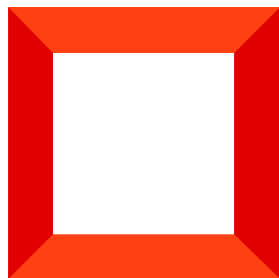
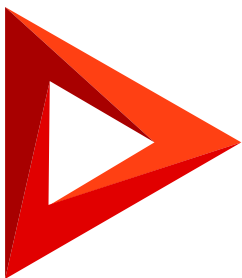


Creatio IDE

Develop in Creatio IDE

Version 7.18



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Develop in Creatio IDE



Creatio IDE is an integrated development environment used to develop complex business logic, integration, and setup. Creatio IDE is located in the [*Configuration*] section. Use the [*Configuration*] section to manage configuration elements that control Creatio functionality.

Set up permissions to access the [*Configuration*] section

You can set up permissions to the [*Configuration*] section on the system operation level. By default, only system administrators have access to key system operations. However, you can [grant](#) permissions to specific users or user groups. To **grant permissions** to access the [*Configuration*] section:

1. Click  to open the System Designer. Click [*Operation permissions*] in the [*Users and administration*] block.
2. Select the [*Can manage configuration elements*] (“CanManageSolution” code) system operation.
3. Click  and specify the user/role in the [*Operation permission*] detail. The relevant record will appear in the [*Operation permissions*] detail with [*Yes*] in the [*Access level*] column. The users with the role will have permission to the [*Can manage configuration elements*] system operation.

If a user does not have permission to access the [*Configuration*] section, they will receive a standard notification about the lack of permissions to perform an operation when trying to load the section.

Open the [*Configuration*] section

To open the [*Configuration*] section in Creatio **.NET Framework**:

- Click  to open the System Designer. Click [*Advanced settings*] in the [*Admin area*] block.
- Open the [Creatio address]/0/ClientApp/#/WorkspaceExplorer URL. For example, `http://my.creatio.com/0/ClientApp/#/WorkspaceExplorer`.
- Use the `/we` alias. For example, `http://my.creatio.com/0/we`.
- Use the `/conf` alias. For example, `http://my.creatio.com/0/conf`.
- Use the `/dev` alias. For example, `http://my.creatio.com/0/dev`.

You can open the section in Creatio **ASP.NET Core** in a similar way. However, you do not need to use the `/0` prefix.

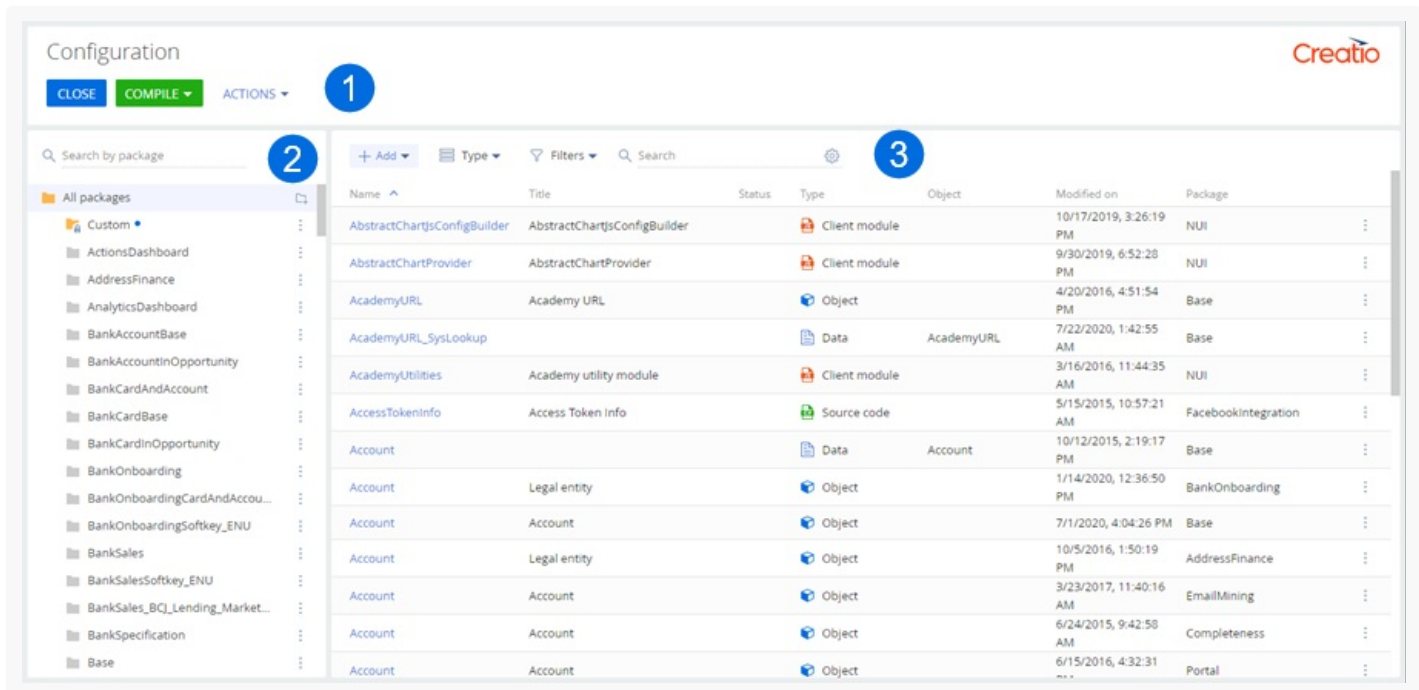
The [*Configuration*] section will open in a new tab.

Configuration development

The [*Configuration*] section UI includes several **functional areas**:

- Toolbar (1)

- Package workspace (2)
- Main workspace (3)

