

UX Extensibility Toolkit Guide
Oracle Banking Digital Experience
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UX Extensibility Toolkit Guide

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1. Preface

1.1 Intended Audience

This document is intended for the following audience:

- Customers
- Partners

1.2 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

1.3 Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

1.4 Structure

This manual is organized into the following categories:

Preface gives information on the intended audience. It also describes the overall structure of the User Manual.

The subsequent chapters describes following details:

- Introduction
- Preferences & Database
- Configuration / Installation.

1.5 Related Information Sources

For more information on Oracle Banking Digital Experience Release 22.1.0.0.0, refer to the following documents:

- Oracle Banking Digital Experience Installation Manuals

2. User Interface Workbench

User Interface Workbench is a development tool to design the User Interface of an Application using APIs to fetch data, enabling communication of one screen with another and generating screens to be displayed to the end user. This tool aims at minimizing developers' efforts and time by generating the working screens automatically with minimal user input.

The tool also enables the developers to make the changes in the existing screens created by them or provided out of box, which are designed using the UI Workbench tool.

Components:

The screens created consist of the following components:

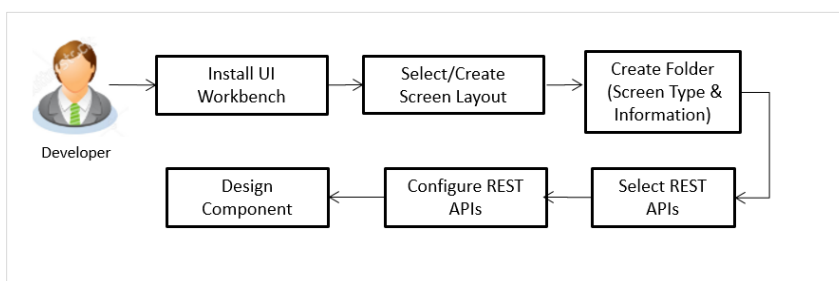
- Template: It decides visual representation of data on the front-end
- Model: It is responsible for fetching data from REST APIs
- Bindings: It consists of logic for processing the data fetched from the APIs
- Resource Bundle: It comprises of strings which are to be displayed on the screen
- Hooks: It comprises of user provided logic.
- Metadata: It consists of summarized information, which can generate all the above mentioned artefacts.
- SCSS/CSS: It comprises of CSS code which provide styling to the components.

Pre-requisites:

- Basic knowledge of Swagger. (To know more about swagger refer <https://swagger.io/>)
- Basic knowledge of JavaScript, Knockout Js
- Basic knowledge of Oracle JET
- Basic knowledge of Sass

Workflow:

The process to create the screen ready to be used by the user / customer is as follows:



1. **Install UI Workbench:** The tool **can** be easily installed simply by running the setup file.
2. **Select/Create Screen Layout:** User can select one of the predefined screen layouts according to his requirement
3. **Create Folder(Screen Information):** User has to provide basic screen details like the name of the screen and the type of the screen e.g. (transaction, inquiry, and widget)
4. **Select REST APIs:** User can select multiple REST APIs which will be needed for fetching required information to display on the screen.
5. **Screen Designing:** User can design how the screen content will be displayed by using the form elements (e.g. Input Box, Text Area) available in the tool. User can drag and drop these elements and design the screen as per requirement

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3. UI Workbench Manual Build

In the project directory, place folders **obdx-ui-workbench-core** and **obdx-ui-workbench-gui** side by side.

Follow the steps mentioned below to setup your environment for build.

1. Open terminal inside **obdx-ui-workbench-core** and perform **npm install** to setup the workspace and then execute **npm run build** to build the core.
2. Open terminal inside **obdx-ui-workbench-gui** and perform **npm install** and then **npm link ../obdx-ui-workbench-core**. This will locally install the core package to GUI project.
3. Run **npm run build** to create executables for macOS, Windows and Linux. Please note that executables for Windows can only be created on Windows setup and code signing for macOS applications can only be done on macOS operating system. To create executables for Windows and macOS on Linux machine, use Wine and Mono on Linux. For more details you can refer to <https://www.electron.build/>

Alternatively, you can use **docker** to simplify the operations as follows and create Windows & macOS builds on Linux by running the following command in **obdx-ui-workbench-gui** folder root:

```
docker run --rm -ti
--env ELECTRON_CACHE="/root/.cache/electron" \
--env ELECTRON_BUILDER_CACHE="/root/.cache/electron-builder" \
-v ${PWD}:/project \
-v ~/.cache/electron:/root/.cache/electron \
-v ~/.cache/electron-builder:/root/.cache/electron-builder \
electronuserland/builder:wine-mono /bin/bash -c "npm run build"
```

4. The artifacts will be available inside **uiworkbench/** directory.

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4. UI workbench installation

For desktop version, user should download the UI Workbench setup from the Oracle Software Delivery Cloud portal. Once the setup is downloaded, double click to install the tool.

For web version, once the setup is downloaded please follow below steps.

- Open Command Prompt in package folder, execute the command **npm install** followed by **npm run build & npm start**.
- The server is hosted on port 3000 by default.
- If you want to execute it on different port use the following command:
Npm start <port_no>
- Access the UI toolkit on browser by following URL.

http://localhost:<port_no>

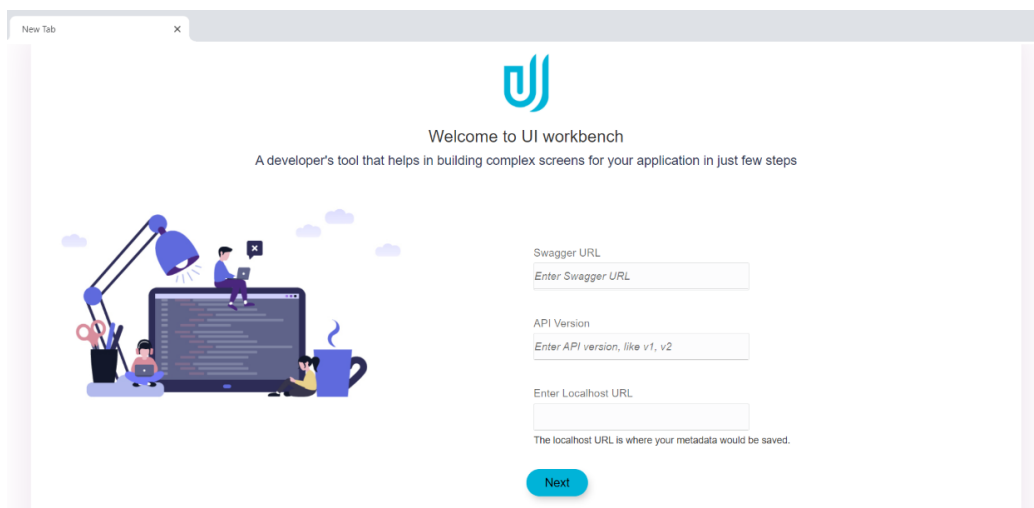
After installation, user would be directed to the following Landing Page. User is expected to provide the URL where the swagger document of the RESTful APIs are hosted.

To know more about swagger refer <https://swagger.io/>

Swagger version (By default it is v1)

Directory path : <OBDX codebase location>/core/channel

Provide these details at the time of installation. The path can be changed anytime later by clicking on settings. Please note: Every time the path is changed, data is lost.



5. Folder Creation

As a part of next step, following screen is displayed to the user to create the new folder. User is expected to furnish following information.

- **Module Name:**

Module is a category of the screen the user are creating, for e.g. a fund-transfer screen would be of category Payments. So in this case, the module name would be payments. Module consists of various components, which contains the artefacts of the screen the user wants to generate.

- **Component Name:**

Component name would be the type of screen e.g. Funds transfer, Cheque Book Request, Letter of Credit Initiation, Bill Payment, New Deposit etc.

- **Component Type:**

Component type is the type screen layout the user wants to be displayed. User can select from the options as Individual page Transaction Page or a Widget. (Explained in the detail below)

- **Use as a Business Component? :**

Toggle 'Yes to make a component as Business component i.e. reusable component

- **Save in Extension? :**

Toggle 'Yes to customize OBDX shipped components

Following are the different component types and the examples where these are used.

- **Individual Page :**

Individual page is a stand-alone page that consists of the detailed information for the Selected transaction/component e.g. Account Details (Component) in a standalone page shows the various Balances, transactions and other information of the selected accounts.

Basics	
Customer ID	***698
Holding Pattern	Single
Mode of Operation	Single
Branch	AT3 FLEXCUBE UNIVERSAL BANK, Needal Street, London, GREAT BRITAIN
Status	Active
Nomination	Not Registered
Sweep-in Provider	No

In case of individual page, the component can be converted to a business component by toggling the use a Business Component switch

Use as a Business Component?

Yes

No

These are Pluggable components whose behavior is common in many other components.

Business

components can be created once and plugged any number of times just by drag and dropping it inside the component we want

Business component takes input as an array of parameters it requires to display its contents.

- **Flows:**

Flows consists of pre-defined multiple pages in accordance to OBDX UI framework. For e.g. A transaction where the customer or user enters information asked on the screen, reviews the same and submit it for further processing. It consists of multiple screens.

Account Number
 xxxxxxxxxxxx0166 - John S

Balance : £347,997.22

Transfer From
 xxxxxxxxxxxx0170

Balance : €345,975.51

Amount
 GBP £1,000.00

[View Limits](#)

Transfer When
 Now Later

Note
 payment for credit card
 57 Characters Left

[Transfer](#) [Cancel](#)

REVIEW
 You initiated a request to add Peer to Peer Payee. Please review details before you confirm!

Payee Name
 John Smith

Email / Mobile
 abc@xyz.com

Nickname
 Johnny

[Confirm](#) [Cancel](#) [← Back](#)

CONFIRMATION
 Request submitted successfully.

Reference Number
 2019030001098995

Host Reference Number
 1932615582700003




UETR
 1a979072-717d-4898-8047-2bc38bd6194e

Transfer To Steve J	Amount €120.00
Account Number 234234	Account Type International
Bank Details DEUTDEFFXXX DEUTSCHE BANK AG TAUNUSANLAGE 12	Payment Details payment
Transfer From xxxxxxxxxxxx0168	Transfer When 30 Jan 2019

Pay Via
SWI

Payee Address
 401 Island Parkway,
 Redwood Shores,
 New York
 UNITED STATES

What would you like to do next?

 [Go To Dashboard](#)
 [More Payment Options](#)
 [Add as Payee?](#)

In case of such scenario, one must select component type as FLOW.

Types of FLOW supported are

1. CREATE:

This is an n-step flow, which is similar to a transaction. The only difference is the initiation page can be any number of pages as per the requirement and not only one. For e.g. first page can comprise of primary details of a customer e.g. name, surname and second page can consist of additional information like address. Review and confirmation page will each consist of a single page only.

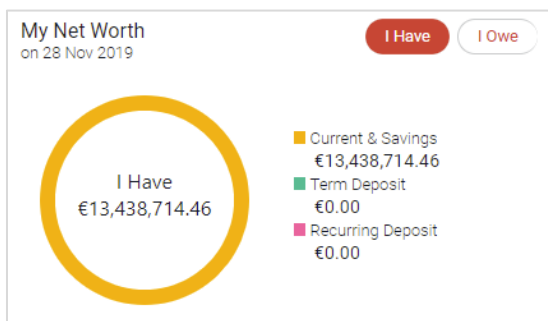
Once the flow type is selected as CREATE, additional details are required to be filled such as

- Flow name : The name will be the identifier of the entire flow
- Number of Stages : The number of pages before the review screen appears in the flow
- Stages navigation display: The type of navigation control to navigate between the pages
- Confirmation Template: Type of layout for confirmation screen
- Show summary : if summary is to be shown about the progress of the form filled and continue where the user had left the last time, the switch can be toggled to YES

Above mentioned fields cannot be modified once a flow is created.

• **Widget -**

Widget is a small section on the screen especially on the Dashboard that displays commonly used functions or important information in a summarized form. The component generated of this type will be shown on the dashboard.



• **Partial -**

An Independent HTML template which can be reused in different components.

Once the “Component Type” is selected as “Partial”, it will be created in channel/partials/<module_name>/<partial_name>.html, if Module Name is not entered “Partial” will be created directly in “channel/partials/<partial_name>.html”.

Favorites Bills Add Biller **Manage Billers** Quick Bill Pay Quick Recharge Payment History

Select Biller
Axis MF SIP

Category
Electricity

Location
Pune

Biller Name
Axis MF

Biller Type
Presentment

Biller Nickname(Nickname should be unique)
Axis MF SIP

Consumer ID
1000046

Folio No

User Interface Workbench

File View Edit About Debug

New Tab

Create a new module and component

Component Type
Partial

Know More

Save in Extension?
Yes No

Module Name
Type module name

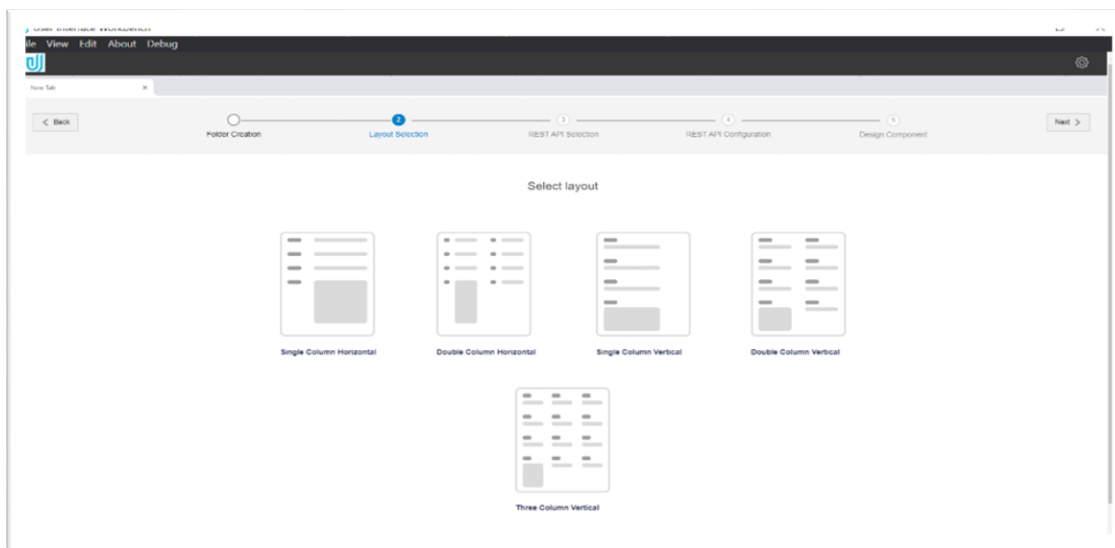
Partial Name
Type partial name

Next

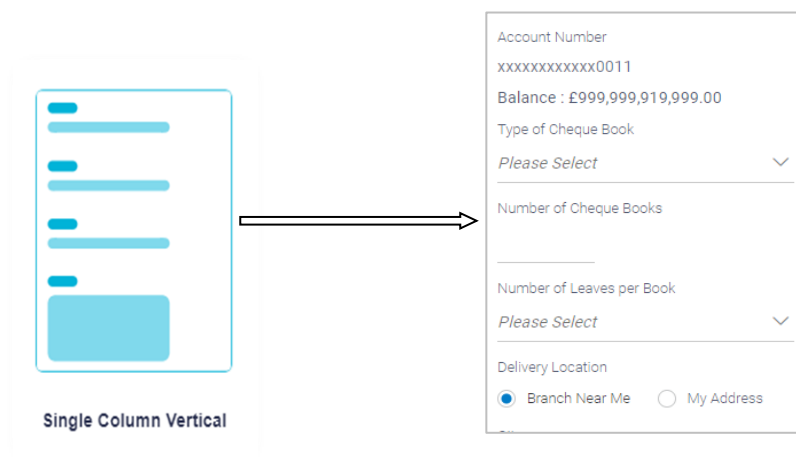
[Home](#)

6. Layout Selection

Next step is to select the screen layout. The tool offers five pre-defined templates, which will decide the layout of the screen that the user wants to create. The user can select any of these layout from the list provided or can create a custom layout in case the desired layout is not found in the mentioned list. To know the steps to create the custom layout Please refer **Grid** section.



E.g. in case if user select the following layout, the label and value fields will be vertically aligned and in a single column.

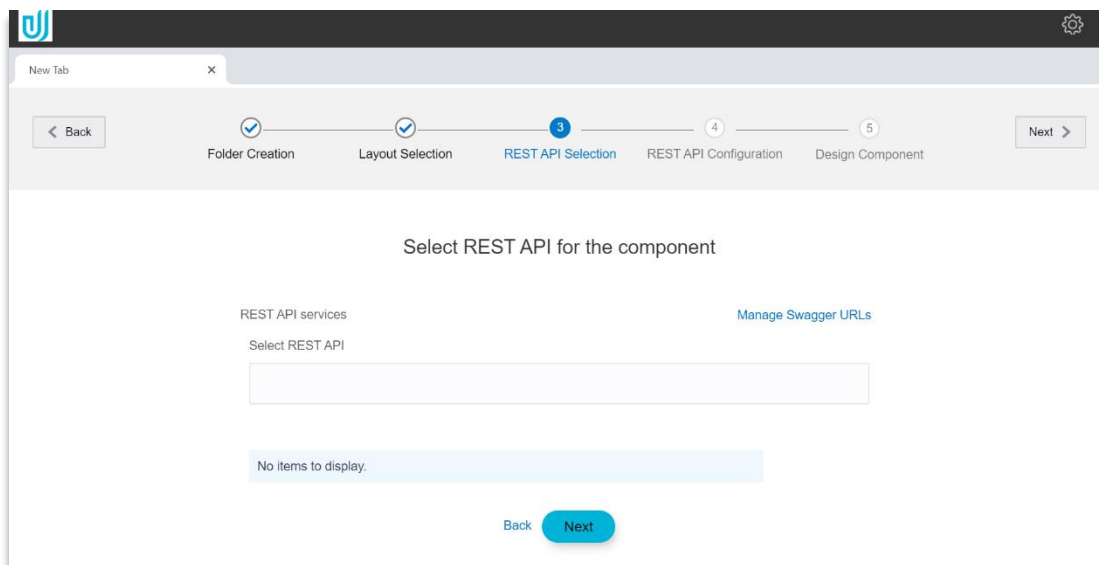


In case the user wants to change the layout once, he has moved on to the next step, he can navigate to this step by clicking back button at the bottom of the screen. Layout can be changed at any given point of time during the process of screen creation.

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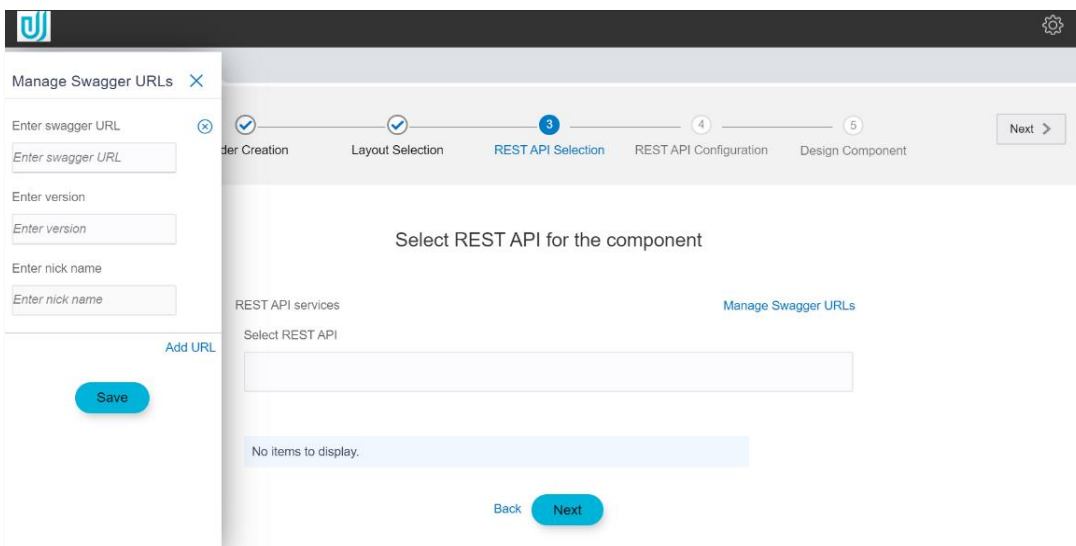
7. REST API Selection

In this step, the user has to select the REST APIs to enable the functioning of the elements on the screen. The dropdown will contain all the REST APIs mentioned in the swagger document hosted on the URL which user had specified in the landing page.



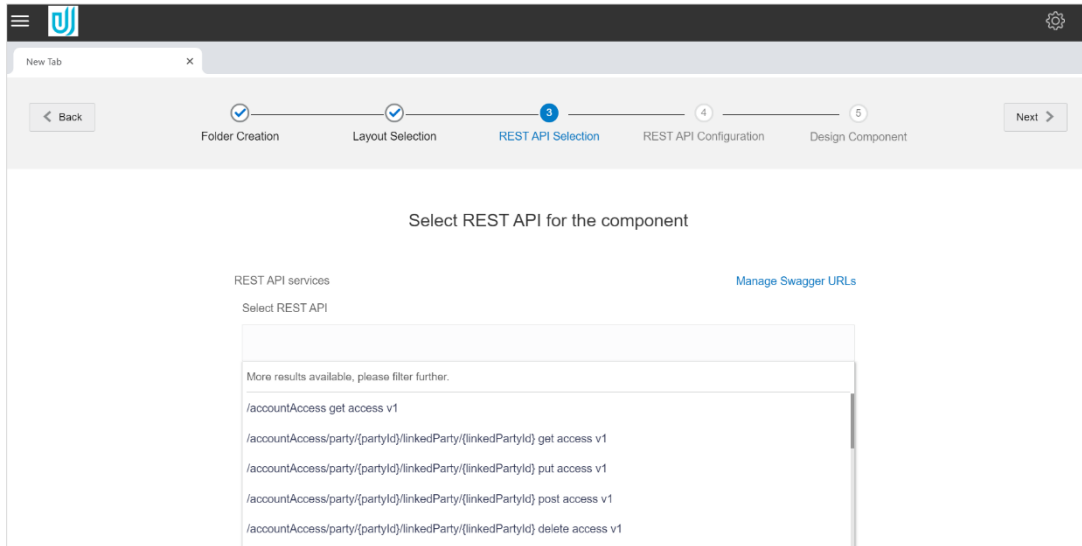
In case, the user needs REST APIs whose documentation is hosted on other URLs apart from the ones the user had mentioned earlier, the user can add them by selecting manage Swagger URLs link.

On clicking the link, a panel will open on the left side. By default, it will contain the URL and the version, the user had specified during installation. User can change this URL or can add multiple URLs by clicking on 'Add URL' text link, depending upon the requirements.

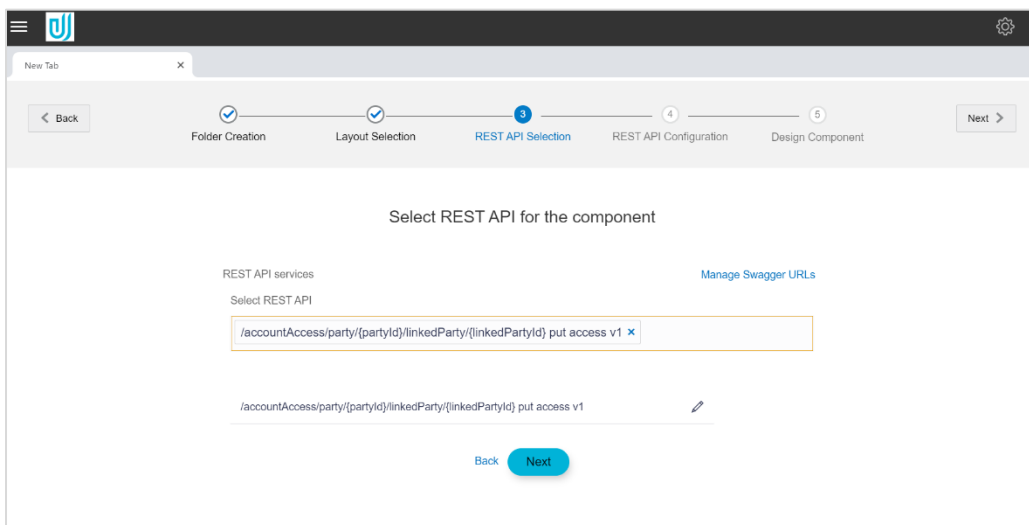


Once the user has entered the URLs he can save the details by clicking the save button. After the dialog box closes, all the REST APIs will be consolidated and are available in the dropdown

User can select multiple RESTs as per requirement. All the selected RESTs are shown in the list view form.



User can configure the REST properties by clicking on the edit icon.



On clicking on the edit button, a panel will open on right, which has three configuration options.

Parameters are the options that the user can pass with the endpoint (such as specifying the response format or the amount returned) to influence the response.

- **Required Parameters:**

They are also known as path parameters. These parameters are part of the REST URL written within curly braces. E.g. /accessPoints/{accessPointId}. Here accessPointId is the required parameter.

- **Optional Parameters:**

They are also known as query parameters. These parameters are part of the REST URL written at the end of the URL followed by? Symbol. E.g. /accessPoints? NoOfpoints=3. Here NoOfPoints is an optional parameter.

The value of these parameters can be set by two ways.

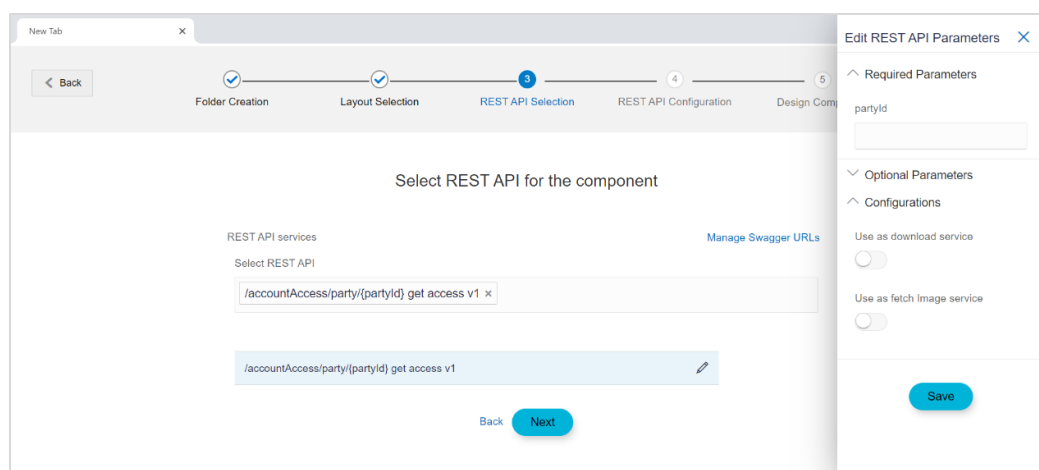
1. Current component sets the value.
2. Value is passed to the current component from the previous component.
In case the parameter values are being passed from the previous component, the variable name has to be mentioned in this pane
The current parameter value is set in later steps, refer [Value](#) attribute.

- **Configurations:**

The GET REST API can be used for two purposes.

1. To fetch details
2. To download a file

If user wants to use GET REST API as a download/fetch service, user can enable the switch named as 'Use as download service' or 'Use as fetch Image service' accordingly in configurations section.

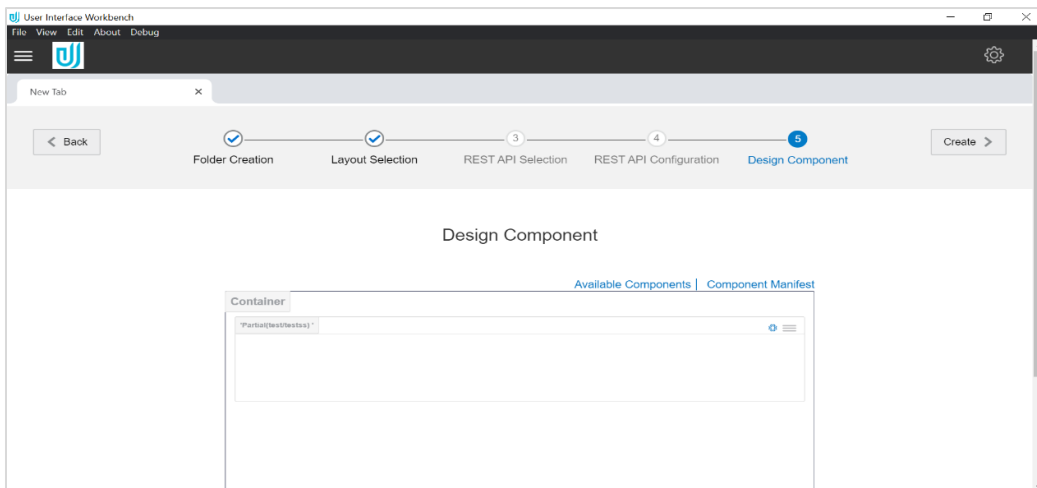


In case of FLOW, user can select RESTs for each step.

The screenshot shows a dialog box titled "Select REST API for the component". At the top right, there is a link "Manage Swagger URLs". Below the title, there is a section "REST API services" with a dropdown menu currently showing "Stage 1". Underneath, there is a "Select REST API" label followed by a large, empty text input field. Below the input field, there are two more dropdown menus: "Review" and "Final REST". At the bottom center, there are two buttons: "Back" and "Next".

The final REST dropdown value should consist of the REST that will be fired once the user has confirmed the details and which will make the concerned transaction.

In case of PARTIAL, this step will be disabled.



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8. REST API Configuration

In this step, the user can configure how the selected REST APIs will be called when the screen is loaded. There are two sections in this step.

- **Chain selected REST APIs**

There are 3 ways how REST APIs can be called:

- **Independent**

If all the selected REST APIs are to be called irrespective of any dependency on other APIs, then the user has to select the NO option.

- **Sequential**

If a REST API calling is dependent on the response of other REST APIs then such case is known as sequential manner. For e.g. A REST API fetching details of cities in a country is dependent on the response of API fetching the list of countries. If REST APIs are to be called in such a manner, select the option 'Yes'.

On selecting the 'Yes' option, a panel appears on the left having list of selected REST APIs

- **Parallel**

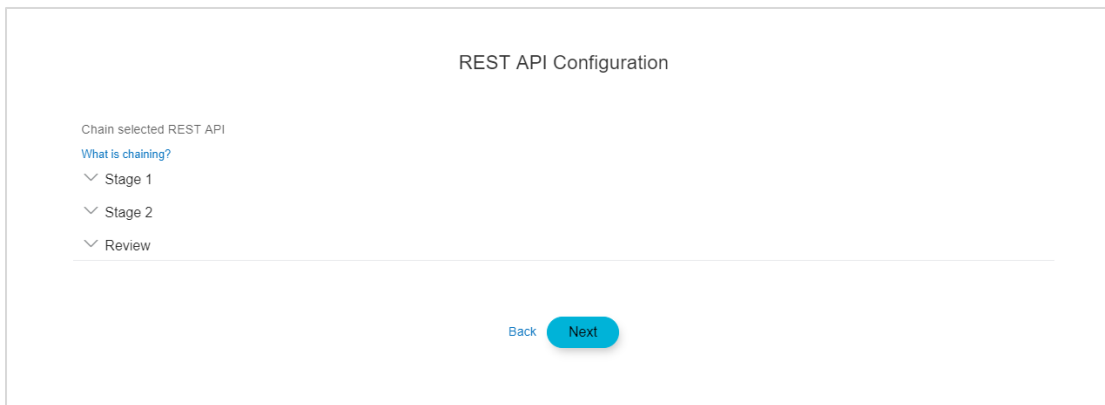
If REST APIs are to be called together and the combined response of these APIs are needed then they are to be called parallelly. If REST APIs are to be called in such a manner, select the option 'Yes'.

