

PUBLIC

Deep dive into SAP Cloud Platform Workflow Management – Model Investment Approval Workflow

DEV-264

Exercises / Solutions
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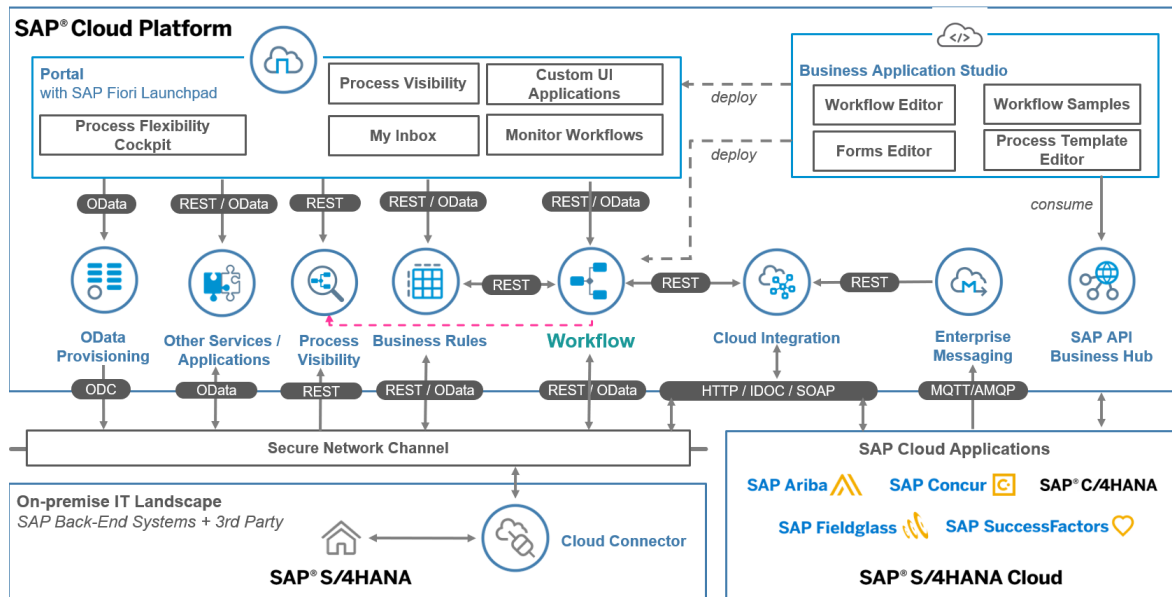
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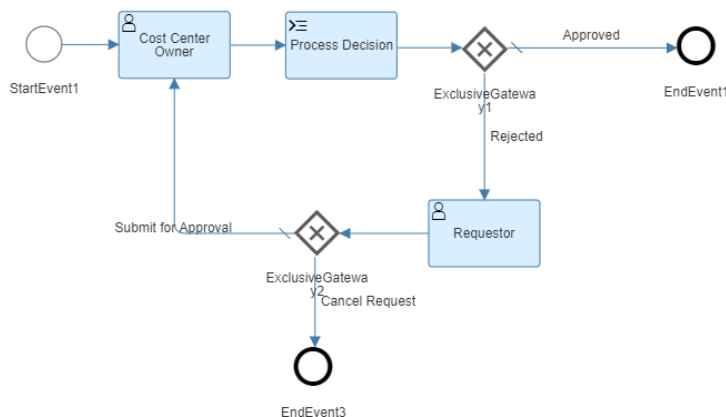
SAP Cloud Platform Workflow Management has Workflow capability, enable developers to model workflow based on BPMN 2.0 using SAP Cloud Platform Business Application Studio and deploy to Cloud platform accounts. A workflow consists of different activities, events and gateways. It provides fine granular REST/oData APIs to integrate with different line of business applications.

SAP Cloud Platform Workflow – the bigger picture



SCENARIO

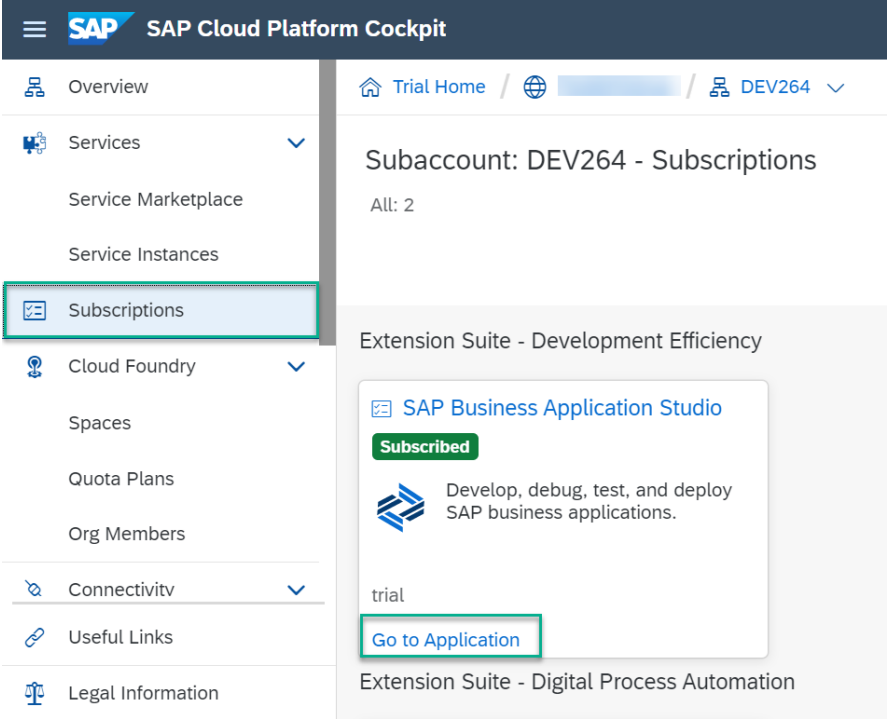
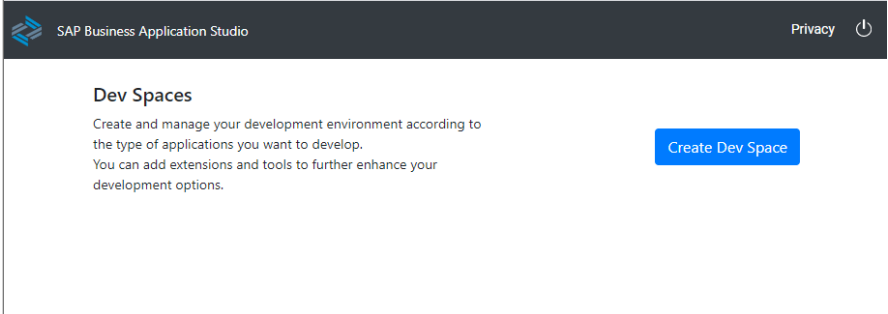
The scenario is an Investment Approval Workflow. A requestor creates a request for approval and Approver can decide Approve or Reject. A rejection enables the requestor to modify the request and submit or cancel the request.

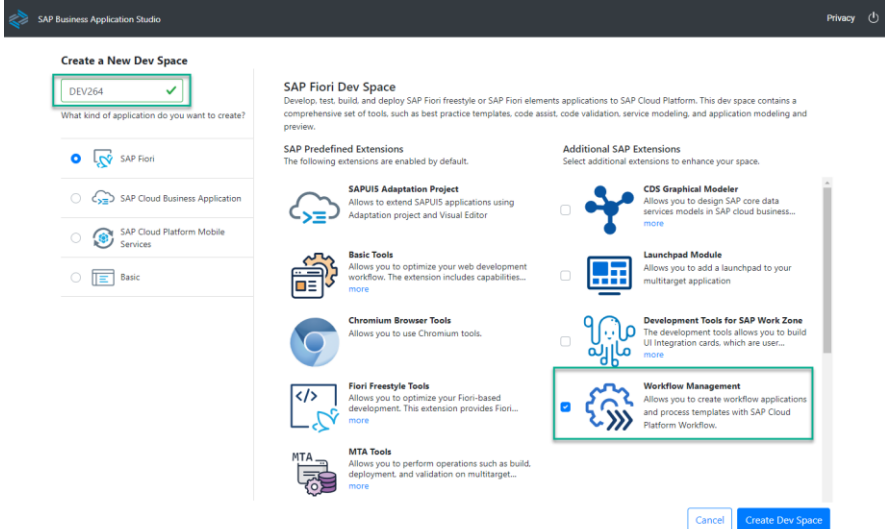
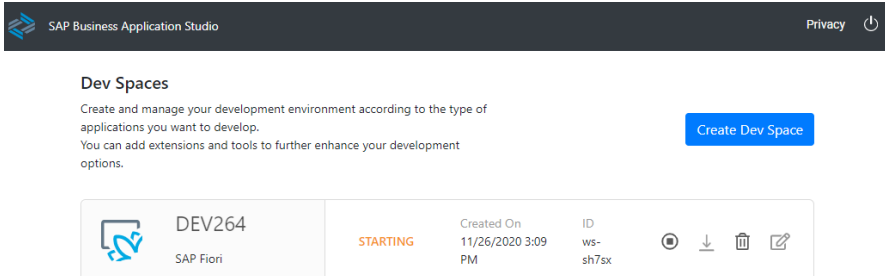
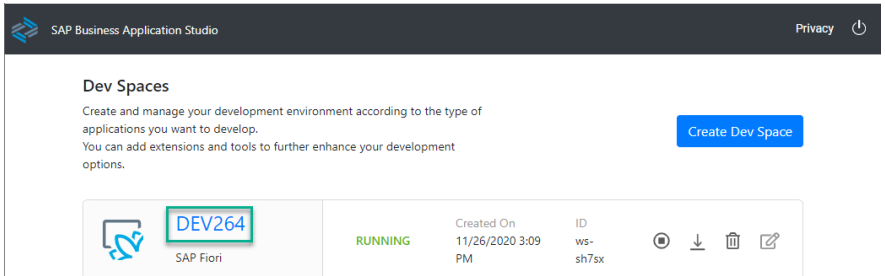