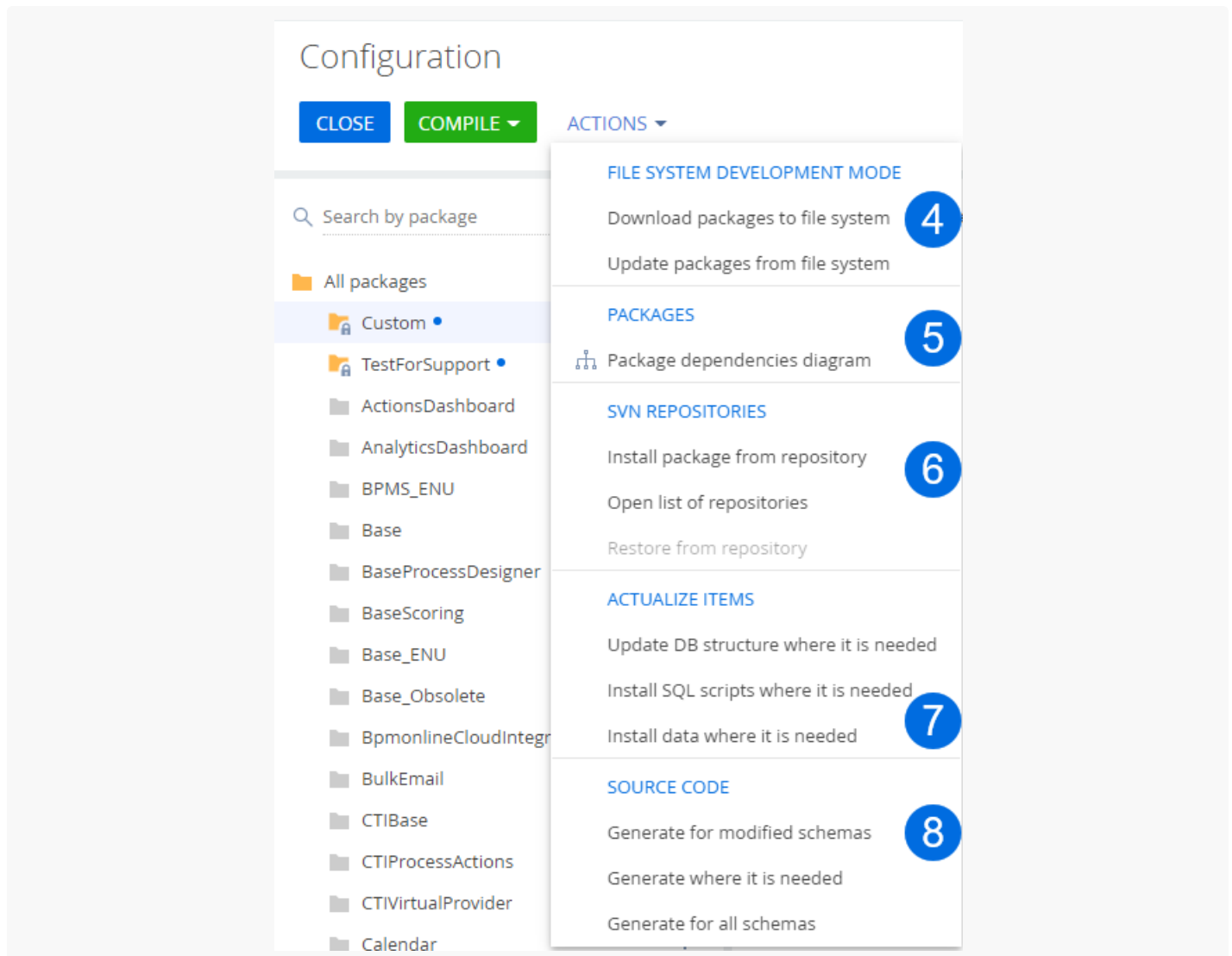


The [*Configuration*] section **tools** let you manage:

- Development in the file system
- Packages
- Package configuration elements
- Version control system repositories
- Configuration compilation

Development in the file system

The file system development actions are located in the [*File system development mode*] group (4) in the toolbar's (1) [*Actions*] dropdown.



The [**File system development mode**] (4) action group lets you:

- Download packages from the Creatio database to the `...\Terrasoft.WebApp\Terrasoft.Configuration\Pkg` directory ([*Download packages to file system*] option).
- Upload packages from the `...\Terrasoft.WebApp\Terrasoft.Configuration\Pkg` directory to Creatio database ([*Update packages from file system*] option).

To access the options in the [*File system development mode*] action group (4), enable development mode in the [file system](#). Hover over an option in this action group to view the steps to enable development mode. Learn more about the file system development mode in the [Development in the file system](#) article.

Packages


Package management tools:

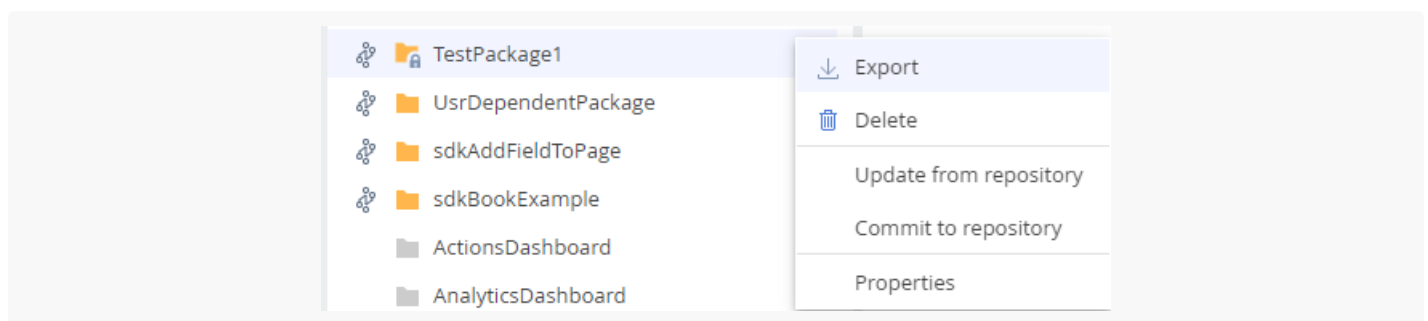
- The [*Packages*] group (5) in the toolbar's (1) [*Actions*] dropdown.
- Package workspace (2).
- The package menu.

The [*Packages*] **action group** (5) lets you open the [package dependencies diagram](#).

The package workspace (2) lets you:

- Search for a package by name ([*Search by package*] bar).
- Create a package (📁 button). Click the button to open the package creation window. Set the package name and description, as well as add dependencies in this window. Learn more about creating packages in the [Create a package for development](#) article.
- View the list of Creatio packages ([*All packages*] folder). The packages are displayed in alphabetical order. The modified packages and modifiable packages are displayed at the top. If you select the All packages folder, Creatio will display the configuration elements of all packages alphabetically in the [*Configuration*] section's main workspace (3). If you select a different package folder, Creatio will only display the configuration elements of that package. Creatio displays the modified packages at the top of the [*All packages*] folder list and marks them with •.

Click  next to the package name to bring up the **package menu**.



The package menu lets you:

- Delete a package ([*Delete*] option). Not available for pre-installed packages. You can delete empty packages and packages with non-parent configuration elements. Attempting to delete a package with parent configuration elements will open a dialog window with the list of dependent packages and dependent elements that block deletion.
- Review the package properties ([*Properties*] option). Set up the package dependencies for modifiable packages in the [*Properties*] tab. The tab also lets you view the system information: the package author and editor, the creation and modification dates, the unique identifier, the primary package key in the database table. To open the package properties, double-click the package name.

Package configuration elements

The [*Configuration*] section includes the following package configuration element **management tools**:

- The [*Actualize items*] group (7) in the toolbar's [*Actions*] dropdown (1).
- The [*Source code*] group (8) in the toolbar's [*Actions*] dropdown (1).
- The workspace toolbar (3) in the [*Configuration*] section.
- The record list (3) in the [*Configuration*] section.

The [*Actualize items*] (7) **action group** lets you:

- Update the database structure for outdated configuration elements ([*Update DB structure when it is needed*] option).
- Install the necessary SQL scripts ([*Install SQL scripts where it is needed*] option).
- Install the necessary data ([*Install data where it is needed*] option).

Creatio will send you a notification when it finishes updating the configuration items.

The [*Source code*] **action group** (8) lets you:

- Generate the source code for modified schemas ([*Generate for modified schemas*] option).
- Generate the source code for schemas that require it ([*Generate where it is needed*] option).
- Generate the source code for every schema ([*Generate for all schemas*] option). This operation may take more than 10 minutes.

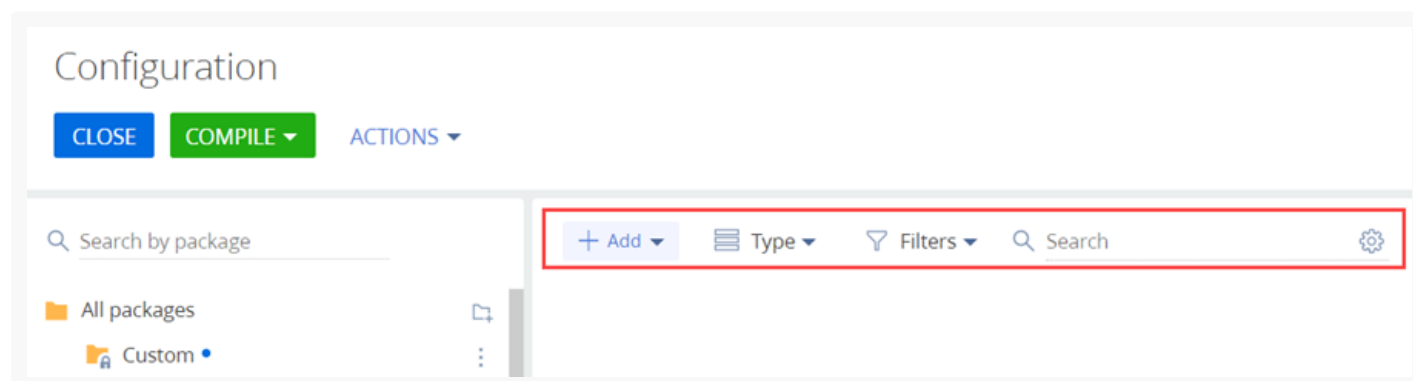
Since version 7.18.4, Creatio generates the source code for schemas [in the background](#).

