**, follow the instructions in a separate article: Client module.

Visual module

Visual modules are modules that implement view models (`ViewModel`) in Creatio based on the MVVM pattern. Learn more about the MVVM pattern in Wikipedia.

The **purpose** of a visual module is to encapsulate data visualized in the UI controls and the methods of working with data. For example, section, detail, and page modules are visual modules.

To **implement a visual module**, follow the instructions in a separate article: Client module.

Replacing module

The **purpose** of a replacing module is to extend the base module's functionality. Modules that replace base functionality modules do not support inheritance in its traditional sense. You cannot use the resources of the replaced module in the replacing module. Instead, recreate resources in the replacing schema.

To **implement a replacing module**, follow the instructions in a separate article: Client module.

Client module methods

Creatio lets you implement the following **methods** in client modules:

- `init()`. Implements the logic executed as part of loading the module. The client core calls this method first automatically when loading the module. The `init()` method usually subscribes to events of other modules and initializes the module values.
- `render(renderTo)`. Implements the module visualization logic. The client core calls this method automatically when loading the module. To ensure data is displayed correctly, the mechanism that binds the view (`View`) and view model (`ViewModel`) must be triggered before data visualization. As such, this mechanism is usually initiated in the `render()` method. by calling the `bind()` method in the view object. If the module is loaded into a container, Creatio passes the link to that container to the `render()` method as an argument. The `render()` method is required for visual modules.

Utility modules

Although module is an isolated software unit, it can use the functionality of other modules. To do this, import the needed module as a dependency. Use a factory function argument to access an instance of a dependency module.

During development, you can group auxiliary and service general-purpose methods into separate **utility modules</141>. Import the utility module into a module to use the functionality.**

Work with resources

Resources are additional schema properties. Add resources to the client module schema in the properties area of the Module Designer (the + button).

Creatio lets you use the following **resources**:

- localizable strings (the [*Localizable strings*] property)
- images (the [*Images*] property)

The `[ClientModuleName]Resources` module contains the resources that the Creatio core generates for each client module automatically.

To **access the resource module from the client module**, import the resource module into the client module as a dependency.

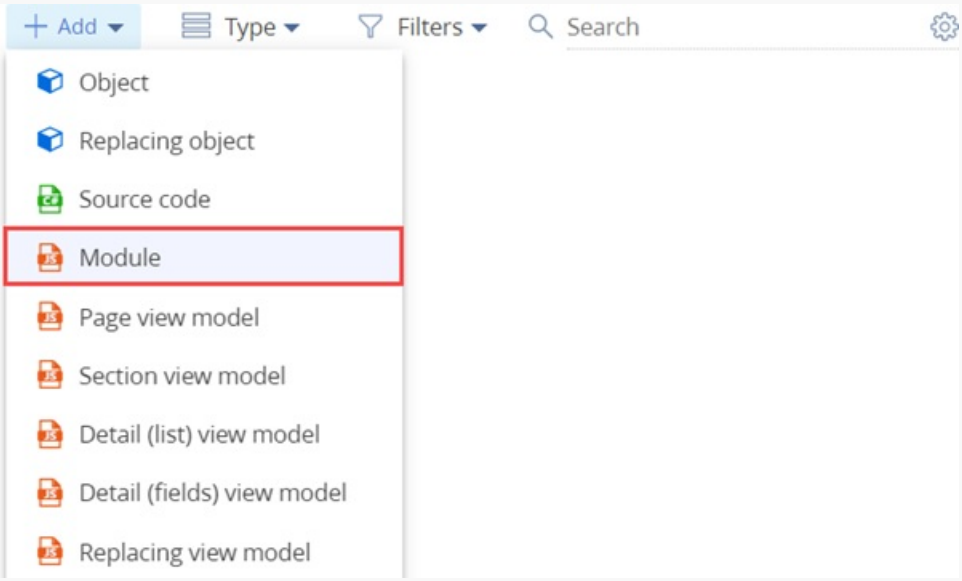
Create a standard module

 Medium

Example. Create a standard module that contains the `init()` and `render()` methods. When loading the module, the client core must call the `init()` method, then the `render()` method. Each method must call a message box.