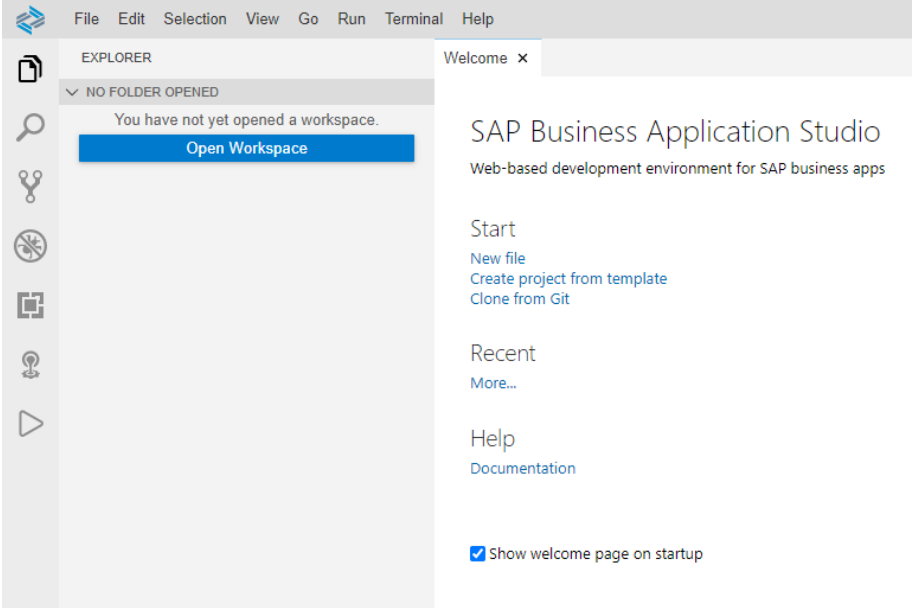
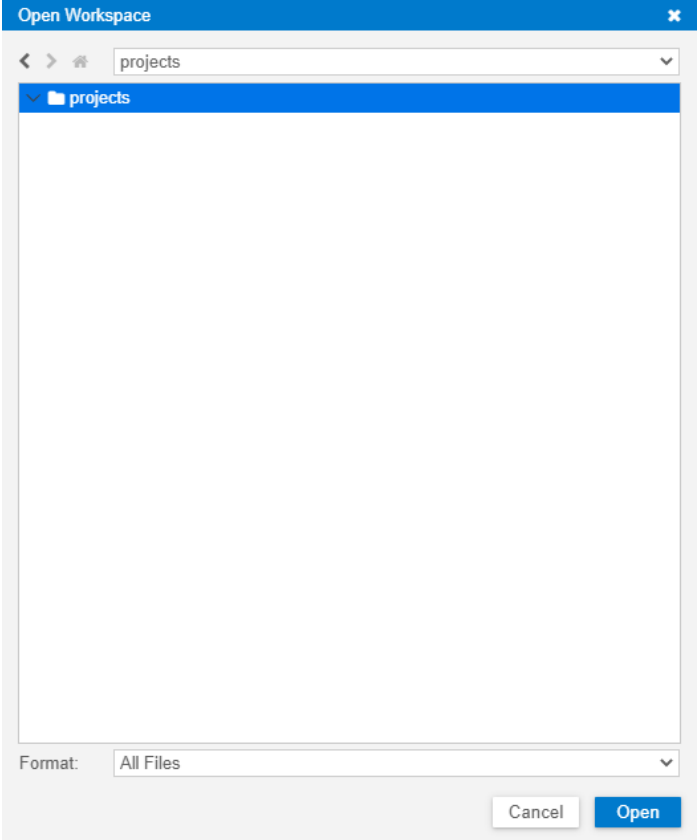
Prerequisite

Please setup your SAP Cloud Platform Trial account using [setup guide](#).

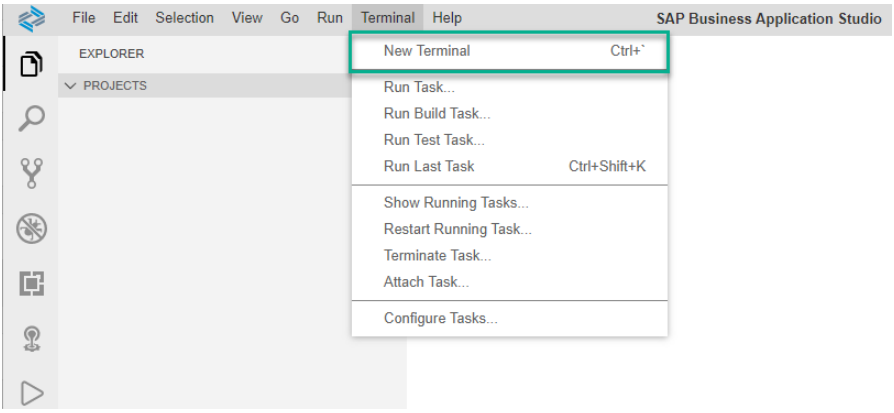
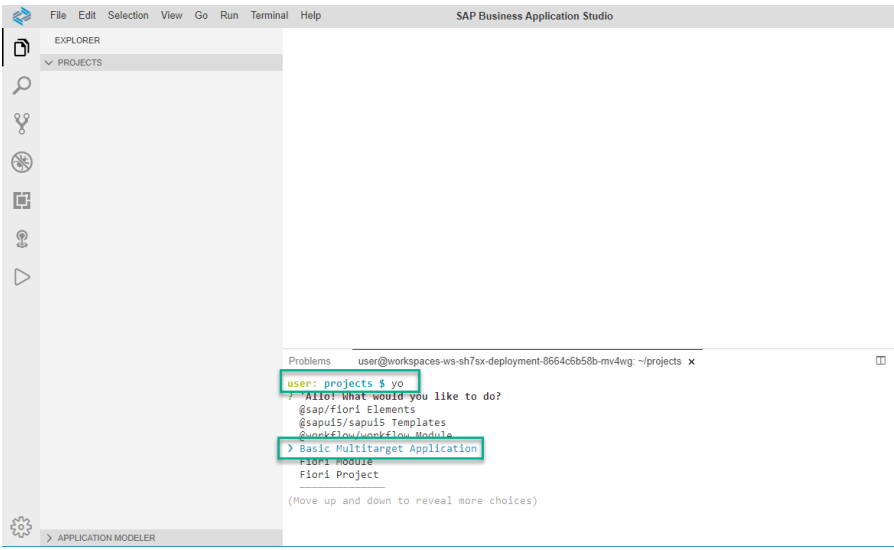
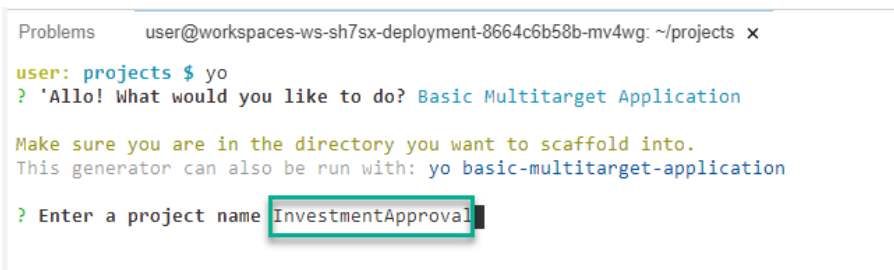
MODEL WORKFLOW – INVESTMENT APPROVAL WORKFLOW


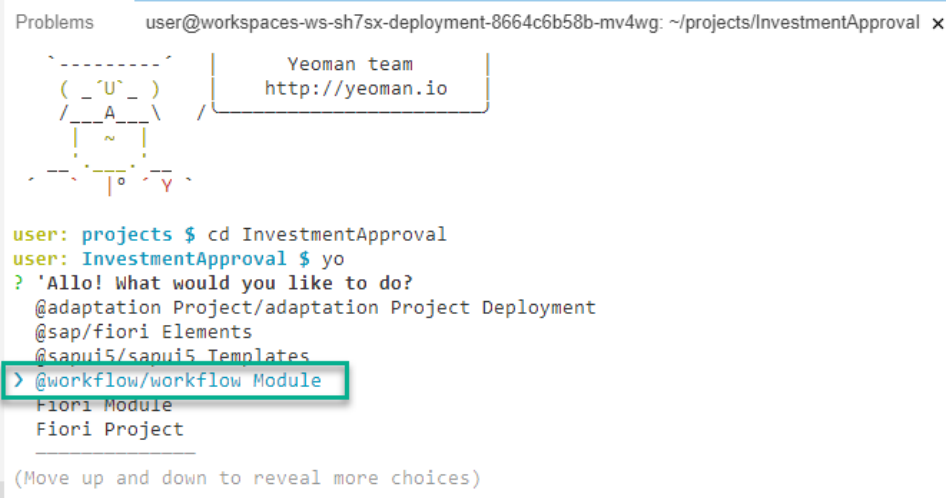
Explanation	Screenshot
<ol style="list-style-type: none"> 1. Select Subscriptions in your Sub Account and you see the subscribed applications. 2. Select SAP Business Application Studio and click Go to Application. <p>SAP Cloud Platform Business Application Studio will be opened in new browser window.</p> <p>Skip steps 3 to 7 If you have already created a dev space with Workflow Management extension.</p>	 <p>The screenshot shows the SAP Cloud Platform Cockpit interface. The left sidebar contains a menu with options: Overview, Services, Service Marketplace, Service Instances, Subscriptions (highlighted with a red box), Cloud Foundry, Spaces, Quota Plans, Org Members, Connectivity, Useful Links, and Legal Information. The main content area displays 'Subaccount: DEV264 - Subscriptions' with 'All: 2' items. Under the 'Extension Suite - Development Efficiency' section, 'SAP Business Application Studio' is listed as 'Subscribed'. Below this, there is a 'trial' label and a 'Go to Application' button (highlighted with a red box). The 'Extension Suite - Digital Process Automation' section is also visible at the bottom.</p>
<p>Create Workspace</p> <ol style="list-style-type: none"> 3. Click Create Dev Space button. 	 <p>The screenshot shows the SAP Business Application Studio interface. The header bar includes the SAP logo, 'SAP Business Application Studio', and 'Privacy' with a power icon. The main content area is titled 'Dev Spaces' and contains the text: 'Create and manage your development environment according to the type of applications you want to develop. You can add extensions and tools to further enhance your development options.' A blue 'Create Dev Space' button is located on the right side of the page.</p>


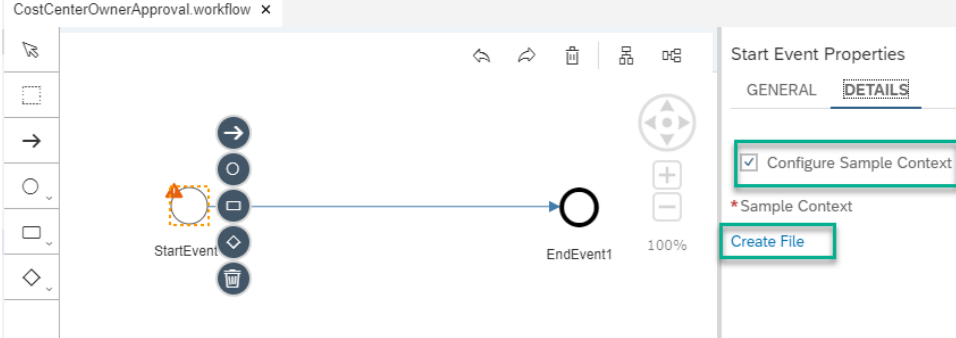
Explanation	Screenshot
<div>4. Enter Dev Space</div> <div>5. Select Workflow Management from Additional SAP Extensions.</div> <div>6. Click Create Dev Space</div>	
<div>7. Setting up the Dev Space will take couple of minutes and show the status as STARTING. Wait until the status changing to RUNNING.</div>	
<div>8. Click your Dev Space.</div>	

Explanation	Screenshot
9. Click Open Workspace .	 <p>The screenshot shows the SAP Business Application Studio interface. The Explorer view on the left displays 'NO FOLDER OPENED' and a blue button labeled 'Open Workspace'. The main area shows the 'Welcome' page with options like 'New file', 'Create project from template', and 'Clone from Git'. The 'Show welcome page on startup' checkbox is checked.</p>
10. Select Projects and click Open button.	 <p>The screenshot shows the 'Open Workspace' dialog box. The file list displays a folder named 'projects'. The 'Format' dropdown is set to 'All Files'. The 'Open' button is highlighted in blue.</p>