On selecting the 'Yes' option, a panel appears on the left having list of selected REST APIs

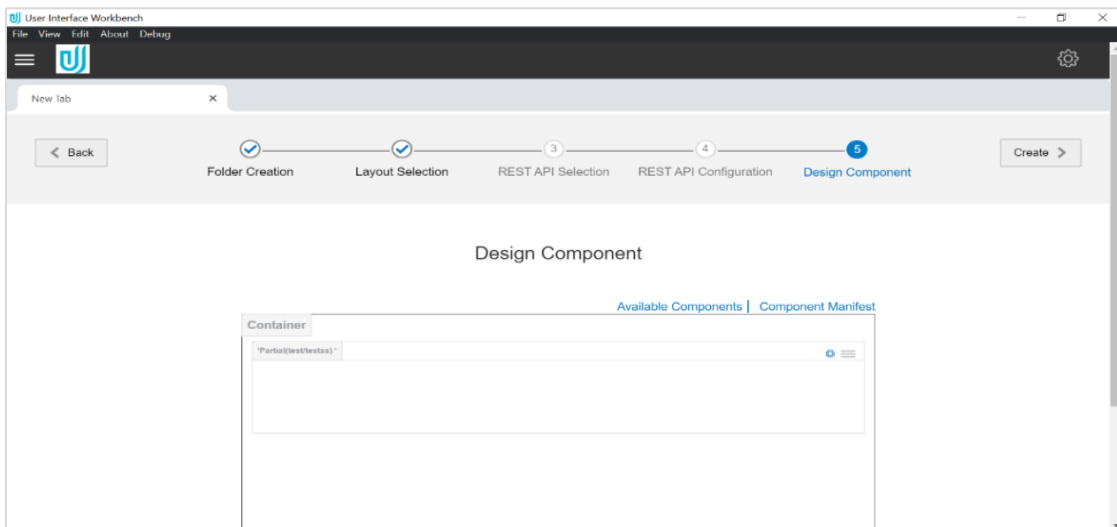
The screenshot displays the 'REST API Configuration' interface. At the top, a progress bar indicates the current step is 'REST API Configuration' (step 4 of 5). The main content area is titled 'REST API Configuration' and contains two sections. The first section is 'Chain selected REST API' with a link 'What is chaining?' and a 'Chain selected REST API' label. Below it are two toggle switches, both set to 'No'. The second section is 'Execute REST API on component load' with a label and two toggle switches, both set to 'No'. At the bottom are 'Back' and 'Next' buttons.

How to chain Rests, refer [Chain RESTS](#).

In case of FLOW, user can configure RESTs for each step.



In case of PARTIAL, this step will be skipped and disabled.

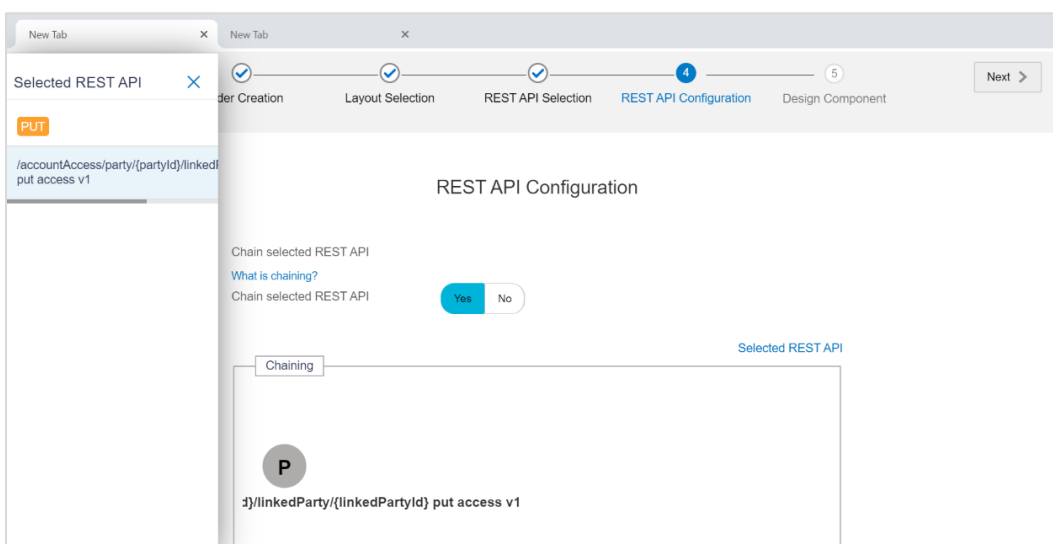


[Home](#)

9. Chain REST APIs

User is expected to chain the REST APIs, if the REST APIs are to be called parallel or sequentially. To chain the APIs, the user must select 'Yes' option in the previous screen. Once the user selects 'Yes', a panel appears on the left having list of selected REST APIs.

To start chaining, user needs to drag the APIs and drop it in the chaining section shown in the middle section of the screen.



Once the user has dropped the REST APIs in the middle section, a right panel gets opened where user has to provide information about the REST type and if the RESTs are parallel independent or dependent.

Some common terms used in chaining are:

REST Type:

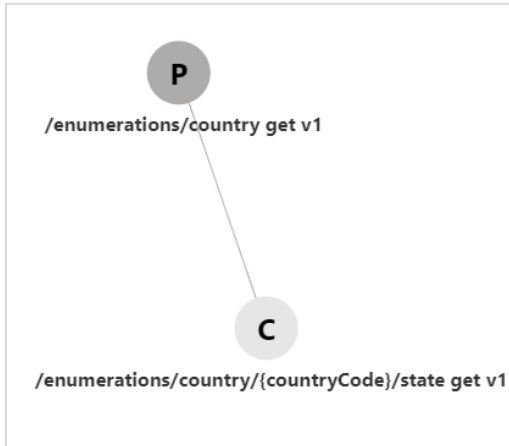
- **Parent** – If this option is selected then, every service call flow needs a parent rest, which will be called first.
- **Child** - If this option is selected then, service to be called after parent call finishes.

Is this REST Parallel Independent or Parallel Dependent?

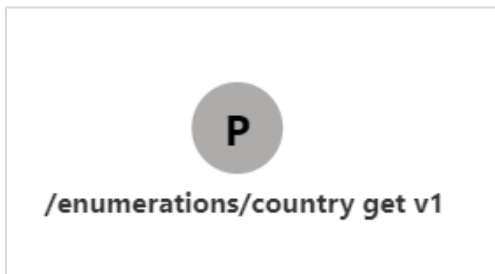
- **Parallel Independent** – On selecting this option, service calls can be fired independently.

- **Parallel Dependent** – On selecting this option, service calls logic, which depend on response of an immediate parallel service call, those immediate service calls needs to be parallel dependent

The chaining structure is similar to tree structure. The top most node would be parent and the other nodes would be child nodes.



If user selects REST type as Parent then the node with letter P will be generated.

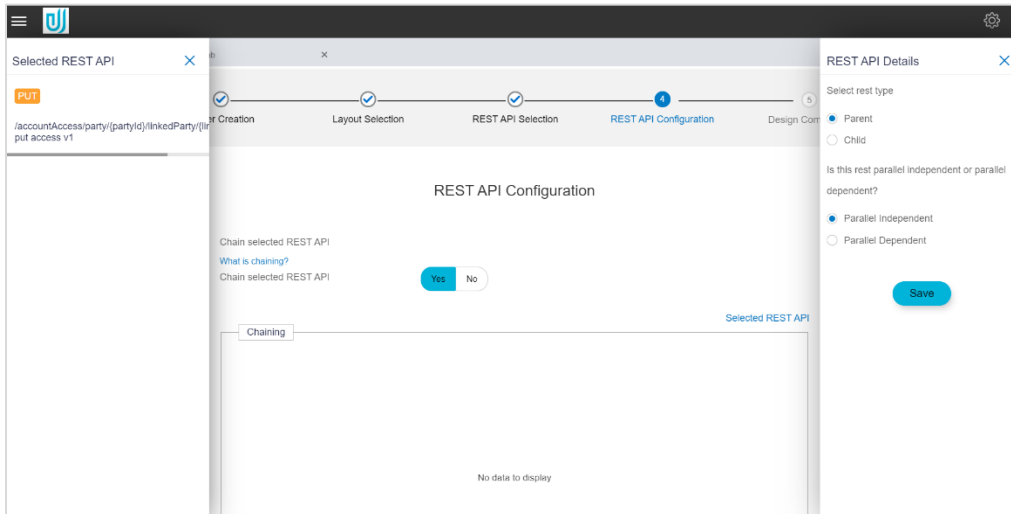


If user selects REST type as Child then the node with letter C will be generated.

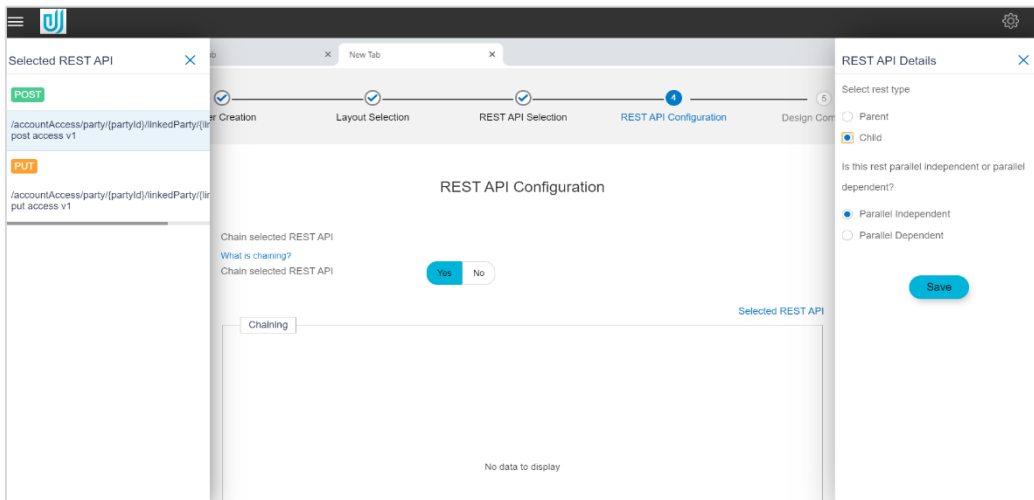


Consider an example if two REST APIs are to be called in a sequential manner.

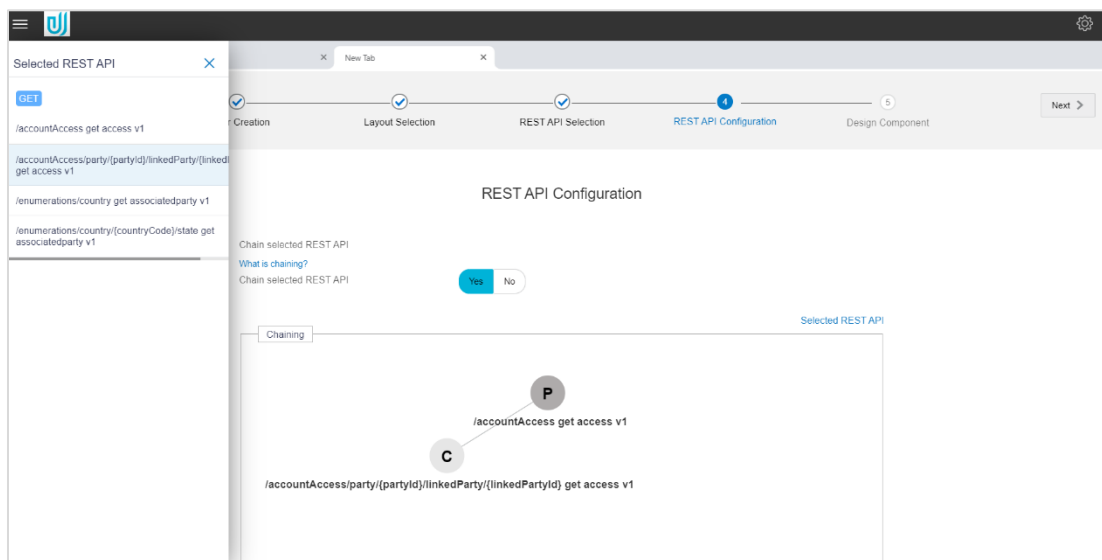
The first API to be called will be declared as Parent and since no other API is to be called along with this API, it will be parallel independent.



The second API which is to be called after the response of the first API is received, will be declared as a child and parallel independent



To establish the linkage between the parent and its child nodes and distinguish them from each other, the connection has to be made. To make a connection, drag the child REST from the chaining section, and drop it on the Parent REST and then drag the child node down, the connection will be made.



The connection is only to be established if the services are to be called in sequential manner.

In case, all the services are to be called together and the wait till response of each service has been received, connection will not be established as they all act as parent nodes. In such case, all REST APIs will be configured as parent node and will be parallel dependent since they will have to wait for the response of the selected APIs.

Select rest type

Parent

Child

Is this rest parallel independent or parallel dependent?

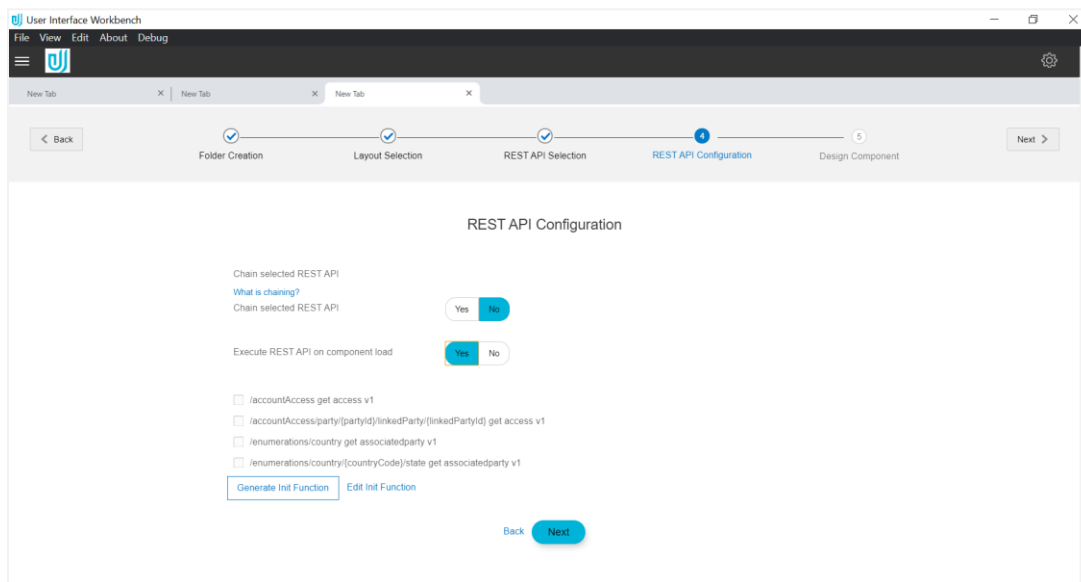
Parallel Independent

Parallel Dependent

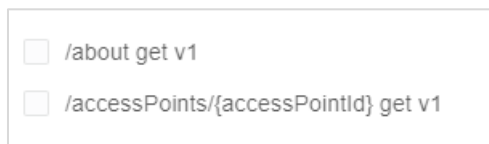
[Save](#)

If out of the selected RESTs, some of them are sequential or parallel Dependent and rest of them are parallel Independent, the chaining is still to be performed. To declare a REST to be independent of other rests, select the rest type as Parent and Parallel independent and do not make any connections with those RESTs. Incase all the REST APIs are independent of each other then there is no need of chaining.

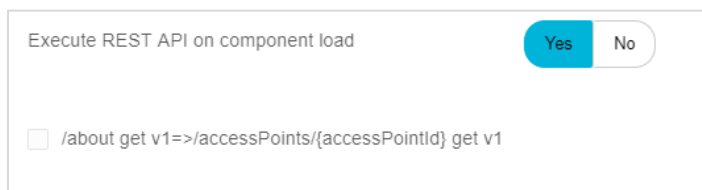
If user wants to call the REST APIs as soon as the screen loads, the option 'Yes' needs to be selected.



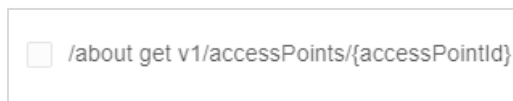
Once the yes option is selected, the REST Chains will be shown to user. In case of independent RESTs their name will appear.



If there is a sequential rest then it will be displayed as



If there is a parallel dependent chain then it will be displayed with their names together



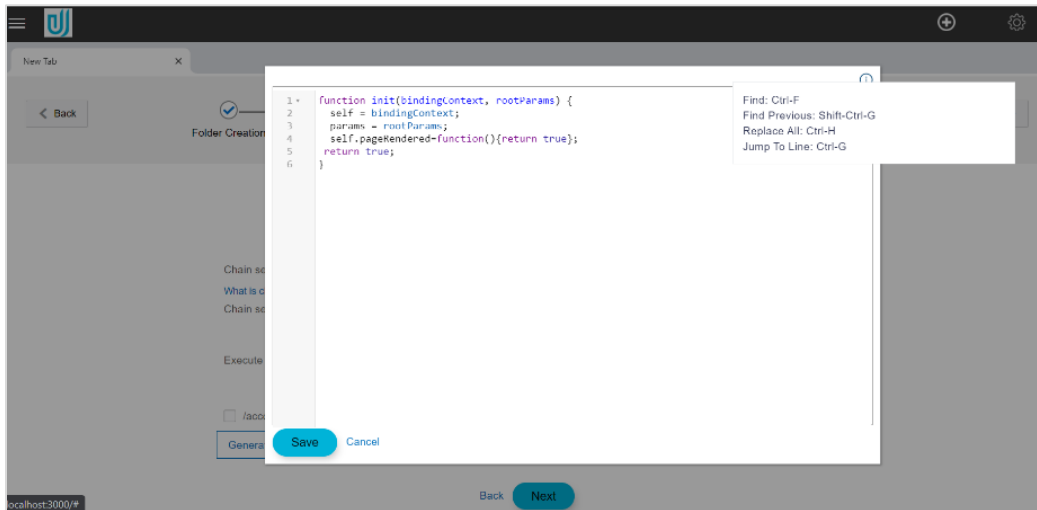
User can select which REST chains he wants to call when the screen loads. Once he has selected the chains, user needs to click on generate init function to generate the code to fire the services on the screen load.

Generate Init Function

Once the function is generated user can click on Edit Init Function link to edit the code to perform desired actions.

User can perform find, find previous, replace all and jump to line on the code editor.

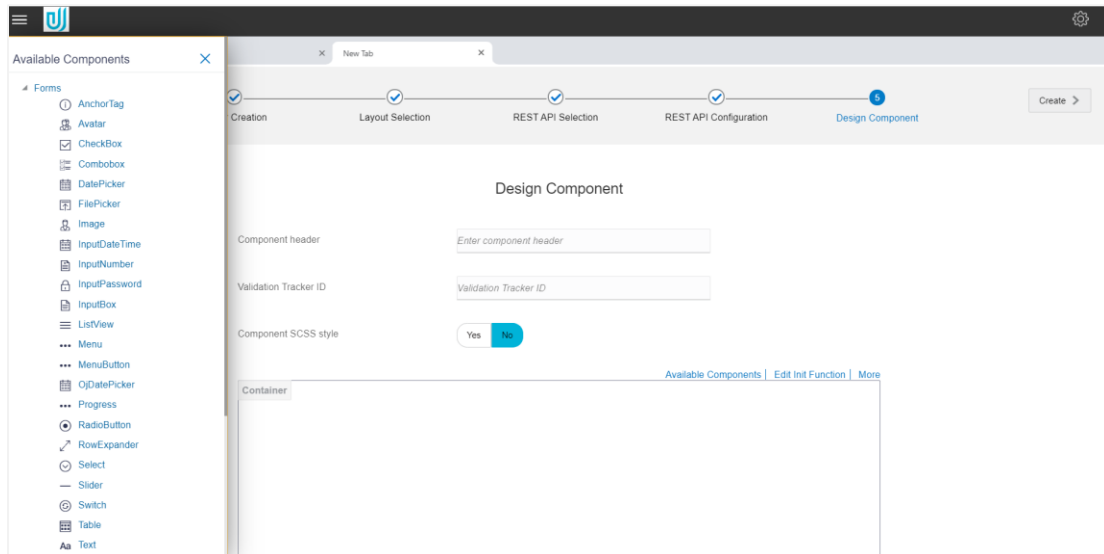
Edit Init Function



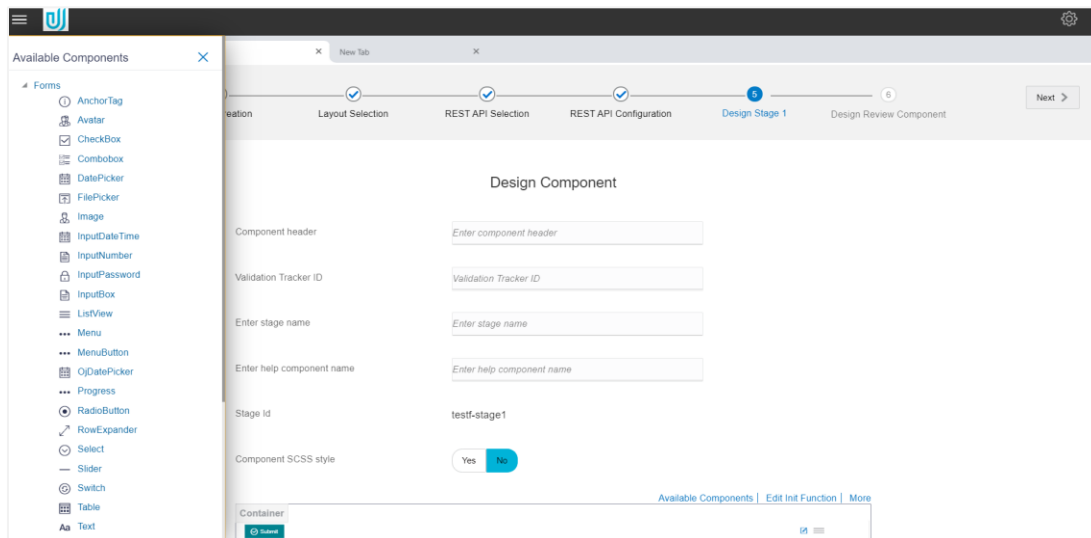
[Home](#)

10. Design Component

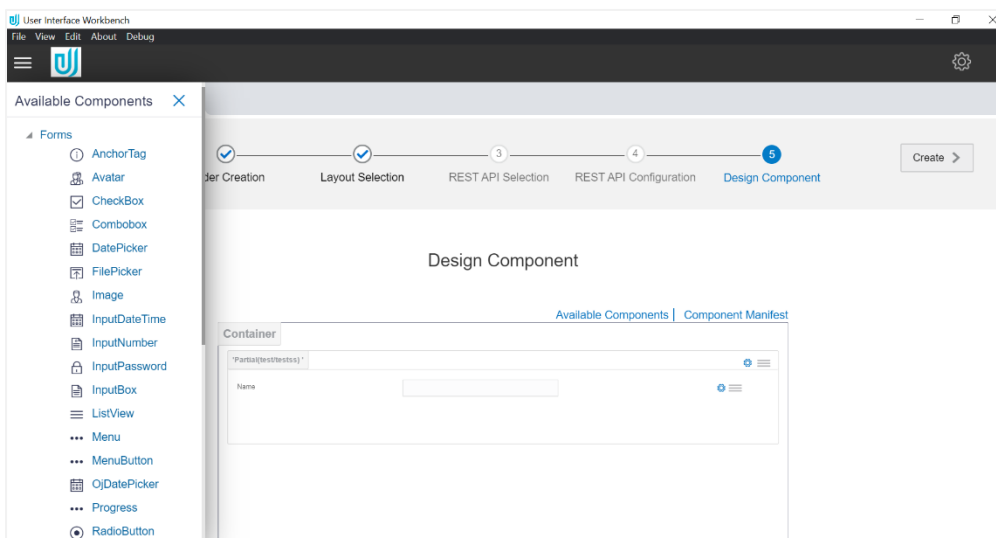
This step enables the user to design how the contents of the screen are to be displayed. User can make use of available form elements e.g. Input Text, Button etc. Each element can further be configured, placed and styled by the user as per the screen requirement.



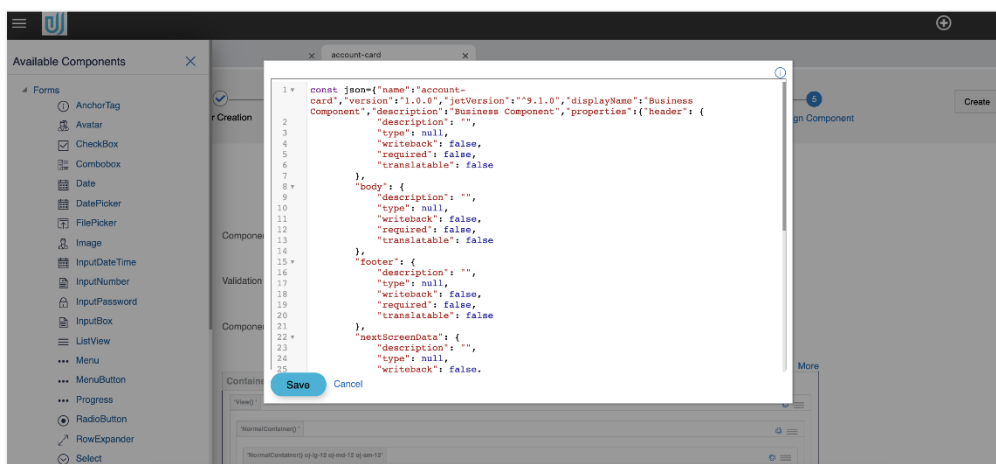
If the type of component is FLOW, the name of the stage changes to Design Stage 1, Design Stage 2, depending on the number of stages



If the type of component is PARTIAL, canvas is displayed with default container type as Partial. User can then design the Partial by drag and drop from Available components.



If the type of component is PARTIAL, canvas is displayed with default container type as Partial. User can then design the Partial by drag and drop from Available components.



The following information is captured on this screen.

- **Component Header**

The text entered in this field will be displayed as the Page Title. E.g. Cheque Book Request, Loan Repayment etc.

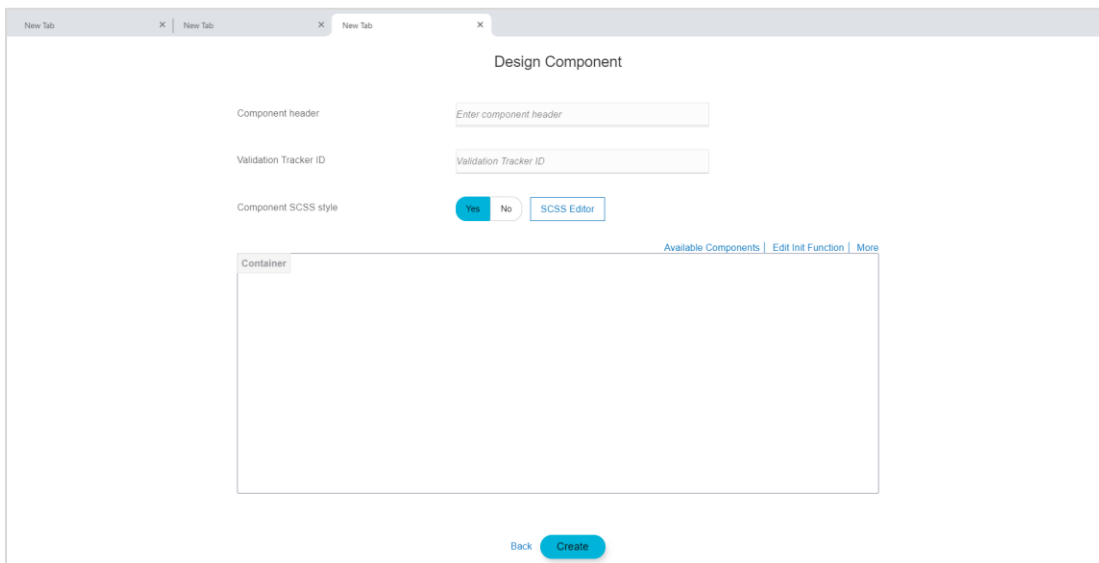
- **Validation Tracker ID**

The ID provided by the user should be the ID of the element within which the form elements reside. The tool by default generates this ID. So this is an optional field. However, there may arise a situation where the user needs to use such an ID. In such case, user can provide custom ID in this field.

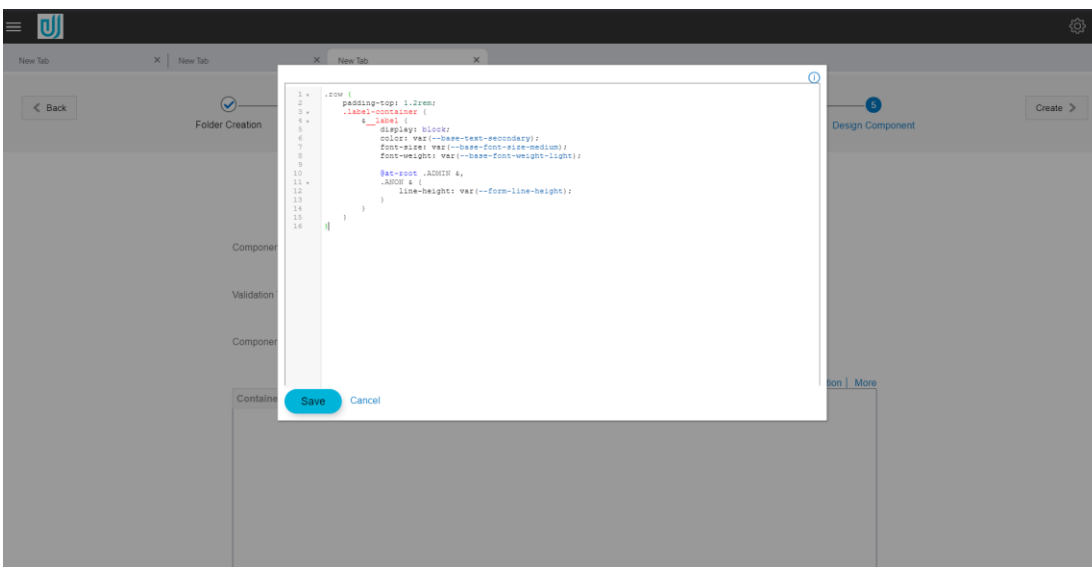
- **Component CSS Style**

User has the provision to provide custom style sheet (CSS) for the screen he wants to generate and change the look and feel of the component as per his requirement.

To create custom style sheet, user has to toggle the button to Yes. A CSS Editor button will appear on the right of the toggle button.

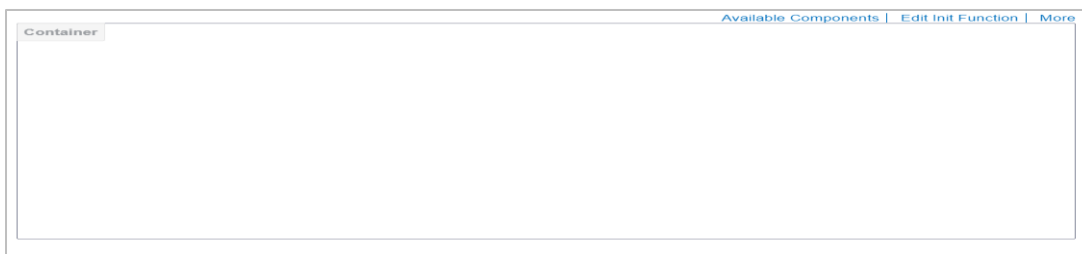


On this button click, an editor window pops up. This code editor supports Sass(Syntactically awesome style sheets). User can provide the custom classes in this editor.



After component creation, Sass file and processed Sass i.e. CSS file will be generated that will contain user defined style definition written in sass editor.

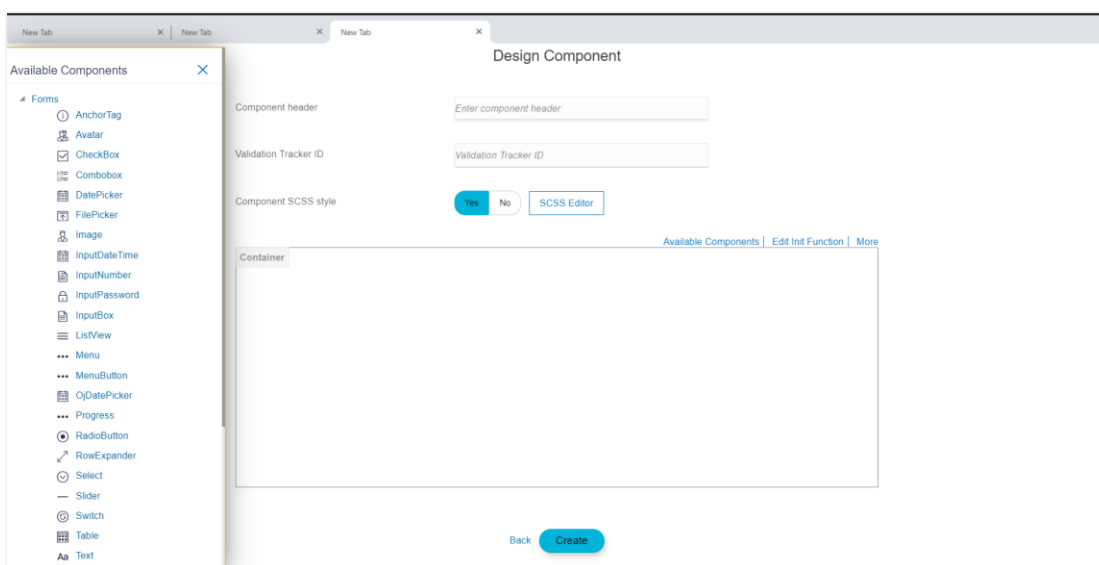
The next section can be considered as a canvas where user can design the screen contents.



The links in the top right section in the above image are explained below:

- **Available Components**

On clicking this link, a panel opens on the left side, which contains the UI elements supported by the tool.