The **major features** of background generation are as follows:

- Background generation does not affect the core user workflows.
- Starting compilation or a new source code generation is not possible while the running operation is not complete. If you attempt to start them, Creatio will warn you that the source code generation is still in progress.
- We do not recommend working on functionality that requires compilation until the source code generation is done. That includes installing applications and extensions, configuring the UI and business logic.

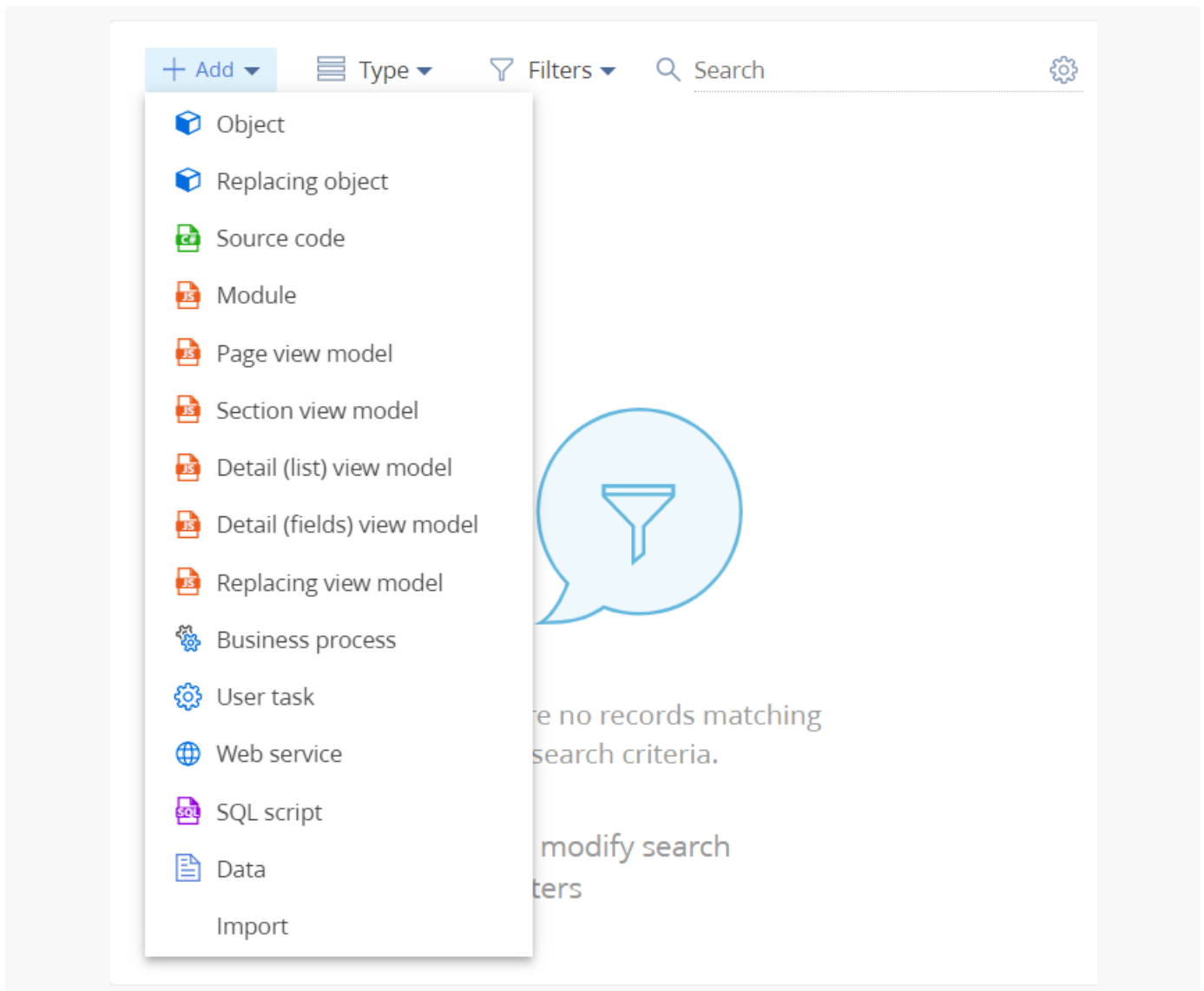
Once the operation is completed, Creatio will display the corresponding notification in the [communication panel](#).

You can view the [*Configuration*] section's workspace **toolbar** (3) on the figure below.

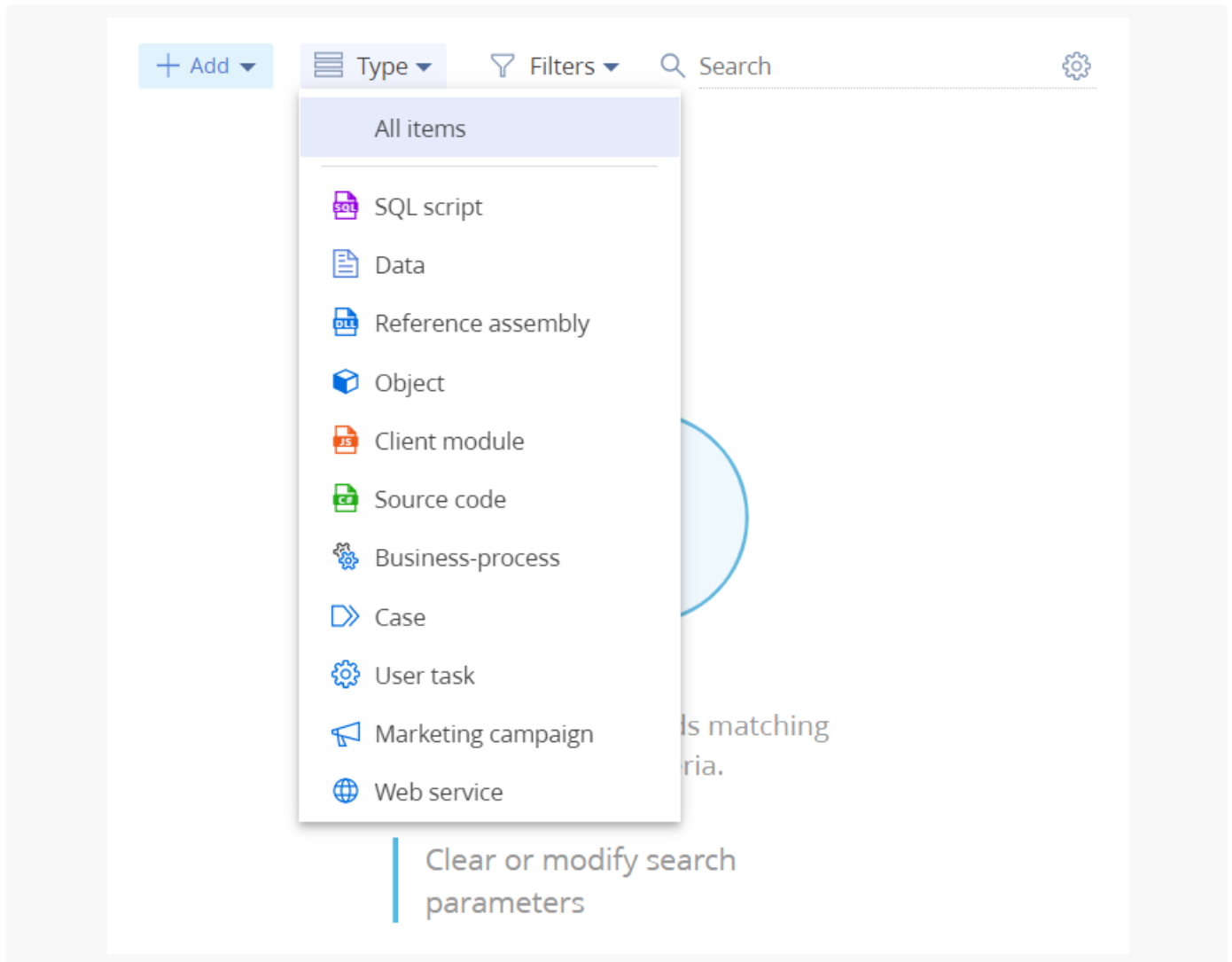


The toolbar lets you:

- Add a configuration element by type ([*Add*] dropdown). Select a package before adding an element. If you do not select a package, the options in the [*Add*] dropdown will be grayed out. You cannot add configuration elements to pre-installed packages. View the configuration element **types** you can add on the figure below.