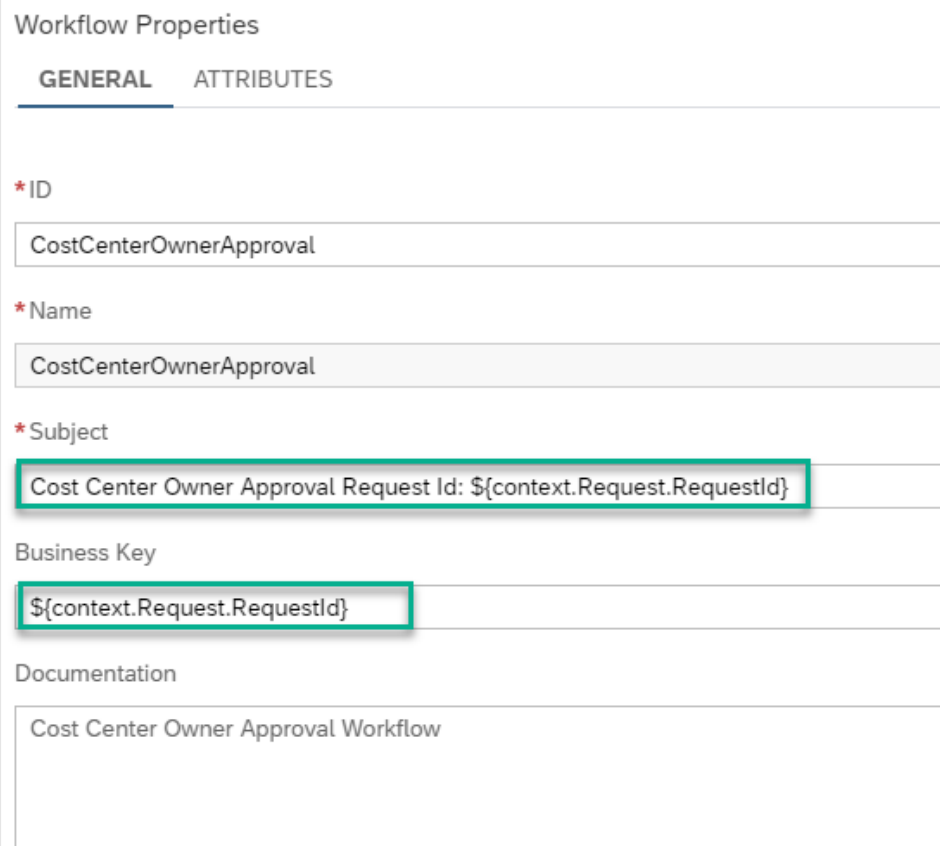
Explanation	Screenshot
<p>Configure Cloud Foundry End Point</p> <p>11. Click the message in the bottom to configure the endpoint for deployment.</p>	
<p>12. Select the Cloud Foundry Endpoint.</p> <p>The URL might vary depends on which data center you are using.</p> <p>Europe -eu10 US – us10 Singapore – ap21</p>	
<p>12. Enter your e-mail address used as your user in in Cloud Platform.</p> <p>13. Subsequently enter your password, Cloud Platform Trial Sub Account and Cloud Foundry Space.</p>	

Explanation	Screenshot
<p>Create Multi Target Application Project</p> <p>14. Select Terminal → New Terminal</p>	 <p>The screenshot shows the SAP Business Application Studio interface. The 'Terminal' menu is open, and 'New Terminal' is highlighted with a red box. The keyboard shortcut 'Ctrl+' is also visible next to it. Other options in the menu include 'Run Task...', 'Run Build Task...', 'Run Test Task...', 'Run Last Task' (with 'Ctrl+Shift+K'), 'Show Running Tasks...', 'Restart Running Task...', 'Terminate Task...', 'Attach Task...', and 'Configure Tasks...'.</p>
<p>15. In the Terminal make sure you are in the projects directory.</p> <p>16. Type yo and press enter key.</p> <p>17. Select project type as Basic Multitarget Application by using up/down arrow key.</p>	 <p>The screenshot shows the terminal window in SAP Business Application Studio. The command 'yo' has been executed, and the output shows a list of project types. 'Basic Multitarget Application' is highlighted with a red box. The other options are '@sap/fiori Elements', '@sapui5/sapui5 Templates', '@sapui5/sapui5 Templates', '@sapui5/sapui5 Templates', and 'Fiori Project'. The prompt 'user: projects \$ yo' is visible at the top of the terminal output.</p>
<p>18. Enter the project name for eg: InvestmentApproval.</p>	 <p>The screenshot shows the terminal window in SAP Business Application Studio. The prompt 'Enter a project name' is visible, and 'InvestmentApproval' has been entered and highlighted with a red box. The terminal output shows the command 'yo' and the prompt 'user: projects \$ yo'. The output also includes the text 'Make sure you are in the directory you want to scaffold into. This generator can also be run with: yo basic-multitarget-application'.</p>

Explanation	Screenshot
<p>19. Use cd InvestmentApproval to move the new project directory.</p> <p>20. Type yo again in the newly created project directory.</p>	 <pre> Problems user@workspaces-ws-sh7sx-deployment-8664c6b58b-mv4wg: ~/projects/InvestmentApproval x ? Enter a project name InvestmentApproval The project will be generated in the /home/user/projects/InvestmentApproval directory. create InvestmentApproval/.gitignore The project has been generated. Bye from us! Chat soon. Yeoman team http://yeoman.io user: projects \$ cd InvestmentApproval user: InvestmentApproval \$ yo </pre>
<p>21. Select @workflow/workflow Module from the list using up/down arrow keys.</p>	 <pre> Problems user@workspaces-ws-sh7sx-deployment-8664c6b58b-mv4wg: ~/projects/InvestmentApproval x Yeoman team http://yeoman.io user: projects \$ cd InvestmentApproval user: InvestmentApproval \$ yo ? 'Allo! What would you like to do? @adaptation Project/adaptation Project Deployment @sap/fiori Elements @sapui5/sapui5 Templates > @workflow/workflow Module Fiori Module Fiori Project (Move up and down to reveal more choices) </pre>

Explanation	Screenshot
<p>22. Enter the following</p> <p>Module Name: InvestmentApprovalWorkflow</p> <p>Workflow Name: CostCenterOwnerApproval</p> <p>Workflow Description: Cost Center Owner Approval Workflow</p> <p>Overwrite mta.yaml: y</p>	 <pre> Problems user@workspaces-ws-sh7sx-deployment-8664c6b58b-mv4wg: ~/projects/InvestmentApproval x user: projects \$ cd InvestmentApproval user: InvestmentApproval \$ yo ? 'Allo! What would you like to do? @workflow/workflow Module Make sure you are in the directory you want to scaffold into. This generator can also be run with: yo @workflow/workflow-module ? Module Name InvestmentApprovalWorkflow ? Workflow Name CostCenterOwnerApproval ? Workflow Description Cost Center Owner Approval Workflow conflict mta.yaml ? Overwrite mta.yaml? (ynaxdH) y >> overwrite </pre>
<p>Configure Sample Context</p> <p>23. The new workflow is opened in the workflow editor.</p> <p>24. Select the Start event and Select DETAILS section of Start Event properties.</p> <p>25. Check Configure Sample Context.</p> <p>26. Click link Create File.</p> <p>27. Enter Name as Sample Investment</p> <p>A new file is opened a default sample context.</p>	

Explanation	Screenshot
<p>28. Copy and paste the content from the file Sample Investment.json shared in the Git repository.</p> <p>Please replace FirstName, LastName, Email, UserId with your details. User Id is your cloud platform trial user id.</p> <p>The context has three Elements.</p> <p>Request: Requestor info including Request Id</p> <p>Investment: Details about the investment</p> <p>Approver: Cost Center Approver details.</p>	<pre> 1 { 2 "Request": { 3 "RequestId": "REQ01", 4 "FirstName": "Venugopal", 5 "LastName": "Chembrakalathil", 6 "Email": " ", 7 "UserId": " ", 8 "Comments": "Please approve the request" 9 }, 10 "Investment": { 11 "Description": "New Building", 12 "Type": "Building", 13 "BusinessUnit": "Manufacturing", 14 "Country": "Germany", 15 "CAPEX": 1000000, 16 "OPEX": 10000, 17 "TotalCost": 1010000, 18 "Currency": "EURO" 19 }, 20 "Approver": { 21 "FirstName": "", 22 "LastName": "", 23 "Email": "", 24 "UserId": "", 25 "Decision": "", 26 "Comment": "" 27 }, 28 "Comments": [29 30] 31 } 32 </pre>

Explanation	Screenshot
<p>29. Select the GENERAL Tab from Workflow Properties.</p> <p>30. Enter the following</p> <p>Subject: Cost Center Owner Approval Request Id: \${context.Request.RequestId}</p> <p>Business Key: \${context.Request.RequestId}</p>	 <p>Workflow Properties</p> <p>GENERAL ATTRIBUTES</p> <p>* ID</p> <p>CostCenterOwnerApproval</p> <p>* Name</p> <p>CostCenterOwnerApproval</p> <p>* Subject</p> <p>Cost Center Owner Approval Request Id: \${context.Request.RequestId}</p> <p>Business Key</p> <p>\${context.Request.RequestId}</p> <p>Documentation</p> <p>Cost Center Owner Approval Workflow</p>

Explanation

Screenshot

31. Select **ATTRIBUTES** and add the following Attributes.

Please copy the Context Path of each of this attribute from the attached [Workflow Context Attributes](#) JSON file.

32. Click **Add** button to add an attribute.

Workflow Properties

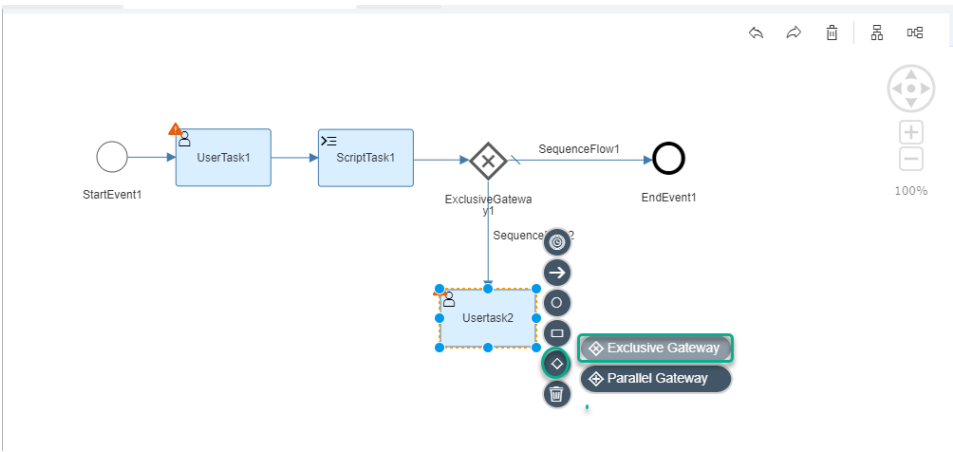
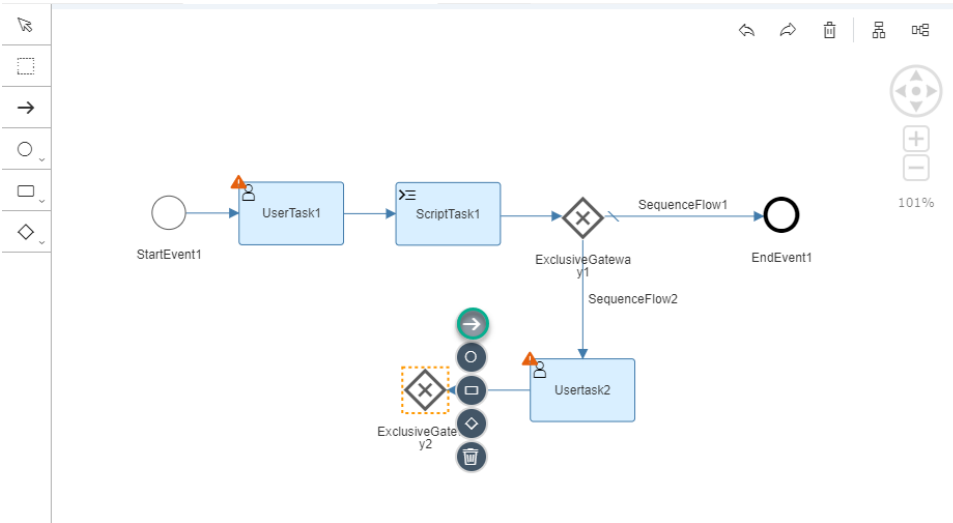
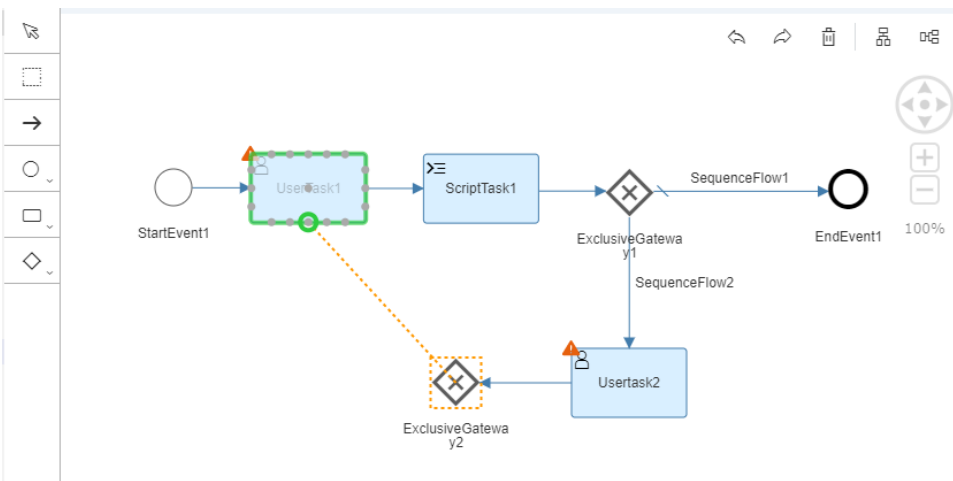
GENERAL ATTRIBUTES