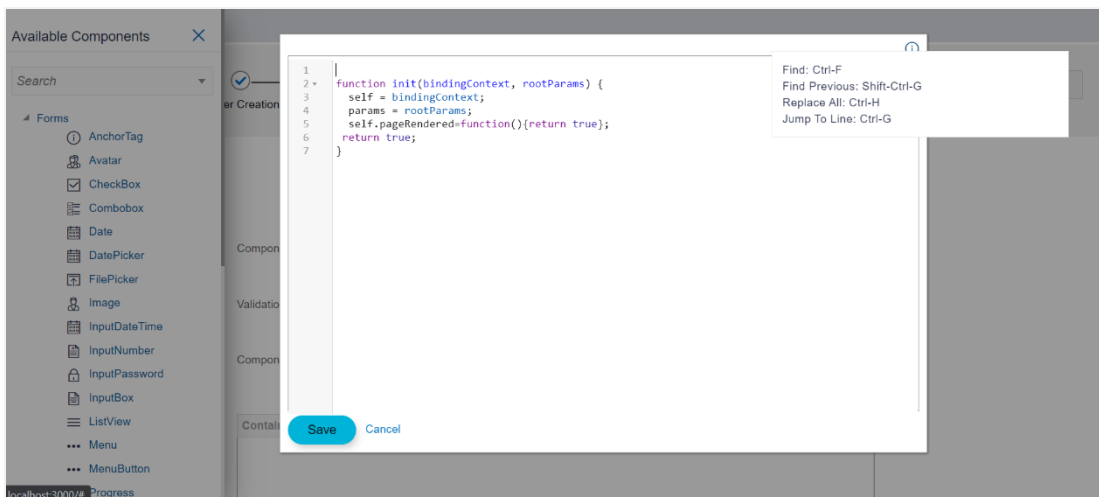


- **Edit Init Function**

This link opens the editor for writing 'init function', which you generated in previous step (REST API Configuration). After making changes to init function, click save to apply the changes. Clicking on cancel button will simply discard the changes.

User can perform find, find previous, replace all and jump to line on the code editor.



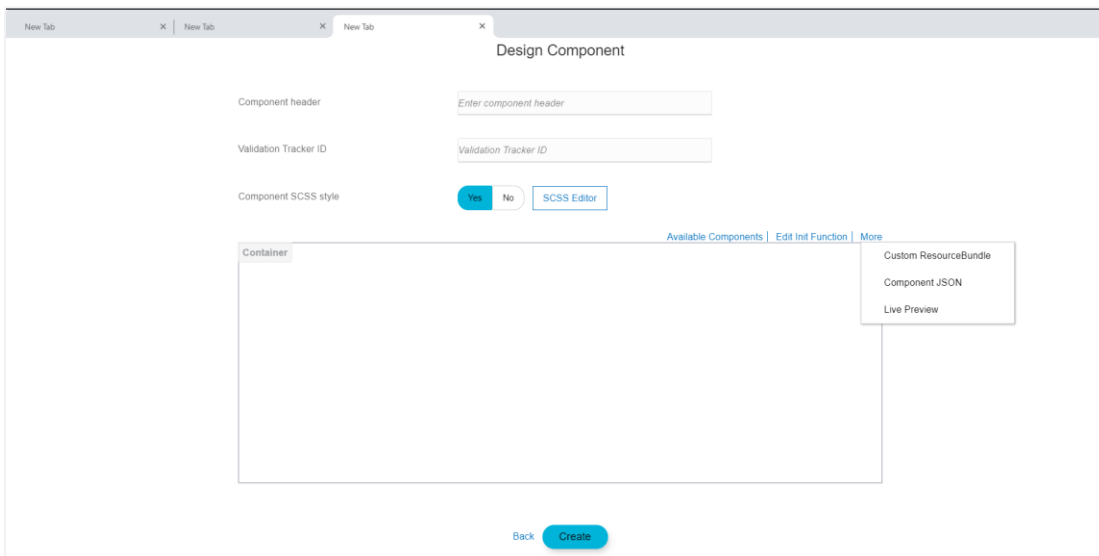


- **More**

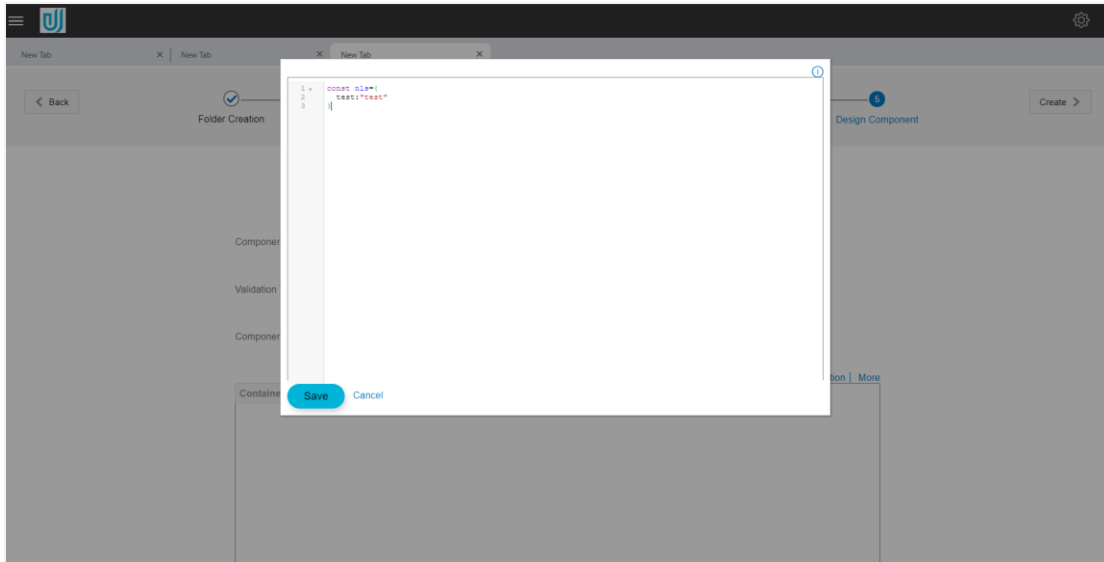
On clicking more, context menu is opened that has following options:

- **Custom Resource Bundle**

To add custom entry to the resource bundle file (which contains all the text that will be displayed on the screen), user can select this option. After selecting this option, editor window will pop up where user can add the custom entry.



To add new entry, add key and the resource value inside the braces of 'const nls' , as shown in the picture below:



This resource bundle value can be used in two way in the component

1. Inside init function: Here resource bundle value can be accessed with code `self.nls.custom_key`.
 2. Inside html: In normal scenario, tool creates resource bundle for every string attached to html element. But in special case, this can be simply done by writing `$component.nls.custom_key`.
- **Component JSON** Selecting this option will open editor window. On creation of component, this JSON file is created inside the component

```

1  const json={
2  data: "dummy data"
3  }

```

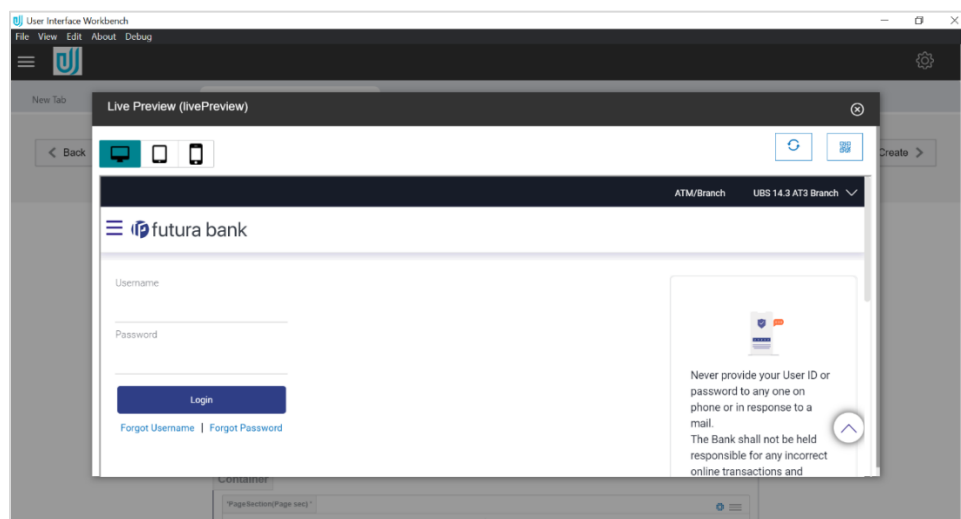
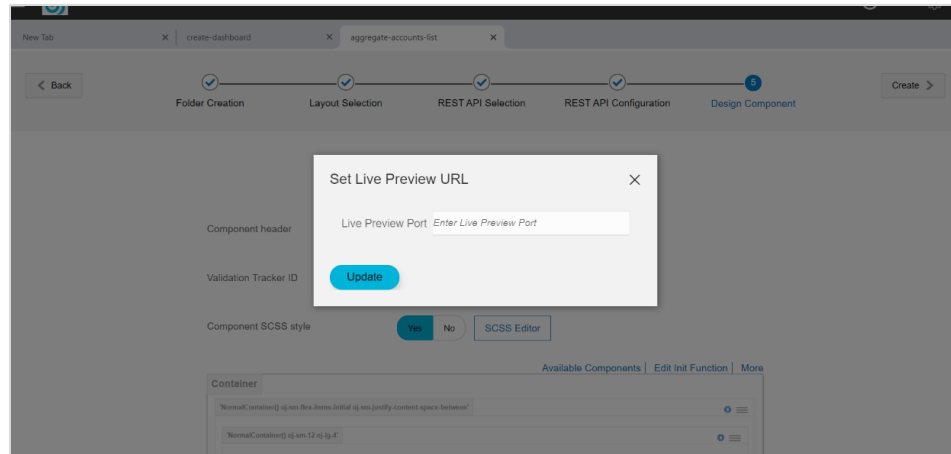
- **Live Preview**

Live Preview option will be displayed on Design component for Component Type Individual and Widget, for Flow component it will be displayed on Design Review screen.

Follow below steps for Live Preview

- Update channel/config/obdx.conf file with following instructions.
Replace "Header always append X-Frame-Options DENY Header always append X-Frame-Options DENY" with "Header always unset X-Frame-Options".
- Restart OHS server.

Selecting this option will open popup window, if Live Preview PORT number is not set user will be prompted to enter live preview PORT number else Preview window will be directly open. Once live preview PORT number is set live preview of the component will be displayed in popup.



Preview of new component to be created can be displayed in multiple devices such as tablets, mobiles etc. as well using QR code scan feature.

For testing your component on different devices such as Mobile, tablet etc.; follow below steps

- Install QR code scanner and Cisco AnyConnect on your device.
- Connect ORACLE VPN using Cisco AnyConnect.
- Open McAfee widget, go to "Quick Settings" and "Disable Endpoint Security Firewall of McAfee".
- Open Windows Defender firewall and Advance security, click on Inbound Rules and add new rule, select port and specify the port on which on which OHS server is running and save the rule.
- Scan the QR code from Live Preview window and view your component.

- **Widget Manifest**

Manifest in case of widget can be written in editor on click of this option

- **Component Manifest**

Parameters for business component can be given with this option

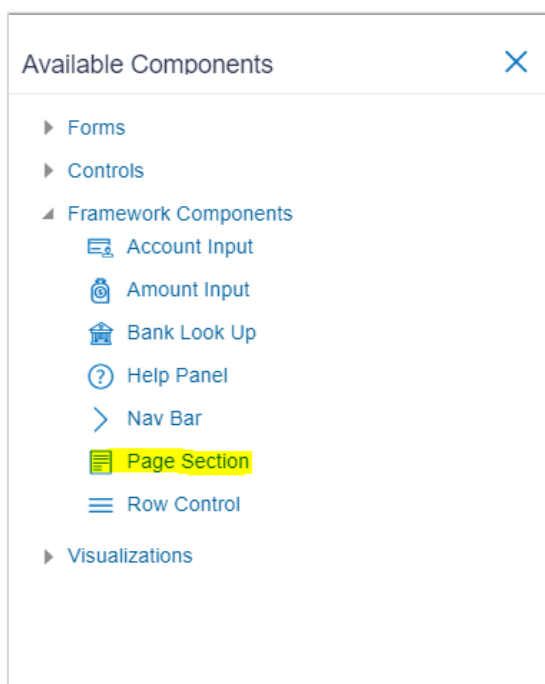
```

1 const json={"moduleName": "accounts",
2             "id": "accounts_interest-certificate",
3             "type": "interest-certificate",
4             "componentName": "interest-certificate",
5             "parameters": {}}

```

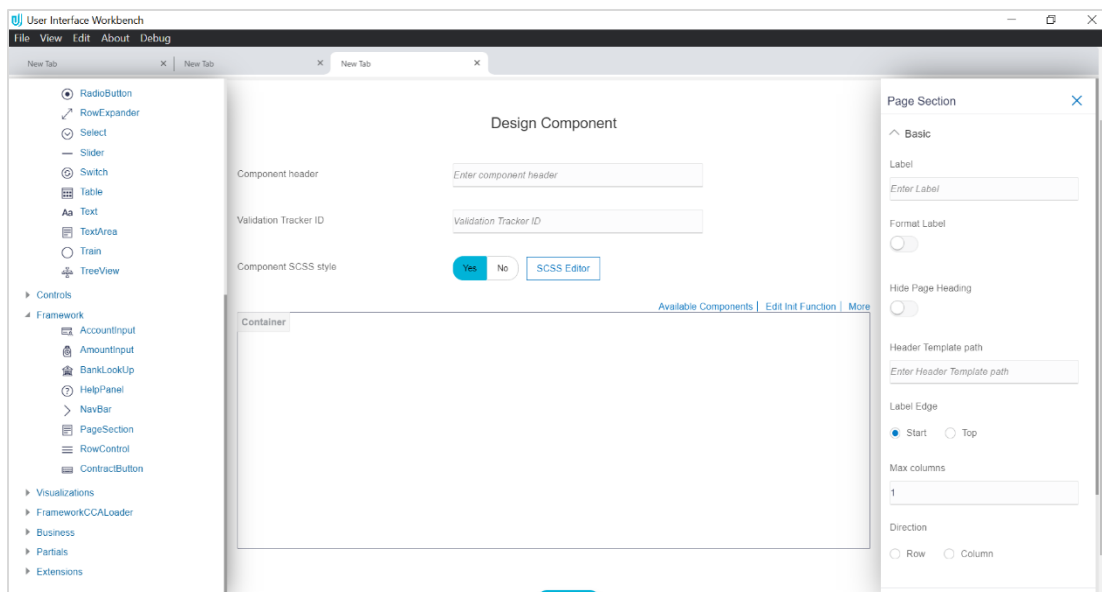
Save Cancel

To create a screen, first element has to be **Page Section** (refer *Page section doc*), which can be found in framework Components section of left panel.



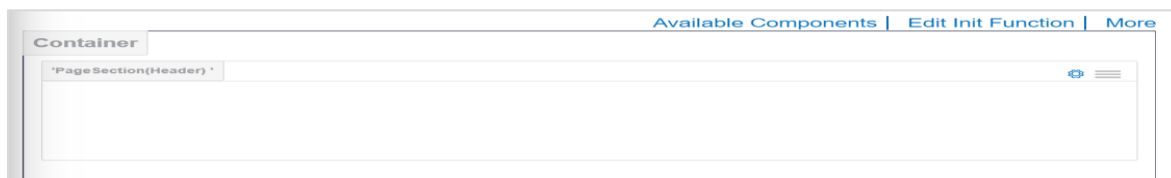
To add any element from left panel to form area, either drop it on a particular location or just click on it to add it as a last element in form area.

After clicking on Page Section option panel on the right will be opened where details for this element are captured.



After filling compulsory fields, click confirm to add element. In case all the required fields are not filled, error message will be thrown.

For Page Section, only Label element is compulsory. After confirming, Page Section is added to the form area.



To make changes to the element, click on edit icon or to remove the element click on delete icon, or to copy element just below this click on copy icon.



User can add as many Page Sections as needed in the screen and add form elements to it.

Adding form element to page-section

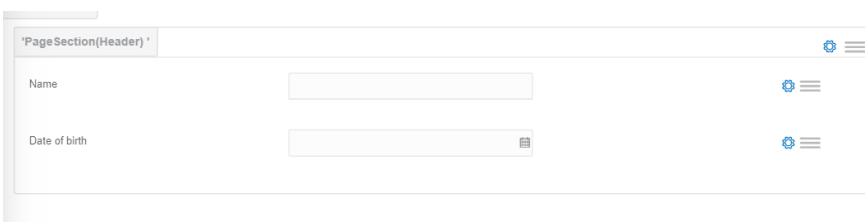
After adding Page Section, any element, which are present in available element panel can be added or dropped below it. For example, to add input box click, on available components ->Expand Forms section ->click on Input Text element

Fill in the required details in the right panel for the element and click confirm. Input element will be added to the form layout below Page Section.



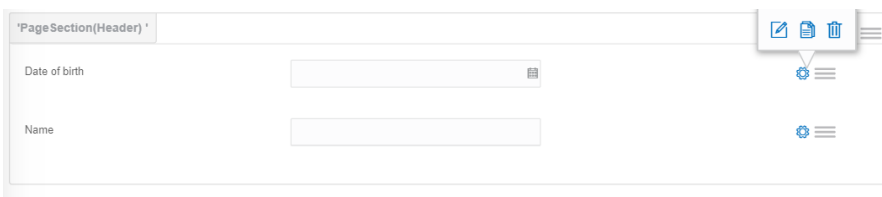
Reordering a form element

Added elements inside form area can be re-ordered among themselves. To re-order an element click and hold the right most drag icon and release at desired position.



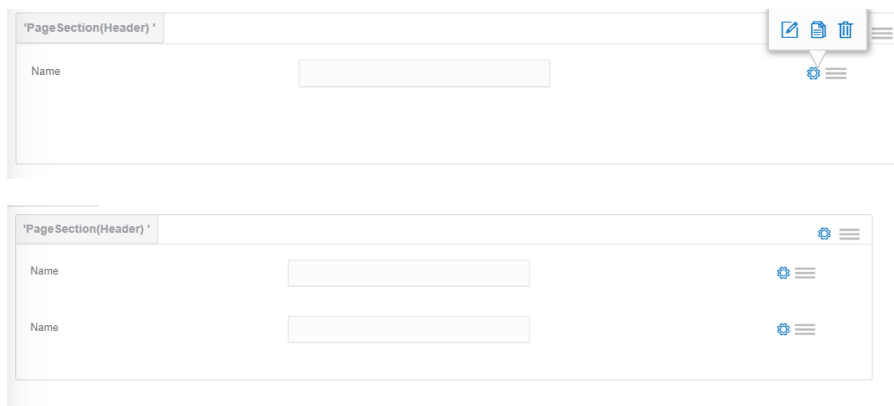
Deleting a form element

To delete form element click on delete icon.



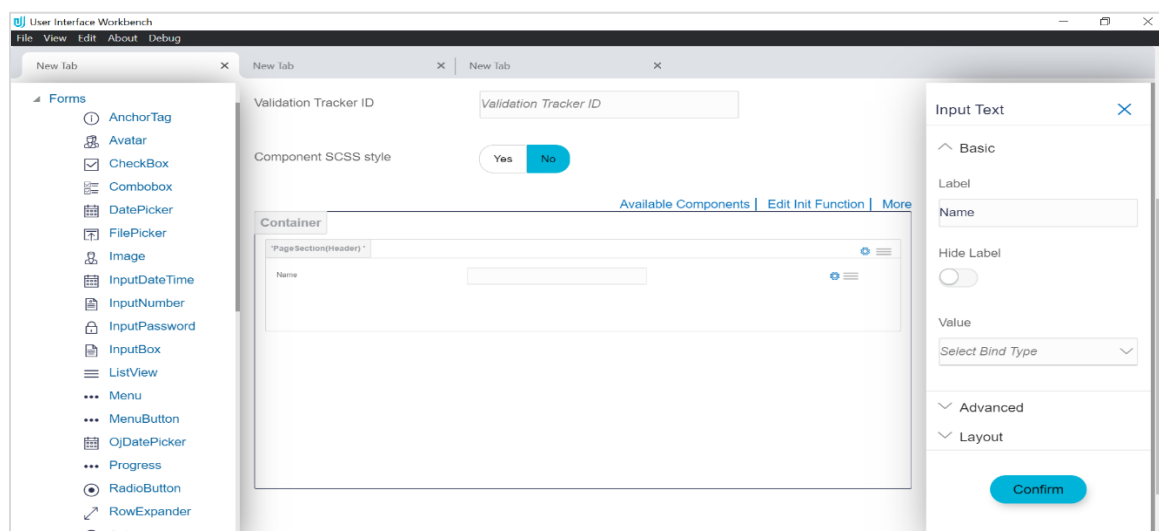
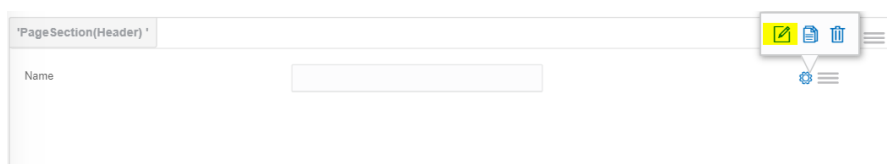
Copying a form element

To copy an already present form element in form area, click the copy icon, new copy of the selected element will added below it, which can again be re-ordered if required.



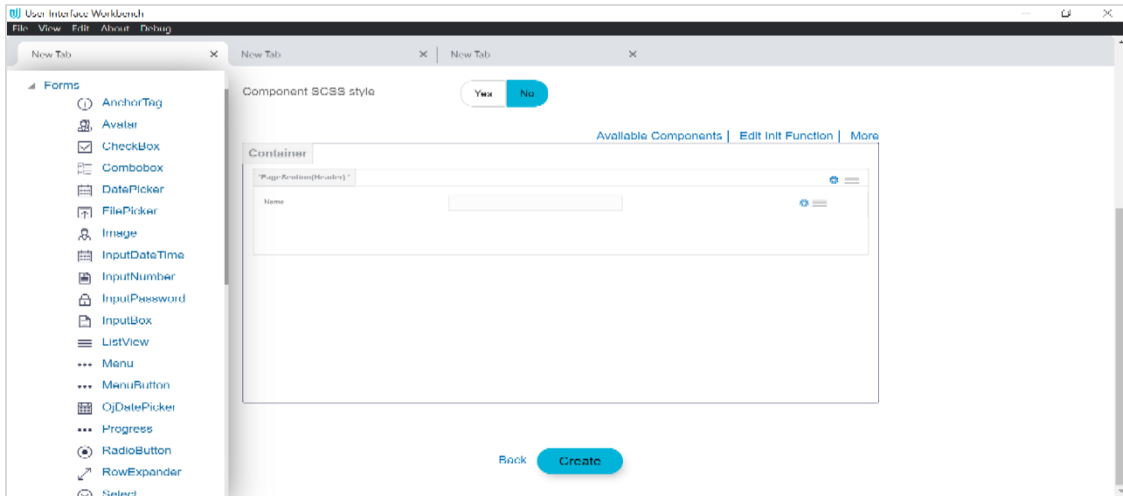
Editing a form element

To edit an already present form element in form area click the edit icon, a right panel will open where the details can be updated. After editing, click on confirm to save the changes.

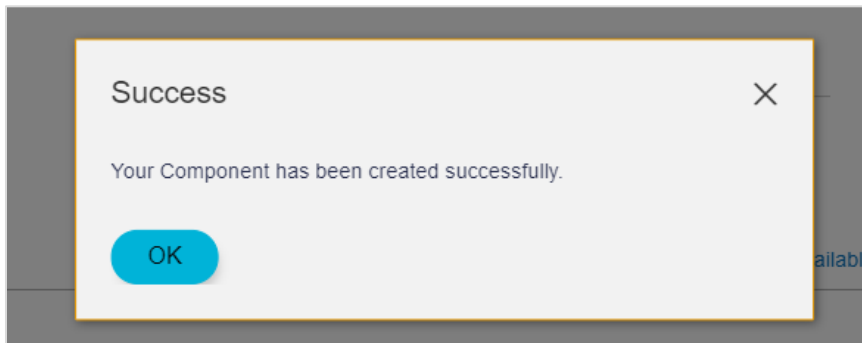
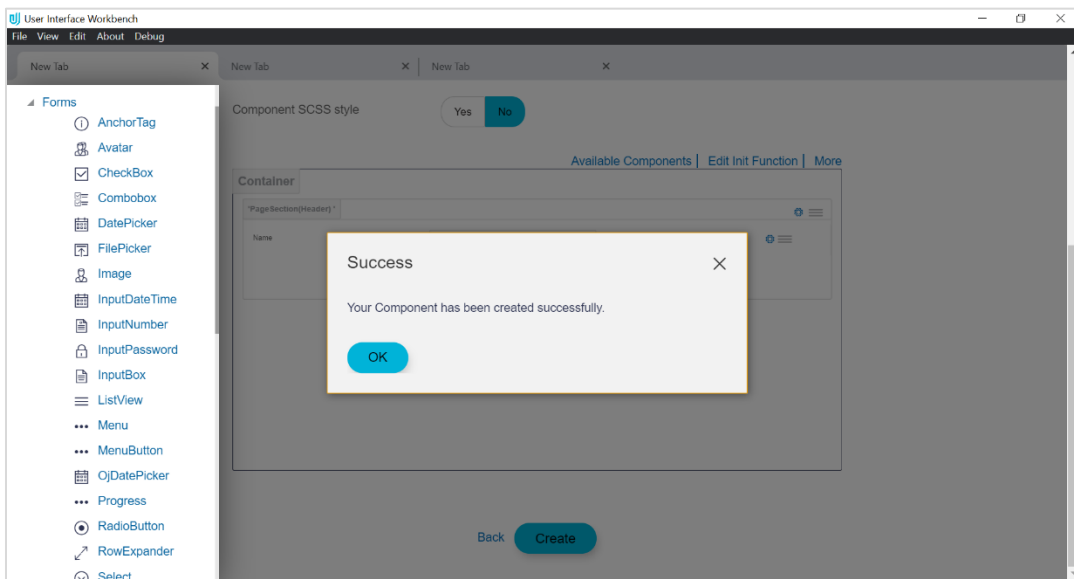


Creating Component

Once the user is satisfied with the screen design, user can click on the create component button to generate the component.

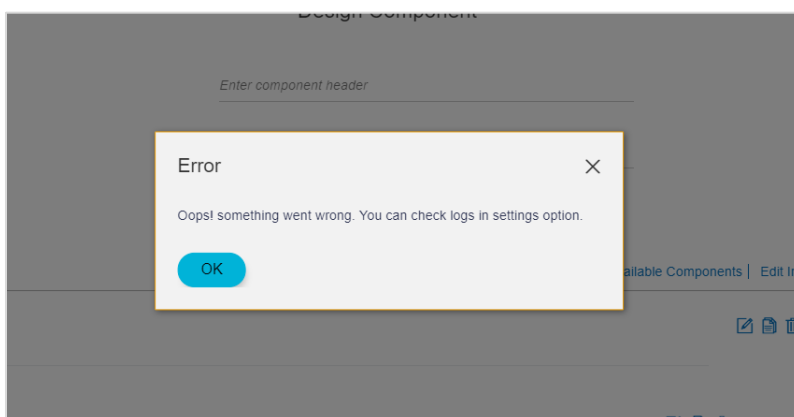
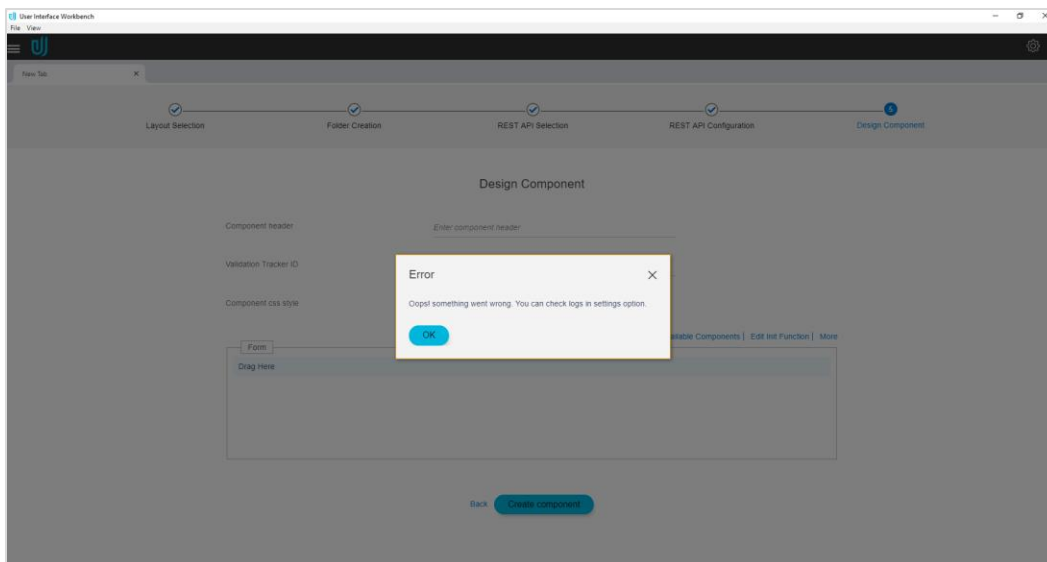


If all the details filled for each form element are valid then component will be generated and a success message will be displayed in a dialog box stating that the components have been created successfully.

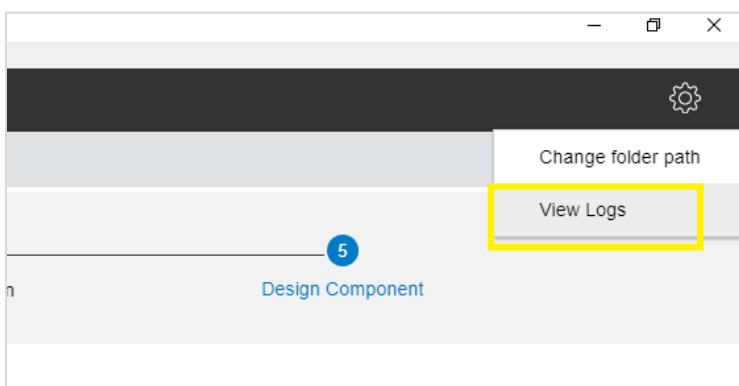


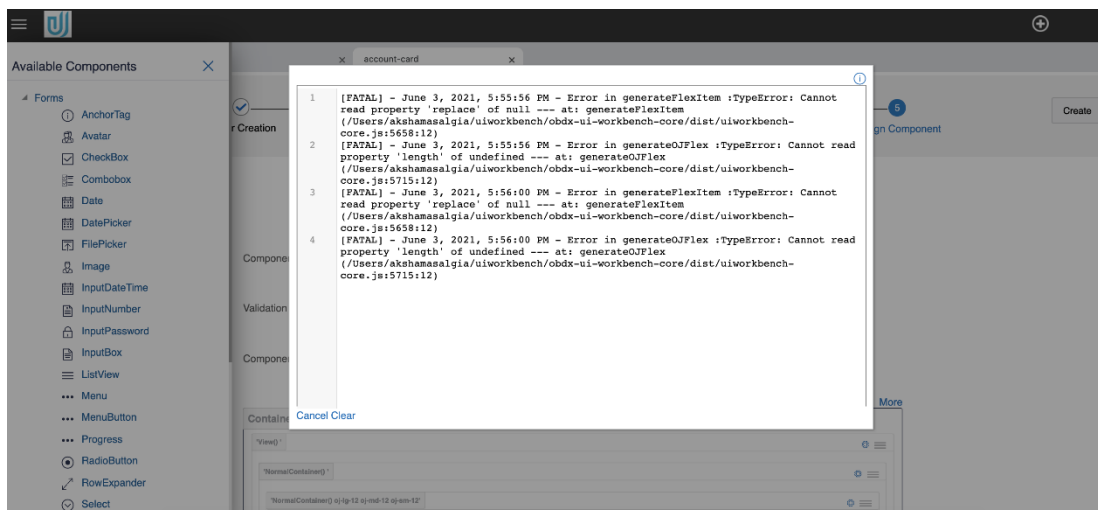
Click the OK button or cancel icon to close the pop up. User can make further changes to it and then update the created component by clicking on 'Create Component' button.

In case there is an error in case of component generation, error message will be displayed in a dialog box.



To find out what errors caused the screen creation failure, click on View Logs option which can be found in the setting icon on top right corner of the tool in the dark grey panel.