- Import a schema (*.md) or a reference assembly (*.dll) to the custom package ([*Import*] option in the [*Add*] dropdown).
- Select the configuration element type to display in the section list ([*Type*] dropdown). View the configuration element **types** you can display on the figure below.

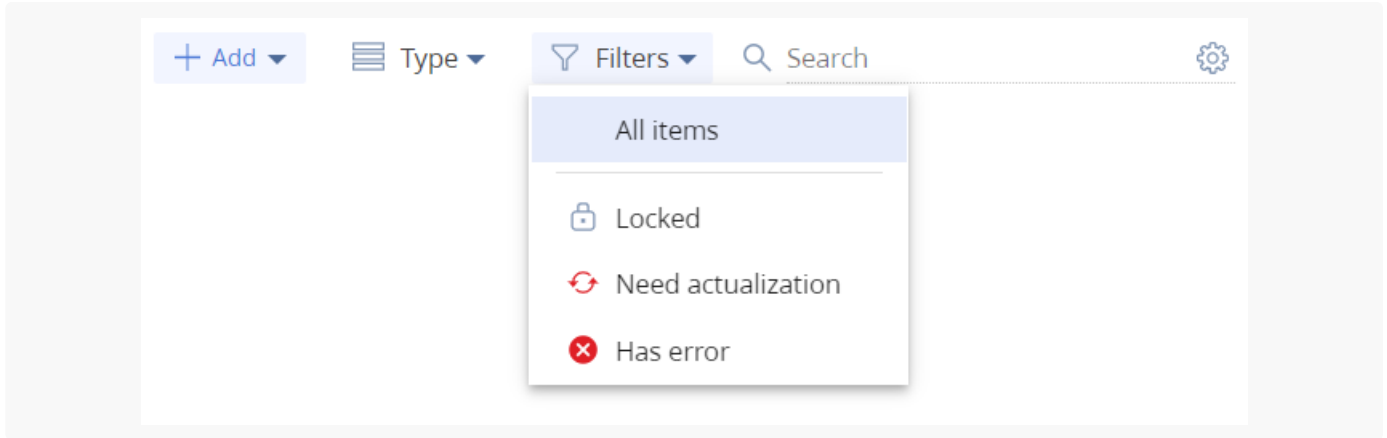


[*Client module*] type configuration elements:


- [*Module*].
- [*Page view model*].
- [*Section view model*].
- [*Detail (list) view model*].
- [*Detail (fields) view model*].
- [*Replacing view model*].

[*Object*] type configuration elements:

- [*Object*].
- [*Replacing object*].
- Filter configuration elements in the section list by status ([*Filters*]) dropdown). Creatio saves the settings of the [*Filters*] dropdown to the user profile. Creatio will apply the filters when you open the [*Configuration*] section. View the configuration element **statuses** on the figure below.



Configuration elements with [*Need actualization*] value in the [*Filters*] dropdown:


- [*SQL script*] and [*Data*] - when the [*Needs to be installed in database*] property is active.
- [*Object*] - when the [*Needs to be updated in database*] property is active.
- [*Client module*], [*Source code*], [*Case*], [*Marketing campaign*], [*Business-process*], [*User task*] - when the [*Needs generate source code*] property is active.
- Search for a configuration element by name in the record list ([*Search*] bar). Creatio searches within a selected package. To search within all packages, navigate to the [*All packages*] folder in the package workspace (2). Click  to configure the **search parameters**:
 - Search by title ([*Search by column "Title"*] option), active by default.
 - Search by a unique identifier ([*Search by column "UID"*] option), inactive by default.
 - Search mode Available options:
 - [*Starts with*], selected by default. The configuration element name starts with the text you type in the [*Search*] bar.
 - [*Contains*]. The configuration element name contains the text you type in the [*Search*] bar.
 - [*Equals*]. The configuration element name is the same as the text you type in the [*Search*] string.






Click [*Apply*] to apply the changes.

Creatio saves the search settings to the user profile. Creatio will apply them when you open the [*Configuration*] section.


The main workspace's (3) **section list** in the [*Configuration*] section contains the list of configuration elements. You can view the list of configuration element **properties** in the table below.

Configuration element properties

Column	Description	Comments
[Name]	The configuration element name you specify when creating it.	All configuration elements are sorted in alphabetical order. The modified configuration elements have  next to the name. Creatio places the modified elements at the top of the record list.

Column	Description	Comments
	configuration element title	
[Status]	The configuration element status	<p>Contains data from the [<i>Filters</i>] dropdown. The [<i>Status</i>] column will display  if the configuration element needs an update. Hover over  to view the tooltips:</p> <ul style="list-style-type: none"> • [<i>Needs to be installed in database</i>] - for the [<i>SQL script</i>] and [<i>Data</i>] configuration elements. • [<i>Needs to be updated in database</i>] - for the [<i>Object</i>] configuration element. • [<i>Needs generate source code</i>] - for the [<i>Client module</i>], [[<i>Source code</i>]], [<i>Case</i>], [<i>Marketing campaign</i>], [<i>Business process</i>], [<i>User task</i>] configuration elements. <p>The [<i>Status</i>] column will display  if there are errors in the configuration element. Hover over  to view the error description.</p> <p>If the configuration element needs an update and contains errors, the [<i>Status</i>] column will display . Hover over the symbol to view both the configuration element update information and the error description.</p>
[Type]	The configuration element type	
[Object]	The object connected to the package bound data	Creatio only populates the column for the [<i>Data</i>] configuration element.
[Modified on]	The configuration element modification date	
[Package]	The name of the package that contains the configuration element	

Note. Click the column name to sort the column data in ascending or descending order.


Click  in the configuration element row to bring up the context menu. The menu options vary depending on the [*Type*] column value. View the configuration element actions in the configuration element menu in the table below.

Configuration element actions

Option	Action	Comments	Configuration element
[Delete]	Deletes the configuration element	Not available for configuration elements in pre-installed packages.	[<i>SQL script</i>] [<i>Data</i>] [<i>Reference assembly</i>] [<i>Object</i>] [<i>Client module</i>] [<i>Source code</i>] [<i>Case</i>] [<i>Marketing campaign</i>] [<i>Web service</i>]
[Install]	Installs the configuration element	<p>Creatio will install [<i>SQL script</i>] elements to the database and [<i>Data</i>] elements to the object specified in the [<i>Object</i>] column.</p> <p>Should there be installation issues with the object specified in the [<i>Object</i>] column, you will be able to view the error description in the [<i>Status</i>] column. You can also view the error description in the configuration</p>	[<i>SQL script</i>] [<i>Data</i>]

Option	Action	element Comments properties.	Configuration element
[Discard changes]	Undoes the changes	This option is available if the configuration element's package is connected to a VCS repository.	<ul style="list-style-type: none"> [<i>SQL script</i>] [<i>Data</i>] [<i>Reference assembly</i>] [<i>Object</i>] [<i>Client module</i>] [<i>Source code</i>] [<i>Case</i>] [<i>Marketing campaign</i>] [<i>Business process</i>] [<i>User task</i>] [<i>Web service</i>]
[Properties]	Opens the configuration element properties window		<ul style="list-style-type: none"> [<i>SQL script</i>] [<i>Data</i>] [<i>Reference assembly</i>] [<i>Object</i>] [<i>Client module</i>] [<i>Source code</i>] [<i>Case</i>] [<i>Marketing campaign</i>] [<i>Business process</i>] [<i>User task</i>] [<i>Web service</i>]
[Edit process]	Opens the object in the Process Designer	If the object was created by a third party, Creatio will display the corresponding notification.	<ul style="list-style-type: none"> [<i>Object</i>]
[Export]	Downloads the configuration element	in *.md format.	<ul style="list-style-type: none"> [<i>Object</i>] [<i>Client module</i>] [<i>Source code</i>] [<i>Case</i>] [<i>Marketing campaign</i>]