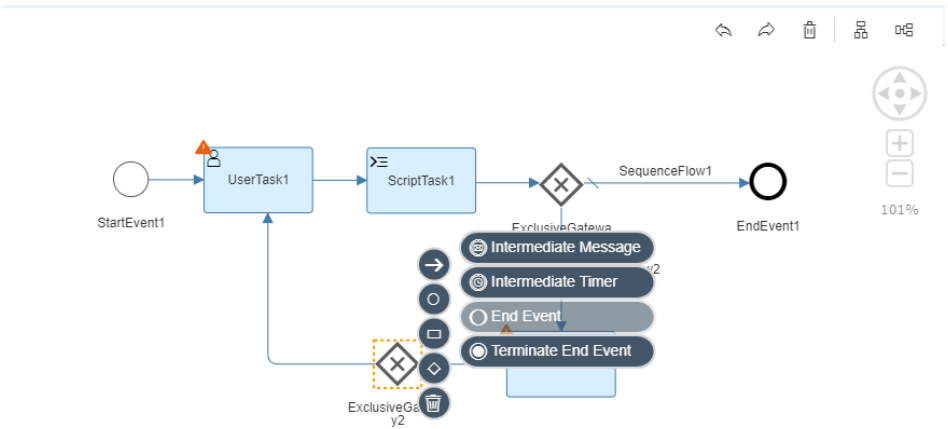
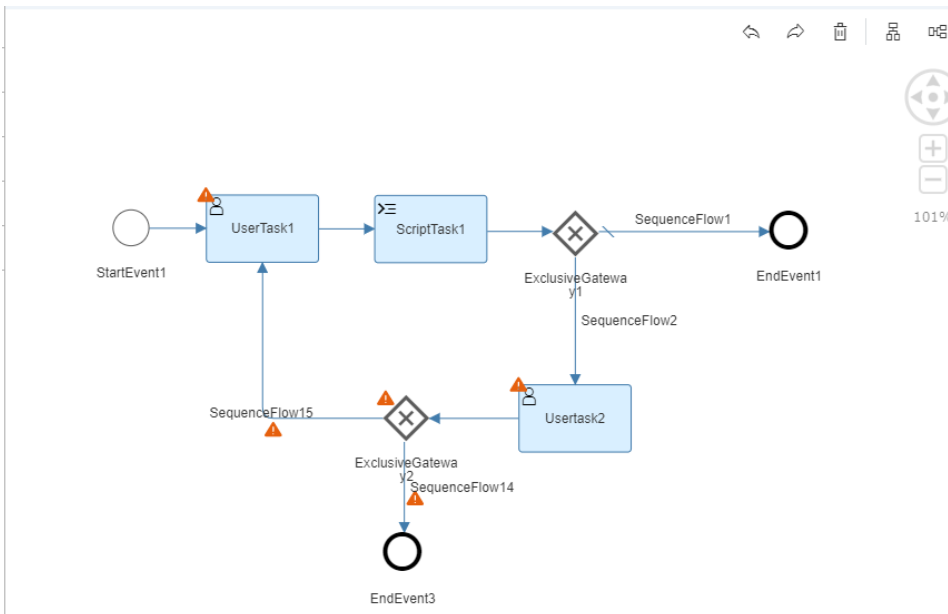
Add Delete Move Up Move Down

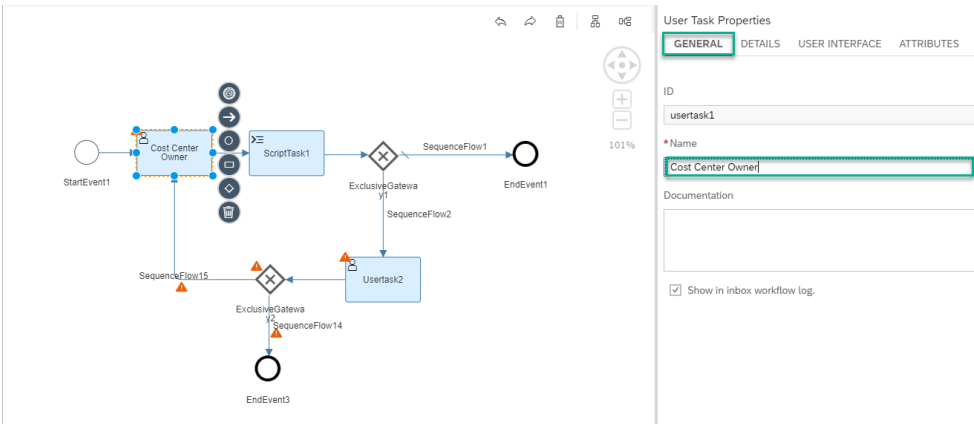
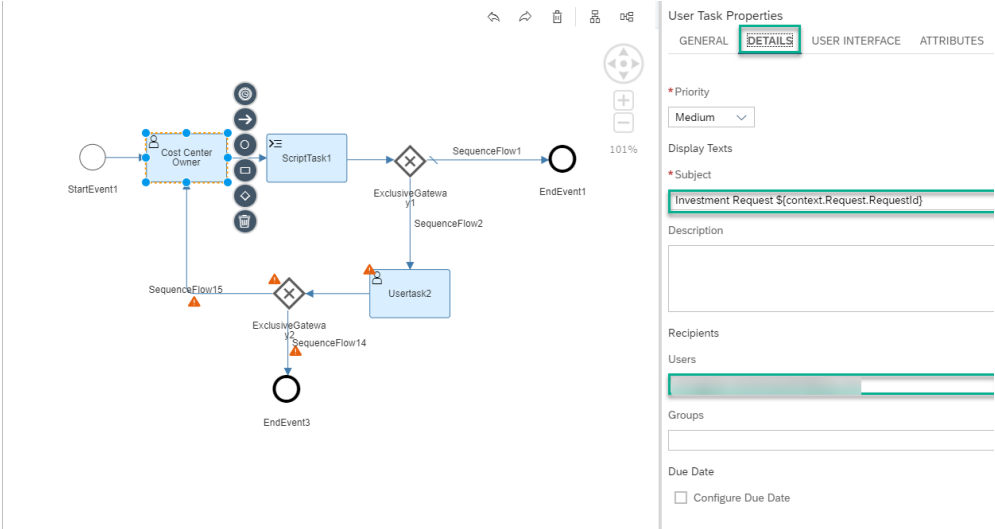
<input type="checkbox"/>	ID	Label	Type	Value
<input type="checkbox"/>	ApproverEmail	Approver Email	String	\${context.Approv...}
<input type="checkbox"/>	Decision	Decision	String	\${context.Decision}
<input type="checkbox"/>	Approver	Approver	String	\${context.Approv...}
<input type="checkbox"/>	Currency	Currency	String	\${context.Investm...}
<input type="checkbox"/>	TotalCost	Total Cost	String	\${context.Investm...}
<input type="checkbox"/>	OPEX	OPEX	String	\${context.Investm...}
<input type="checkbox"/>	CAPEX	CAPEX	String	\${context.Investm...}
<input type="checkbox"/>	Country	Country	String	\${context.Investm...}
<input type="checkbox"/>	InvestmentType	Investment Type	String	\${context.Investm...}
<input type="checkbox"/>	BusinessUnit	Business Unit	String	\${context.Investm...}
<input type="checkbox"/>	LastName	Last Name	String	\${context.Reques...}
<input type="checkbox"/>	FirstName	First Name	String	\${context.Reques...}
<input type="checkbox"/>	RequesterId	Requester ID	String	\${context.Reques...}
<input type="checkbox"/>	RequestId	Request ID	String	\${context.Reques...}


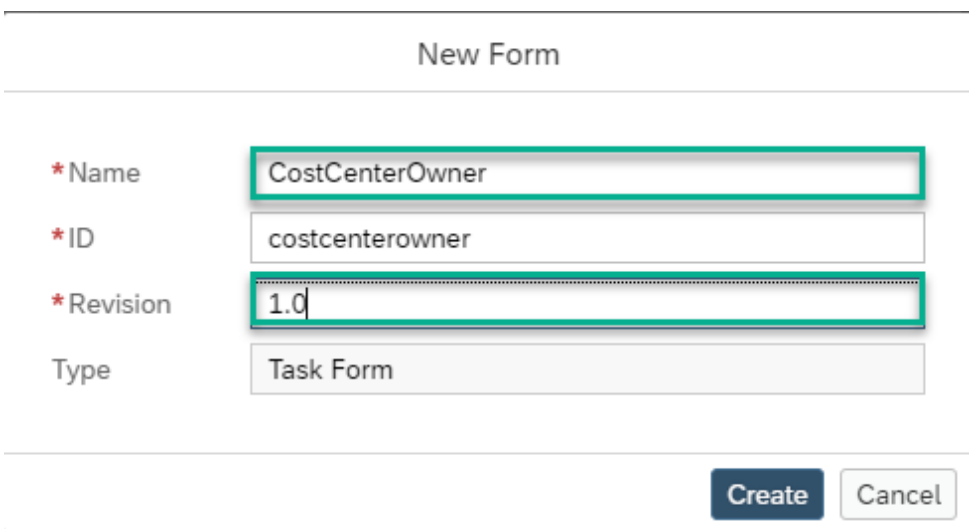
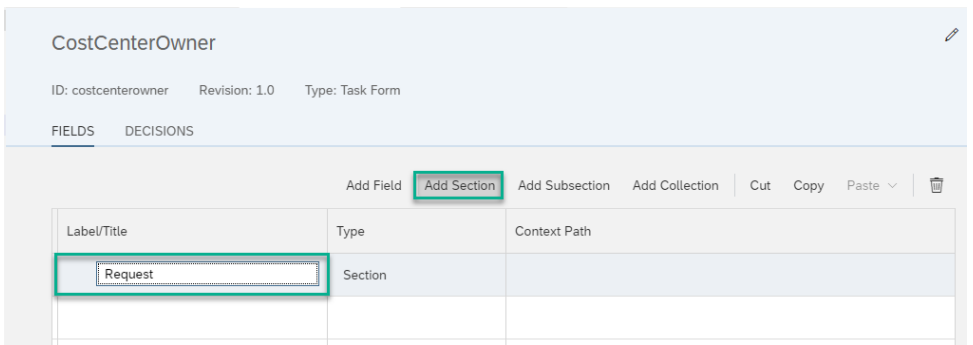
Explanation	Screenshot
<div>33. Before start modeling, please drag and drop the EndEvent1 towards the right side of the editor to keep some space between Start and End Event.</div> <div>34. Select the StartEvent, use the speed button and select User Task.</div> <div>A user task is added to the workflow model.</div>	
<div>35. Select the newly Added User Task.</div> <div>36. Using the speed button add a Script Task.</div>	
<div>37. Select the newly Added Script Task.</div> <div>38. Using the speed button add an Exclusive Gateway.</div>	