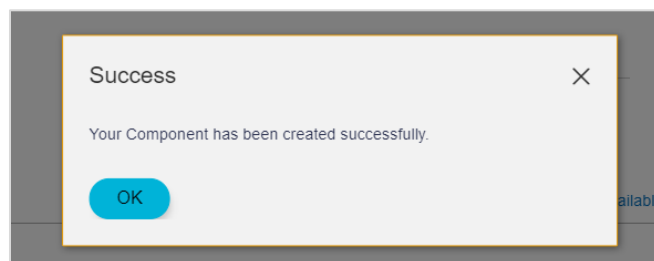
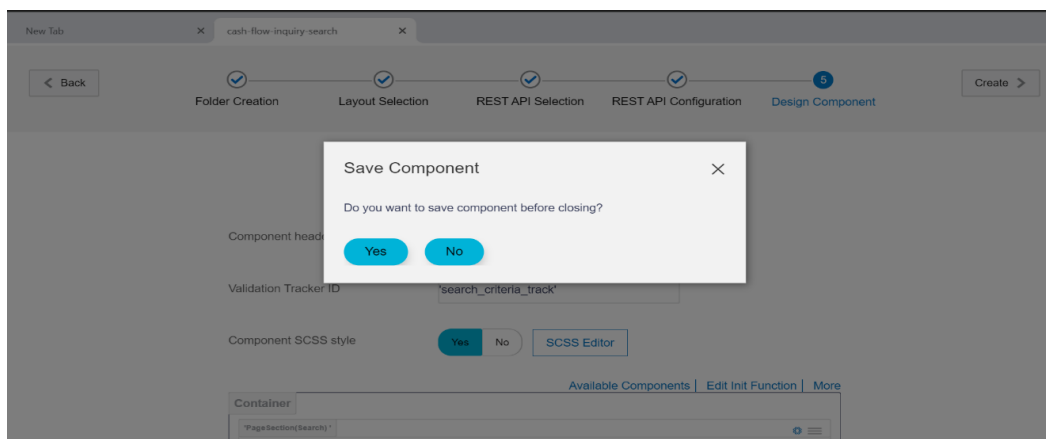




User can fix the errors and can click on Create Component again. If there are no further errors, component will be generated and success window will be displayed.

Users can clear old logs by clicking on 'Clear' button.

When user tries to close the component tab, "Save Component" popup is opened, on click of 'Yes' the components is generated/saved and on click of 'No' changes are discarded.



Generated Artefacts

After Creating components following files are generated inside channel path selected by the user;

- a. Inside `channel_path/component/module_name/component_name`:
 1. `Hooks.js` – It contains all the custom code written by user in the `Init` function or `Hook` function.
 2. `Loader.js` – This is the entry file to load the component.
 3. `Model.js` – This file is responsible for communicating with server and transferring data between component and server.
 4. `Component_name.js`- This file is the view model for the component.
 5. `Component_name.html` – It contains the html code for the designed layout.
 6. `Component_name.json` – Code written in component JSON window is added in this file
 7. `Component_name.scss` - If Component SCSS style was turned on, a SCSS file is created which contains the code written in SCSS Editor.
 8. `Component_name.css` - If Component CSS style was turned on, the same file is created which contains code written in CSS Editor.



e.g. Below screenshot refers to a `virtual-account-record-list` component which is generated using the tool.

Note: Generated artefacts must not be overwritten manually.

Name	Date modified	Type
hooks.js	25/04/2019 22:48	JavaScript File
loader.js	25/04/2019 22:48	JavaScript File
model.js	25/04/2019 22:48	JavaScript File
virtual-account-record-list.html	25/04/2019 22:48	Chrome HTML Do...
virtual-account-record-list.js	25/04/2019 22:48	JavaScript File
virtual-account-record-list.json	25/04/2019 22:48	JSON File

- b. Inside `channel_path/resources/nls`:
 1. `component_name.js` – It contains the language specific values entered by user.
- c. Inside `channel_path/metadata/module_name/component_name`:
 1. `component_name.json`- This is the manifest file for the component.
 2. `hooks.js`- It contains all the custom code written by user in `Init` function or `Hook` function.

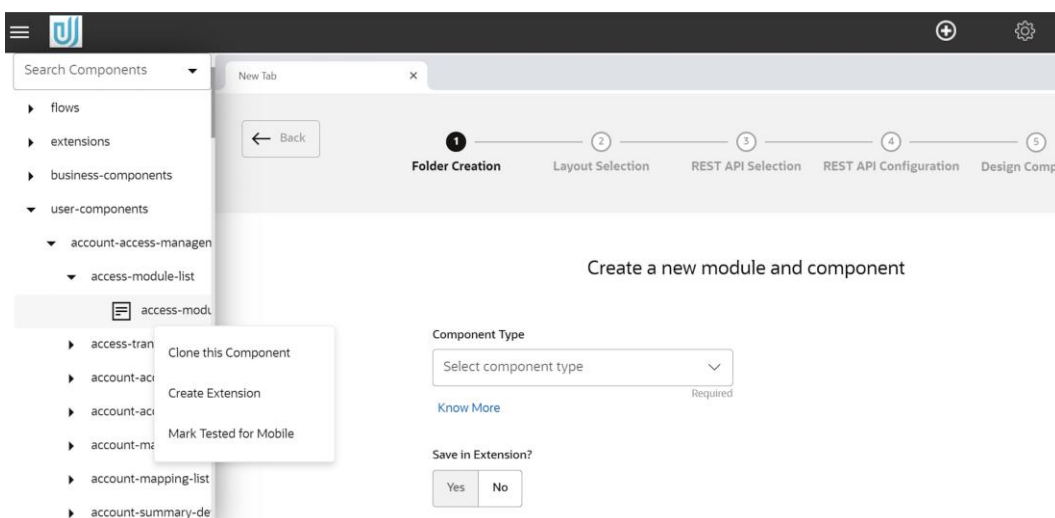
E.g. metadata files for `Virtual-Account-Record-List` component

core > channel > metadata > file-upload > virtual-account-record-list		
Name	Date modified	Type
 hooks.js	30/04/2019 18:16	JavaScri
 virtual-account-record-list.json	30/04/2019 18:16	JSON Fi

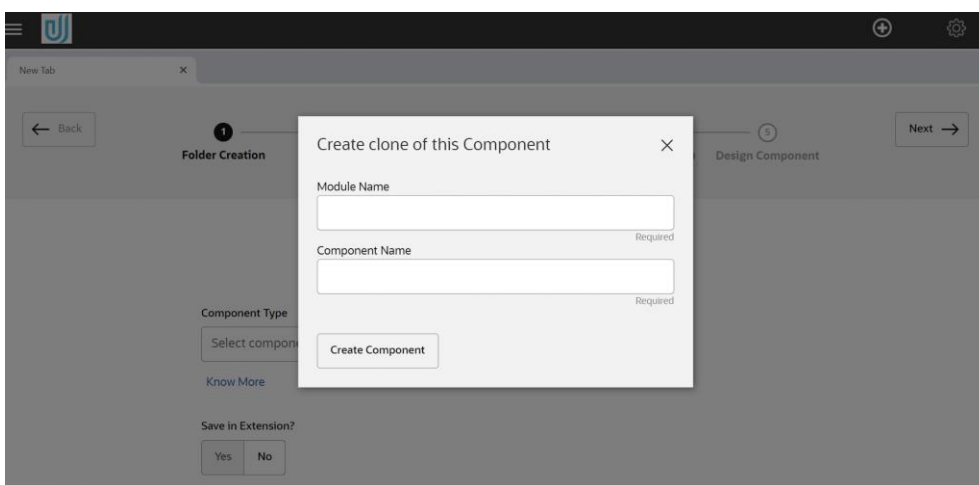
Cloning Component

Users can clone tool generated components. To clone a component, click on File Explorer icon, available at top left corner of the tool in the grey panel.

Traverse to the desired component and select clone this component option.



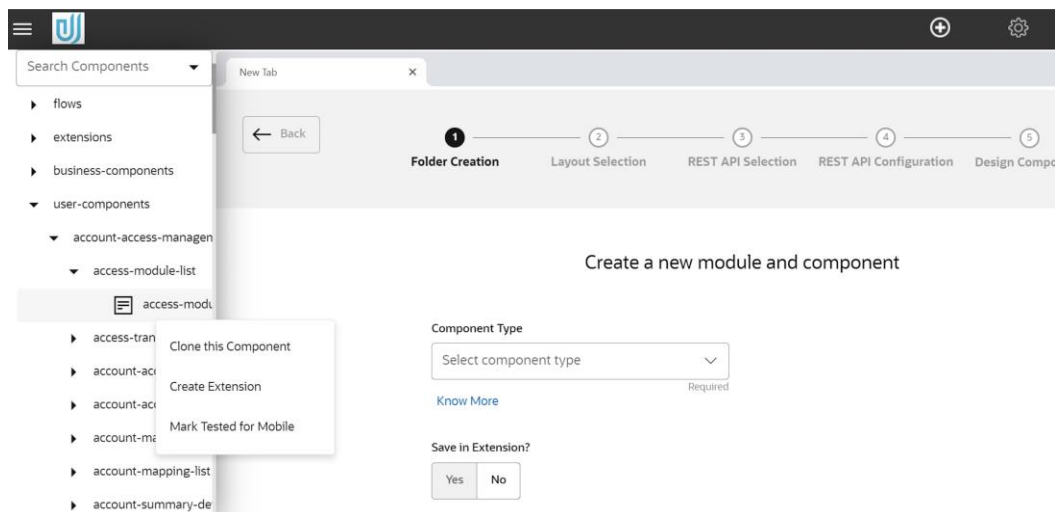
Enter the new component name



Extending Component

Users can extend tool generated components. The new extended component manifest gets saved in the extensions folder. User can then customize the extended component.

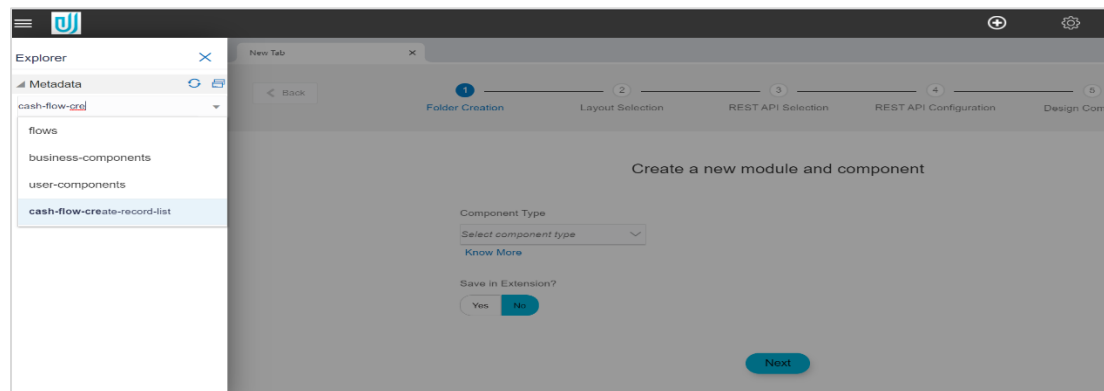
To extend a component, click on File Explorer icon, available at top left corner of the tool in the grey panel and then select create extension option.



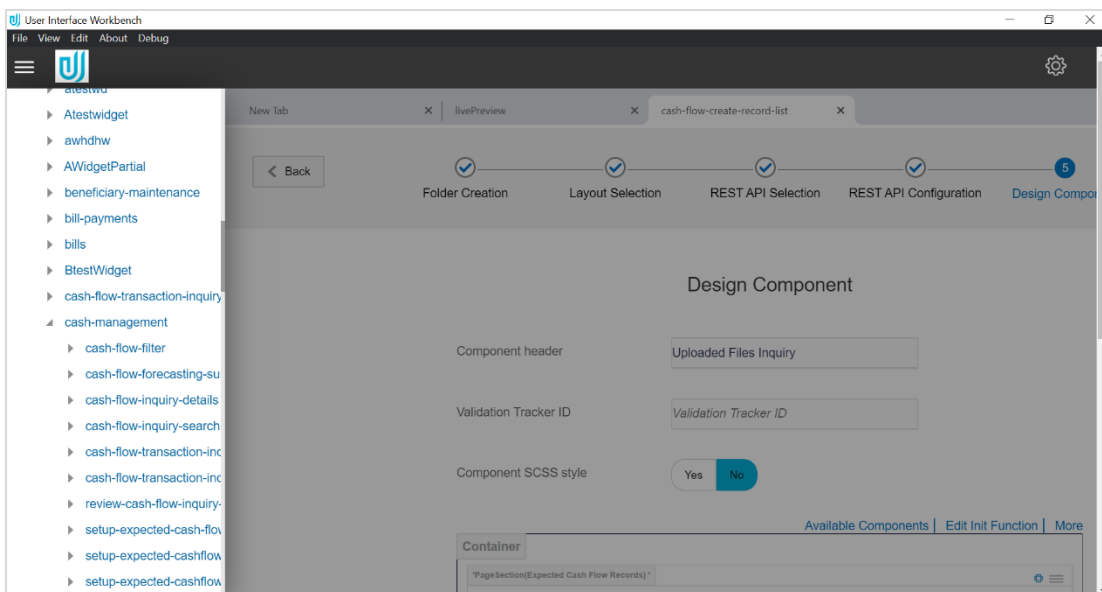
Editing Component

All the components generated using the tool can be edited by opening the component in the tool.

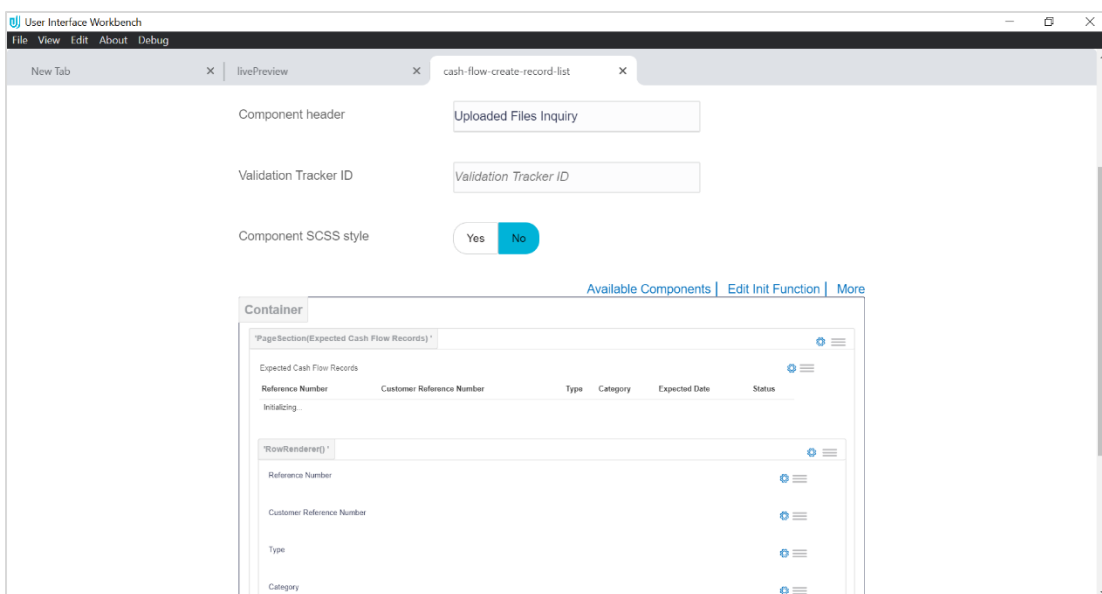
To edit a component, click on File Explorer icon, available at top left corner of the tool in the grey panel.



All the created components are present under Metadata accordion. To start editing a component, expand the module_name->component-> click on the component name. Users can also search the components from search panel and click of searched component to edit.



Once the user clicks on the screen name, he will be directed to the screen created during the first time.



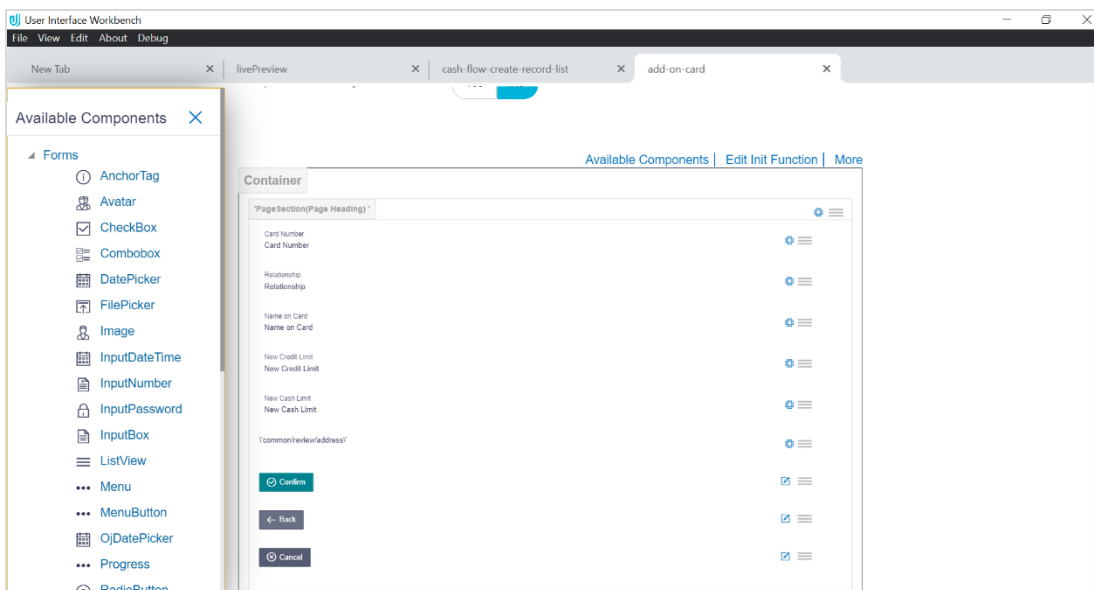
The user can now edit the screen as per requirement and save the changes by clicking on Create Component Button.

Design Review Component

If the type of component is FLOW, this step is automatically added. It is similar to design component stage.

In this Stage, a default design is created using the fields which have been designed on the design stages.

Thus a review page can be generated without user intervention.



In case the design does not meet the requirements, user can make changes in the design as needed. Once the user manipulates the screen, the tool stops automatic design generation. For e.g. If user adds a field in one of the design pages, then he will have to add that field on the review design step also.

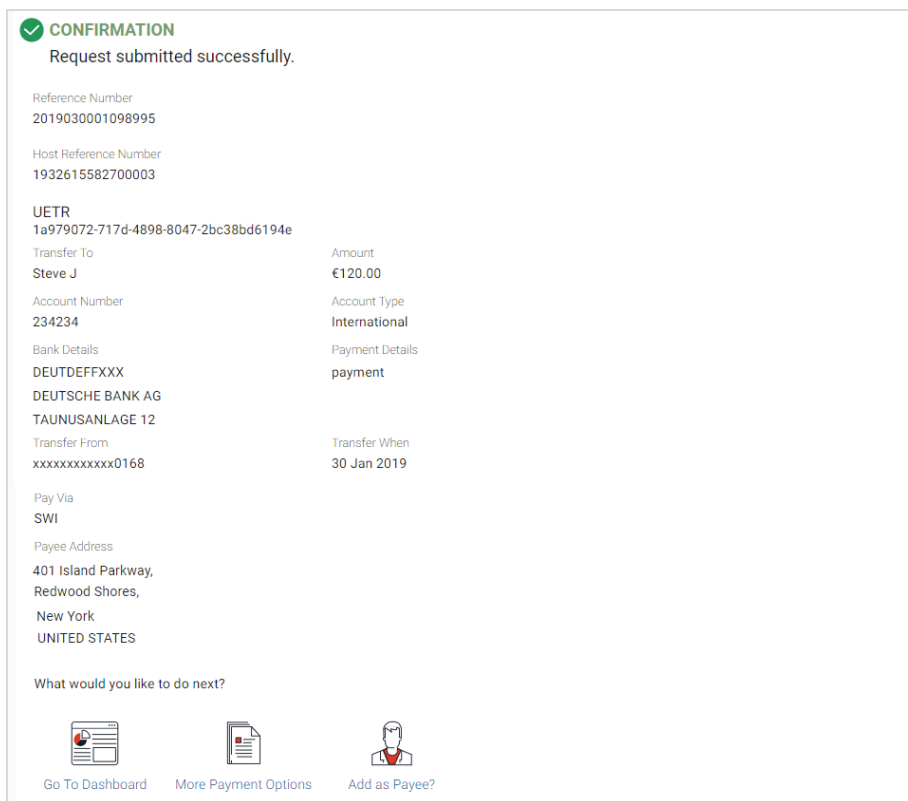
Confirmation Screen:

Confirmation screen is used to show confirmation of the operation, only in case of flows. User can design his own confirmation screen. Confirmation template option will be available when Component Type is Flow & Flow Type is Create.

There will be 2 options available for Confirmation Template:

1. Standard

It is a standard template of confirmation screen, which means user cannot modify or add any component in this screen. Screen will look like image below.



2. Animated Page

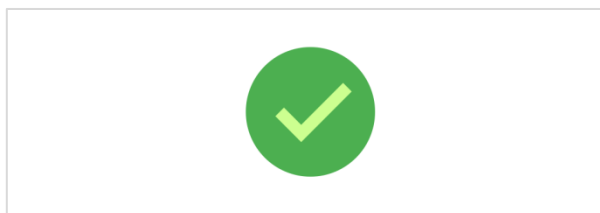
In this case user can design his own confirmation screen.

One extra step will get added in train after review screen, this will be the design step for confirmation screen.

Toolkit will generate a page with an animated imaged centrally placed by default.

User can delete or change this image. He can also add any text of his choice e.g. Thank You or Transaction Confirmed or can add other components e.g. Buttons, Icons etc.

Confirm folder will get generated in NLS, metadata & in created component folder also.



[Home](#)

11. Available Components

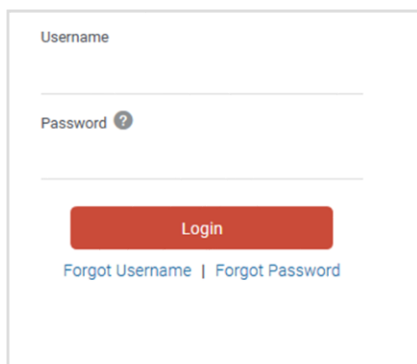
There are four types of components available in this panel.

- a. Forms
- b. Controls
- c. Framework Components
- d. Visualization
- e. Framework CCA Loader
- f. Business
- g. Partial
- h. Extensions

A) Forms

This section contains the components which are required in designing a form.

For example, a Login form accepts user name and password and validates a user. In the example below, developer can use Input Text and Input Password element for user name and password respectively.



The image shows a login form with the following elements:

- A text input field labeled "Username".
- A password input field labeled "Password" with a question mark icon to its right.
- A red "Login" button.
- Two links: "Forgot Username" and "Forgot Password" separated by a vertical bar.

Following is the list of available components under this section.

1. Anchor Tag
2. Avatar
3. Check Box
4. Combo Box
5. Date Picker
6. File Picker
7. Image
8. Input Number

9. Input Password
10. Input Text
11. List View
12. Menu
13. Radio Buttons
14. Select
15. Switch
16. Table
17. Text
18. Text Area
19. Train
20. Tree View

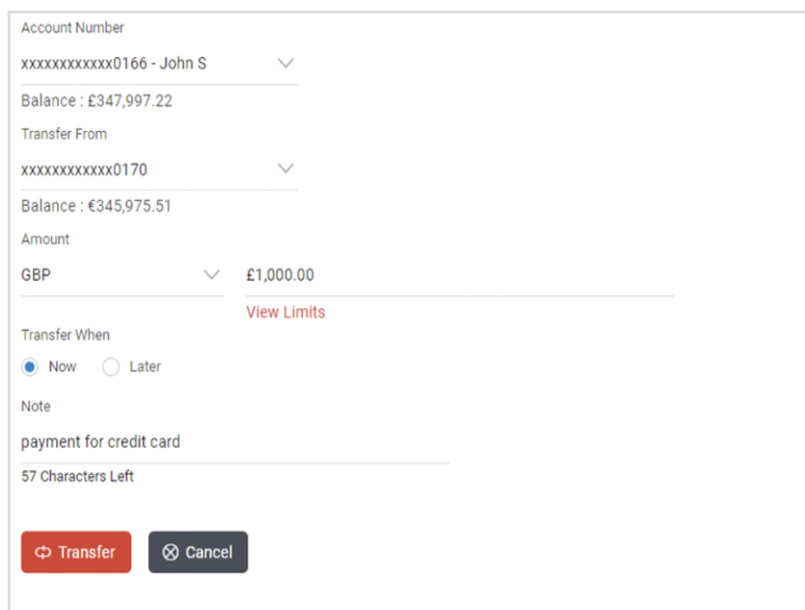
B) Controls

This section contains the components, which are used to control the activity on the form.

For example, user has a form to transfer money from one account to another account in which he will have the following two actions:

- Transfer button to confirm the transaction
- Cancel button to cancel the transaction

In the below example, buttons are displayed:



The screenshot shows a form for transferring money. It includes the following elements:

- Account Number:** A dropdown menu showing "xxxxxxxxxxx0166 - John S" with a downward arrow.
- Balance:** "£347,997.22"
- Transfer From:** A dropdown menu showing "xxxxxxxxxxx0170" with a downward arrow.
- Balance:** "€345,975.51"
- Amount:** A dropdown menu showing "GBP" with a downward arrow, and a text input field containing "£1,000.00".
- View Limits:** A red text link.
- Transfer When:** Two radio buttons: "Now" (selected) and "Later".
- Note:** A text input field containing "payment for credit card".
- Characters Left:** "57 Characters Left"
- Buttons:** A red "Transfer" button with a right-pointing arrow and a dark grey "Cancel" button with a close icon.

Following is the list of available components under this section.

1. Button

2. Button Set
3. Container
4. Component Loader

C) Framework Components

This section contains the components, which are predefined & supported by OBDX. It has in-built functionality.

In the below example, an account input component which lists all the accounts of the user and shows its details like balance and address of the account selected by the user .

The image shows a 'Transfer From' dropdown menu. The selected account is 'xxxxxxxxxxxx0031'. Below the dropdown, the balance is displayed as 'Balance : £201,065.00'.

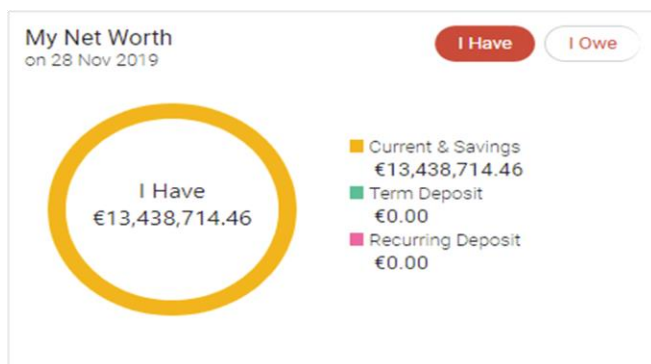
Following is the list of available components under this section.

1. Account Input
2. Amount Input
3. Bank Look Up
4. Help Panel
5. Navigation Bar
6. Page Section
7. Row Control

D) Visualization

This section contains the components, which are useful to design a widget that displays information graphically.

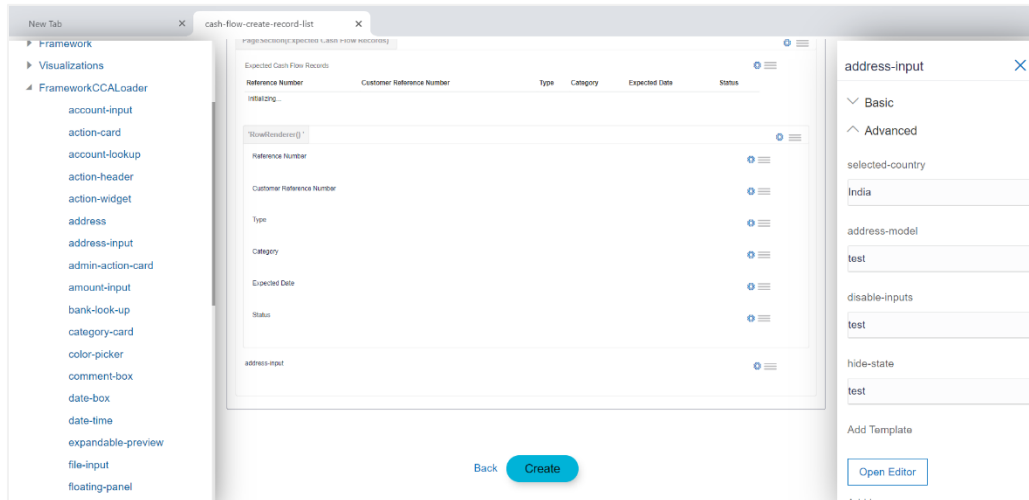
In the below example, a chart that shows the net worth of different accounts (CASA) of the user



E) Framework CCA Loader

This section contains the framework CCA components, which are predefined and supported by OBDX. It has in-built functionality.

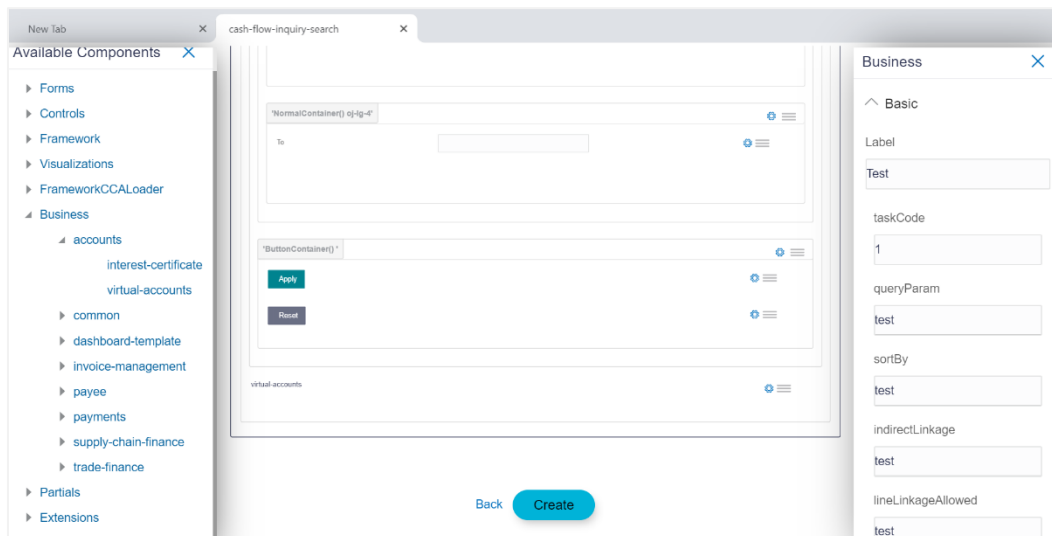
In the below example, an address-input component which contains predefined address structure. On right panel all the properties of address-input CCA component are available.



F) Business

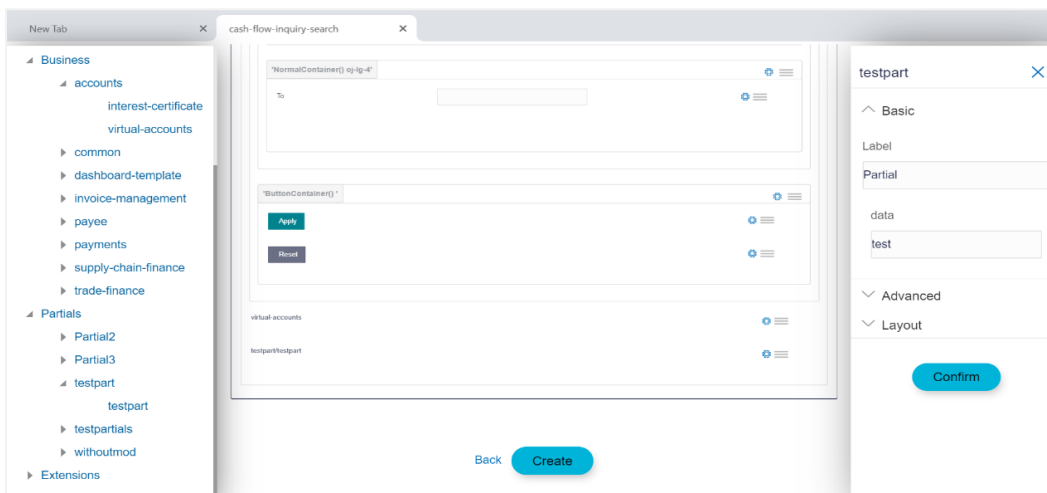
This section contains the Business components, which are created by user and are reusable components. Business components generate

In the below example, a virtual-accounts component which contains predefined virtual accounts list. On right panel all the properties of virtual-accounts CCA component are available.



G) Partials

This section contains the Partial templates, which are created by user and are reusable independent HTML template.



H) Extensions

This section contains the components which are customized OBDX components and are saved in extensions folder.

Following is the list of available components under this section.