Option	Action	Comments	[<i>Business process</i>] Configuration element [<i>User task</i>]
			[<i>Web service</i>]
[<i>Update database structure</i>]	Updates the object's database structure		[<i>Object</i>]
[<i>Generate source code</i>]	Generates the source code of the configuration element	The code generation will work if there are compilable elements in the process.	[<i>Object</i>] [<i>Business process</i>] [<i>User task</i>] [<i>Web service</i>]
[<i>Open metadata</i>]	Opens the configuration element metadata window.		[<i>Object</i>] [<i>Client module</i>] [<i>Source code</i>] [<i>Case</i>] [<i>Marketing campaign</i>] [<i>Business process</i>] [<i>User task</i>] [<i>Web service</i>]

Click  in the record list to delete a custom package's configuration element. To bring up this button, hover over the configuration element record in the [*Configuration*] section.

Version control system repositories

Version control system repository **management tools**:

- The [*SVN repositories*] group (6) in the toolbar's (1) [*Actions*] dropdown.
- The package menu.

The [**SVN repositories**] action group (6) lets you:

- Install a package from the VCS repository ([*Install package from repository*] option).
- Create, update and delete links to VCS repositories in the [*List of repositories*] window ([*Open list of repositories*] option).
- Synchronize the configuration with the latest version in the repository ([*Restore from repository*] option). This will roll back the changes not committed to the VCS repository.

Subversion VCS is only available for Creatio .NET Framework. Learn more about working with VCS repositories in the [Version control in Creatio IDE](#) article.

The **package menu** lets you:

- Export a package as a ZIP archive ([*Export*] option). Learn more about exporting packages in the [Packages export and import](#) article.
- Update the package from the VCS repository ([*Update from repository*] option). Learn more about updating packages in the [Updating package from repository](#) article.
- Commit a package to the repository ([*Commit to repository*] option). Learn more about committing a package to the VCS in the [Committing a package to storage](#) article.



Compile the configuration

Click [*Compile*] on the toolbar (1) to start compiling the configuration changes.

If you select [*Compile all*] in the [*Compile*] button's dropdown, Creatio will compile the configuration for all configuration elements. This will update all executable files and upload the [static content](#) to the

`...\Terrasoft.WebApp\conf` directory. Once the compilation finishes, Creatio will send a corresponding notification. The changes will take effect for users working in the relevant configuration.

Creatio will display any compilation **errors** in the dialog window. Compilation error **properties**:

- The error type icon (error  or warning .
- The name of the relevant file.
- The error description.
- The error code.
- The number of the line with an error.

Close the [*Configuration*] section

To close the tab with the [*Configuration*] section, click [*Close*] on the toolbar (1).

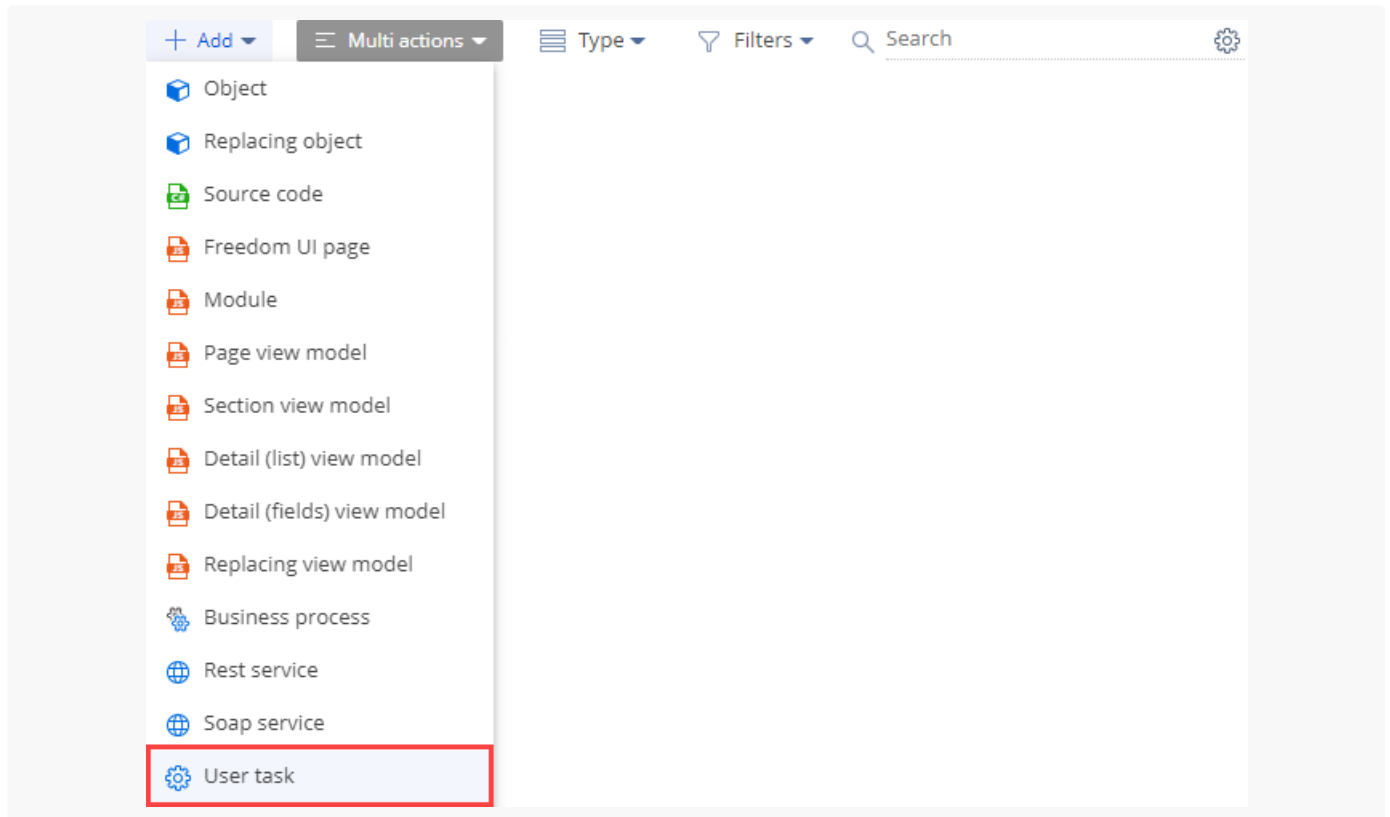
Implement a custom user task

 Medium

Example. Implement a custom [*User task of sum numbers*] user task. The task must calculate the sum of two integers that are specified in the task parameters. Display the calculation result on an auto-generated business process page.