Explanation	Screenshot
<div>39. Select a User Task from the palette.</div> <div>40. Drag and drop the User Task just below the Exclusive Gateway.</div>	<p>The screenshot shows the BPMN editor interface. The top toolbar includes icons for undo, redo, delete, and zoom. The left sidebar contains a palette of BPMN elements: Start Event, Intermediate Event, End Event, Task (User, Service, Script, Mail), and Subflow. The main canvas displays a workflow diagram with the following elements: a Start Event, a User Task, a Script Task, an Exclusive Gateway, and an End Event. The 'User Task' element in the palette is highlighted with a green border. A green arrow points from the 'User Task' in the palette to the position below the Exclusive Gateway, indicating the next step in the process.</p>
<div>41. Use Sequence Flow from Exclusive Gateway to the new User Task.</div>	<p>The screenshot shows the BPMN editor interface with the workflow diagram updated. The 'User Task' element has been added below the Exclusive Gateway. A 'Sequence Flow' (represented by a blue arrow) connects the Exclusive Gateway to the new 'User Task'. The 'User Task' is now part of the main flow, and the 'Sequence Flow' is labeled 'SequenceFlow4'. The 'User Task' is now part of the main flow, and the 'Sequence Flow' is labeled 'SequenceFlow4'. The 'User Task' is now part of the main flow, and the 'Sequence Flow' is labeled 'SequenceFlow4'.</p>

Explanation	Screenshot
42. Select User Task2 and choose Exclusive Gateway .	 <p>The screenshot shows a BPMN diagram with the following elements: StartEvent1 (circle), UserTask1 (rounded rectangle), ScriptTask1 (rounded rectangle with a script icon), ExclusiveGateway y1 (diamond with an 'X'), SequenceFlow1 (arrow), EndEvent1 (thick circle), and UserTask2 (rounded rectangle). A dashed box highlights UserTask2, and a menu is open with 'Exclusive Gateway' selected.</p>
43. Select newly added Exclusive Gateway and choose Sequence Flow from the speed button.	 <p>The screenshot shows the BPMN diagram after adding a second Exclusive Gateway (ExclusiveGateway y2) and a Sequence Flow (SequenceFlow2). SequenceFlow2 connects ExclusiveGateway y1 to UserTask2. The menu is now closed.</p>
44. Drag and drop to User Task1 .	 <p>The screenshot shows the BPMN diagram after moving UserTask1. A dashed box highlights UserTask1, and a dashed arrow points from it to ExclusiveGateway y2.</p>

Explanation	Screenshot
45. Select Exclusive Gateway2 and choose End Event from speed button.	 <p>The screenshot shows a BPMN diagram in an editor. The diagram includes a StartEvent1, a UserTask1, a ScriptTask1, and an EndEvent1. An Exclusive Gateway (diamond with an 'X') is positioned between ScriptTask1 and EndEvent1, connected by SequenceFlow1. A second Exclusive Gateway, labeled 'ExclusiveGateway2', is shown in a dashed box. A speed button menu is open over this gateway, with 'End Event' selected. The menu also lists 'Intermediate Message', 'Intermediate Timer', and 'Terminate End Event'. The editor interface includes a toolbar at the top right and a zoom level of 101%.</p>
46. The workflow model sequence modeling has completed. Do necessary formatting if required.	 <p>The screenshot shows the completed BPMN diagram. It features a StartEvent1 leading to UserTask1, which then leads to ScriptTask1. ScriptTask1 connects to ExclusiveGateway1 (labeled 'Exclusive Gateway y1'), which leads to EndEvent1 via SequenceFlow1. ExclusiveGateway1 also leads to UserTask2 via SequenceFlow2. UserTask2 connects to ExclusiveGateway2 (labeled 'Exclusive Gateway y2'), which leads to EndEvent3 via SequenceFlow14. SequenceFlow15 connects ExclusiveGateway2 back to UserTask1. The diagram is fully formatted and includes the same editor interface as the previous screenshot.</p>

Explanation	Screenshot
<p>47. Select User Task1 and User Task Properties.</p> <p>48. Under GENERAL section, change the Name as Cost Center Owner.</p>	 <p>The screenshot shows a BPMN editor interface. On the left, a workflow diagram is visible with a start event, a task named 'Cost Center Owner', a script task, an exclusive gateway, and an end event. On the right, the 'User Task Properties' panel is open, showing the 'GENERAL' tab. The 'Name' field is set to 'Cost Center Owner'.</p>
<p>49. Select DETAILS section and set the following.</p> <p>Subject: Investment Request <code>\${context.Request.RequestId}</code></p> <p>Users: Your Cloud Platform User Id (email id)</p>	 <p>The screenshot shows the same BPMN editor interface. The 'User Task Properties' panel is now showing the 'DETAILS' tab. The 'Subject' field is set to 'Investment Request <code>\${context.Request.RequestId}</code>'. The 'Users' field is also visible, set to 'Your Cloud Platform User Id (email id)'.</p>

Explanation	Screenshot						
<p>Create Workflow Forms</p> <p>50. Select USER INTERFACE section.</p> <p>51. Change the type as Form.</p> <p>52. Click the link Create File.</p> <p>A popup window is available now to enter Form details.</p>	 <p>User Task Properties</p> <p>GENERAL DETAILS USER INTERFACE ATTRIBUTES</p> <p>*Type Form</p> <p>Form Details</p> <p>*File Name Create File Select</p> <p>*ID</p> <p>*Revision</p>						
<p>53. Enter the following. Name: CostCenterOwner Revision: 1.0</p> <p>54. Click Create button.</p> <p>You can see the Forms Editor opened to model the new task UI.</p>	 <p>New Form</p> <p>*Name CostCenterOwner</p> <p>*ID costcenterowner</p> <p>*Revision 1.0</p> <p>Type Task Form</p> <p>Create Cancel</p>						
<p>55. Click Add Section. A section contains set of Fields.</p> <p>56. Update the Label / Title of the section as Request</p>	 <p>CostCenterOwner</p> <p>ID: costcenterowner Revision: 1.0 Type: Task Form</p> <p>FIELDS DECISIONS</p> <p>Add Field Add Section Add Subsection Add Collection Cut Copy Paste</p> <table><thead><tr><th>Label/Title</th><th>Type</th><th>Context Path</th></tr></thead><tbody><tr><td>Request</td><td>Section</td><td></td></tr></tbody></table>	Label/Title	Type	Context Path	Request	Section	
Label/Title	Type	Context Path					
Request	Section						

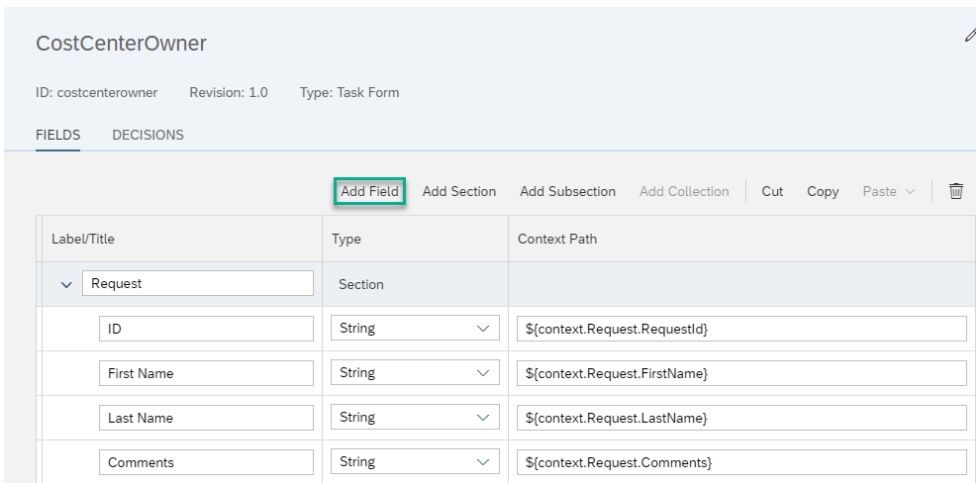
Explanation

57. Select Request and click **Add Field** to add the following fields.

Copy the Context Path from the attached file
CostCenterOwnerApprovalTask

Label	Type	Context Path
ID	String	\${context.Request.RequestId}
First Name	String	\${context.Request.FirstName}
Last Name	String	\${context.Request.LastName}
Comments	String	\${context.Request.Comments}

Screenshot



The screenshot shows the 'CostCenterOwner' form with the 'Request' section expanded. The 'Add Field' button is highlighted. The table below shows the fields added to the 'Request' section:

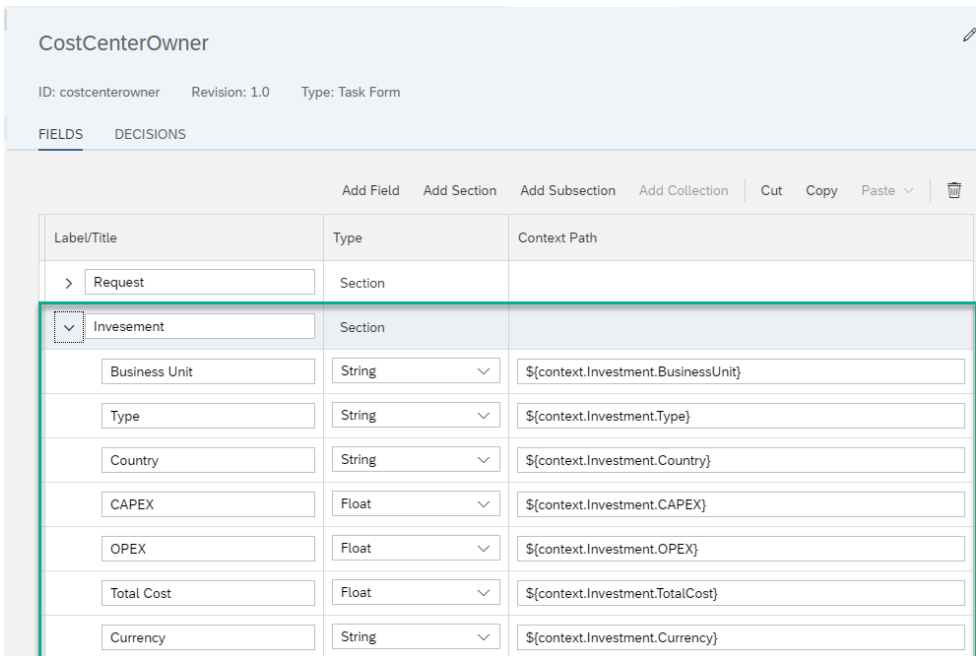
Label/Title	Type	Context Path
Request	Section	
ID	String	\${context.Request.RequestId}
First Name	String	\${context.Request.FirstName}
Last Name	String	\${context.Request.LastName}
Comments	String	\${context.Request.Comments}