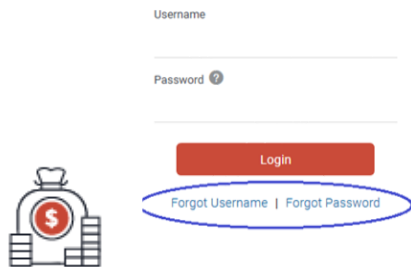
1. Chart
2. TimeLine

Details of components

A) Forms:

1) Anchor Tag :

Usage: This component is used to add a link. This link can be an image / icon or text.
Example:



Supported attributes:

a) Basic:

- [Label](#)
- Format Label

b) Advanced:

- Select anchor type
- Add formatter
- REST API chain
- Hook functions
- Add Loop
- Add Custom Attributes
- Conditional Field

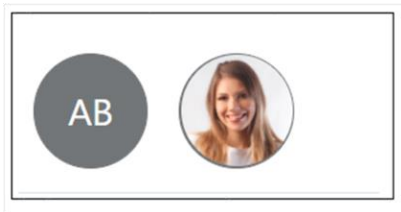
c) Layout:

- Grid

2) Avatar

Usage: This component is used to display initials for name or product and images in a circle.

Example:



Supported attributes:

a) Basic:

- Label

b) Advanced:

- Select Size
- Enter Image Path
- Enter Initials
- Add Loop
- Add Custom Attributes:
- Conditional Field

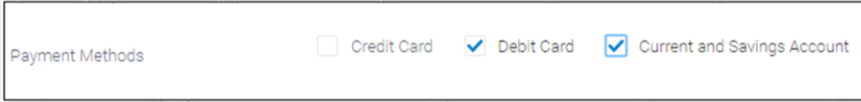
c) Layout:

- Grid

3) Check Box:

Usage: This component is used to add checkbox to allow a user select one or more options from the available choices.

Example:



The screenshot shows a form titled "Payment Methods" with three checkboxes. The "Credit Card" checkbox is unchecked, the "Debit Card" checkbox is checked, and the "Current and Savings Account" checkbox is checked.

Supported attributes:

a) Basic:

- Label
- Hide Label
- Value
- Options

b) Advanced:

- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

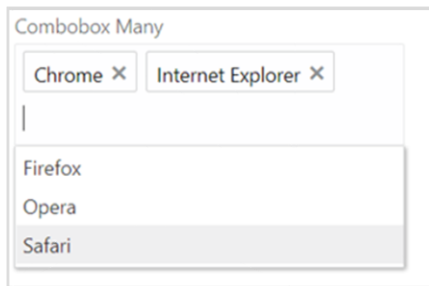
c) Layout:

- Grid

4) Combo Box:

Usage: This component is used to add a drop down to allow user to make multiple selection from the predefined options or type his own option.

Example:



Supported attributes:

a) Basic:

l) Label:

- Hide Label
- Value
- Select Type
- Options

b) Advanced

- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

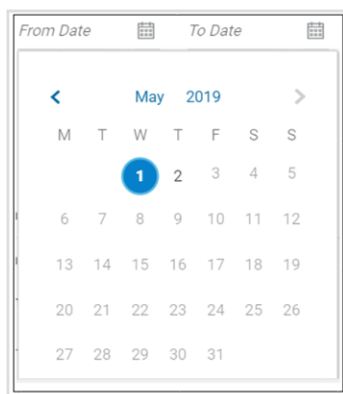
c) Layout:

- Grid

5) Date Picker:

Usage: This component is used to add an input box to accept date as an input from user.

Example:



Supported attributes:

a) Basic:

- Label
- Hide Label
- Value

b) Advanced:

- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

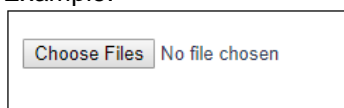
c) Layout:

- Grid

6) File Picker:

Usage: This component is used to add an action as a button to accept the documents (files) as an input from user.

Example:



Supported attributes:

a) Basic:

- Label

d) Advanced:

- Selection Mode
- Enter Allowed File Extensions
- REST API chain
- Hook functions
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

e) Layout:

- Grid

7) Image:

Usage: This component is used to add an image.

Example:



Supported attributes:

a) Basic:

- Image source

b) Advanced:

- Add Loop

- II)Add Custom Attributes
- III)Conditional Field

c) Layout:

- Grid

8) Input Number:

Usage: This component is used to add an input box to accept numbers as an input from the user .

Example:



Supported attributes:

a) Basic:

- Label
- Hide Label
- Value

b) Advanced:

- Enter Minimum Length
- Enter Maximum Length
- Enter Step
- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

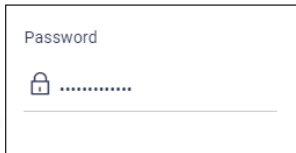
c) Layout:

- Grid

9) Input Password:

Usage: This component is used to add an input box to accept the password as an input from the user.

Example:



Supported attributes:

a) Basic:

- Label
- Hide Label
- Value

b) Advanced:

- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

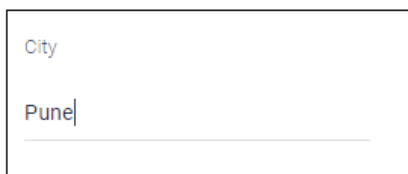
c) Layout:

- Grid

10) Input Text:

Usage: This component is used to add an input box to accept text as an input from the user

Example:



Supported attributes:

- Basic
- Label
- Hide Label
- Value

a) Advanced:

- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

b) Layout:

- Grid

11) List View:

Usage: This component is used to add a view which groups several items and displays them in a vertical scrollable list

Example:

DC	OBDXDEV COUNTERPARTY 237,UK,UK	Id -001003 Contact Number 9999900017	Party Role-Counterparty,Anchor	Active
AE	Adaani Electricity Andheri Station,IN	Id -NC00000399 Contact Number 7045212345	Party Role-Counterparty	Initiated
RE	Reliance Energy Andheri Station,AD	Id -NC00000406 Contact Number 8879710570	Party Role-Counterparty	Initiated

Supported attributes:

a) Basic:

- Label
- Source variable
- Id attribute

b) Advanced:

- Renderer ID
- Pagination
- Indexer
- Add Loop
- Add Custom Attributes
- Conditional Field

c) Layout:

- Grid

12) Menu:

Usage: This component is used to add an element, which displays popup menu with multiple options relevant to the particular row for easier navigation.

Example:

06 Sep 2018	xxxxxxxxxxxx0064	QA Own Account xxxxxxxxxxxx0199	E100.00	Self	AT3OUPA18249AZIG	Failed	⋮
06 Sep 2018	xxxxxxxxxxxx0053	QA Own Account xxxxxxxxxxxx0199	E333.00	Self	AT3OUPA18249AYD0	Failed	View Details
06 Sep 2018	xxxxxxxxxxxx0053	QA Own Account xxxxxxxxxxxx0199	E1,888.00	Self	AT3OUPA18249AXYO	Failed	Re-initiate

Supported attributes:

a) Basic:

- Label
- ID
- Options

b) Advanced:

- Enter Menu Launcher
- REST API chain
- Hook functions
- Add Loop
- Add Custom Attributes
- Conditional Field

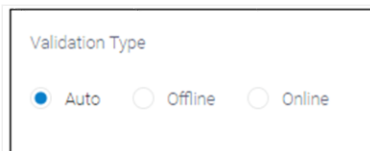
c) Layout:

- Grid

13) Radio Buttons:

Usage: This component is used to add buttons to let a user select an option from the available choices.

Example:



Supported attributes:

a) Basic:

- Label
- Hide Label
- Value:
- Options

b) Advanced:

- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

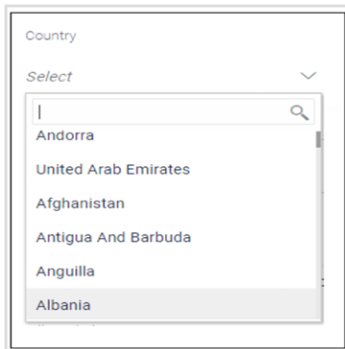
c) Layout:

- Grid:

14) Select:

Usage: This component is used to add a drop down, to allow user to make a choice from the predefined options.

Example:



Supported attributes:

a) Basic:

- Label
- Hide Label
- Value
- Select type
- Options

b) Advanced:

- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

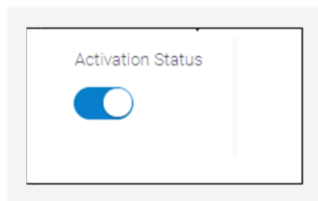
c) Layout:

- Grid

15) Switch:

Usage: This component is used to add a toggle button for binary status such as on/off.

Example:



Supported attributes:

a) Basic:

- Label
- Hide Label
- Value

b) Advanced:

- Value change handler
- Required field
- Add Loop
- Add Custom Attributes
- Conditional Field

c) Layout:

- Grid

16) Table:

Usage: This component is used to add a view which groups several items and displays them in row- column fashion.

Example:

Touch Point	Currency	Updated On	Roles
APINTERNET	GBP	13 Jul 2018	corporateuser
APINTERNET	GBP	19 Jul 2018	corporateuser
001	GBP	25 Oct 2018	corporateuser
APINTERNET	GBP	13 Jul 2018	corporateuser

Supported attributes:

a) Basic:

- Label
- Source variable
- Id attribute

- Columns
- b) Advanced:
- Row renderer
 - Pagination
 - Add Loop
 - Add Custom Attributes
 - Conditional Field
- c) Layout:
- Grid

17) Text:

Usage: This component is used to add a simple text.

Example:

You do not have any Loans

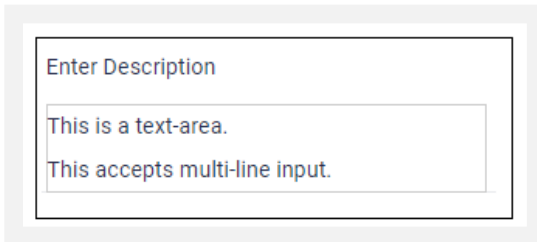
Supported attributes:

- a) Basic:
- b) Advanced:
- Aria label
 - Tag type
 - Binding Source
 - Add formatter
 - Add loop
 - Add Custom Attributes
 - Conditional Field
- c) Layout:
- Grid

18) Text Area:

Usage: This component is used to add an input box to accept the multi-line text as an input from user.

Example:



Enter Description

This is a text-area.

This accepts multi-line input.

Supported attributes:

a) Basic:

- Label
- Hide Label
- Value

b) Advanced:

- Enter rows
- Value Change Handler
- Validations
- Required Field
- Add Loop
- Add Custom Attributes
- Conditional Field

c) Layout:

- Grid

19) Train:

Usage: This component is used to add an element for navigation that allows a user to go between different "steps" i.e. different components. Each step can display information about the state of the step such as "visited", "unvisited", "disabled".

Example:



Supported attributes:

a) Basic:

- Label
- Value

b) Advanced:

- Selected step
- Value change handler
- Add Loop
- Add Custom Attributes:
- Conditional Field

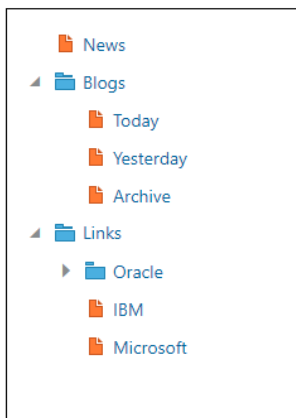
c) Layout:

l) Grid

20) Tree View:

Usage: This component is used to add an element to display the hierarchical relationship between the items of the tree.

Example:



Supported attributes:

a) Basic:

- Label
- Source variable

b) Advanced:

- Renderer ID
- Add Loop
- Add Custom Attributes
- Conditional Field

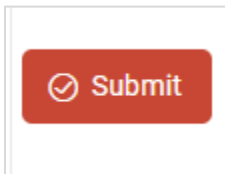
- c) Layout:
 - Grid

B) Controls:

1) Button:

Usage: This component is used to add a call to action to the page which can be configured to perform various actions on its click.

Example:



Supported Attributes:

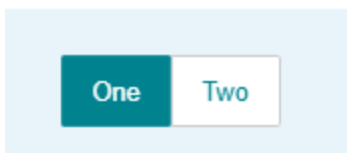
- a) Basic:
 - label
- b) Advanced:
 - Icons
 - Select Class Type
 - Select Type
 - Rest API Chain
 - Hook Function
 - Add Loop
 - Add Custom Attributes
 - Conditional Field
- c) Layout:
 - Grid

2) Button Set:

Usage: Basically button set is a group of button which can be used as radio button or checkbox button. In case of single selection it act as radio button and in case of multiple selection it act as checkbox set button

Example:

a) Radio button set



b) Checkbox button set



Supported Attributes:

a) Basic:

- ID: It accepts the same value as Label
- Value
- Select Type:
 - 1) Buttons Set One: Choose this to use it as radio button set
 - 2) Button Set Many: Choose this to use it a checkbox button set
- Options

b) Advanced:

- Value Change Handler
- Add Loop
- Add Custom Attributes
- Conditional Field

c) Layout:

- Grid

3) Container:

Usage: This component is used to provide a wrapper or group for form elements to apply a common behavior to them. e.g. display / hide of buttons. An element is always placed inside the container start element and container end element.

1. On Dropping the container element at the desired position on form area, a panel will open on the right side
2. User can select the type, fill the required fields and click confirm.

Note: Container can also be used inside container.

Supported Attributes:

a) Basic:

- Select Type Of Container

b) Advanced:

- Add Loop
- Add Custom Attributes
- Conditional Field

c) Layout:

- Grid

4) Component Loader:

Usage: Component Loader is used to load already created component or partial in current component.

Supported Attributes:

a) Advanced:

- Select Type:

a) Component

1) Select Type

i) Framework Elements: To use Framework Components.

Refer to framework components section for more detail.

ii) Transaction: To load transaction type of component. Refer to Transaction component section.

III) Single: To load normal component.

b) Partial:

- Add Loop:
- Add Custom Attributes:
- Conditional Field:

c) Layout:

- Grid:

C) Framework Component:

These components are predefined component that can be plugged with the user's created component to give specific functionality. Different framework component:

1) Account Input:

Usage: Component which provides account selection that is fetched from current logged in user or custom URL

Example:

Supported Attributes:

a) Basic:

- Label
- Value

b) Advanced:

- Enter Type: These values will passed to 'type' key in params for account input.
 1. balance
 2. address
 3. nodeValue
 4. loans
 - Add Loop:
 - Add Custom Attributes:
 - Conditional Field:

c) Layout:

- Grid

2) Amount Input:

Usage: This component is used to accept amount in an input box. The component gives currency selection and entered amount is formatted with respect to selected currency.

Example:



The screenshot shows a rectangular input box. At the top left, the word "Amount" is displayed in a light blue font. Below it, there is a dropdown menu with "GBP" selected and a small downward arrow to its right. To the right of the dropdown, the text "£345.00" is displayed in a light blue font. A horizontal line is drawn across the bottom of the input box.

Supported Attributes:

a) Basic:

- Label
- Value

b) Advanced:

- Enter Currency Variable: To store selected currency value.
- Required
- Currency List Required: Whether to display currency list. In case currency list is required, user has to provide URL to fetch currency list or provide a function called Currency Parser which returns the currency list.
- Currency URL: URL for Fetching currency.
- Currency Parser: Custom function which returns currency list that can be declared in init function
- Enter Root ID: Root id which will be passed in params of amount input.
- Enter Root Class: Root class which will be passed in params of amount input.
- Add Loop
- Add Custom Attributes
- Conditional Field

c) Layout:

- Grid

3) Bank Look up:

Usage: This component is used to provide bank look up on the basis of IFSC Code, state, city or branch name.

Example

Search IFSC Code ✕

IFSC Code A	Bank Name
State	City

Q Search

Bank Name	Branch	Address	IFSC Code
AARBDE5W		13, VARDANANTS STR.	AARBDE5W108
AAAKUK02		SALAM STREET	AAAKUK02XXX
APACGB61001			APACGB61001
BARCLSY MUMBAI			BARCMM01XXX

Supported Attributes:

a) Basic:

- Label

b) Advanced:

- Clearing Code Type
- Account Type
- Region
- Network Code
- Add Loop
- Conditional Field

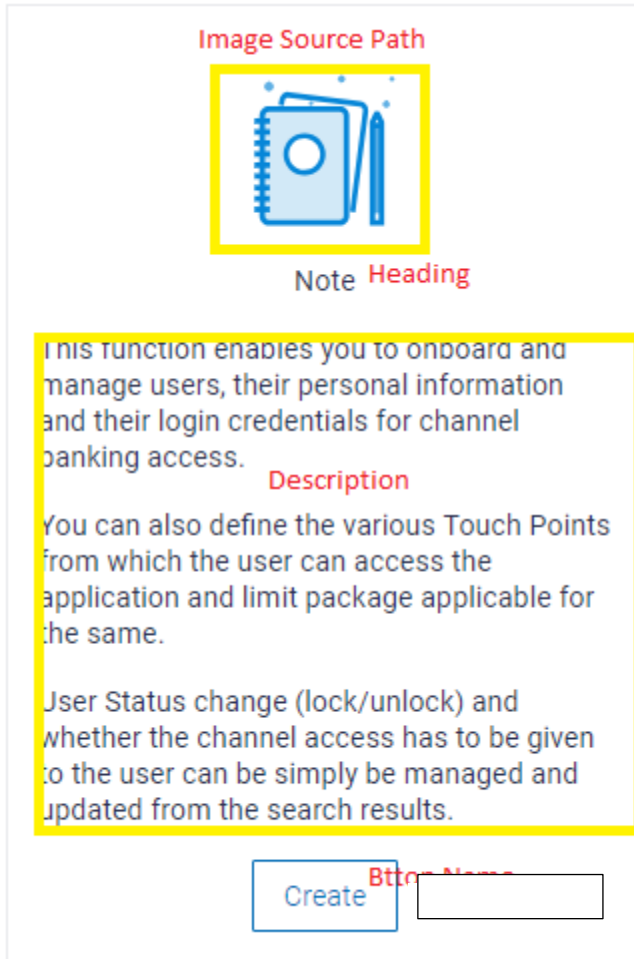
c) Layout:

- Grid

4) Help Panel:

Usage: This component is used to display related information about the current component .

Example:



Supported Attributes:

a) Basic:

- Partial Name: Name of the partial which will be created inside ChannelPath/partials/help/

b) Advanced:

- Enter Heading
- Image Source: Path of image inside channelPath/images/
- Enter Description
- Enter Button Name
- Rest API Chain: Rest to be fired on button click

- Hook Function: Write action to be performed on button click
- Add Loop
- Conditional Field

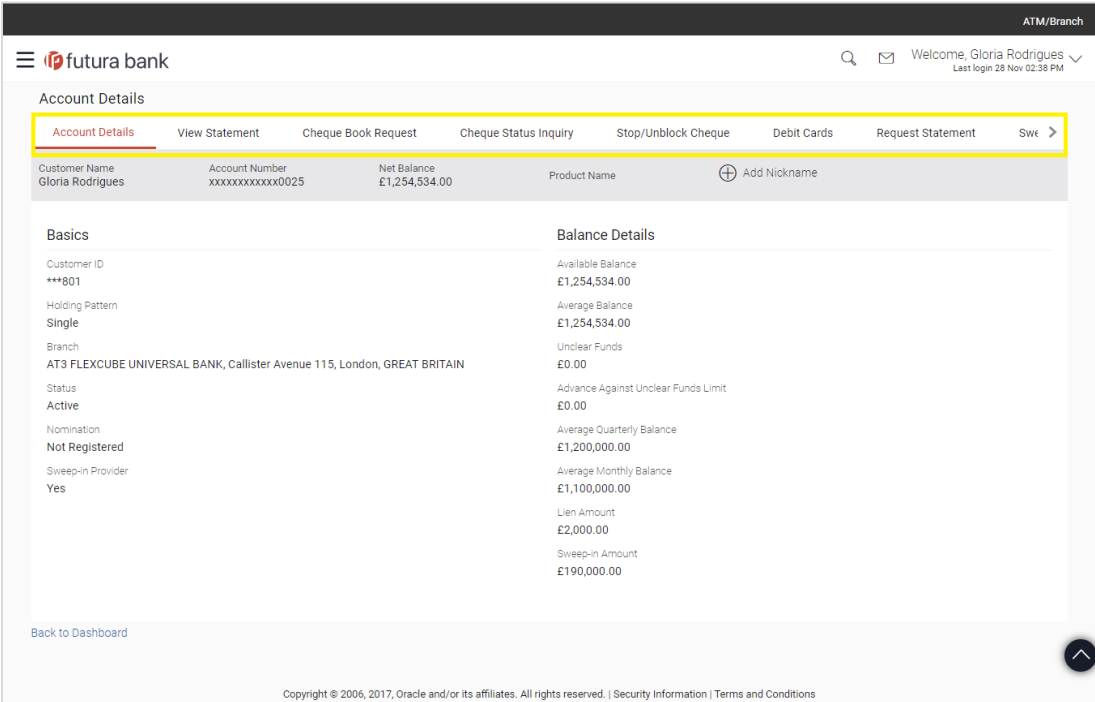
c) Layout:

- Grid

5) Navigation Bar:

Usage: This component is used to provide tab based page Navigation, where each tab item / name will display specific view.

Example:



The screenshot displays a web interface for 'futura bank'. At the top right, it says 'ATM/Branch' and 'Welcome, Gloria Rodrigues' with a dropdown arrow and 'Last login 28 Nov 02:38 PM'. Below the header is a navigation bar with several tabs: 'Account Details', 'View Statement', 'Cheque Book Request', 'Cheque Status Inquiry', 'Stop/Unblock Cheque', 'Debit Cards', and 'Request Statement'. The 'Account Details' tab is highlighted with a yellow border. Below the navigation bar, there is a summary row with fields: 'Customer Name: Gloria Rodrigues', 'Account Number: xxxxxxxxxxxx0025', 'Net Balance: £1,254,534.00', and 'Product Name' with an 'Add Nickname' button. The main content area is divided into two columns: 'Basics' and 'Balance Details'. The 'Basics' column lists: Customer ID (***801), Holding Pattern (Single), Branch (AT3 FLEXCUBE UNIVERSAL BANK, Callister Avenue 115, London, GREAT BRITAIN), Status (Active), and Nomination (Not Registered). The 'Balance Details' column lists: Available Balance (£1,254,534.00), Average Balance (£1,254,534.00), Unclear Funds (£0.00), Advance Against Unclear Funds Limit (£0.00), Average Quarterly Balance (£1,200,000.00), Average Monthly Balance (£1,100,000.00), Lien Amount (£2,000.00), and Sweep-in Amount (£190,000.00). At the bottom left, there is a 'Back to Dashboard' link, and at the bottom right, there is a scroll-to-top button. The footer contains copyright information: 'Copyright © 2006, 2017, Oracle and/or its affiliates. All rights reserved. | Security Information | Terms and Conditions'.

Supported Attributes:

a) Basic:

- Label:
- Tabs: Can be provided externally or custom just like select box option. In case user is not familiar with how to provide option, refer Option section in Available attributes.

b) Advanced:

- UI Options:
 - a) Icon Available
 - b) Default option
 - c) Menu Float
 - d) Full Width
 - e) Edge
- Navigation Bar Description
- Add Loop
- VI) Conditional Field

c) Layout:

- Grid

6) Page Section:

Usage: This component is used to provide basic layout structure and styling for every page / screen.

Note: All the form elements must be present inside this container.

Example: In the example below, Page Section is added and header is optional. The other form elements can also be added via Partial.

Basics
Customer ID
***698
Holding Pattern
Joint
Joint Account Holder
Maria M
Mode of Operation
Branch
AT3 FLEXCUBE UNIVERSAL BANK, Needal Street, London, GREAT BRITAIN
Status
Active
Nomination
Not Registered
Sweep-in Provider
No

Supported Attributes:

a) Basic:

- Label
- Format label
- Hide Page Heading: Switch to active mode to hide the page section heading.

b) Advanced:

- Add Loop
- Conditional Field

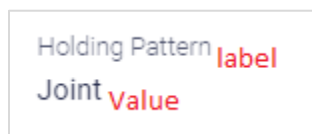
c) Layout:

- Grid

7) Row Control:

This component is used to display label and its corresponding value in structure supported by OBDX framework

Example:

**Supported Attributes:**

a) Basic:

- Label
- Format label
- Value

b) Advanced:

- Add Formatter
- Add Loop
- Conditional Field

c) Layout:

- Grid

d) Visualizations

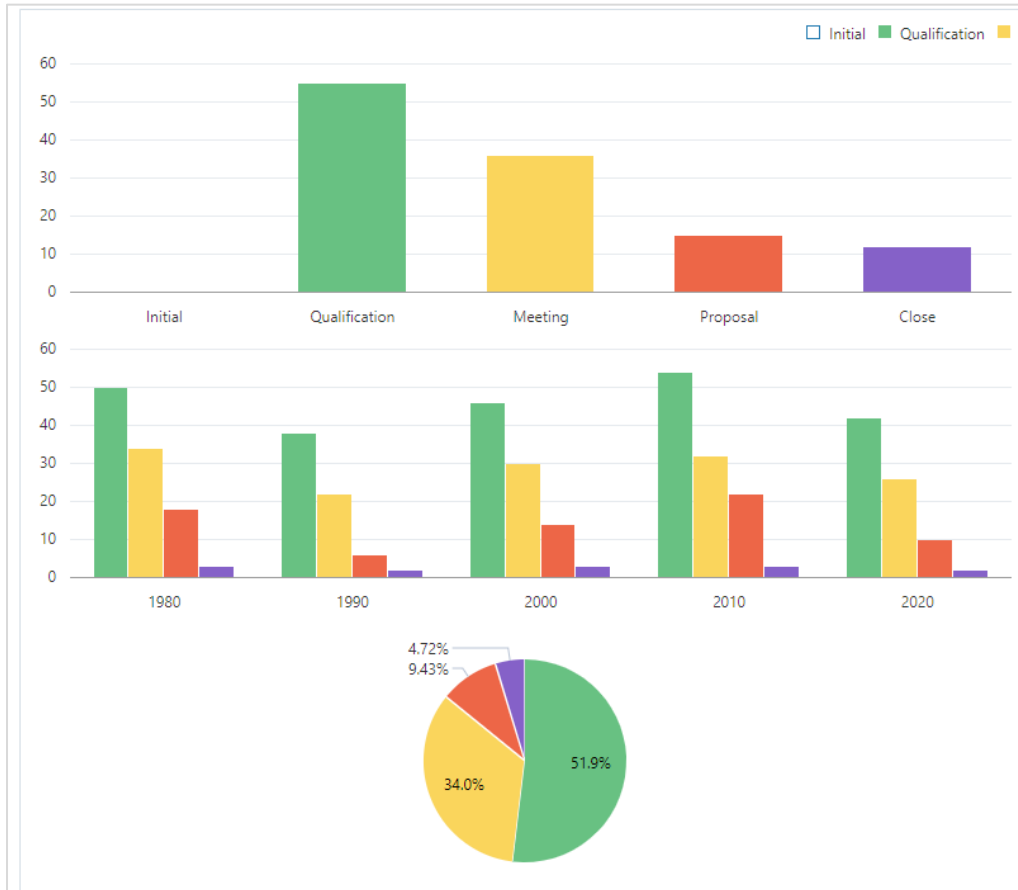
1) Chart: There are three types of chart that can be drawn with the help of tool:

a) Pie Chart,

b) Bar Chart,

c) Line Chart. For more information about each chart type, visit jet.us.oracle.com.

Example:



Supported Attributes:

a) Advanced:

- Series
- Groups
- Add loop
- Add Custom Attributes
- Conditional Field

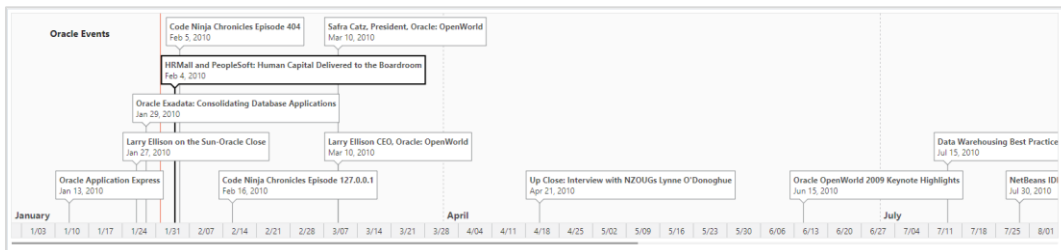
b) Layout:

- Grid

2) Timeline:

Usage: This component is used to display the timeline component. To provide values to timeline component use Add Custom Attribute (refer section **Add Custom attribute in Available Attributes**).

Example:



Supported Attributes:

a) Basic:

- Label

b) Advanced:

- Add Loop
- Add Custom Attributes
- Conditional Field

c) Layout:

- Grid

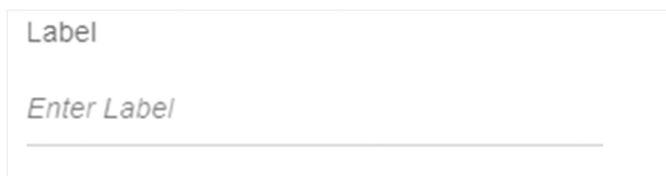
[Home](#)

12. Available Attributes

12.1 Label

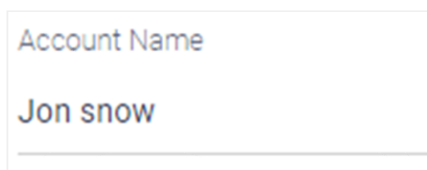
Description: This attribute is a mandatory element and is used to display the label of the element on the screen.

Component to accept the input: Input Text



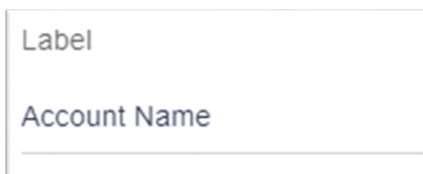
A screenshot of a rectangular input field. At the top left, the word "Label" is displayed in a light gray font. Below it, the placeholder text "Enter Label" is shown in a light gray font. A horizontal line is positioned below the placeholder text, indicating the input area.

Example: User has an input field to provide account name as shown in the image.



A screenshot of a rectangular input field. At the top left, the text "Account Name" is displayed in a light blue font. Below it, the text "Jon snow" is entered in a dark blue font. A horizontal line is positioned below the text, indicating the input area.

Usage: Enter the label as "Account Name" in the input text field as shown in the image.

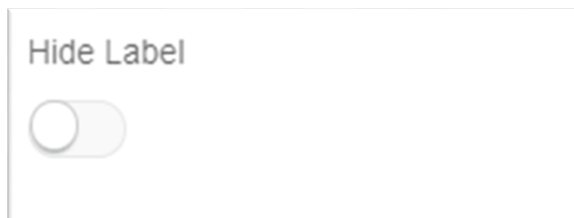


A screenshot of a rectangular input field. At the top left, the word "Label" is displayed in a light gray font. Below it, the text "Account Name" is entered in a light blue font. A horizontal line is positioned below the text, indicating the input area.

12.1.1 Hide Label

Description: This attribute is used to hide the label of the element on the screen.

Component to accept the input: Switch

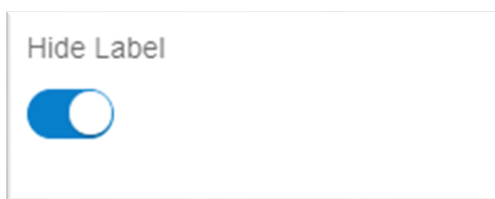


A screenshot of a rectangular control element. At the top left, the text "Hide Label" is displayed in a light gray font. Below it, there is a toggle switch consisting of a light gray circle and a light gray bar, currently in the off position.

Example: In the below example, User can **apply** this component to use checkboxes that selects rows in a table without displaying the label.

<input type="checkbox"/>	Counterparty Name & ID	Program Name and ID	Invoice No	Invoice Amount	Due Date	Status	Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0126	£100,000.00	21 May 2019	Failed	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0127	£100,000.00	21 May 2019	Failed	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0124	£100,000.00	21 May 2019	Failed	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0130	£100,000.00	21 May 2019	Failed	Type Comments

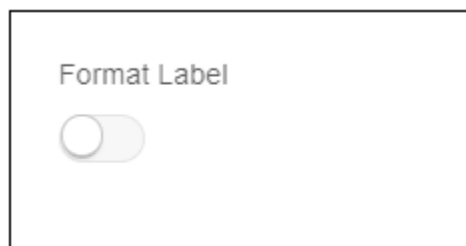
Usage: Enable the switch on as shown in the image. It will disable the label of the element.



12.1.2 Format Label

Description: This attribute is used when user wants to change the label or text dynamically.

Components to accept the input: Switch and Input text



If user enabled the switch, it will display two input texts.

1. Add variables to label
2. Enter variable's mapping

Format Label

Add Variables To Label

Enter Variables Mapping

key1 : Value1, key2 : Value2

Example: In the example below, user name of logged in user and other login details are displayed. User name and Login details will be dynamic. (“Welcome <user name>” and “Last Login <login Details>”) and will change based on the current user and time.



Usage: Enter the label of an element which is static (e.g. “Welcome”) in Label attribute,

Then enable the “Format Label” switch. It will display two input texts.

Label

Welcome

Format Label

12.1.3 Add variables to label

When user enables the switch, the label user entered in Label attribute will be pre-filled in this input field as shown in the image.