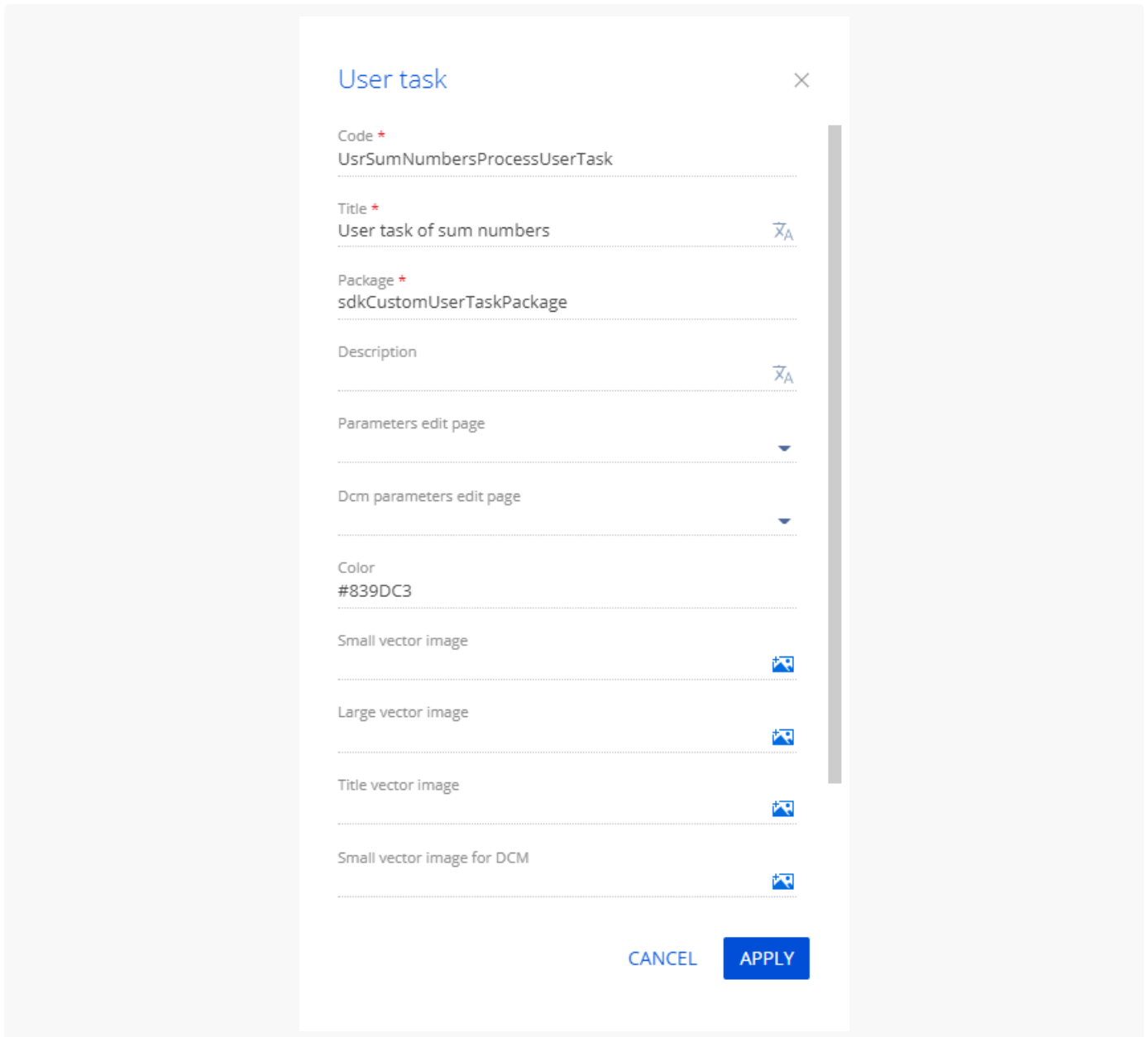
1. Create a user task schema

1. [Go to the \[*Configuration* \] section](#) and select a custom [package](#) to add the schema.
2. Click [*Add*] → [*User task*] on the section list toolbar.



3. Fill out the **schema properties** in the User Task Designer.

- Set [*Code*] to "UsrSumNumbersProcessUserTask."
- Set [*Title*] to "User task of sum numbers."



Click [*Apply*] to apply the properties.

4. Add a **user task parameter that contains the first integer.**

- a. Click **+** in the properties area of the [*Parameters*] node's context menu.
- b. Fill out the **parameter properties** in the User Task Designer.
 - Set [*Code*] to "FirstNumber."
 - Set [*Title*] to "First number."
 - Set [*Type*] to "Integer."
 - Set the [*Serializable*] checkbox.

Parameter

Code *
FirstNumber

Title *
First number

Type *
Integer

Lookup

Schema

Required

Resulting

Contains performer Id

Lazy load

Serializable

Copy value

CANCEL CREATE

g. Click [*Create*] to add a parameter.

5. Add **user task parameters that contain the following** in a similar way:

- second integer
- integer sum

View the properties of the parameters to add in the table below.

Parameter property values

Parameter	Property	Property value
Parameter that contains the second integer	[<i>Code</i>]	"SecondNumber"
	[<i>Title</i>]	"Second number"
	[<i>Type</i>]	Select "Integer"
	[<i>Serializable</i>] checkbox	Set
Parameter that contains the integer sum	[<i>Code</i>]	"SumNumbers"
	[<i>Title</i>]	"Sum of numbers"
	[<i>Type</i>]	Select "Integer"
	[<i>Serializable</i>] checkbox	Set

6. Implement the **logic to add integers**. To do this, implement the `InternalExecute()` method of the user task schema's automatically generated source code.

InternalExecute() method

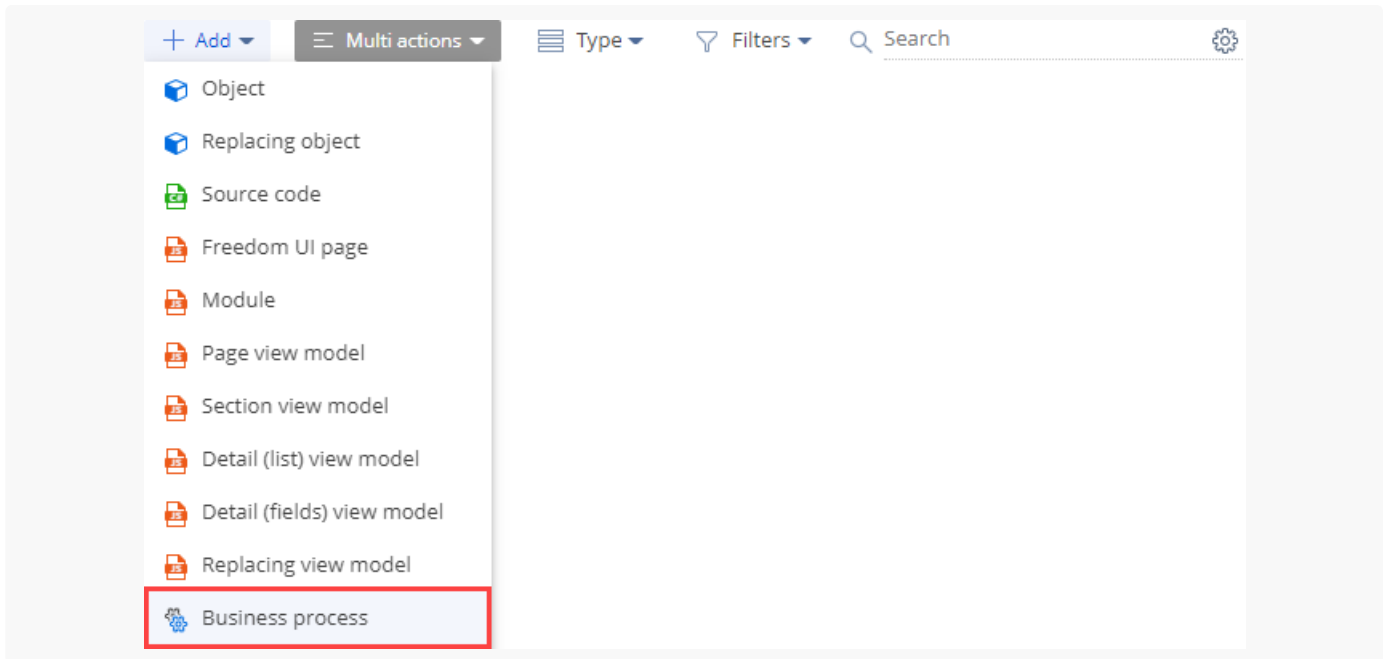
```
protected override bool InternalExecute(ProcessExecutingContext context) {
    /* Execute operations with task parameters. */
    SumNumbers = FirstNumber + SecondNumber;
    /* Specify that the task was completed successfully. */
    return true;
}
```

[Full source code of the user task schema](#)