58. Add a new Section **Investment**.

59. Add the following Fields.

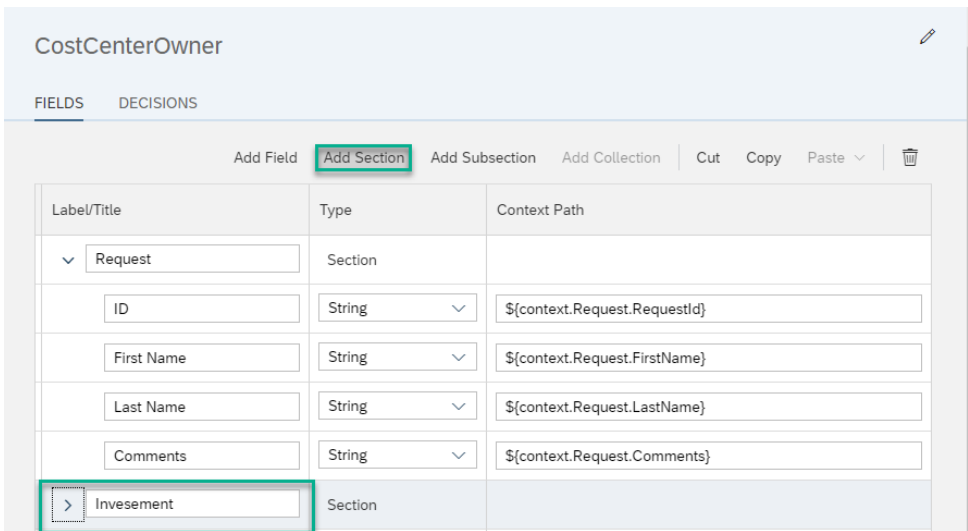
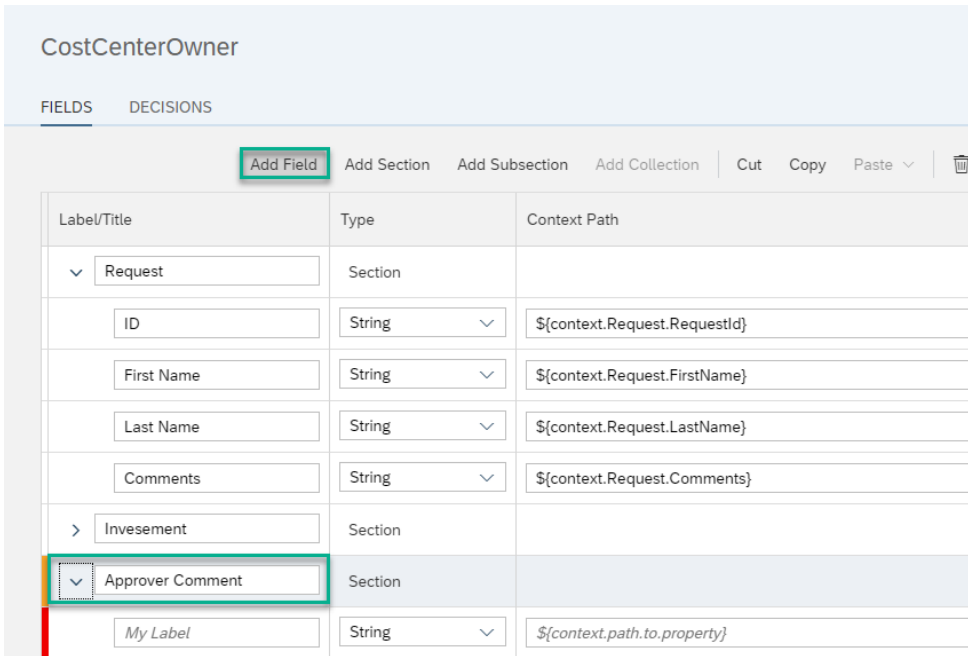
Copy the Context Path from the attached file
CostCenterOwnerApprovalTask

Label	Type	Context Path
Business Unit	String	\${context.Investment.BusinessUnit}
Type	String	\${context.Investment.Type}
Country	String	\${context.Investment.Country}
CAPEX	Float	\${context.Investment.CAPEX}
OPEX	Float	\${context.Investment.TotalCost}
Currency	String	\${context.Investment.Currency}

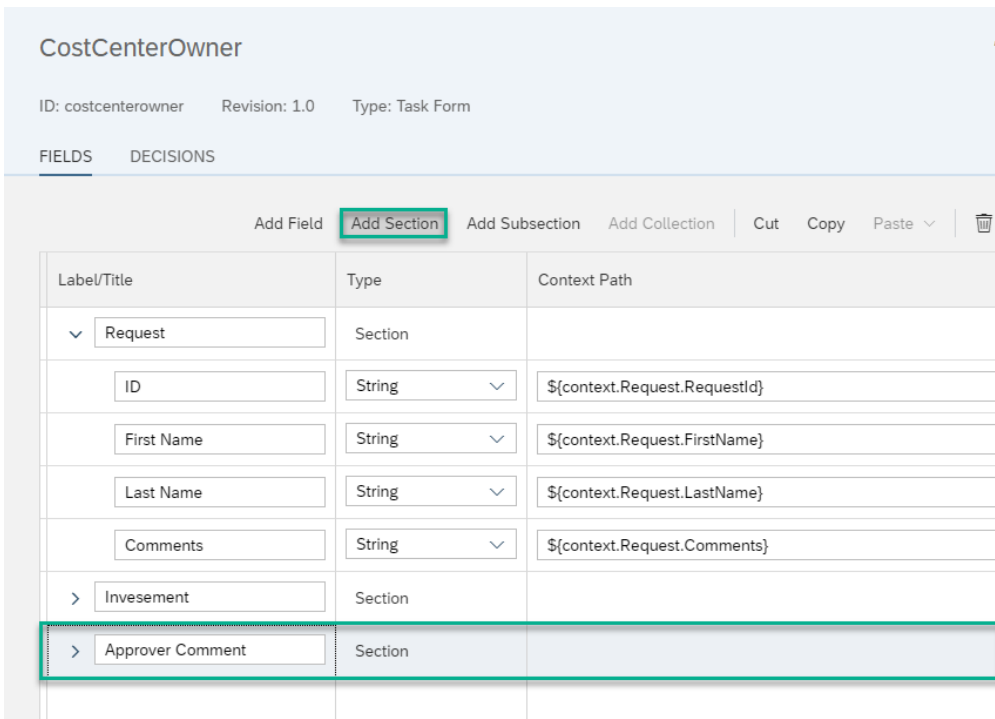
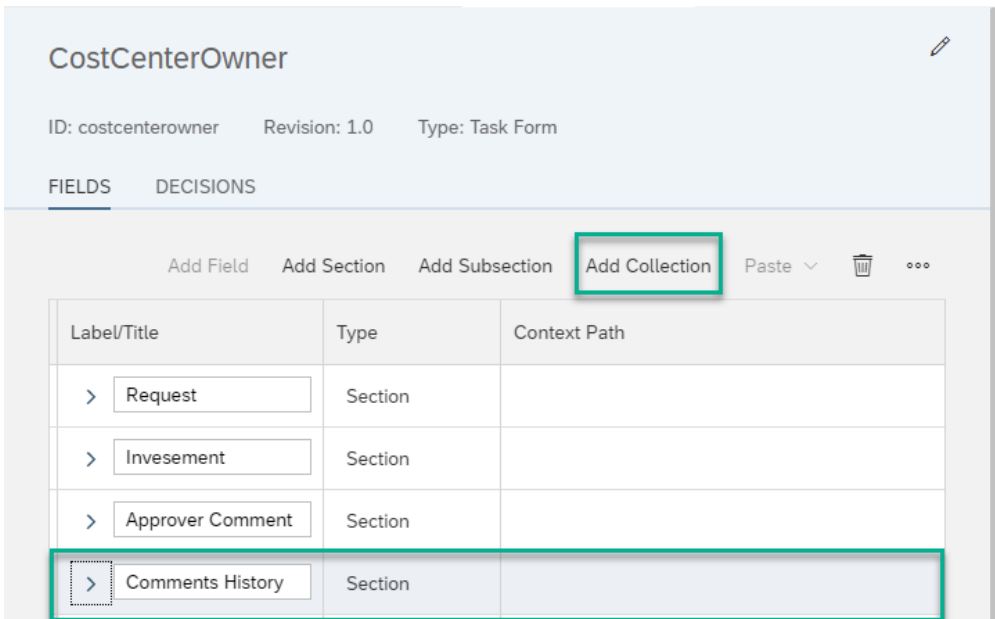


The screenshot shows the 'CostCenterOwner' form with the 'Investment' section expanded. The 'Add Field' button is highlighted. The table below shows the fields added to the 'Investment' section:

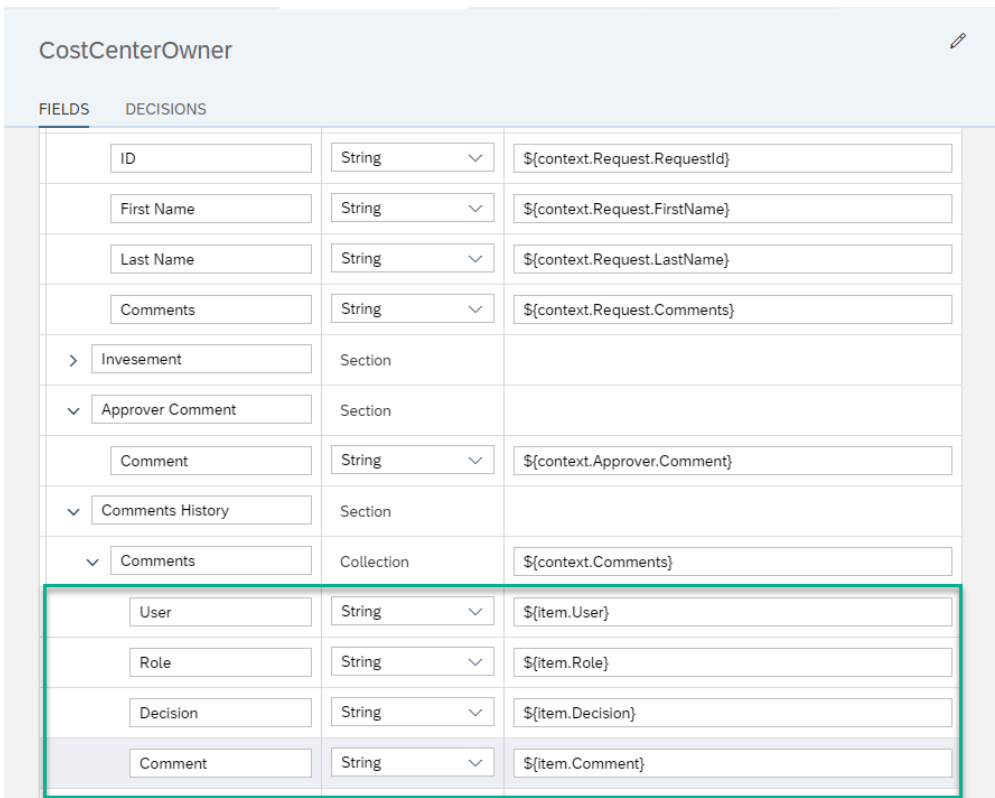
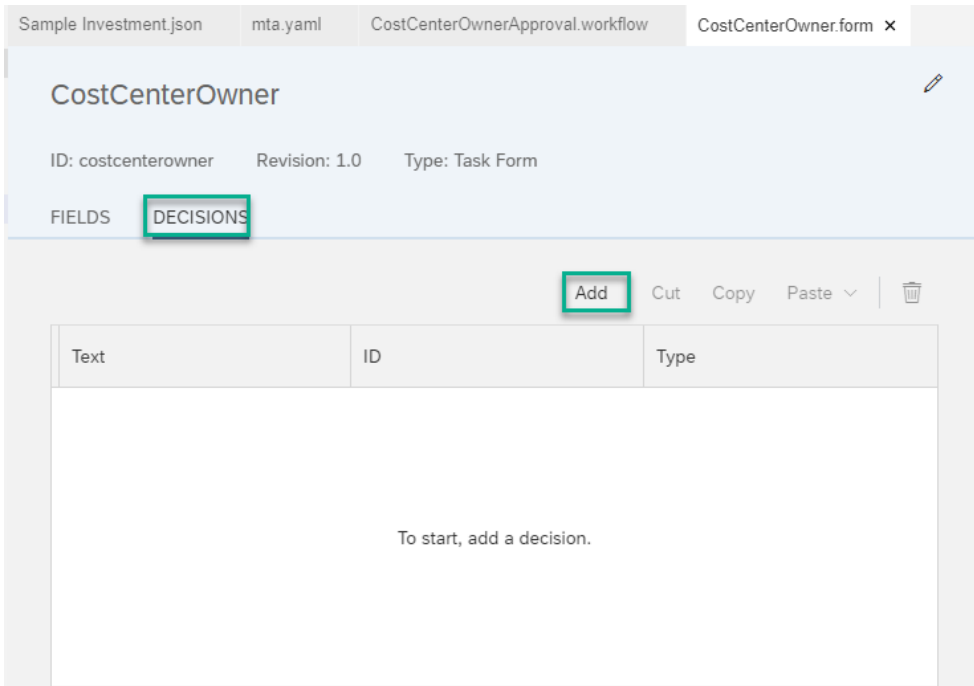
Label/Title	Type	Context Path
Investment	Section	
Business Unit	String	\${context.Investment.BusinessUnit}
Type	String	\${context.Investment.Type}
Country	String	\${context.Investment.Country}
CAPEX	Float	\${context.Investment.CAPEX}
OPEX	Float	\${context.Investment.OPEX}
Total Cost	Float	\${context.Investment.TotalCost}
Currency	String	\${context.Investment.Currency}