Label

Welcome

Format Label

Add Variables To Label

Welcome

Enter Variables Mapping

key1 : Value1, key2 : Value2

Now user needs a key to hold the value, which will change dynamically. In the example below, key name is user name. User will have to add this key name (user name) after the label (Welcome) in this field.

To add a key, write the key name surrounded by curly braces.

Label

Welcome

Format Label

Add Variables To Label

Welcome {username}

Enter Variables Mapping

key1 : Value1, key2 : Value2

12.1.4 Enter variables mapping

User will have to map this key to a variable, which will hold the dynamic value. In the example below, the value is stored in a variable called as user_name.

To map the key to the variable, write the key name, colon (:), and variable name.

Label

Welcome

Format Label

Add Variables To Label

Welcome {username}

Enter Variables Mapping

username : user_name

User can have multiple keys and values as shown in the image.

Label

Welcome

Format Label

Add Variables To Label

Welcome {username} {accountType}

Enter Variables Mapping

username : user_name, accountType : accou

12.2 Value

Description: This attribute is used to store the value of an element. This value can be displayed on the screen or used for further processing, such as sending to server.

Components to accept the input: Select Box

Value

Select Bind Type

This select box has five options

- Observable variable
- Rest properties
- Inside table
- Inside List/tree view
- Inside loop

Value

Select Bind Type

Observable Variable

Rests Properties

Inside Table

Inside List/Tree View

Inside Loop

Example: In the example below, User has a form to request a statement account for a given time period. In the form, account number component and two date pickers, **From date** and **To date** are available. User will send the values of **From date** and **To date** field to the server to fetch the details.

Account Number
xxxxxxxxxxx0166

Balance : £347,997.22

From Date

To Date

Submit Back

Usage:

User can store the values of these fields using five different ways. By selecting the type based on requirement.

a. Observable variable

In some scenarios, the data fetched from the REST API cannot be directly shown on the screen. Similarly the data submitted by the user cannot be directly saved on the server. It needs processing. To process this data, sometimes the user needs to store it in another variable. Therefore, if user wants to store the value of an element into a variable, which is defined by you, this option should be selected.

In the example below, user has a variable From Date, storing the value of From Date field.

Select the option as “Observable variable”. After selection, it will display an input field named as variable name.

Enter this variable name (fromDate) into “variable name” field as displayed in the image below.

Value
Observable Variable

Variable Name
fromDate

b. Rest properties:

Rest API can be used for multiple requirements.

1. GET: To fetch data from the server.

2. POST: To save data on the server.
3. PUT: To modify data on the server
3. DELETE: To delete data from the server.

When user selects the option “Rest properties”, it will display a select box named as “Select REST API”.

Select REST API: This select box displays all the REST APIs that user has selected in Step 3 i.e. REST API Selection as shown in the below image.

The screenshot shows a form with two dropdown menus. The first dropdown is labeled 'Rests Properties' and has a downward arrow. The second dropdown is labeled 'Select REST API' and also has a downward arrow. Below the second dropdown, a list of REST API endpoints is displayed, with the first option, 'Select REST API', highlighted in grey. The visible text in the list is: 'Select REST API', '/accounts/demandDeposit/{accountI', and 'd) get v1'.

When user selects a REST API from this select box, it will display another select box named as “Select Options”.

Select Options: This select box has two options as shown in the below image.

The screenshot shows a form with three dropdown menus. The first dropdown is labeled 'Rests Properties' and has a downward arrow. The second dropdown is labeled 'Select REST API' and has a downward arrow. Below the second dropdown, a REST API endpoint is displayed: '/accounts/demandDeposit/{accountI...'. The third dropdown is labeled 'Select Options' and has a downward arrow. Below the third dropdown, a list of options is displayed, with the first option, 'Select Option', highlighted in grey. The visible text in the list is: 'Select Option', 'Required Or Optional Parameters', and 'Payload Properties'.

- Required and Optional Parameters :

To understand what is “Required or Optional Parameters” refer to Required and optional parameters section.

When user will select “Required or Optional Parameters” option, it will display two different select boxes.

The screenshot shows a vertical stack of form elements within a bordered container:

- A text input field labeled "Value".
- A dropdown menu labeled "Rests Properties" with a downward arrow.
- A text input field labeled "Select REST API".
- A text input field containing the REST API endpoint: `/accessPoint/{accessPointId} get v1`.
- A text input field labeled "Select Options".
- A dropdown menu labeled "Required Or Optional Parameters" with a downward arrow.
- A text input field labeled "Required Parameters".
- A dropdown menu labeled "Select Required Params" with a downward arrow.
- A text input field labeled "Optional Parameters".
- A dropdown menu labeled "Select Optional Params" with a downward arrow.

- Required Parameters: This select box will display all the required parameters of the selected REST API.
- Optional Parameters: This select box will display all the optional parameters of the selected REST API.

Example: User has a REST API `"/accessPoint/{accessPointId} get v1"`. In this REST API, `accessPointId` is a required parameter and user wants this parameter to be filled as in Input and wants to map this property to input text.

Usage:

- Select “REST Properties”.
- Select REST API i.e. `/ accessPoint/{accessPointId} get v1`
- Select Required or Optional Parameters
- Map the `accessPointId` to the input text.

Value
Rests Properties ▼
Select REST API
/accessPoint/{accessPointId} get v1
Select Options
Required Or Optional Parameters ▼
Required Parameters
accessPointId ▼
Optional Parameters
Select Optional Params ▼

- **Payload Properties:**

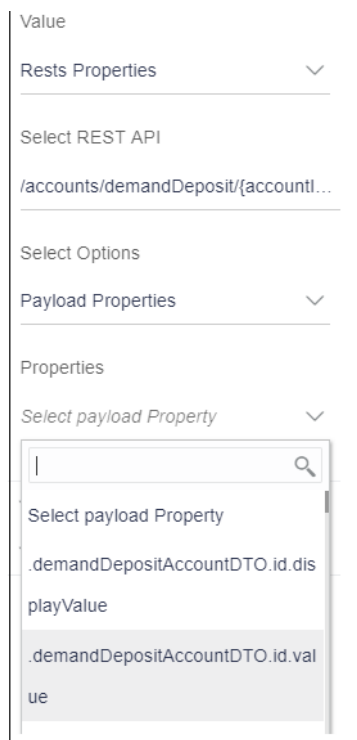
When user select “Payload Properties”, it will display a select box named as “Properties”.

Properties: This select box will display all the payload properties of the selected REST API.

As discussed above, REST API can be used for multiple request types like GET, POST OR PUT.

In the case of GET request, server sends the data to the user . In this case, this response data is considered as payload. All the payload properties listed in this select box will store the server response of that selected REST API. User can map this property to the elements, which display s the data. For example, Row control, Text.

In the of POST or PUT request, user sends the data to the server. In this case, this request data is considered as payload. All the payload properties listed in this select box will store the data entered by the user for that selected REST API. User can map these payload properties to the elements, which accepts the input, and send it to the server.

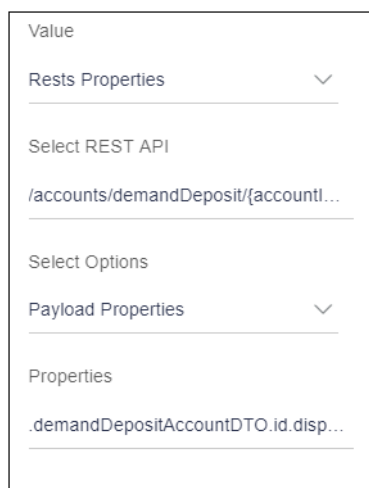


In the above example, there are two components.

4. Row Control to display the account number

In this case, account number is fetched from the server.

- a. Select "REST Properties".
- b. Select REST API i.e. /accounts/demandDeposits/{accountId} get v1
- c. Select Payload Property
- d. This is the GET request Payload Property will store the response came from the server, hence select the required property from payload i.e. demandDepositeAccountDTO.id.display value and map it to the row control.



5. Two date pickers to store the dates.

In this case, dates need to be sent to the server.

- a. Select "REST Properties".
- b. Select REST API i.e. /accounts/demandDeposits/{accountId} post v1
- c. Select Payload Property
- d. This is the POST request Payload Property will store the input and this payload will be sent to the sever, select the required property from payload i.e. demandDepositeAccountDTO.id.display value and map it to the date pickers.

Value

Rests Properties ▼

Select REST API

/accessPointGroup post v1 ▼

Select Options

Payload Properties ▼

Properties

.accessPointGroupDTO.creationDate

- **Inside table:**

If element is inside the table, then select this option.

Example: In the below image, user has Invoice list table as display. All the components, which are used, are inside the table such as checkbox, input box etc. select this option.

Invoice List							
<input type="checkbox"/>	Counterparty Name & ID	Program Name and ID	Invoice No	Invoice Amount	Due Date	Status	Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0126	£100,000.00	21 May 2019	Raised	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0127	£100,000.00	21 May 2019	Raised	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0124	£100,000.00	21 May 2019	Raised	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0130	£100,000.00	21 May 2019	Raised	Type Comments

When user will select "Inside table" option, it will display an input box to add a variable name as shown in the below image. This variable is nothing but one of the keys available in the data source object given to the table. This variable can be used to display the data or to store the data.

Value
Inside Table ▼
Variable Name
<i>Enter Variable Name</i>

Example: The datasource object looks like this:

```
datasource[0] {
    counterPartyName: "OBDX_COUNTER_PARTY",
    invoiceNo: "BULKFUV0126"(this is string)
    comment: user _comment(this is variable)
}
```

Note: Datasource is an array of objects. The object shown above is just one object for the first row of the table. Data source will have an object for every row. That is why it is written as datasource[0] i.e. first object in an array.

Let us consider two cases here:

6. Invoice No:

This field is displaying the data. Now user wants to display the invoice BULKFUV0126. As user can see in data source object written above, the key, which stores invoice number(BULKFUV0126), is "invoiceNo". User will enter this key as a variable name for this field.

Value
Inside Table ▼
Variable Name
invoiceNo

7. Comments:

This field is accepting the user comments, i.e. it is storing the data entered by the user. User will need a variable to store the data, which is user _comment variable. As user can see in data source object written above, the key, which has a reference to the variable(user _comment) is “comment”. User will enter this key as a variable name for this field.

Value

Inside Table ▼

Variable Name

comment

- **Inside List/tree view :**

If element is inside the list or tree view, then select this option. This is similar to the table. User will have the data source having all the objects. User will write the key name into the variable name for their respective field.

Value

Inside List/Tree View ▼

Variable Name

comment

- **Inside loop:**

Refer “**Add loop**” attribute to understand what is loop.

If the element is inside the loop, user will select this option.

referring to the same example of add loop attribute.

In this example, there are three fields: name, city and mobile number. They are inside the loop. For these elements user will select “Inside loop” as value.

The objective is as follows:

```
user_data = [{name: "James Smith", city: "New York", mobileNo: 3454654},
```

```
{name: "Christopher Robin", city: "Manhattan", mobileNo:4758945},
```

```
{name: "William Turner", city: "London", mobileNo:7857694}];
```

For example, user is adding the first text element, which displays the name. User will select an option as “Inside loop”.

User will enter the key, which is storing the name (James Smith, Christopher Robin and William Turner) of every object. That key is “name”. Enter this “name” key in variable name field as shown in the image below.

Value
Inside Loop ▼
Variable Name
name

Similar for city and mobile number.

Value
Inside Loop ▼
Variable Name
city

Value
Inside Loop ▼
Variable Name
mobileNO

12.3 Options

Description: This attribute is used for all the components, which enables the user to select one or more options. For example, select box, radio buttons, checkboxes etc.

Component used to accept the input: Collapsible element, Button set and Input texts.

When user clicks on Options, it will expand. There are two ways to add the options.

- a. External
- b. Custom

Example: User has a select box, which shows multiple options like Current month, Previous month as shown in the below image.

Usage: User can add these options using the following two ways

- a. External

In this type, if user has options to be displayed on the screen which are getting fetched from a REST API, then select the type as external.

Options

Type

Custom External

Variable Name

Enter Variable Name

Value Key

Enter Value Key

Label Key

Enter Label Key

Under this type, there are three input fields.

1. Variable name: This field stores the data fetched from REST API. It is mandatory to have the data in this variable in **value=>label** format. In case the data is not in this format, then convert it to the required format and enter that variable name in this field.

Example: The variable name is time_range.

This variable has the following data which is fetched from REST API.

```
time_range = [{ label : "Current Month", value : "CM"}, { label : "Previous Month", value : "PM"}, { label : "Previous Quarter", value : "PQ"}, { label : "Date Range", value : "DR"}]
```

2. Value key: As mentioned in point (1), value from variable name represents the actual data that will be used for further processing and is to be entered in this field.

Here time_range is an array having multiple objects.

In this object {label:"Current Month", value:"CM"} , value "CM" is going to be processed.

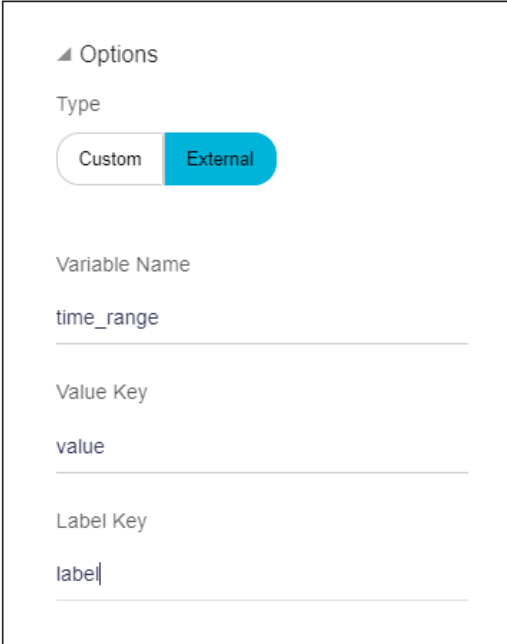
Hence, in this case value key will be, "value".

3. Label Key: As mentioned in point (1) above, label from variable name represents the description that needs to be displayed against an option of an input field such as select box, radio button set etc. This label is to be entered in this field.

In this object `{label:"Current Month", value:"CM"}` , label "Current Month "is going to be displayed on screen,

in this case label key will be, "label".

Note: User can name this value key and label key as per their choice i.e. `{label:"Current Month", value:"CM"}` can be written as `{name:"Current Month", id:"CM"}`. In this case, value key will be "id", and label key will be "name".



Options

Type

Custom External

Variable Name

time_range

Value Key

value

Label Key

label

a. Custom

In this type, if user wants to add the options manually, i.e. for data not fetched from any REST API, then select the type custom.

Options

Type

Custom External

Enter Value ⊗

Enter Label

Add Options

Under this type, there are two input fields.

4. Enter Value: This field represents the actual data that will be used for further processing. If user enters the value in double quotes, it will be processed as string. For special cases such as Boolean, where the value is true/ false do not enter the value in double quotes.

In the below image, "CM", "PM", "PQ" are the values.

5. Enter Label: This field represents the description that needs to be displayed against an option of an input field such as select box, radio button set, etc.

as shown in the image below, Current Month, Previous Month and Previous Quarter are the labels.

User can add more options using the "Add Options" link highlighted in green below.

User can delete the option using the icon highlighted in red

Enter Value ⓧ

"CM"

Enter Label

Current Month

Enter Value ⓧ

"PM"

Enter Label

Previous Month

Enter Value ⓧ

"PQ"

Enter Label

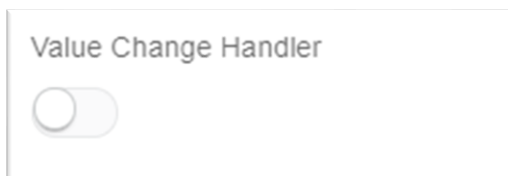
Previous Quarter

Add Options

12.4 Value change handler

Description: This attribute is used to handle the events, when the value of an element is changed.

Components to accept the input: Switch, select box, and code editor



When user enables the switch, it will display an input box and a button as shown in the below image.

Value Change Handler

REST API Chain

Select REST API Chain

Hook function

Open Editor

1. REST API Chain: To understand REST chaining, please refer **REST API Chaining** section. This select box lists all the REST API chaining that user has created in step four i.e. REST API Configuration. From this select box, user can select REST API chain that he wants to fire when the value of an element is changed.
2. Hook function: There is a button named as “Open Editor”. When user clicks on this button, it will open a code editor as shown in the below image. In this editor, user can write the code to be executed when the value of an element is changed.

To understand more about editor, refer **Open Editor of hook function** section.

```
function(newValue){
let self=this;
1 //write code here;
}

```

Save Cancel

Example:

1. User has two select box options
 - a. Buyer Name: This select box lists all available buyer names.
 - b. Name of Program: When user selects a buyer name, this select box will lists available programs specific to the selected buyer.

Buyer Name NonCustomerSecond ▼ <div style="border: 1px solid gray; padding: 5px;"> CounterPartyBuyer OBDXDEV COUNTERPARTY NonCustomerSecond </div>	Name of Program SupplierProgram1 ▼ <div style="border: 1px solid gray; padding: 5px;"> SupplierProgram1 NRJCORPPROG Purchase Order Date </div>
---	---

In above example, user will need to fire a REST API to fetch the available programs of the selected buyer. It means the user needs to perform an operation when the value of buyer field changes. In such scenarios, this attribute is used.

Usage: Enable the “value change handler” switch.

Select the REST API that user needs to fire when the value of **buyer** field changes as shown in the below image.

Value Change Handler

REST API Chain

/payments/transfers/peerToPeer/user
get v1

Hook function

Open Editor

Now if user clicks on the “Open Editor” button, it will open the code editor.

```
function(newValue){
let self=this;
1 paymentstransferspeerToPeerusergetCall(self.paymentstransferspeerToPeerusergetvalue
2 .then(function(response){
3
4 // result for get : "/payments/transfers/peerToPeer/user"
5
6 self.paymentstransferspeerToPeerusergetVar(response);
7 })
8
}
}

Save Cancel
```

A default code is already present in the window generated by the tool. When user selects a REST API, the tool generates the required code to execute that REST API. However, in some cases, there is a need to do some additional operation on the data fetched from the server. Therefore, for this purpose, there is a support for code editor. In such scenarios, use the response variable (highlighted in red circle in the above image) for further processing.

Whenever the value of buyer name field changes, it will execute the block of code written inside the editor.

- 1) User has a form and wants to give an option to use this form as a template. If the user says yes, then an input text field is displayed to accept the template name as shown in the image.

Save As Template

Yes No

Template Name

Usage: In this example, user will need a variable to handle this case, say “isTemplate”. Initially this variable will have a value set as false (Boolean). It will hide “Template Name” input field. But when the user will select “Yes” option, its value will change to true (Boolean) and it will display the input field “Template Name”.

Enable the “value change handler” switch.

As user does not need to fire any REST API, no REST API is to be selected.

Value Change Handler

REST API Chain

Select REST API Chain

Hook function

Open Editor

Click on the “Open Editor” button, and write code inside the editor as shown in the below image.

newValue represents the new value of the field. If user selects “Yes”, **newValue** will be “Yes” and variable will be true. If user selects “No”, **newValue** will be “No” and variable will be false. Whenever the value of radio button changes, it will execute this block of code.

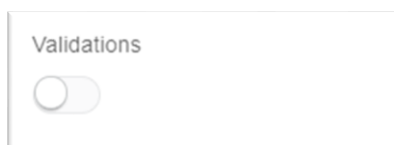
Note: As there is no REST API selected, there will be no auto-generated code.

```
function(newValue){
let self=this;
1  if(newValue === "yes") {
2    self.isTemplate(true)
3  }else {
4    self.isTemplate(false)
5  }
6  _____
}
}
Save Cancel
```

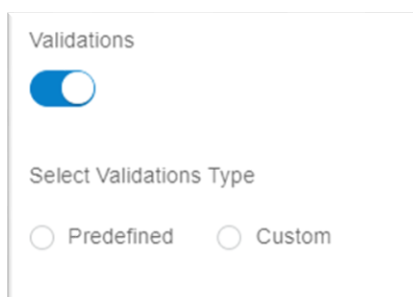
12.5 Validations

Description: This attribute is used to add UI level validations for an element.

Components to accept the input: Switch, Radio buttons, Select box



When user will enable this switch, it will display two radio buttons as shown in the below image.



1. **Predefined:** There are some validations, which are common such as mobile number must have 10 digits. Such validations are already defined by OBDX framework.

When user selects this option, it will display a select box named as "Select Validations" as shown in the below image. This select box lists all the predefined validations, which are available. For example, mobile number, address, email etc.

Validations

Select Validations Type

Predefined Custom

Select Validation

Select Validation

EMAIL

MOBILE_NO

IFSC_CODE

ADDRESS

POSTAL_CODE

OTP

2. Custom: There are some validations which are element specific, for example, some element must have a specific length or special characters etc. Select this option to customize validations.

When user selects this option, it displays a select box named as “Select Validations” as shown in the below image. This select box lists all the custom validation options such as “alphabets with space”, “alphabets with some special characters” etc.

Validations

Select Validations Type

Predefined Custom

Select Validation

Select Validation ▼

- DECIMALS
- ALPHABETS
- ALPHABETS_WITH_SPACE
- ALPHABETS_WITH_SOME_SPECIAL
- LOWER_ALPHABETS

Below the select box, there is an input box named as “Enter error message” and a switch for “Length validation” as shown in the below image.

Validations

Select Validations Type

Predefined Custom

Select Validation

ALPHANUMERIC_WITH_SPACE ▼

Enter Error Message

Enter Error Message

Length Validation

Minimum Length

Maximum Length

Enter error message: Enter the error message that should display on the screen when the validation fails.

Length validation: Enabled this switch, if there is a length validation. When user will enable this switch, it will display two input boxes for minimum length and maximum length.

Example: User has two fields, which needs some validations.

1. Input field to accept the phone number:

Validation for phone number is “Enter 10 or fewer characters, not more.” As shown in the below image.

The image shows a form field labeled "Phone Number" with a dropdown menu set to "91". The input field contains the number "344095604578678". A red error message box is displayed below the input field, containing a red exclamation mark icon and the text "Enter 10 or fewer characters, not more."

Usage: This validation is available in predefined validation.

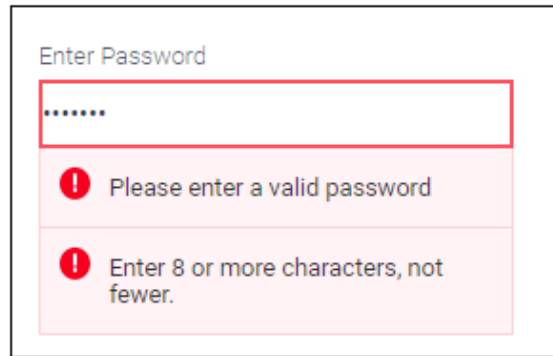
After selecting the validation, select the option, “mobile_no” as shown in the below image.

The image shows a configuration panel titled "Validations". It features a blue toggle switch that is turned on. Below the toggle, there is a section "Select Validations Type" with two radio buttons: "Predefined" (which is selected) and "Custom". Underneath, there is a "Select Validation" dropdown menu with "MOBILE_NO" selected.

2. Input field to set the password:

Validation for password is “Password must have minimum 8 and maximum 12 characters. It can have special characters”.

Example of Error Message can be ‘Please enter a valid password.’



The image shows a user interface for a password field. At the top, it says "Enter Password". Below this is a text input field containing six dots. Below the input field, there are two error messages, each preceded by a red exclamation mark icon. The first message says "Please enter a valid password". The second message says "Enter 8 or more characters, not fewer." The entire form is enclosed in a thin black border.

Usage: This validation is specific to password field, and hence is not available in predefined validation. The user needs to customize the validation. Therefore, user will enable the validation switch and select custom validation.

From the select box, user needs to select the option, "APHABETS_WITH_ME_SPECIAL".

Enter the error message example 'password is not valid' into the input box.

Enable the switch and enter the minimum length and maximum length in respective input fields as shown in the below image.

Validations

Select Validations Type

Predefined Custom

Select Validation

ALPHABETS_WITH_SOME_SPECI... ▼

Enter Error Message

Please enter a valid password

Length Validation

Minimum Length

8

Maximum Length

12

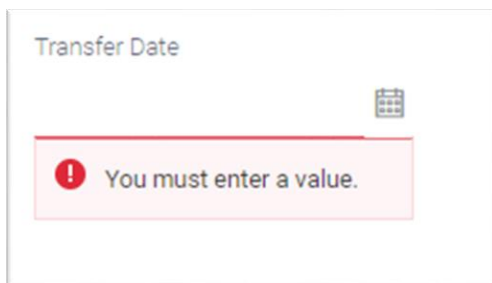
12.6 Required field

Description: This attribute is used to make the field mandatory, i.e. user cannot leave the field empty.

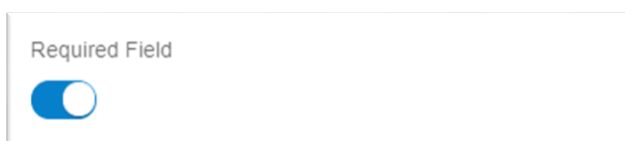
Components to accept the input: Switch

Required Field

In the below Example, User has a date picker and wants to make it mandatory i.e. user must select the date otherwise an error is will be displayed.



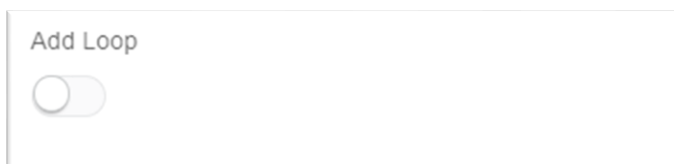
Usage: Enable the switch as shown in the below image. This will make the date picker field mandatory.



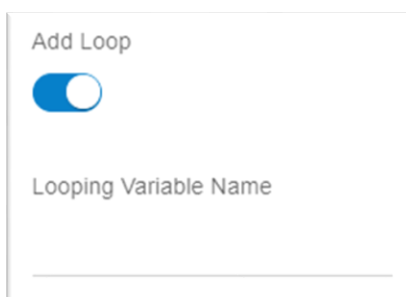
12.7 Add Loop

Description: This attribute is used to display the same element multiple times with different values.

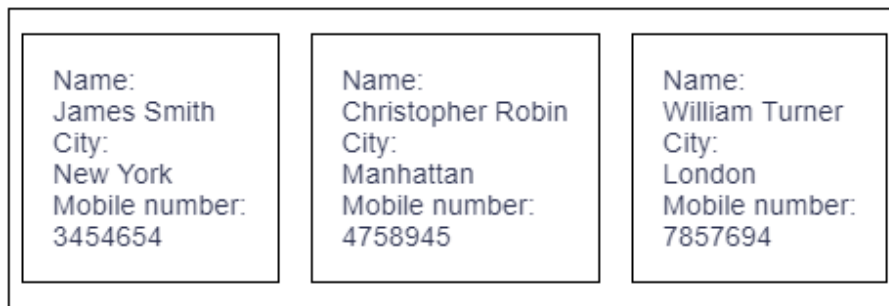
Components to accept the input: Switch and input text.



When user enables the switch, it displays an input text named as "Looping variable name" as shown in the below image.



In the below example, User has a template, which displays the name, city and mobile number of the three user s.



There are two ways in which this can be achieved:

1. Writing the template 3 times for three users, which is quite cumbersome and will produce unnecessary redundancy in code.
2. Writing the template once, and using it 3 times for three user s which can be achieved using **add loop** attribute

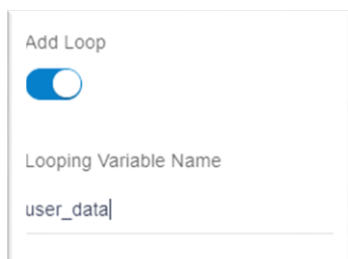
Usage: Assume user has a normal container (For container refer **Container element**) and all the fields(name, city and mobile number) are wrapped inside this container.

The user details are stored in the variable “user _data”:

```
user _data = [{name: “James Smith”, city: “New York”, mobileNo: 3454654},
{name: “Christopher Robin”, city: “Manhattan”, mobileNo:4758945},
{name: “William Turner”, city: “London”, mobileNo:7857694}];
```

Note: user _data is an array of objects. Each object represents one user. In this array, there are three objects length of this variable is three. Hence, the container will repeat three times.

To enable the switch of add loop attribute, and user will enter user _data variable name in the “Looping variable name” input field as shown in the below image.



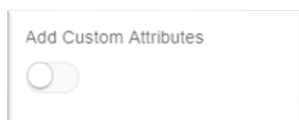
To know how to add the elements, which are inside the looping variable, (name, city, mobile number) refer **to Inside loop attribute** section.

Note: In this example, looping variable has been added to the container. But user can add the looping variable to any element using the same process (For example, input text, anchor tag etc.) In that case, input text and anchor tag will be repeated as many times as the length defined by the looping variable.

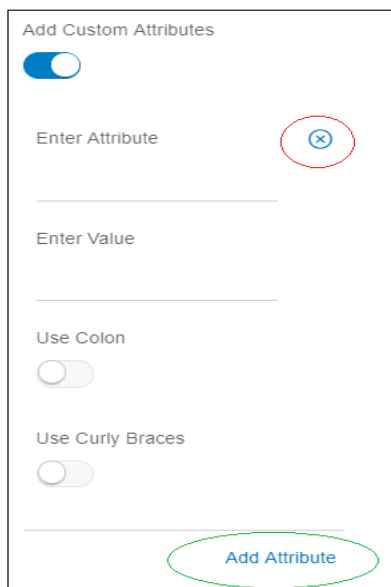
12.8 Add Custom Attributes

Description: This attribute is used to add custom attribute, i.e. attribute not supported by the tool.

Components to accept the input: Switch, Input box



When user enables the switch, it will display two input boxes and two switches as shown in the image. User can add more attributes using the link "Add attribute" highlighted in green and can delete the attribute using the icon highlighted in red.



- a. Input boxes :
 1. Enter attribute: This field represents the attribute name.
 2. Enter value: This field represents the attribute value. It supports both strings and variables. For strings use double quotes("").
- b. Switch:

Attributes support two types of bindings : one way binding and two way binding. To understand one way binding and two way binding refer:

<https://knockoutjs.com/documentation/value-binding.html>

1. Use colon: This option is only valid if the user is using one way binding to add attributes to the JET components, for example, oj-input-text, oj-select-one etc. Use this field as some of the JET attributes need colon before attribute name. If this switch is enabled, attribute name will start with colon. Refer JET site to know whether the attribute needs colon or not. <http://jet.us.oracle.com/6.1.0/jetCookbook.html>

2. Use curly braces: If this switch is enabled, attribute value will be surrounded by curly braces.

For one way binding, use square brackets.

For two way binding, use curly brackets.

Example: User can use this attribute in two cases.

3. User has a list and wants to refresh it whenever the data changes. To refresh the list, its ID attribute is required. Tool generates ID for every element but it is random and will change every time the component is edited. Therefore, this ID cannot be used to refresh the list. Hence, user can add new id attribute. It will replace the id generated by the tool. In the below example, "listview" is taken as an attribute.

Usage: Enable the switch.

Enter the attribute name in "Enter Attribute" field. Attribute name is "id".

Enter the attribute value in "Enter Value" field. Attribute value is "listview". As it is a simple string, use double quotes as shown in the image below.

This id attribute needs colon. enable the switch.

This attribute needs one way binding, it needs square brackets. Hence, do not enable the switch as shown in the image below.

1. A single element can support many attributes and it is not feasible to add each attribute. Therefore, there will be some attributes, which will not be available inside the tool user can add such attributes using this custom attribute.

Note: When user add attributes to the Non-JET components, some attributes goes inside **attr** attribute. Refer <https://knockoutjs.com/documentation/attr-binding.html>

In that case, Attribute Name will be attr and Attribute value will be actual attribute user want to add.

Assume user want to add id attribute to an Image, i.e. html tag. In this case, id attribute goes inside attr attribute. Therefore, Attribute Name will be attr and Attribute value will be id: fb_image as shown in the image below.

12.9 Conditional Field

Description: This attribute is used to display an element only if given condition gets satisfied.

Components to accept the input: switch, select box, and input text.

When user enable the switch, it will display a select box and an input text as shown in the image below.

1. **Controlling property:** This select box lists name of the all the elements which user have added. If user want to display element based on the value of a different element, then user can use all these elements available in the select box to write a condition.
2. **Conditional Expression:** This field accepts the condition that needs to be satisfied.

Example: User have a form to transfer money from account to another account. That form has select box to select a payee, account input to select an account from which user want to transfer the money, input field which accepts the amount and radio buttons which accepts the date i.e. when to transfer the money as shown in the image.

This radio button (Transfer when) has two options.

- a. **Now :** If user wants to transfer the money today only, he will select this option.
- b. **Later:** If user wants to transfer the money on a different date, he will select this option.

Now when user selects “Later” option, there should be a date picker to accept the date as shown in the image below.