7. Click [*Publish*] on the User Task Designer's toolbar to apply the changes to the database level.

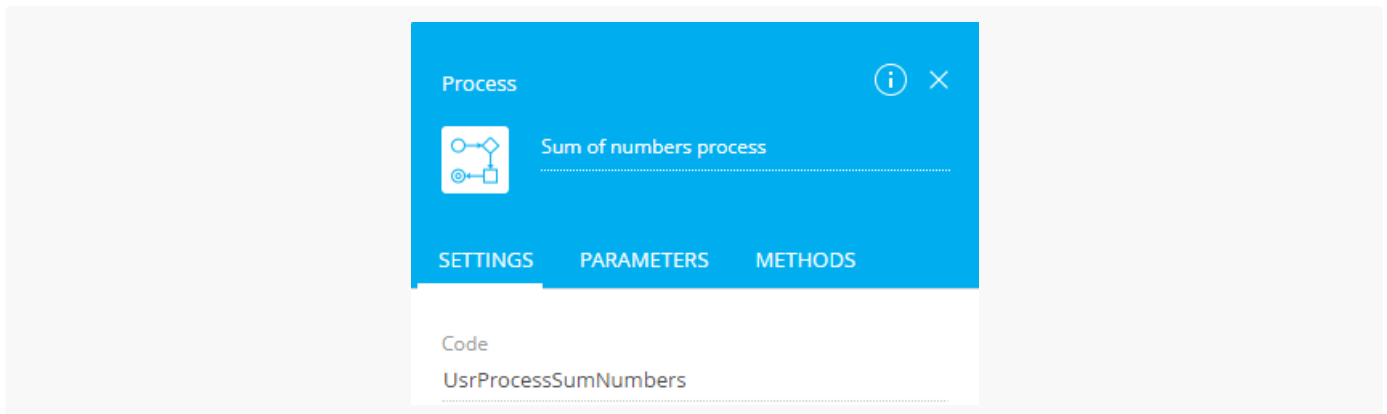
2. Implement a business process

1. [Go to the \[Configuration \] section](#) and select a custom [package](#) to add the schema.
2. Click [*Add*] → [*Business process*] on the section list toolbar.



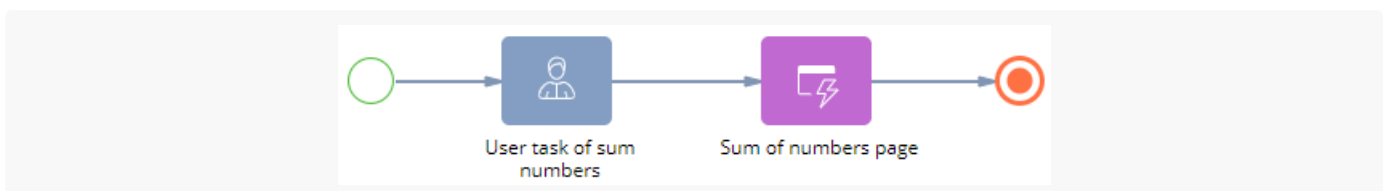
3. Fill out the **properties of the business process**:

- Set the [*Title*] property in the element setup area to "Sum of numbers process."
- Set the [*Code*] property on the [*Settings*] tab of the element setup area to "UsrProcessSumNumbers."



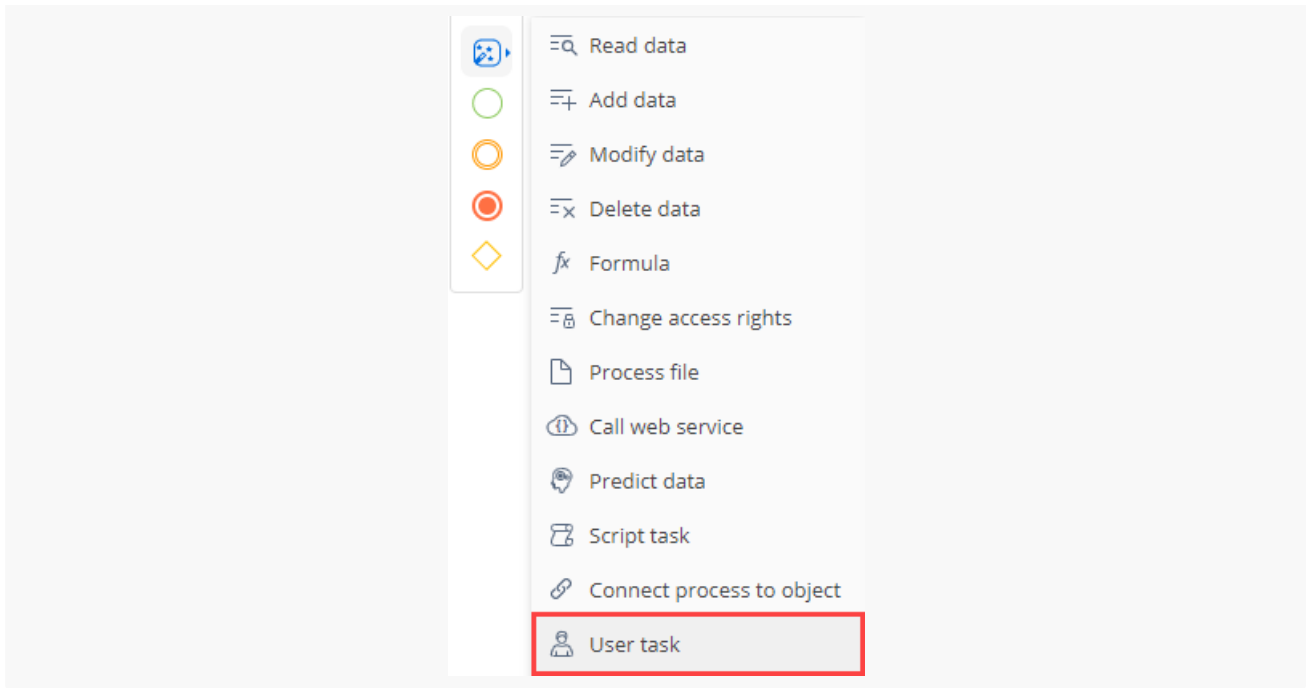
4. Implement the **business process**.

View the business process in the figure below.



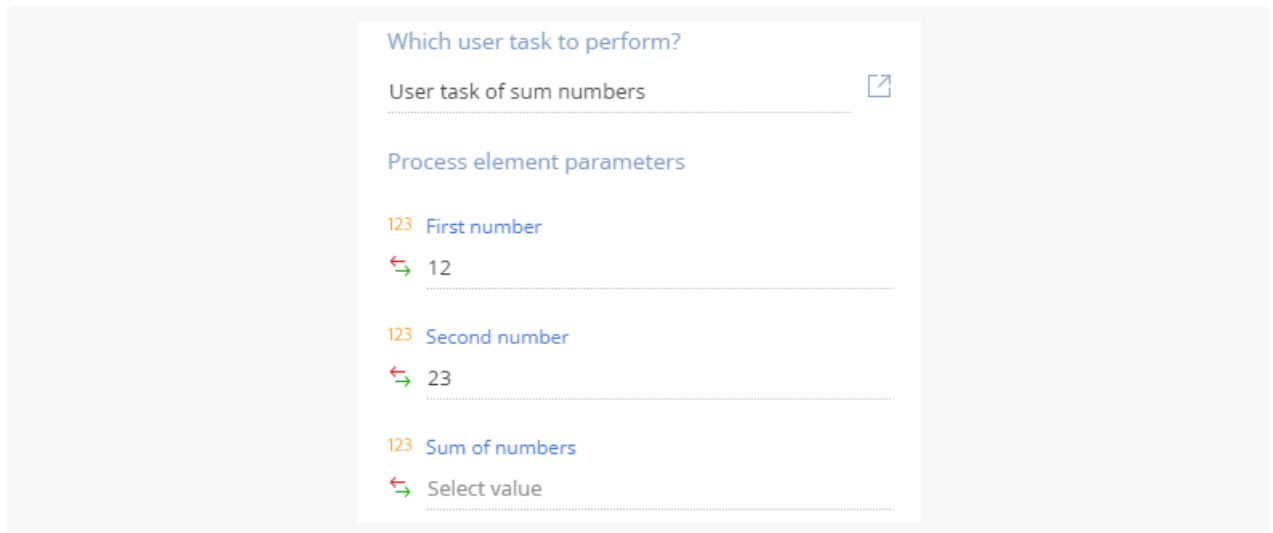
a. Add the **user task**.