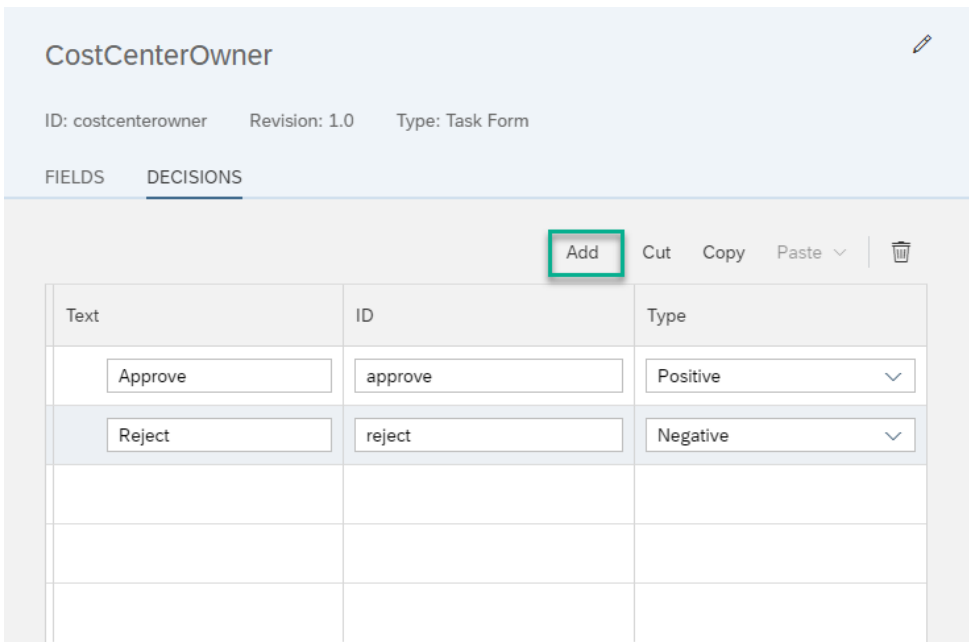
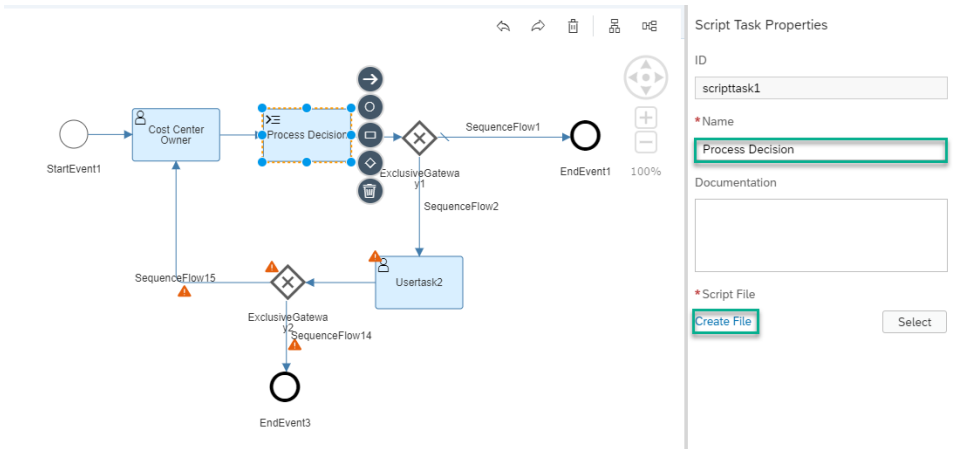
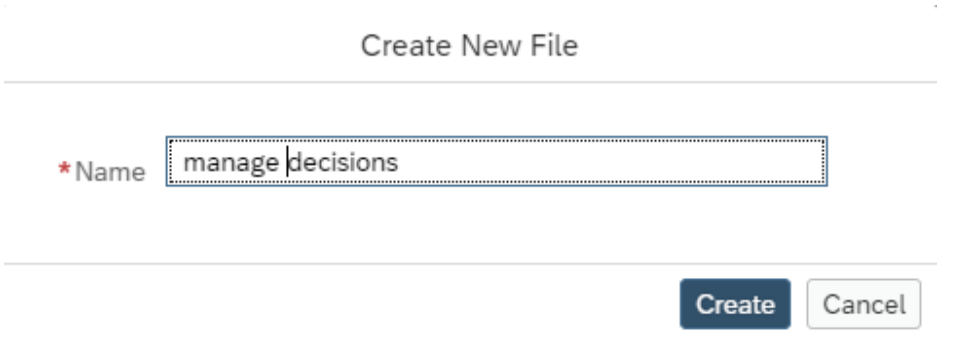
Explanation	Screenshot																											
60. Select section Investment . 61. Click Add Section .	 <p>CostCenterOwner</p> <p>FIELDS DECISIONS</p> <p>Add Field Add Section Add Subsection Add Collection Cut Copy Paste</p> <table><tr><th>Label/Title</th><th>Type</th><th>Context Path</th></tr><tr><td>Request</td><td>Section</td><td></td></tr><tr><td>ID</td><td>String</td><td>\$(context.Request.RequestId)</td></tr><tr><td>First Name</td><td>String</td><td>\$(context.Request.FirstName)</td></tr><tr><td>Last Name</td><td>String</td><td>\$(context.Request.LastName)</td></tr><tr><td>Comments</td><td>String</td><td>\$(context.Request.Comments)</td></tr><tr><td>Investment</td><td>Section</td><td></td></tr></table>	Label/Title	Type	Context Path	Request	Section		ID	String	\$(context.Request.RequestId)	First Name	String	\$(context.Request.FirstName)	Last Name	String	\$(context.Request.LastName)	Comments	String	\$(context.Request.Comments)	Investment	Section							
Label/Title	Type	Context Path																										
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Last Name	String	\$(context.Request.LastName)																										
Comments	String	\$(context.Request.Comments)																										
Investment	Section																											
62. Change the Label/Title of the section as Approver Comment . 63. Click Add Field .	 <p>CostCenterOwner</p> <p>FIELDS DECISIONS</p> <p>Add Field Add Section Add Subsection Add Collection Cut Copy Paste</p> <table><tr><th>Label/Title</th><th>Type</th><th>Context Path</th></tr><tr><td>Request</td><td>Section</td><td></td></tr><tr><td>ID</td><td>String</td><td>\$(context.Request.RequestId)</td></tr><tr><td>First Name</td><td>String</td><td>\$(context.Request.FirstName)</td></tr><tr><td>Last Name</td><td>String</td><td>\$(context.Request.LastName)</td></tr><tr><td>Comments</td><td>String</td><td>\$(context.Request.Comments)</td></tr><tr><td>Investment</td><td>Section</td><td></td></tr><tr><td>Approver Comment</td><td>Section</td><td></td></tr><tr><td>My Label</td><td>String</td><td>\$(context.path.to.property)</td></tr></table>	Label/Title	Type	Context Path	Request	Section		ID	String	\$(context.Request.RequestId)	First Name	String	\$(context.Request.FirstName)	Last Name	String	\$(context.Request.LastName)	Comments	String	\$(context.Request.Comments)	Investment	Section		Approver Comment	Section		My Label	String	\$(context.path.to.property)
Label/Title	Type	Context Path																										
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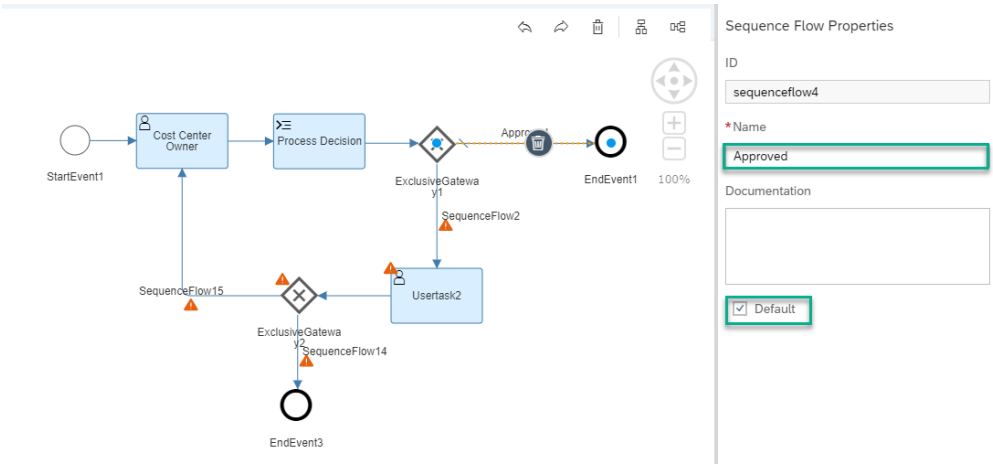
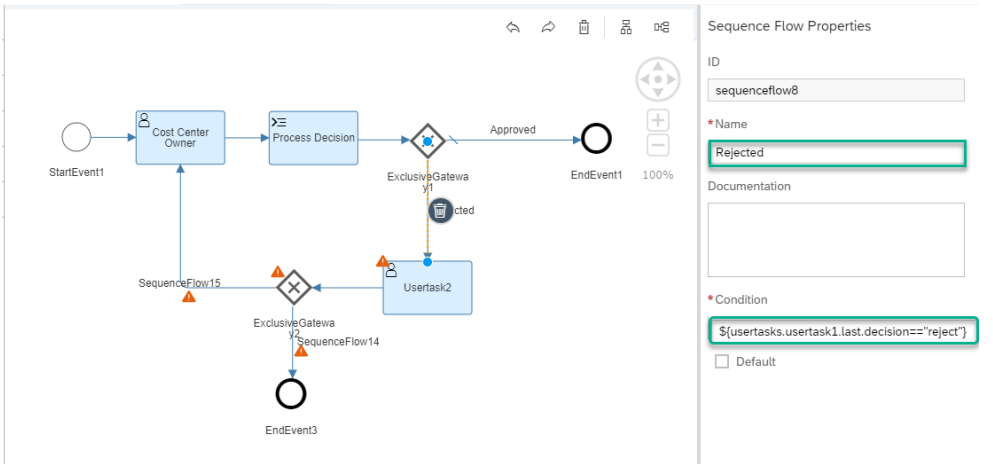
Explanation	Screenshot																											
<div>64. Update the Label/Title of the new Field as Comment.</div> <div>65. Update the Context Path <code>\${context.Approver.Comment}</code></div>	<div><div>CostCenterOwner</div><div><div>FIELDS</div><div>DECISIONS</div></div><div><div>Add Field</div><div>Add Section</div><div>Add Subsection</div><div>Add Collection</div><div>Cut</div><div>Copy</div><div>Paste</div><div></div></div><table><tr><th>Label/Title</th><th>Type</th><th>Context Path</th></tr><tr><td>Request</td><td>Section</td><td></td></tr><tr><td>ID</td><td>String</td><td><code>\${context.Request.RequestId}</code></td></tr><tr><td>First Name</td><td>String</td><td><code>\${context.Request.FirstName}</code></td></tr><tr><td>Last Name</td><td>String</td><td><code>\${context.Request.LastName}</code></td></tr><tr><td>Comments</td><td>String</td><td><code>\${context.Request.Comments}</code></td></tr><tr><td>Investment</td><td>Section</td><td></td></tr><tr><td>Approver Comment</td><td>Section</td><td></td></tr><tr><td>Comment</td><td>String</td><td><code>\${context.Approver.Comment}</code></td></tr></table></div>	Label/Title	Type	Context Path	Request	Section		ID	String	<code>\${context.Request.RequestId}</code>	First Name	String	<code>\${context.Request.FirstName}</code>	Last Name	String	<code>\${context.Request.LastName}</code>	Comments	String	<code>\${context.Request.Comments}</code>	Investment	Section		Approver Comment	Section		Comment	String	<code>\${context.Approver.Comment}</code>
Label/Title	Type	Context Path																										
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Investment	Section																											
Approver Comment	Section																											
Comment	String	<code>\${context.Approver.Comment}</code>																										
<div>66. Select the Comment field.</div> <div>67. Select Control as Text Area.</div> <div>68. Select Height as Medium.</div>	<div><div>UI Configuration</div><div><div>Control</div><div>Text Area</div></div><div><div>Placeholder</div><div>My Placeholder</div></div><div><div>Height</div><div>Medium</div></div></div>																											