The screenshot shows a transfer form with the following elements:

- Payee:** A dropdown menu with the text "Please Select".
- Transfer From:** A dropdown menu with the value "xxxxxxxxxxx0067".
- Balance:** A text field showing "£995,824.11".
- Amount:** A text input field.
- Transfer When:** Two radio buttons, "Now" (unselected) and "Later" (selected).
- Transfer Date:** A date picker field, which is circled in red in the image.
- Buttons:** "Transfer" (red) and "Cancel" (dark grey).
- Link:** A blue link labeled "View Limits" is positioned to the right of the "Amount" field.

In this case user have to display the date picker “Transfer date”, if user selects “Later” option. This is condition.

Usage:

Assuming user has already added the radio buttons, and amount field.

Now when user will add “Transfer date” date picker, user will enable the conditional field switch. It will display a select box (Controlling property) and input text (Conditional Expression).

3. **Controlling property:** This select box will list name of all the elements. Therefore, it will display name of radio buttons (“Transfer when”)and amount(“Amount”) field as shown in the image below.

The screenshot shows a configuration panel for a conditional field:

- Conditional Field:** A toggle switch is turned on.
- Controlling Property:** A dropdown menu is open, showing "Select controlling Property" at the top, "Transfer When" (highlighted), and "Amount" below it.
- Text:** Below the dropdown, it says "Please use x1.x2 as placeholder for selected controlling field to write expression".

If date picker based on the value of radio button is to be displayed, user will select the “Transfer When”.

4. Conditional Expression: User will have to add the condition. There is a help text written just below this input field.

“Please use x1, x2 as placeholder for selected controlling field to write expression”.

It implies when the condition is written, the name of an element that user have selected from Controlling Property, instead refer them as x1,x2 and on is not mentioned.

Therefore, in this example, user will write “Transfer When” as x1.

condition will be `x1 === "Later"`.

Write this condition in the input field as shown in the image below.

Conditional Field

Controlling Property

Transfer When x

Conditional Expression

`x1 === "Later"`

Please use x1,x2 as placeholder for selected controlling field to write expression

Note: Sometimes, condition is a combination of multiple elements. In that case, user can select multiple elements from Controlling property. For example, user wants to display the date picker, only if user selects later and amount entered is greater than 100INR. Then user can select both “Transfer when” and “Amount”. And condition will be `x1==="Later" && x2 > 100` as shown in the image below.

Conditional Field

Controlling Property

Transfer When x

Amount x

Conditional Expression

`x1 === "Later" && x2 > 1000`

Please use x1,x2 as placeholder for selected controlling field to write expression

5. Condition cannot always be depend on element's value that user have added. For example, user has only one condition, display the date picker in case of large screen only. This condition is not based on any element that user have added. In such cases user can directly write condition in Conditional expression field. As there is no controlling property, there will be no x1, x2 placeholder.

Condition will be "\$baseModel.large()" (\$baseModel.large() returns true if it is large screen) as shown in the image below.

Conditional Field

Controlling Property

Select controlling Property

Conditional Expression

\$baseModel.large()

Please use x1,x2 as placeholder for selected controlling field to write expression

6. With controlling properties, user can add me different condition al. For example, user has a condition, which is a combination of all the three conditions, which are discussed above.

condition will be x1==="Later" && x2 > 100 && \$baseModel.large() as shown in the image below.

Conditional Field

Controlling Property

Transfer When x

Amount x

Conditional Expression

x1==="Later" && x2 > 100 && \$baseModel.large()

Please use x1,x2 as placeholder for selected controlling field to write expression

12.10 Grid

The grid section is used to design grid structure supported by Oracle JET. Refer <http://jet.us.oracle.com/jetCookbook.html?component=grid&demo=gridresponsive> to learn how to use grid structure.

<input type="checkbox"/> small classes	<input type="checkbox"/> medium classes	<input type="checkbox"/> large classes	<input checked="" type="checkbox"/> xlarge classes
S-4	S-4	S-4	S-4
M-3	M-6	M-3	M-3
L-2	L-8	L-2	L-2
XL-1	XL-10	XL-1	XL-1

Usage: By default tools support Oracle JET oj-form-layout (refer <http://jet.us.oracle.com/jetCookbook.html?component=ojFormLayout&demo=formverticalofl>).

The default layout will be the one which user selected on Layout Selection page (refer [Layout Selection](#) Page). But there are limitations of oj-form-layout. Not every element is supported by oj-form-layout and not every structure can be created by oj-form-layout, hence grid layout can be used to resolve this problem. Use of grid is pretty simple.

Creating grid Layout: Select grid option to enable grid layout.

a. Flex :

This property provide new flex to the selected element. And the current element will be wrapped as flex-item in this Flex. But in case user does not select this option and previous element has Flex true than this element will be added as flex item in the previous element. It is okay if this all seems little complex, we will clear this in upcoming examples.

b. Flex Item Label Class:

In case of form element like input box, select box, etc. this property is used to decide the width and position of label. In case form element does not have label or user does not want to display the label, keep the switch off.

c. Flex item label Class:

This field is used to get configuration for width and position of current element.

Examples:

Case:

a) Grid: true, flex : true; Flex item label class: true,

Label Class: 'oj-lg-3 oj-md-4 oj-sm-12', Flex Item Class: 'oj-lg-4 oj-md-5 oj-sm-12'

* input 1

b) Grid: true, flex: false, previous element flex: true, Flex item label class: true

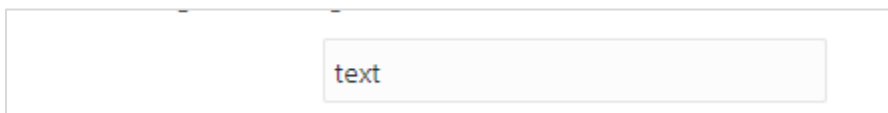
Label Class: 'oj-lg-2 oj-md-4 oj-sm-12', Flex Item Class: 'oj-lg-3 oj-md-5 oj-sm-12'

* A row 1 text Previous Element

B row 1 text Current Element

c) Grid: true, flex: true, Flex item label class: false

Flex Item Class: 'oj-lg-3 oj-md-5 oj-sm-12'



Open Editor of hook function: Whatever is written inside this code editor goes inside the function.

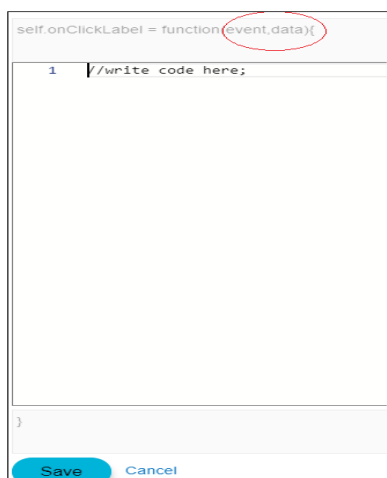
Function has three parts:

```
function function_name(function_parameters) {
    Function_body
}
```

1. function_name: Function name will be generated by the tool
2. function_parameters:
 - a. In case of JET components, which support value attribute for example, oj-input-text, oj-select-one etc. function parameter will be newValue as shown in the image below. newValue stores a new value of the field. To know more about JET components refer <http://jet.us.oracle.com/6.1.0/jetCookbook.html>.



- b. In case of JET components, which do not support value attribute, for example, oj-button, oj-menu, oj-file-picker etc. function parameter will be event and data as shown in the image below.



```
self.onClickLabel = function(event,data){  
  1 //write code here;  
}
```

- c. In case of Non JET components i.e. pure html components, for example, anchor tag function parameters will be data and event as shown in the image below.



```
self.onClickLabel = function(data,event){  
  1 //write code here;  
}
```

3. function_body: User can write own code inside this body. If user select any REST API from REST API Chain select box, it will have some auto-generated code. Otherwise, it will be an empty body.

There are two buttons.

1. Save Button: It will save all the code user has written.

2. Cancel Button: It will close the code editor without saving anything user has written after opening the code editor.

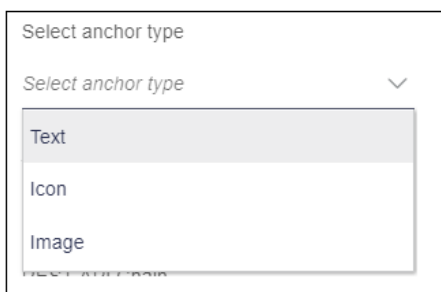
12.11 Select anchor type

Description: This attribute is used to determine the type of anchor tag.

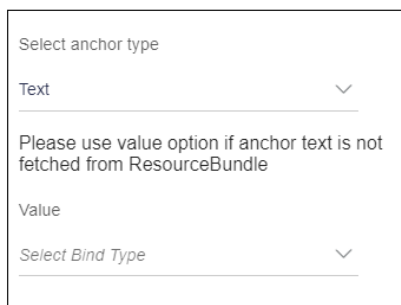
Components to accept the input: Select box

This select box has three options as shown in the image below.

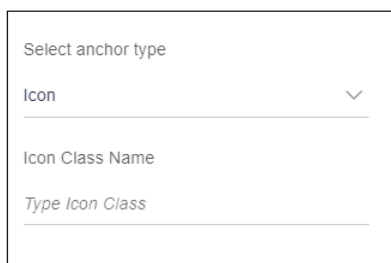
1. Text
2. Icon
3. Image



4. Text: This option is used for simple text. When user select "Text" option, it shows "Value" select box as shown in the image below.



5. Icon: This option is used for icons. When user select “Icon” option, it shows an input box named as “Icon class Name” as shown in the image below. This input text accepts an icon class.



Select anchor type

Icon

Icon Class Name

Type Icon Class

6. Image: This option is used for image. When user select “Image” option, it shows an input box named as “Enter Image Path” as shown in the image below. This input text accepts image path where it is located.



Select anchor type

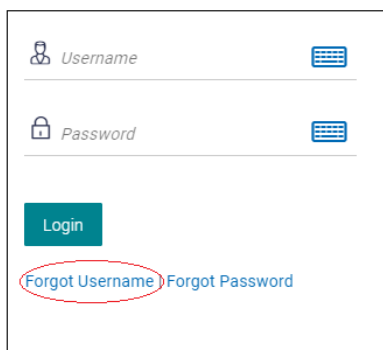
Image

Enter Image Path

Type Image Path

Example: Now anchor tag can be used with simple text, icon or image.

7. Text: User have a simple text “Forgot User name” that user want to use as a link, as shown in the image below highlighted in red oval.



Username

Password

Login

[Forgot Username](#) [Forgot Password](#)

Usage: In this type, select this option as shown in the image below.

Select anchor type

Text

Please use value option if anchor text is not fetched from ResourceBundle

Value

Select Bind Type

As user can see in above image, there is small information text, “Please use value option if anchor text is not fetched from ResourceBundle”.

It means, if text is not a simple string, i.e. it is fetched from the server or stored in variable then user can use value option available just below the text.

To understand value attribute refer value attribute section.

In this example, “Forgot User name” it is a simple string, do not select anything from “Value” select box.

8. Icon: User have an icon (>) that user want to use as a link, as shown in the image below highlighted in red oval.

Current & Savings	£1,378,138.11	>
Term Deposits	£55,645.44	>
Recurring Deposits	£0.00	>

Usage: In this type, select this option as shown in the image below.

It will display an input box to enter the class name for an icon.

For this icon, class name is “icons icon-arrow-right”, enter it in the input box as shown in the image below.

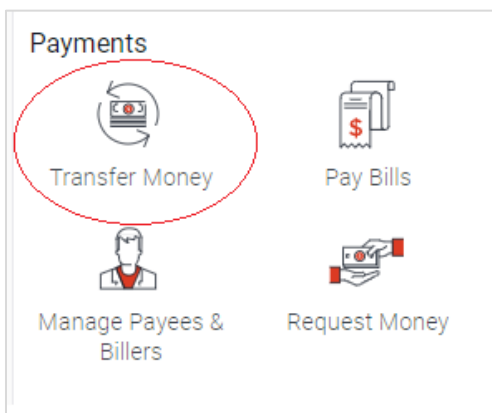
Select anchor type

Icon ▼

Icon Class Name

icons icon-arrow-right

9. Image: User have an image that user want to use as a link, as shown in the image below highlighted in red oval.



Usage: In this type, select this option as shown in the image below.

It will display an input box to enter the path for an image.

For this image, path is “dashboard/quick-access/ transfer-money”, enter it in the input box as shown in the image below.

Note: Use single quotes if path is of type string.

Select anchor type

Image ▼

Enter Image Path

'dashboard/quick-access/ transfer-money.svg'

If “dashboard/quick-access” is string but “transfer-money” is stored in image variable. Then path will be 'dashboard/quick-access' + image

12.12 Add formatter

Description: This attribute is used to add formatter to format a date, currency or number.

Components to accept the input: Switch, Select box and Input box

When user enables this switch, it will display a select box named as “Select Formatter type”.

This select box has three options:

- a) Format Date: To format a date

- b) **Format Currency:** To format currency as per the standard format for a particular currency.

The screenshot shows a dialog box titled "Add Formatter" with a blue toggle switch turned on. Below the toggle is a dropdown menu labeled "Select Formatter Type" with "Format Currency" selected. Underneath are two input fields: "Enter Currency Variable" with a placeholder text "Enter Currency Variable".

When user selects this option, it will display an input box named as "Enter Currency Variable". Add variable name which has currency value.

- c) **Format Number:** To format a number into percent value.

When user selects this option, it will display three input boxes as shown in the image below

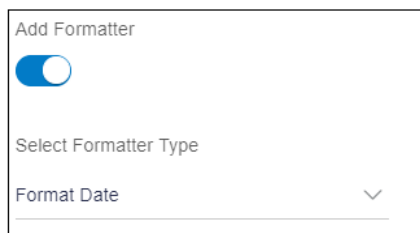
The screenshot shows a dialog box titled "Add Formatter" with a blue toggle switch turned on. Below the toggle is a dropdown menu labeled "Select Formatter Type" with "Format Number" selected. Underneath are three input fields: "Style" with a placeholder "Style", "Min Fraction Digit" with a placeholder "Min Fraction Digit", and "Max Fraction Digit" with a placeholder "Max Fraction Digit".

- d) **Style:** This field is used to specify the style which should be used for formatting the number, like percent or decimal
- e) **Min Fraction Digit:** This field is used to specify the minimum digits permissible after the decimal.
- f) **Max Fraction Digit:** This field is used to specify the maximum digits permissible after the decimal.

Example:

- 1) Format Date: User has a date like “2017-10-03T19:43:45.695Z”. And user wants to format it using `dateTimeStampFormat`, which will be “04 Oct 2017 01:13:45 AM”.

Usage: Enable the switch, and select type “Format Date”



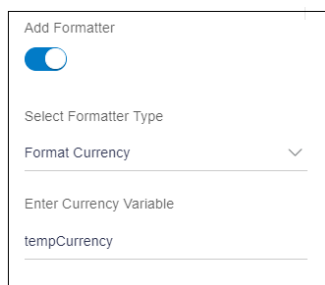
- 2) Format Currency: User has an amount “2,502.25” and user want to format it using currency “GBP”, which will be “£2,502.25”.

Usage: Enable the switch.

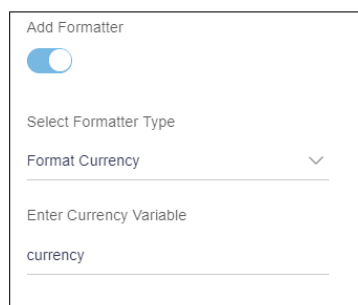
Here what user write in “Enter Currency Variable” input box depends on what user select in value attribute. Refer **value attribute** section

If user selects “Observable variable / Inside Table/ Inside List/TreeView”, then user will write variable name in which this currency has been stored.

Assume variable name is “tempCurrency”. Its value is “GBP”.



If user select “Rest Properties”, then user will write “currency” word as shown in the image below.



- 3) Format Number: User has a number “63.2512” and want to format it with percentage. Minimum fraction digit is 1, and maximum is 2. It will be 63.25%.

Usage: Enable the switch, select “Format Number” type. Enter style as percent (do not use single quotes), and fractions digits as shown in the image below.

The image shows a configuration window titled "Add Formatter". At the top, there is a toggle switch labeled "Add Formatter" which is turned on. Below it, there is a section "Select Formatter Type" with a dropdown menu currently showing "Format Number". Underneath, there is a "Style" field containing the text "percent". At the bottom, there are two input fields: "Min Fraction Digit" with the value "1" and "Max Fraction Digit" with the value "2".

12.13 Select Size

Description: This attribute is used to specify the size of the avatar.

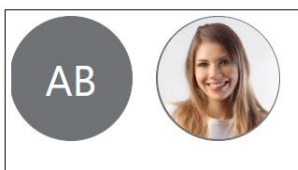
Components to accept the input: Select box

The image shows a dropdown menu titled "Select Size". The dropdown is open, displaying a list of size options: XS, SM, MD, LG, and XL. The "XS" option is currently selected and highlighted.

This select box has seven options:

1. XXS : Double extra small
2. XS: Extra small
3. SM: Small
4. MD: Medium
5. LG: Large
6. XL: Extra large
7. XXL: Double extra large

Example: User has an avatar, and user wants to specify the size as extra small. To know more about `avatar` `size` refer <http://jet.us.oracle.com/6.1.0/jetCookbook.html?component=avatar&demo=basic>



Usage: Select XS option as shown in the image below.

Select Size

XS ▼

12.14 Enter Image Path

Description: This attribute is used to specify the path for the image of the avatar. Image will be rendered as a background image.

Components to accept the input: Input Text

Enter Image Path

Enter Image Path

Example: User wants to add an image in avatar located at “composites/avatar-image.jpg”.



Usage: Enter path “composites/avatar-image.jpg” in an input box as shown in the image below.

Note: Use single quotes if path is of type string

Enter Image Path

'composites/avatar-image.jpg'

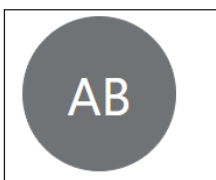
12.15 Enter Initials

Description: This attribute is used to specify the initials of the avatar. It will only be displayed if the source (src) attribute i.e. path of an image is null or not specified.

Components to accept the input: Input Text

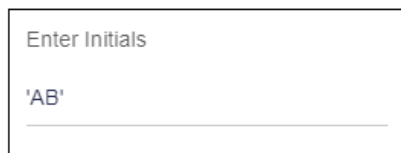
A rectangular input field with a light gray border. The text "Enter Initials" is displayed in a light gray font at the top left. Below it, the same text "Enter Initials" is shown in a darker gray font, with a vertical cursor line positioned at the end of the text.

Example: User wants the initials as "AB" in avatar.



Usage: Enter the initials "AB" in an input box as shown in the image below.

Note: Use single quotes if initials are of type string.

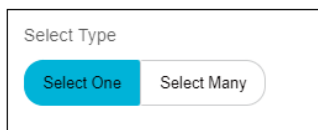
A rectangular input field with a light gray border. The text "Enter Initials" is displayed in a light gray font at the top left. Below it, the text "'AB'" is shown in a darker gray font, with a vertical cursor line positioned at the end of the text.

12.16 Select Type

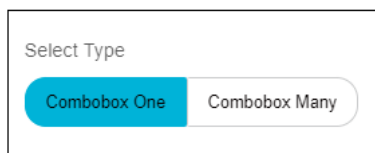
Description: This attribute is used to specify whether to allow single or multiple option selection. By default, it will be single selection.

Components to accept the input: Buttonset

For Select:

A rectangular container with a light gray border. At the top left, the text "Select Type" is displayed in a light gray font. Below it, there are two buttons: "Select One" is a blue button with white text, and "Select Many" is a light gray button with dark gray text.

For ComboBox:



There are two types of button available.

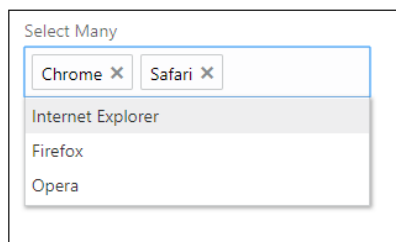
1. Select/ComboBox One : For single select
2. Select/ComboBox Many : For multi select

By default, "Select/ComboBox One" will be selected.

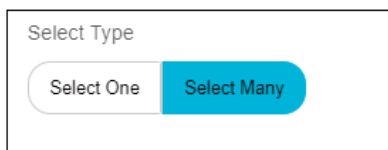
Example:

1. For Select Component:

User wants multi select drop down as shown in the image below.

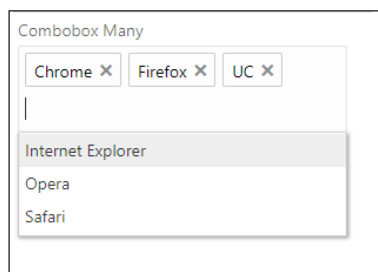


Usage: Select type "Select Many" as shown in the image below.

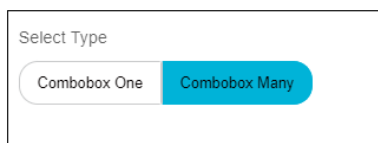


2. For ComboBox Component:

User wants multi select combobox as shown in the image below.



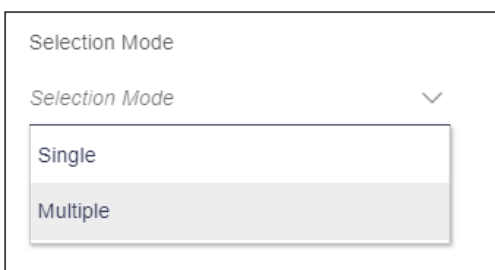
Usage: Select type “ComboBox Many” as shown in the image below.



12.17 Selection Mode

Description: This attribute is used to specify whether to allow single or multiple file selection.

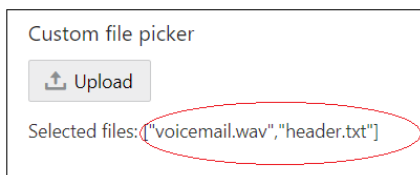
Components to accept the input: Select box



This selection box has two options:

1. Single
2. Multiple

Example: User wants to allow multiple file selection as shown in the image below highlighted in red oval.



Usage: Select type “Multiple” as shown in the image below.



12.18 Enter Allowed File Extensions

Description: This attribute is used to specify the file extensions that can be uploaded. If not specified, accept all file types.

Component to accept the input: Input text



Enter Allowed File Extensions

Enter Allowed File Extensions

Example : ['.jpg', '.png']

In the image above, there is information text written under the input text. Example['.jpg', '.png']

All extensions must be in an array, separated by a comma (,), surrounded by single quotes (' ') and start with full stop (.).

Example: User wants to accept only the following file extension.

"jpg", "png", "gif"

Usage: array will be ['.jpg', '.png', '.gif']

Enter this array in an input box as shown in the image below.



Enter Allowed File Extensions

['.jpg', '.png', '.gif']

Example : ['.jpg', '.png']

12.19 Image source

Description: This attribute is used to specify the path or source of an image.

Components to accept the input: Input Text



Image Source

Enter Image Source

Example: User wants to add an image, available at "composites/avatar-image.jpg" location.

Usage: Enter this path "composites/avatar-image.jpg" in the input text as shown in the image below.

Note: Use single quotes if path is of type string.

Image Source

'composites/avatar-image.jpg'

If path is stored in a variable, write that variable name as shown in the image below. Example variable name is “image”.

Image Source

image

12.20 Enter Minimum Length

Description: This attribute is used to specify the minimum allowed value. This number is used in the range validator; if the value is less than the minimum value then the range validator flags an error to the user. The down arrow is disabled when the minimum value is reached.

Component to accept the input: Input Text

Enter Minimum Length

Enter Minimum Length

Example: User wants to set the minimum value as 5 as shown in the image below.

Enter number

4

! The number is too low.
The number must be greater than or equal to 5.

Usage: Enter 5 in the input text as shown in the image below.

Note: Do not write number in quotes.

Enter Minimum Length

5

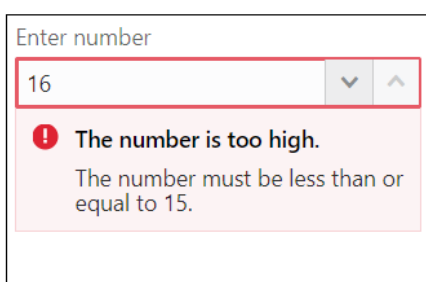
12.21 Enter Maximum Length

Description: This attribute is used to specify the maximum allowed value. This number is used in the range validator; if the value is greater than the maximum value then the range validator flags an error to the user. The up arrow is disabled when the maximum value is reached.

Component to accept the input: Input Text



Example: User wants to set the maximum value as 15 as shown in the image below.



Usage: Enter 15 in the input text as shown in the image below.

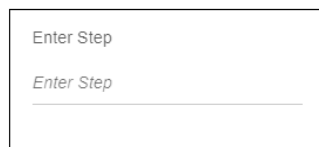
Note: Do not write number in quotes.



12.22 Enter Step

Description: This attribute is used to specify the size of the step to take when spinning via buttons. Step must be a number greater than 0, otherwise an exception is thrown. It defaults to 1. To understand more about step attribute refer <http://jet.us.oracle.com/6.1.0/jsdocs/oj.ojInputNumber.html#step>

Component to accept the input: Input Text



Example: User wants to set the step value as 2.

 A screenshot of a web form element. It consists of a text input field with the placeholder text "Enter number" and the value "5". To the right of the input field are two small buttons: a downward-pointing arrow and an upward-pointing arrow.

Value of input number is 5. If user clicks the up arrow, value will increment by 2 and it will be 7 as shown in the image below.

 A screenshot of a web form element, similar to the previous one. The text input field now contains the value "7".

Now value of input number is 7. If user clicks the down arrow, value will decrement by 2 and it will be 5 as shown in the image below.

 A screenshot of a web form element, similar to the previous ones. The text input field now contains the value "5".

Usage: Enter 2 in the input text as shown in the image below.

Note: Do not write number in quotes.

 A screenshot of a web form element. It is a simple text input field with the placeholder text "Enter Step" and the value "2".

12.23 Source variable

Description: This attribute is used to specify the data source for the list/table/tree. A Data source is a variable, which stores the data that needs to be displayed on the screen in the form of a list/table/tree.

Input Text

 A screenshot of a web form element. It is a text input field with the placeholder text "Source Variable" and "Enter Source Variable".

Example: User has stored data in a variable named as "deptArray".

Note: In case of Tree element, this variable must be in JN format.

Usage: Enter this variable in an input box as shown in the image below.

Source Variable

deptArray

12.24 Id attribute

Description: This attribute is used to specify the column name that contains the unique key from the data source of the list/table. A Unique key i.e. a column is used to identify an item of list/table uniquely.

Component to accept the input: Input Text

Id Attribute

Id Attribute

Example: User has a data source deptArray, which has the following data.

```
Var deptArray= [
{DepartmentId: 10, DepartmentName: 'Administration', LocationId: 200},
{DepartmentId: 20, DepartmentName: 'Marketing', LocationId: 200},
{DepartmentId: 30, DepartmentName: 'Purchasing', LocationId: 200}];
```

Usage: In this example, the column, which is a unique key, is “DepartmentId”. Because value of every “DepartmentId” is unique.

Enter this column name in an input box as shown in the image below.

Id Attribute

DepartmentId

12.25 Renderer ID

Description: This attribute is used to specify the id of a renderer that user have created for list/tree. To understand what is renderer and how to create it refer [\(link to renderer\)](#)

Components to accept the input: Input text

Renderer ID

Enter Template ID

Example: User has created a renderer with the id as “item_template”.

Usage: Enter “item_template” in an input box as shown in the image below.

Renderer ID

item_template

12.26 Pagination

Description: This attribute is used to apply pagination to list/table.

Components to accept the input: **Switch**

Pagination

When user enables the switch, it will display an input text and accordion as shown in the image below.

Pagination

Page Size

Enter Page Size

∨ Page Options

- 1) Page Size: This is used to specify the page size i.e. how many records should be visible to the user on the first page.

For example, user has given page size as 3, only first three records will be visible to the user as shown in the image below.

Department Id	Department Name
10015	ADFPM 1001 neverending
556	BB
10	Administration

Page of 2 (1-3 of 5 items) | K < 2 > X

2) Page Options: When user expands this accordion, it shows multiple page options as shown in the image below.

Pagination

Page Size

Enter Page Size

^ Page Options

Layout

Select Layout

Max PageLinks

Enter Max PageLinks

Orientation

Select Orientation

3) Layout: This option is used to specify how the paging navigation controls should be displayed.

^ Page Options

Layout

Select Layout

Select Layout

All

Auto

Input

Nav

It has following six options:

- a) All: Display all controls

Page of 5 (1-10 of 45 items) | K < 2 3 4 5 > »

- b) Auto: The Paging Control decides which controls to display.

Page of 5 (1-10 of 45 items) | K < 2 3 4 5 > »

- c) Input: Display the page input control

Page of 5

- d) Navigation: Display the navigation arrows

K < > »

- e) Pages: Display the page links

2 3 4 5

- f) RangeText: Display the page range text control

(1-10 of 45 items)

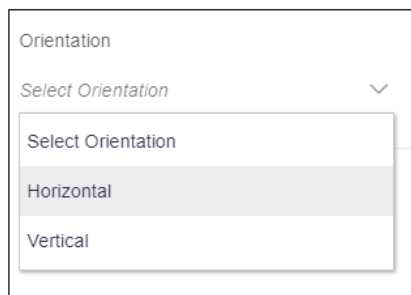
- 1) Maximum PageLinks: This option is used to give the maximum number of page links to display.

Max PageLinks
 Enter Max PageLinks

An ellipsis '...' will be displayed for pages, which exceed the maximum number as shown in the image below. maxPageLinks must be greater than 4.



2) Orientation: This option is used to give the orientation of the page links.



It has following options:

a) Horizontal: This option is used to align the page links horizontally.

Department Id	Department Name
10015	ADFPM 1001 neverending
556	BB
10	Administration

Page 1 of 1 (1-3 of 3 items) | K < 1 > >

b) Vertical: This option is used to align the page links vertically.

Example: User wants a pagination with following options.

Page size: 4

Layout : 'All'

Max Page Links: "5"

Orientation: "Horizontal"

Department Id	Department Name	Location Id
10015	ADFPM 1001 neverending	200
556	BB	200
10	Administration	200
20	Marketing	200

Page 1 of 12 (1-4 of 45 items) | K < 1 2 3 4 5 ... 12 > >

Usage: Enter all the options as shown in the image below.

Pagination

Page Size
 4

^ Page Options

Layout
 All

Max PageLinks
 5

Orientation
 Horizontal

12.27 Indexer

Description: The JET Indexer is usually associated with a scrollable JET ListView. It provides a list of sections that corresponds to group headers in ListView. When a section is selected, the corresponding group header will be scroll to the top of the ListView.

Components to accept the input: Switch

Indexer

When user enables this switch, it will display an input box as shown in the image below.

Indexer

Indexer Key

Indexer key: This field accepts the key of the data on which grouping is based on.

Example: User wants a list with indexer and user want to group all list items based on the surname as shown in the image below.

A
Mozhe Atkinson
Simon Austin
B
Hermann Baer
Shelli Baida
Annett Barnes
Amy Bartlet
Laura Bissot
Bart Buckler
Andrew Bugsy
C

Usage: Assume user have following data source of the list.

```
datasource= [{id: "1", first_name: "", last_name: "Dunphy"},
```

```
{id: "100", first_name: "Mozhe", last_name: "Atkinn"},
```

```
{id: "101", first_name: "Simon", last_name: "Austin"},
```

```
{id: "200", first_name: "Hermann", last_name: "Baer"},
```

```
{id: "201", first_name: "Shelli", last_name: "Baida"},
```

.....

```
{id: "2300", first_name: "Eleni", last_name: "Zlotkey"} ]
```

Here surname is stored in last_name key.

Enable the switch and enter the indexer key as "last_name" as shown in the image below.

Indexer

Indexer Key

last_name|

12.28 ID

Description: This attribute is used to specify the id attribute for menu. This id attribute is used to launch the menu.

Components to accept the input: Input text



Input field for ID. The field is empty and contains the placeholder text "Enter ID".

Example: User wants to give the id as "actionMenu".

Usage: Enter "actionMenu" in an input box as shown in the image below.

Note: Use single quotes if it is a simple string.



Input field for ID. The field contains the text "actionMenu".

If it is a combination of a string and a variable, for example string is "actionMenu" and variable is "\$data.index" then ID will be "'actionMenu' + \$data.index" as shown in the image below

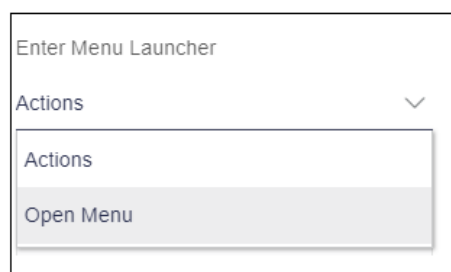


Input field for ID. The field contains the text "'actionMenu' + \$data.index".

12.29 Enter menu launcher

Description: This attribute is used to specify the DOM Element, which may or may not be a JET element that launches the menu. For example anchor tag (<a>) or oj-button.