- Click [*System actions*] in the Designer's element area and place a [*User task*] element between the [*Simple*] start event and [*Terminate*] end event in the Process Designer's working area.



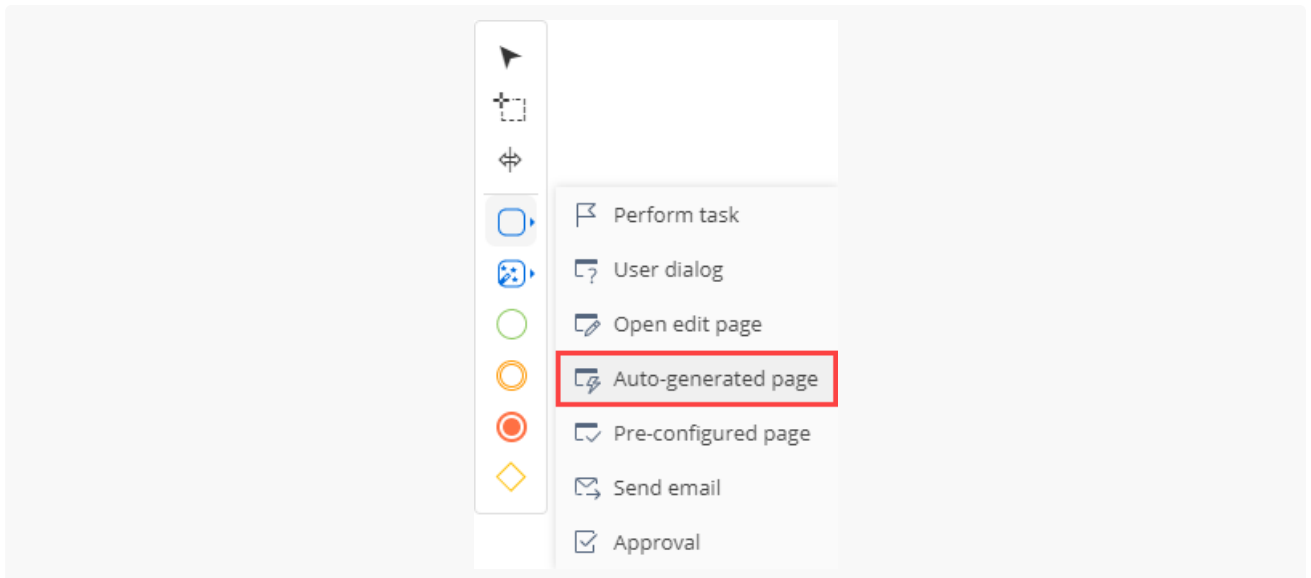
b. Fill out the **user task properties**.

- Select "User task of sum numbers" in the [*Which user task to perform?*] property.
- Fill out the **user task parameters**.
 - Set [*First number*] to "12."
 - Set [*Second number*] to "23."



b. Add an **auto-generated page**.

- a. Click [*User actions*] in the Designer's element area and place an [*Auto-generated page*] element after the [*User task*] element in the Process Designer's working area.

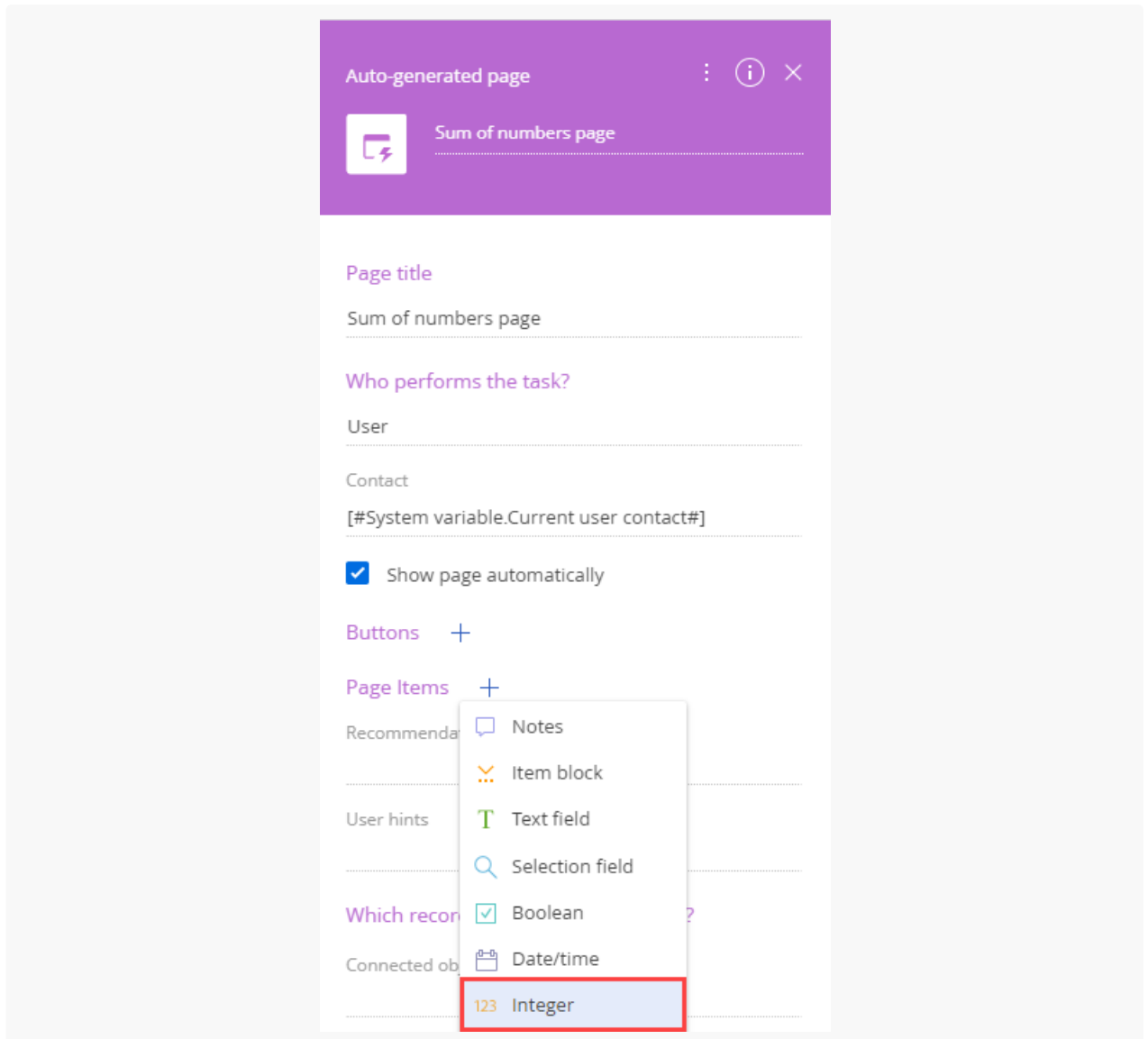


b. Fill out the **auto-generated page properties**.

- Set [*Title*] to "Sum of numbers page."
- Set [*Page title*] to "Sum of numbers page."

e. Add an **auto-generated page**.

- a. Click **+** in the [*Page Items*] block and select "Integer."



b. Fill out the **item properties**.

- Set [*Title*] to "SUM:."
- Set [*Code*] to "Sum."
- Click ⚡ → [*Process parameter*] → [*Sum of numbers*] in the [*Value*] property.

f. Click [Save] to add the parameter.

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

Outcome of the example

To **view the outcome of the example**, run the `Sum of numbers process` business process.

As a result, Creatio will open the [*Sum of numbers page*] auto-generated page. The page will display the sum of 2 integers that are specified in the business process parameters.