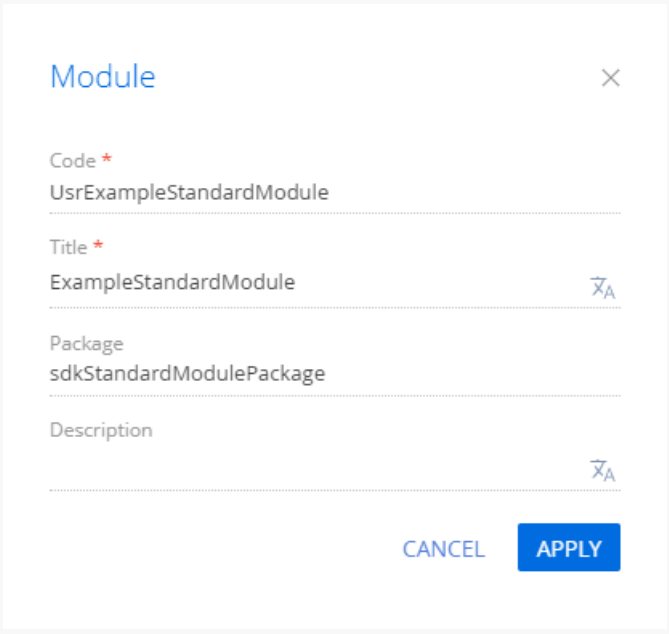
Create a visual module

1. Open the [*Configuration*] section and select a custom package to add the schema.
2. Click [*Add*] → [*Module*] on the section list toolbar.



3. Fill out the schema properties in the Module Designer.

   - Set [*Code*] to "`UsrExampleStandardModule`."
   - Set [*Title*] to "`ExampleStandardModule`."



   Click [*Apply*] to apply the changes.

4. Add the source code in the Module Designer.

```
UsrExampleStandardModule
```

```
/* Declare a module called UsrExampleStandartModule. The module has no dependencies. Therefor
define("UsrExampleStandardModule", [], function () {
    return {
```

```
        /* The client core calls this method first automatically when loading the module. */
        init: function () {
            alert("Calling the init() method of the UsrExampleStandardModule module");
        },
        /* The client core calls this method automatically when loading the module into a con
        render: function (renderTo) {
            alert("Calling the render() method of the UsrExampleStandardModule module. The mo
        }
    };
});
```

5. Click [*Save*] on the Module Designer's toolbar.

Outcome of the example

To **view the outcome of the example**, create the following request string.

Template URL

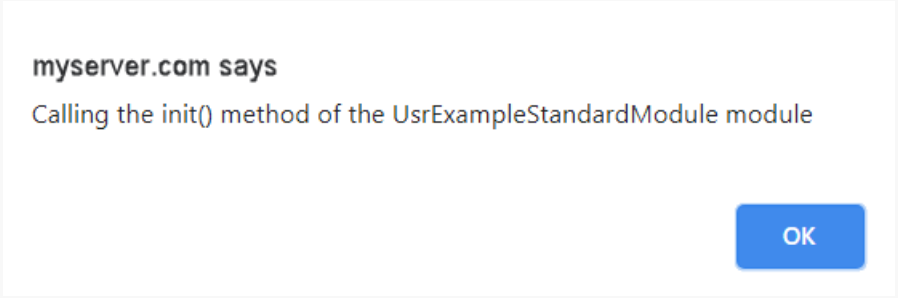
```
[Creatio URL]/0/NUI/ViewModule.aspx#[SomeModuleName]
```

Example URL

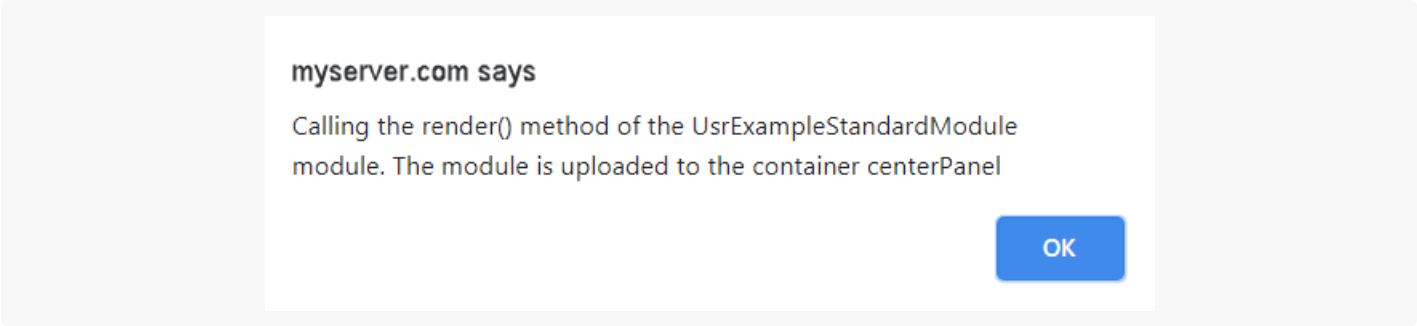
```
http://myserver.com/0/NUI/ViewModule.aspx#UsrExampleStandardModule
```