Components to accept the input: Select box

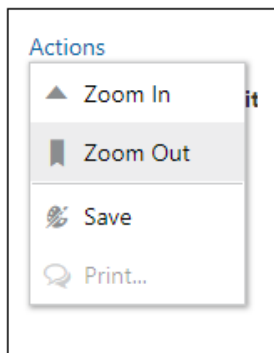


Select box for Enter Menu Launcher. The dropdown menu is open, showing "Actions" and "Open Menu".

This select box lists the name of all clickable elements that user has added in page. For example, anchor tag and button.

First option “Actions” is a name of the anchor tag and second option “Open Menu” is a name of the button.

Example: User wants to open menu on the click of an anchor tag “Actions” as shown in the image below.



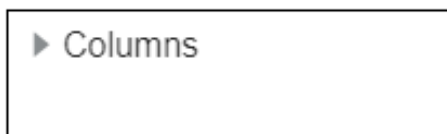
Usage: Select the “Actions” anchor tag option as shown in the image below.



12.30 Columns

Description: This attribute is used to add the columns of a table.

Component to accept the input: Accordion, Buttonset and Input text



When user expands the “Columns” accordion, it shows a buttonset, with custom and external options as shown in the image below.

Columns

Type

Custom External

Variable Name

Enter Variable Name

These are two ways to add columns of the table.

- 1) Custom: When user clicks this option, it shows three input text as shown in the image below.

Columns

Type

Custom External

Enter Field

Enter HeaderText

Enter Class

Add Columns

- 2) Enter Field: This field is used to specify the data field the column refers to i.e. the data of the column.
- 3) Enter HeaderText: This field is used to specify the text to display in the header of the column i.e. name of the column
- 4) Enter Class: This field is used to specify the CSS class to apply to the column cells.

User can add more columns using “Add Columns” link highlighted in green oval in the above image.

User can delete the columns using an icon highlighted in red oval in the above image.

- 5) External: By default, this option will be selected. When user click this option, it shows an input text as shown in the image below.

▲ Columns

Type

Custom
 External

Variable Name

Enter Variable Name

6) Variable name: This accepts the variable name in which columns information is stored.

Example:

1) Custom: User has a table, which displays Department name and manager ID as shown in the image below.

Department Name	Manager Id
ADFPM 1001 neverending	300
BB	300
Administration	300
Marketing	300

Data source of the table is as following.

```
var deptArray = [
  {DepartmentName: 'ADFPM 1001 neverending',ManagerId: 300},
  {DepartmentName: 'BB', ManagerId: 300},
  {DepartmentName: 'Administration', ManagerId: 300},
  {DepartmentName: 'Marketing', , ManagerId: 300};
```

- a) For the first column i.e. “Department Name”
- Name of the column is Department Name, headerText is “Department Name”.
 - Data of the column is stored in the field DepartmentName (refer the deptArray), field is “DepartmentName”.
 - No class is needed.

Usage: Enter all these information as shown in the image below.

Columns

Type

Custom External

Enter Field ⊗

DepartmentName

Enter HeaderText

Department Name

Enter Class

Add Columns

b) For the second column i.e. "Manager ID".

- Name of the column is Manager ID, headerText is "Manager ID".
- Data of the column is stored in the field ManagerId (refer the deptArray), field is "ManagerId".
- Class is "oj-sm-12"

Usage: To add this column, click "Add columns". It will add one more column and add all the details as shown in the image below.

Enter Field ⊗

DepartmentName

Enter HeaderText

Department Name

Enter Class

Enter Field ⊗

ManagerId

Enter HeaderText

Manager Id

Enter Class

oj-sm-12

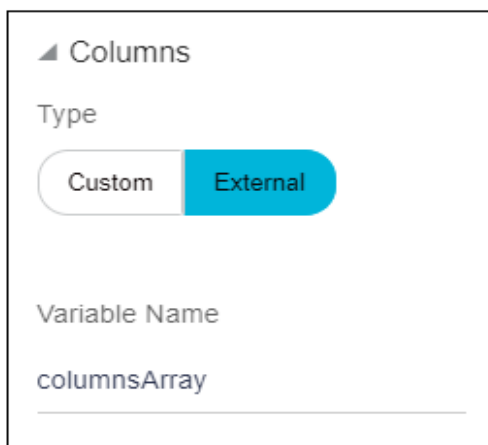
- 2) External: If user wants to display the same table used in above example. User wants to make first column resizable, which can be done by adding `resizable: enabled` configuration to the column. But in custom type there is no option to add this configuration because it accepts only `headerText`, `field` and `class`. In such cases, where column has more configuration, use “External” type.

Create one variable “columnsArray”. Add two objects for two columns. In those objects, user can add any configuration needed for the column.

```
columnsArray = [ {"headerText": "Department Name",
                 "field": "DepartmentName",
                 "resizable": "enabled"},
                 {"headerText": "Manager Id",
                 "field": "ManagerId",
                 "class": "oj-sm-2"}]
```

As user can see for the first column, “Department Name”, `resizable: enabled` configuration is added.

Usage: Enter this variable name in an input box as shown in the image below.



▲ Columns

Type

Custom External

Variable Name

columnsArray

12.31 Row renderer

Description: This attribute is used to specify the id of a renderer for table. This is only valid if user have added any row renderer for the table.

If user has a simple data to display i.e. every column of the table, display some text. In that case, user do not need any row renderer. Refer the image below.


Date	Description	Reference No	Amount	Balance
06 Sep 2018	AT30028200778 NEW DEPOSIT	AT3DEBK1824915AE	£121.00 Dr	£6,160.45
06 Sep 2018	AT30028200745 NEW DEPOSIT	AT3DEBK1824915AA	£221.00 Dr	£6,281.45
06 Sep 2018	Payments and Collections Transaction code	AT3OUPA18249B0QN	£550.00 Dr	£6,502.45
06 Sep 2018	Payments and Collections Transaction code	AT3OUPA18249B0QL	£550.00 Dr	£7,052.45

However, in the table, input fields such as input text, checkboxes or anchor tag have to be added. In that case, user needs a row renderer. For example in the following image, there is checkbox highlighted in red oval and input text highlighted in green oval inside the table. To understand what is renderer and how to create it refer **renderer** section.

Invoice List							
<input type="checkbox"/>	Counterparty Name & ID	Program Name and ID	Invoice No	Invoice Amount	Due Date	Status	Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0126	£100,000.00	21 May 2019	Raised	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0127	£100,000.00	21 May 2019	Raised	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0124	£100,000.00	21 May 2019	Raised	Type Comments
<input type="checkbox"/>	OBDXDEV COUNTERPARTY	BPT	BULKFUV0130	£100,000.00	21 May 2019	Raised	Type Comments


Components to accept the input: Switch, Input box

Row renderer



When user enables the switch, it shows an input box named as "Row template".

Row renderer

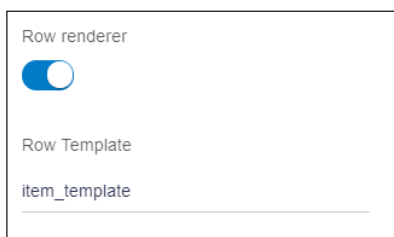


Row Template

Enter Row Template Id

Example: User has created a renderer with the id as “item_template”.

Usage: Enter “item_template” in an input box as shown in the image below.



Row renderer

Row Template

item_template

12.32 Aria label

Description: This attribute is used to specify the aria label of the tag.

Components to accept the input: Input text



Aria Label

Enter Aria Label

Example: User wants aria label as “Accounts”.

Usage: Enter “Accounts” in an input box as shown in the image below.



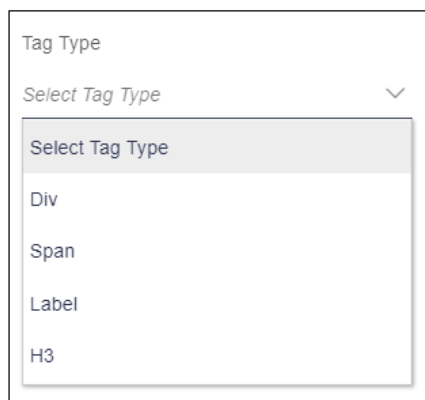
Aria Label

Accounts

12.33 Tag type

Description: This attribute is used to specify the type of tag.

Components to accept the input: Select box

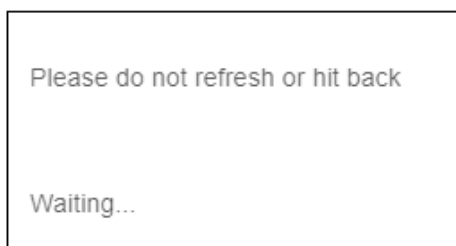


This select box has five options:

1. Div : It is a block-level element. A block-level element always starts on a new line and takes up the full width available.
2. Span: It is an inline element. An inline element does not start on a new line and only takes up as much width as necessary.
3. Label: It is a label tag of HTML. This element is used to associate a text label with a form input field
4. H3: It is h3 tag of HTML. It represents a level 3 heading in an HTML.

As per requirement, select the type.

Example: User wants to display “Please do not refresh or hit back” text. And user wants other text “Waiting” on the next line as shown in the image below.



Usage: Now in this example, our first text should occupy the whole line and second text should start on the next line. As Div is a block element, it satisfies the requirement. When user adds “Waiting” text and selects Div type as shown in the image below. “Waiting” text will start on a new line.

A screenshot of a dropdown menu titled "Tag Type". The menu is open, showing the selected option "Div" and a downward-pointing chevron icon on the right side.

12.34 Binding source

Description: This attribute is used to specify the use of the tag. For example, it can be used to display text, or some value or an icon etc.

Components to accept the input: Select box

A screenshot of a dropdown menu titled "Binding Source". The menu is open, showing the selected option "Icon" and a downward-pointing chevron icon on the right side. The options listed are "Select binding Type", "NLS", "Bindings", "Icon", and "After Renderer".

This select box has five options:

- 1) **NLS:** This option is used to display simple text. When user selects this option it will display an input box named as "Label" as shown in the image below.

A screenshot of a dropdown menu titled "Binding Source". The menu is open, showing the selected option "NLS" and a downward-pointing chevron icon on the right side. Below the dropdown, there is a text input box labeled "Label" with the placeholder text "Enter Label".

- 2) **Bindings:** This option is used to display value of some variable. When user selects this option it will display a select box named as "Value" as shown in the image below. To know more about value refer **Value attribute** section.

Binding Source

Bindings

Value

Select Bind Type

- 3) Icon: This option is used to display an icon. When user selects this option, it will display an input box named as “Icon class name” as shown in the image below.

Binding Source

Icon

Icon Class Name

Type Icon Class

- 4) After Renderer: This option is used to call a function after the DOM (Document Object Model) has rendered the specific HTML code. When user selects this option, it will display an input box named as “Enter Function Name” as shown in the image below. To know more about this refer <https://knockoutjs.com/documentation/template-binding.html>

Binding Source

After Renderer

Enter Funtion Name

Enter Funtion Name

Example:

- 1) User wants to display simple text “Welcome” as shown in the image below.

Welcome,

Usage: As this is a simple text coming from Resource Bundle, select Type “NLS”.

Enter “Welcome” text in the “Label” input box as shown in the image below.

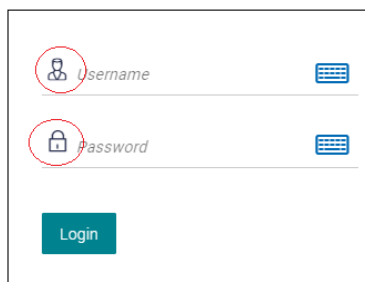
2) User wants to display “Welcome” which is stored in a variable.



Usage: Assume variable name is “tempVariable”. As this is stored in a variable and not coming from Resource Bundle, select type “Binding Source”.

How to add a variable using Value attribute refer Value attribute section.

3) User wants to display the user icon and password icon, highlighted in red oval in the image below.



Usage: User icon class is “icons icon-user”.

Select type “Icon”

Enter the user icon class “icons icon-user” in the “Icon class name” input box as shown in the image below.

Binding Source

Icon

Icon Class Name

icons icon-user|

- 4) User wants to execute some function once the specific elements are rendered on the screen.

Usage: Assume function name is "display Success".

Select type "After renderer"

Enter function name "display Success" in the "Enter Function Name" input box as shown in the image below.

Binding Source

After Renderer

Enter Funtion Name

displaySuccess

12.35 Enter rows

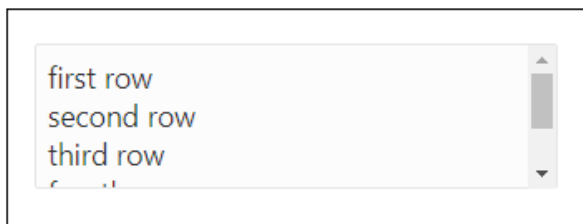
Description: This attribute is used to specify the number of visible text lines in the text area. It can be used to give specific height to the text area.

Components to accept the input: Input text

Enter Rows

Enter Rows

Example: User want to add text area with 3 rows as shown in the image below.



In the image above, only first three rows are visible to the user because the number of rows are 3. There is a scroll for other rows as shown in the image below.



Usage: Enter 3 in the input text as shown in the image below.

12.36 Selected step

Description: This attribute is used to specify the ID of the current selected step. Default is the first step in the steps array.

Components to accept the input: Input text

Example: User wants to set step 2 as a selected step as shown in the image below.



Usage: Assume step array has following data:

```
Step_array = [{label:'Step One', id:'stp1'},  
              {label:'Step Two', id:'stp2'},  
              {label:'Step Three', id:'stp3'},  
              {label:'Step Four', id:'stp4'},  
              {label:'Step Five', id:'stp5'}];
```

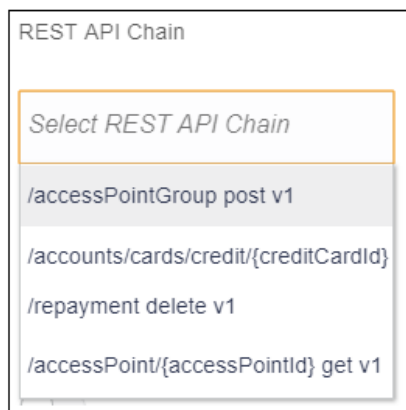
Therefore, ID of second step is "stp2". Enter this id in the input text as shown in the image below.

Selected Step

stp2

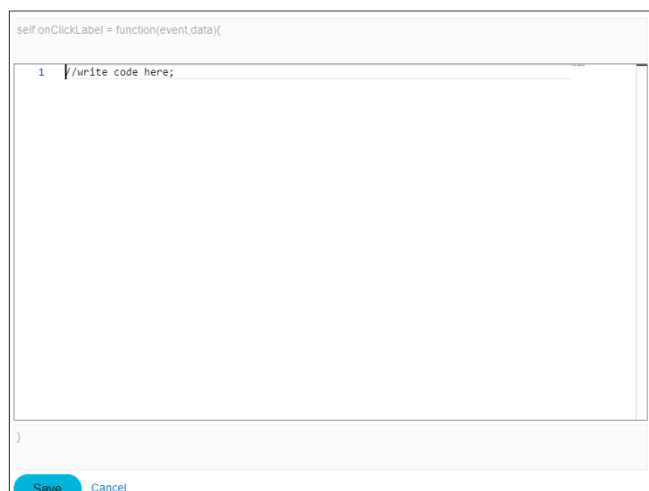
12.37 REST API Chain and Hook Function

- REST API Chain: To understand what is chaining refer **REST API Configuration** section. This select box lists all the REST API chaining that user have created in step four i.e. REST API Configuration. From this select box, user can select REST API chain that user wants to fire when an element is clicked.



- Hook function: There is a button named as "Open Editor". When user clicks this button, it will open a code editor as shown in the below image. In this editor, user can write the code user wants to execute when the value of an element is changed.

To understand more about editor refer **Open Editor of hook function** section



Example:

1. User want to give an option to use a form as a template. It has an input text to accept the template name as shown in the image below. And it has an anchor tag that checks for the availability of the name entered by the user highlighted in a green oval as shown in the image below.

In this example, user needs to fire a rest to check the availability of the name.

Usage:

Select the REST API, user needs to fire when user clicks the Check Availability option as shown in the image below.

If user click the “Open Editor” button, it will open the code editor.

```

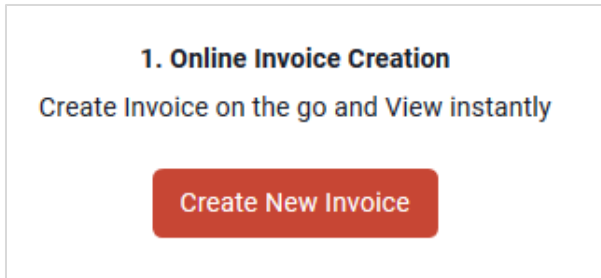
self.onClickLabel = function(data,event){
1  accessPointaccessPointIdgetCall(self.accessPointaccessPointIdgetaccessPointId()).
2  then(function (response) {
3
4      // result for get : "/accessPoint/{accessPointId}"
5
6      self.accessPointaccessPointIdgetVar(response);
7  })
8

```

There is some code already written inside the editor, the tool has generated this code. When user selects any REST API, the tool generates the required code to execute that REST API. However, in some cases, there is need to do some additional operation on the data, fetched from the server. Therefore, for this purpose, there is a support for code editor, to let user write its own code. In such scenarios, use the response (highlighted in red circle in the image above) for further processing.

Whenever user clicks this option, it will execute the block of code written inside the editor.

2. User want to create an invoice. On clicking Create New Invoice button, navigate should be to the form of creating an invoice.



Usage: In this example user do not need to fire any REST API, user will not select any REST API.

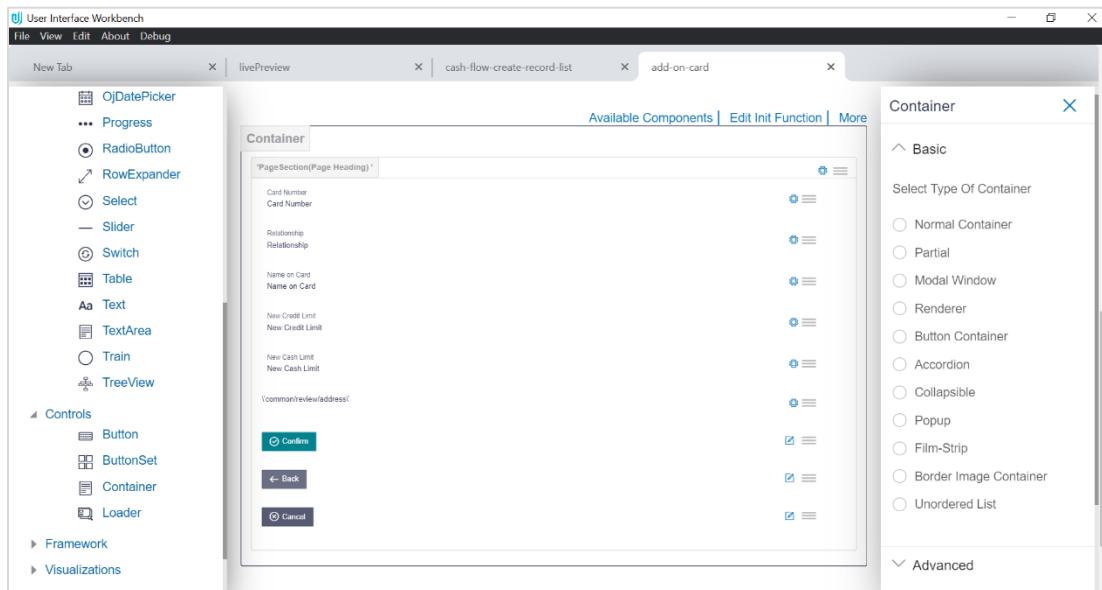
Click the "Open Editor" button, and write code inside the editor as shown in the image below.

```
self.onClickLabel = function(event,data){  
1  params.baseModel.registerComponent("create-invoice", "invoice");  
2  
3  params.dashboard.loadComponent("create-invoice");  
}
```

Function has two parameters event and data. User can use these parameters in code if required.

Note: As there is no REST API selected, there will be no auto-generated code.

12.38 Select Type of Container

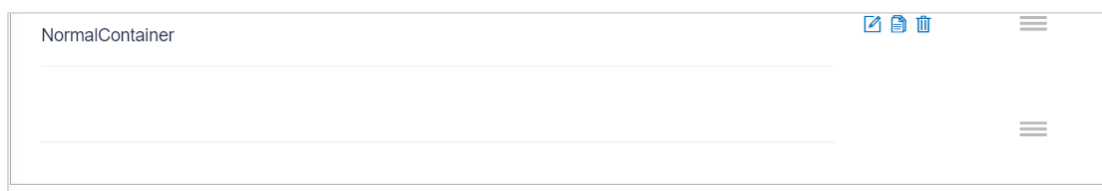


1. **Normal Container:** This is the most basic type of container which is used to group an element to:

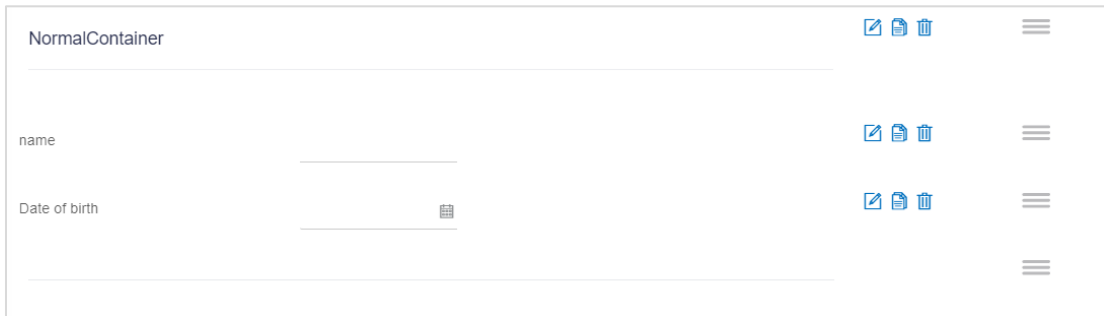
- apply a common style
- repeat a form section on page
- hide and display form section
- apply grid size to a form section

Example:

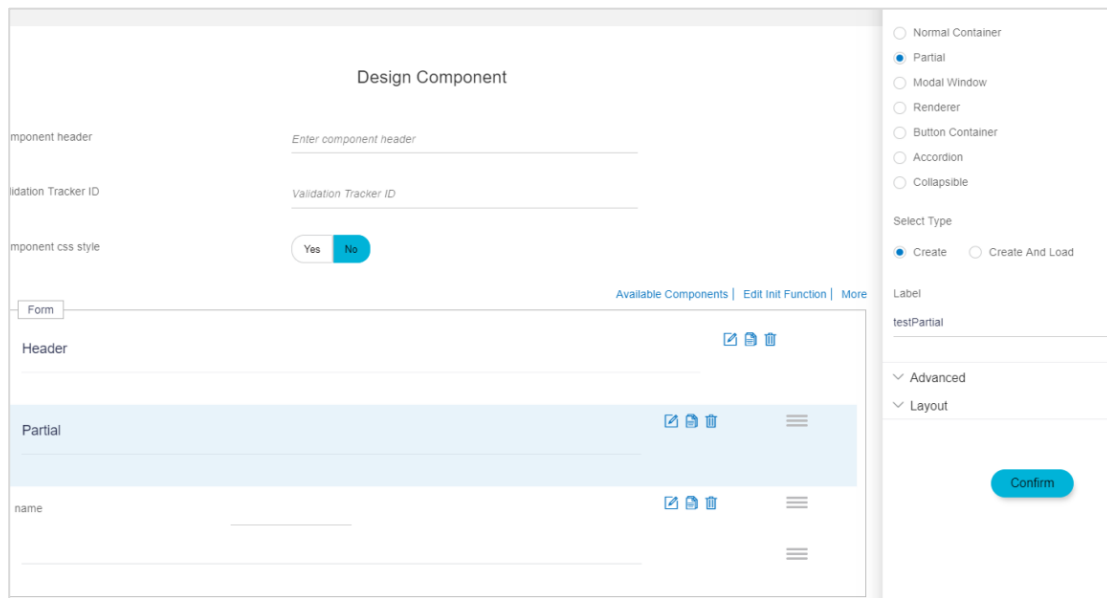
In the below example, normal container option has been selected. Two elements will be added with a gap in between them. User can drop any form element inside it.



In the below image an input box and date picker are added inside a normal container.



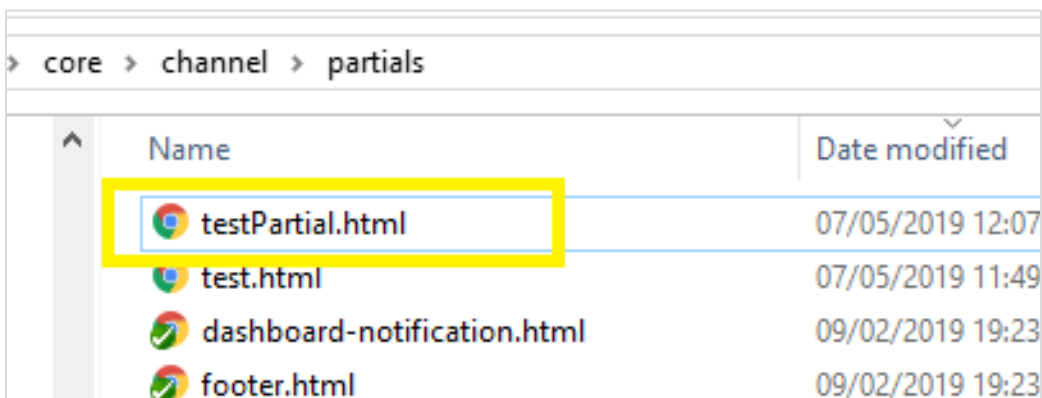
2. Partial: Partials are small unit of the page which can be reused.



Example:

When user chooses a container type as partial and create a component, an extra file will be created in partials folder along with other artefacts (refer creating component) at location. ChannelPath/partial/you_module/label.html.

Generated partials:



To use it, refer component loader or select type 'create and load' to use is at same location where container is dropped.

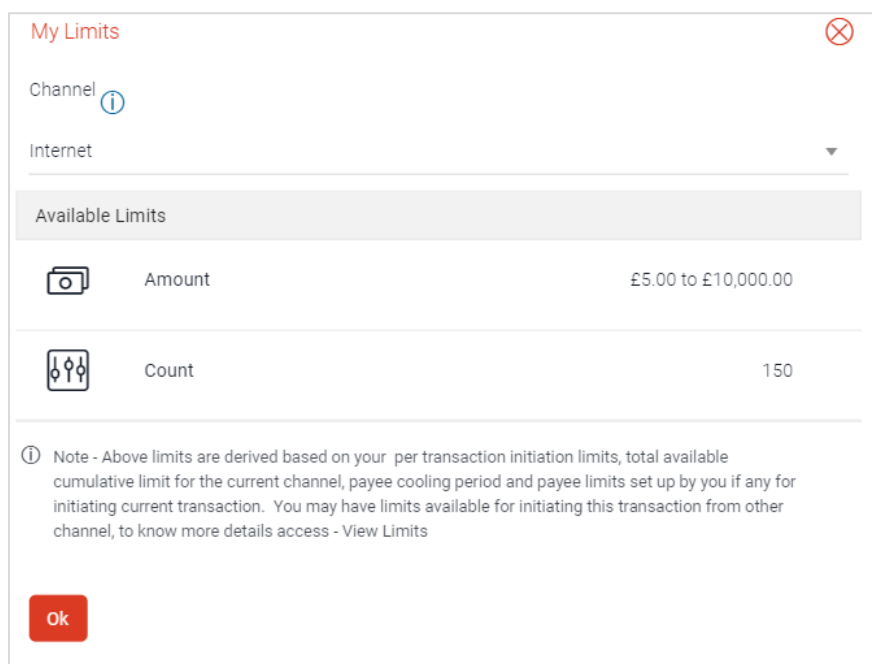
Select Type:

- Create: to create the partial.
- Create And Load: to create and load the partial.

3. Modal Window:

Usage: This container type is used to display the layout in overlay window or dialog box.

Example:



4. Renderer

Usage: Renderer are used to design row of Table or ListView.

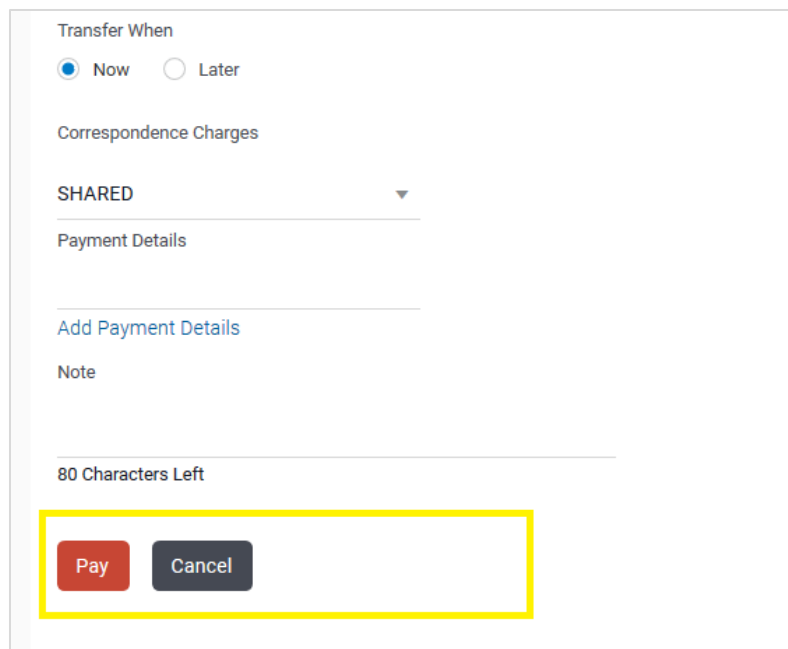
For reference go to <http://jet.us.oracle.com/>.

- Container ID: This Id will be mapped to Row Template in case of Table or Renderer Id in case of ListView (refer Table and ListView Section).

5. Button Container:

Usage: This container is used to display one or more button as the call to action button. Only buttons can be placed inside this container

Example:



The screenshot shows a form with the following elements:

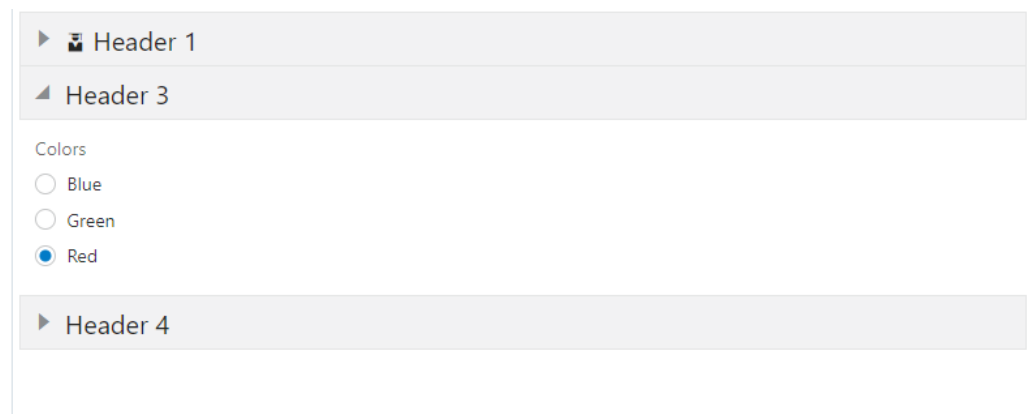
- Transfer When:** Radio buttons for "Now" (selected) and "Later".
- Correspondence Charges:** A dropdown menu currently showing "SHARED".
- Payment Details:** A section header.
- Add Payment Details:** A blue link.
- Note:** A text input field.
- 80 Characters Left:** A character count label.
- Buttons:** A red "Pay" button and a grey "Cancel" button, both enclosed in a yellow rectangular box.

6. Accordion:

Usage: A vertically stacked element which allows the user to toggle between sections of content is an accordion. Accordion container is used to create a group of collapsible items. A collapsible container is dropped inside it. To know about accordion and its use follow the link:

<http://jet.us.oracle.com/jetCookbook.html?component=accordion&demo=basicAccordion>.

Example:



The screenshot shows an accordion component with the following structure:

- Header 1:** Expanded, showing a right-pointing triangle and a document icon.
- Header 3:** Collapsed, showing a left-pointing triangle.
- Content:** A section titled "Colors" with three radio buttons: "Blue", "Green", and "Red" (selected).
- Header 4:** Collapsed, showing a right-pointing triangle.

7. Collapsible:

Usage: Collapsible container can contain any element inside it, which the user uses to toggle between sections of content. To know more about collapsible visit <http://jet.us.oracle.com/jetCookbook.html?component=collapsible&demo=basicCollapsible>.

Note: UX Extensibility Toolkit and UI Workbench are used interchangeably.

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