When loading the module, the client core must call the `init()` method, then the `render()` method. Each method calls a message box.

Call the `init()` method of the `UsrExampleStandardModule` module



Call the `render()` method of the `UsrExampleStandardModule` module



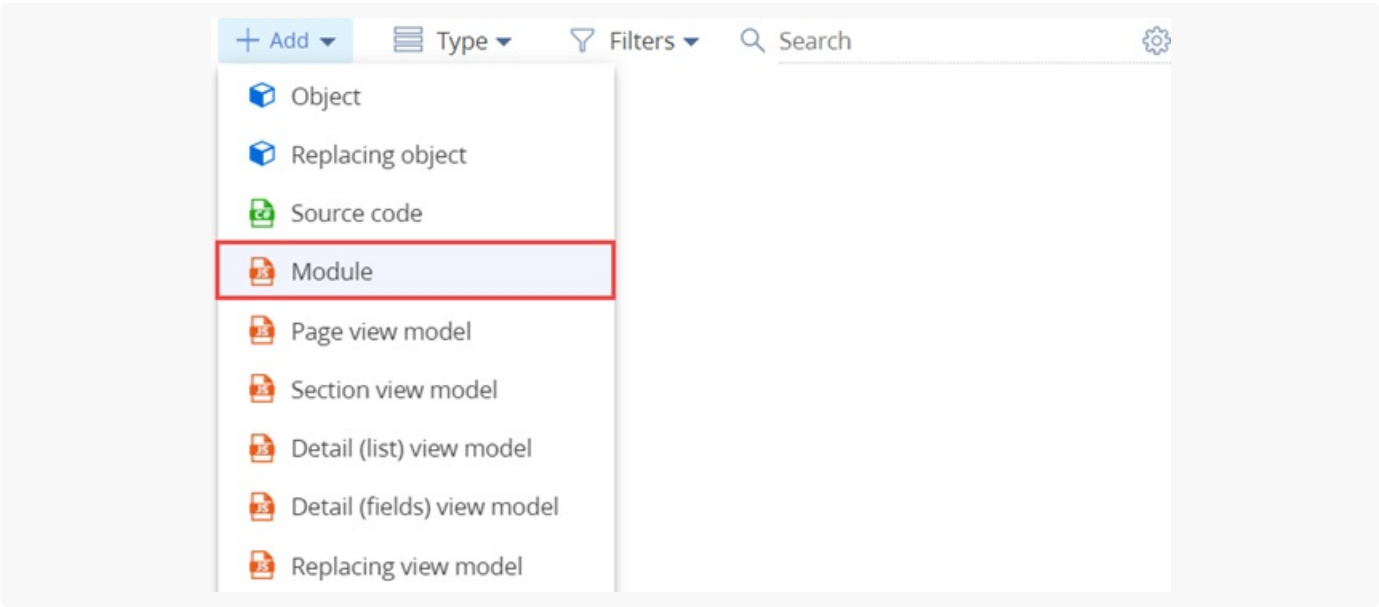
Create a utility module

Medium

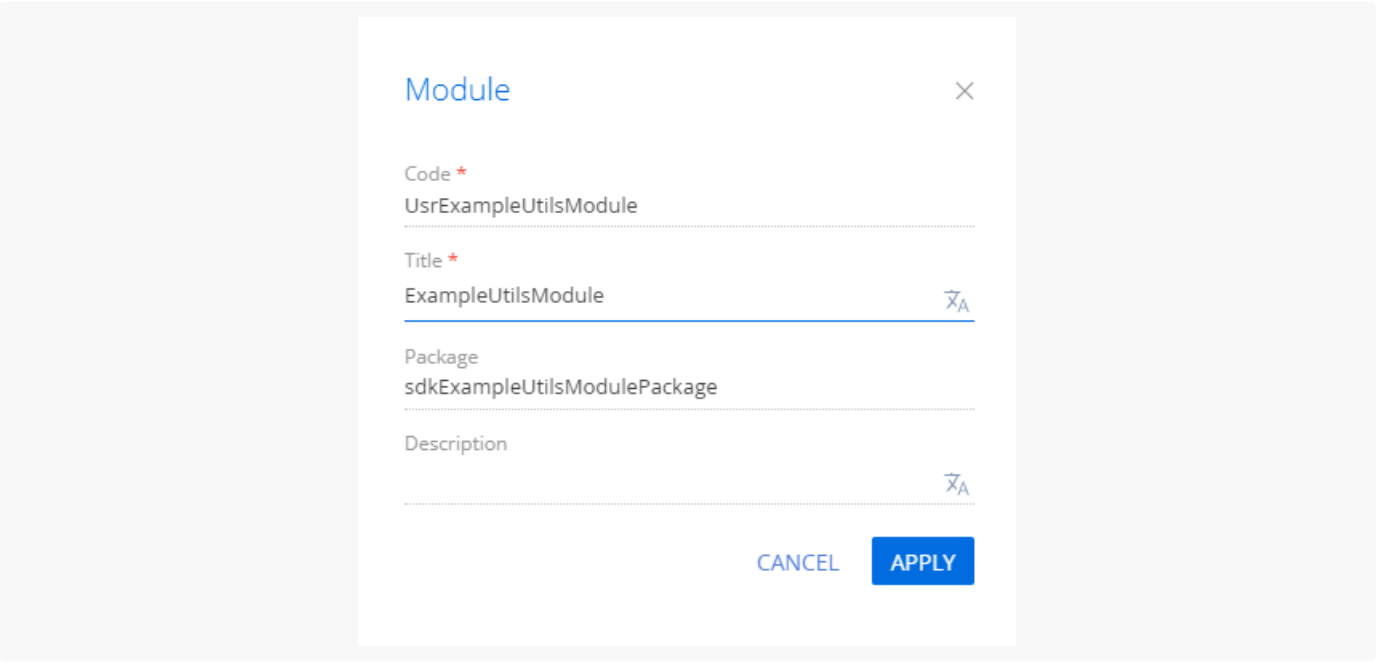
Example. Create a standard module that contains the `init()` and `render()` methods. When loading the module, the client core must call the `init()` method, then the `render()` method. Each method must call a message box. Implement the method that displays the message box using a utility module.

1. Create a utility module

1. Open the [*Configuration*] section and select a custom package to add the schema.
2. Click [*Add*] → [*Module*] on the section list toolbar.



3. Fill out the schema properties in the Module Designer.
   - Set [*Code*] to "`UsrExampleUtilsModule`."
   - Set [*Title*] to "`ExampleUtilsModule`."



Click [*Apply*] to apply the changes.

4. Add the source code in the Module Designer.

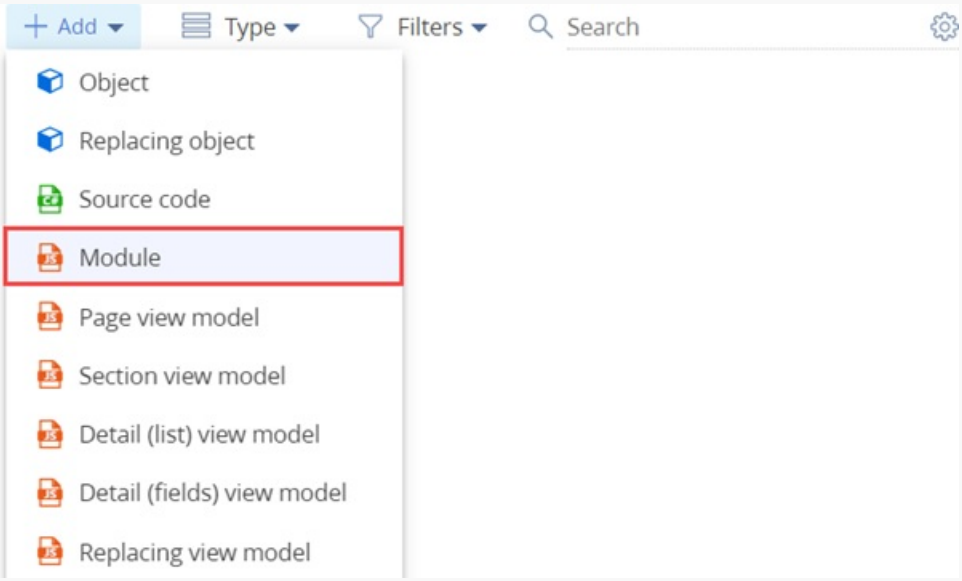
UsrExampleUtilsModule

```
/* Declare a module called UsrExampleUtilsModule. The module has no dependencies. Therefore,
The module contains the method that displays the message box. */
define("UsrExampleUtilsModule", [], function () {
    return {
        /* The method that displays the message box. The "information" method argument contai
        showInformation: function (information) {
            alert(information);
        }
    };
});
```

5. Click [*Save*] on the Module Designer's toolbar.

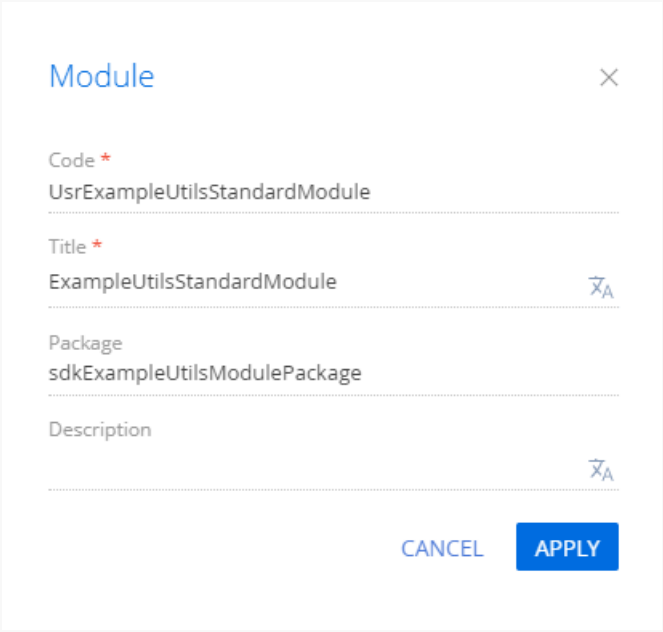
2. Create a visual module

1. Open the [*Configuration*] section and select a custom package to add the schema.
2. Click [*Add*] → [*Module*] on the section list toolbar.



3. Fill out the schema properties in the Module Designer.

   - Set [*Code*] to "`UsrExampleUtilsStandardModule`."
   - Set [*Title*] to "`ExampleUtilsStandardModule`."



   Click [*Apply*] to apply the changes.

4. Add the source code in the Module Designer.

```
UsrExampleUtilsStandardModule
```

```
/* Declare a module called UsrExampleUtilsStandardModule. The module imports the UsrExampleUt
define("UsrExampleUtilsStandardModule", ["UsrExampleUtilsModule"], function (UsrExampleUtilsM
    return {
```

```
        /* The init() and render() methods call a utility method to display the message that
        init: function () {
            UsrExampleUtilsModule.showInformation("Calling the init() method of the UsrExampl
        },
        render: function (renderTo) {
            UsrExampleUtilsModule.showInformation("Calling the render() method of the UsrExam
        }
    };
});
```

5. Click [*Save*] on the Module Designer's toolbar.

Outcome of the example

To **view the outcome of the example**, create the following request string.

Template URL

```
[Creatio URL]/0/NUI/ViewModule.aspx#[SomeModuleName]
```

Example URL

```
http://myserver.com/0/NUI/ViewModule.aspx#UsrExampleUtilsStandardModule
```

When loading the module, the client core must call the `init()` method, then the `render()` method. Each method calls a message box.

Call the `init()` method of the `UsrExampleUtilsStandardModule` module

Call the `render()` method of the `UsrExampleUtilsStandardModule` module