Explanation	Screenshot																								
69. Add a new Section. Click Add Section .	 <p>The screenshot shows the 'CostCenterOwner' form with the 'FIELDS' tab selected. The 'Add Section' button is highlighted in a red box. The table below shows the current fields and sections.</p> <table><tr><th>Label/Title</th><th>Type</th><th>Context Path</th></tr><tr><td>Request</td><td>Section</td><td></td></tr><tr><td>ID</td><td>String</td><td>\${context.Request.RequestId}</td></tr><tr><td>First Name</td><td>String</td><td>\${context.Request.FirstName}</td></tr><tr><td>Last Name</td><td>String</td><td>\${context.Request.LastName}</td></tr><tr><td>Comments</td><td>String</td><td>\${context.Request.Comments}</td></tr><tr><td>Invesement</td><td>Section</td><td></td></tr><tr><td>Approver Comment</td><td>Section</td><td></td></tr></table>	Label/Title	Type	Context Path	Request	Section		ID	String	\${context.Request.RequestId}	First Name	String	\${context.Request.FirstName}	Last Name	String	\${context.Request.LastName}	Comments	String	\${context.Request.Comments}	Invesement	Section		Approver Comment	Section	
Label/Title	Type	Context Path																							
Request	Section																								
ID	String	\${context.Request.RequestId}																							
First Name	String	\${context.Request.FirstName}																							
Last Name	String	\${context.Request.LastName}																							
Comments	String	\${context.Request.Comments}																							
Invesement	Section																								
Approver Comment	Section																								
70. Update Label/Title of the newly added Section as Comments History . 71. Click Add Collection .	 <p>The screenshot shows the 'CostCenterOwner' form with the 'FIELDS' tab selected. The 'Add Collection' button is highlighted in a red box. The table below shows the current fields and sections.</p> <table><tr><th>Label/Title</th><th>Type</th><th>Context Path</th></tr><tr><td>Request</td><td>Section</td><td></td></tr><tr><td>Invesement</td><td>Section</td><td></td></tr><tr><td>Approver Comment</td><td>Section</td><td></td></tr><tr><td>Comments History</td><td>Section</td><td></td></tr></table>	Label/Title	Type	Context Path	Request	Section		Invesement	Section		Approver Comment	Section		Comments History	Section										
Label/Title	Type	Context Path																							
Request	Section																								
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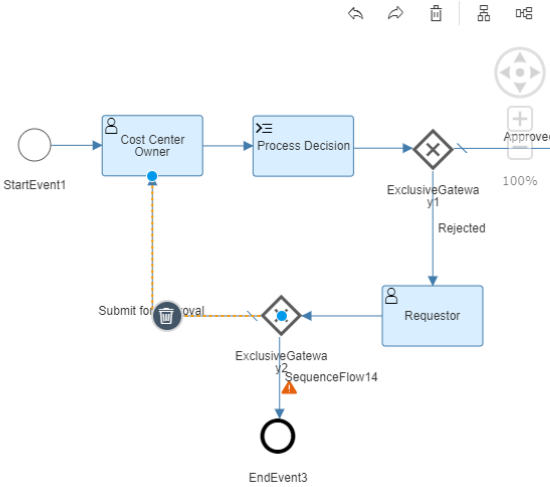
Explanation	Screenshot																																	
72. Update the Label/Title as Comments .	<p>The screenshot shows the 'CostCenterOwner' form editor. The 'Request' section is expanded, showing fields for ID, First Name, Last Name, and Comments. The 'Comments' field is highlighted with a red border, indicating it is the current selection. The 'Context Path' for this field is set to <code>\${context.path.to.property}</code>. The 'Type' is set to 'Collection'.</p> <table><tr><th>Label/Title</th><th>Type</th><th>Context Path</th></tr><tr><td>Request</td><td>Section</td><td></td></tr><tr><td>ID</td><td>String</td><td><code>\${context.Request.RequestId}</code></td></tr><tr><td>First Name</td><td>String</td><td><code>\${context.Request.FirstName}</code></td></tr><tr><td>Last Name</td><td>String</td><td><code>\${context.Request.LastName}</code></td></tr><tr><td>Comments</td><td>String</td><td><code>\${context.Request.Comments}</code></td></tr><tr><td>Investment</td><td>Section</td><td></td></tr><tr><td>Approver Comment</td><td>Section</td><td></td></tr><tr><td>Comment</td><td>String</td><td><code>\${context.Approver.Comment}</code></td></tr><tr><td>Comments History</td><td>Section</td><td></td></tr><tr><td>Comments</td><td>Collection</td><td><code>\${context.path.to.property}</code></td></tr></table>	Label/Title	Type	Context Path	Request	Section		ID	String	<code>\${context.Request.RequestId}</code>	First Name	String	<code>\${context.Request.FirstName}</code>	Last Name	String	<code>\${context.Request.LastName}</code>	Comments	String	<code>\${context.Request.Comments}</code>	Investment	Section		Approver Comment	Section		Comment	String	<code>\${context.Approver.Comment}</code>	Comments History	Section		Comments	Collection	<code>\${context.path.to.property}</code>
Label/Title		Type	Context Path																															
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Comment	String	<code>\${context.Approver.Comment}</code>																																
Comments History	Section																																	
Comments	Collection	<code>\${context.path.to.property}</code>																																
73. Update the Context Path as <code>\${context.Comments}</code> .																																		

Explanation	Screenshot															
<div>74. Select Comments and click Add Field to add the following fields.</div> <div>Copy the Context Path from the attached file <u>CostCenterOwnerApprovalTask</u></div> <table><tr><th>Label</th><th>Type</th><th>Context Path</th></tr><tr><td>User</td><td>String</td><td>\$(item.User)</td></tr><tr><td>Role</td><td>String</td><td>\$(item.Role)</td></tr><tr><td>Decision</td><td>String</td><td>\$(item.Decision)</td></tr><tr><td>Comment</td><td>String</td><td>\$(item.Comment)</td></tr></table>	Label	Type	Context Path	User	String	\$(item.User)	Role	String	\$(item.Role)	Decision	String	\$(item.Decision)	Comment	String	\$(item.Comment)	
Label	Type	Context Path														
User	String	\$(item.User)														
Role	String	\$(item.Role)														
Decision	String	\$(item.Decision)														
Comment	String	\$(item.Comment)														
<div>75. Select DECISIONS.</div> <div>76. Click Add.</div>																

Explanation	Screenshot									
<p>77. Click Add and add the following Decisions.</p> <table><tr><th>Text</th><th>ID</th><th>Type</th></tr><tr><td>Approve</td><td>approve</td><td>Positive</td></tr><tr><td>Reject</td><td>reject</td><td>Negative</td></tr></table>	Text	ID	Type	Approve	approve	Positive	Reject	reject	Negative	
Text	ID	Type								
Approve	approve	Positive								
Reject	reject	Negative								
<p>78. Select the Script Task and enter name as Process Decision.</p> <p>79. Click Create File link.</p>										
<p>80. Enter file name as manage decisions.</p> <p>81. Click Create button.</p>										

Explanation	Screenshot
82. Copy and paste the scripts from the attached manage decisions.js .	<pre>1 2 var lastUserTask1 = \$.usertasks.usertask1.last; 3 \$.context.Approver.UserId = lastUserTask1.processor; 4 \$.context.Approver.decision = lastUserTask1.decision; 5 6 var decision={}; 7 decision.User= lastUserTask1.processor; 8 decision.Role="Cost Center Approver"; 9 decision.Decision = lastUserTask1.decision; 10 decision.Comment=\$.context.Approver.Comment; 11 12 \$.context.Comments.Add(decision); 13 14 \$.context.Approver.UserId = ""; 15 \$.context.Approver.decision = ""; 16 \$.context.Approver.Comment = "";</pre>
83. Select the sequence flow between the exclusive gateway and end event1 . 84. In Sequence flow properties enter Name as Approved. 85. Check the Default checkbox.	
86. Select sequence flow between the ExclusiveGateway1 and UserTask2 . 87. Enter Name as Rejected. 88. Enter the condition as <code>\${usertasks.usertask1.last.decision=="reject"}</code> You may copy the condition from the attached file Exclusive Gateway Conditions .	

Explanation	Screenshot
<div>89. Select UserTask2 and in User Task Properties select GENERAL tab.</div> <div>90. update the Name as Requestor.</div>	<p>The screenshot shows a BPMN process diagram with a 'Requestor' user task. The 'User Task Properties' panel on the right has the 'GENERAL' tab selected. The 'Name' field is set to 'Requestor'. The process diagram includes a 'StartEvent1', a 'Cost Center Owner' task, a 'Process Decision' task, an 'ExclusiveGateway' with 'Approved' and 'Rejected' paths, and an 'EndEvent1'. The 'Requestor' task is connected to the 'Rejected' path of the 'ExclusiveGateway'.</p>
<div>91. Select Details tab.</div> <div>92. Set Subject as Request \${context.Request.RequestId} for Investment Rejected.</div> <div>93. Set Users as \${context.Request.UserId}</div>	<p>The screenshot shows the same BPMN process diagram. The 'User Task Properties' panel on the right has the 'DETAILS' tab selected. The 'Subject' field is set to 'Request \${context.Request.RequestId} for Investment Rejected'. The 'Users' field is set to '\${context.Request.UserId}'. The 'Priority' is set to 'Medium'.</p>
<div>94. Select USER INTERFACE section.</div> <div>95. Select Type as Form.</div> <div>96. Click Select button.</div> <div>You will reuse the same Form modeled for Cost Center Owner approval.</div>	<p>The screenshot shows the same BPMN process diagram. The 'User Task Properties' panel on the right has the 'USER INTERFACE' tab selected. The 'Type' is set to 'Form'. The 'Form Details' section shows a 'File Name' field with a 'Select' button next to it. The 'ID' field is empty, and the 'Revision' field is highlighted in red.</p>

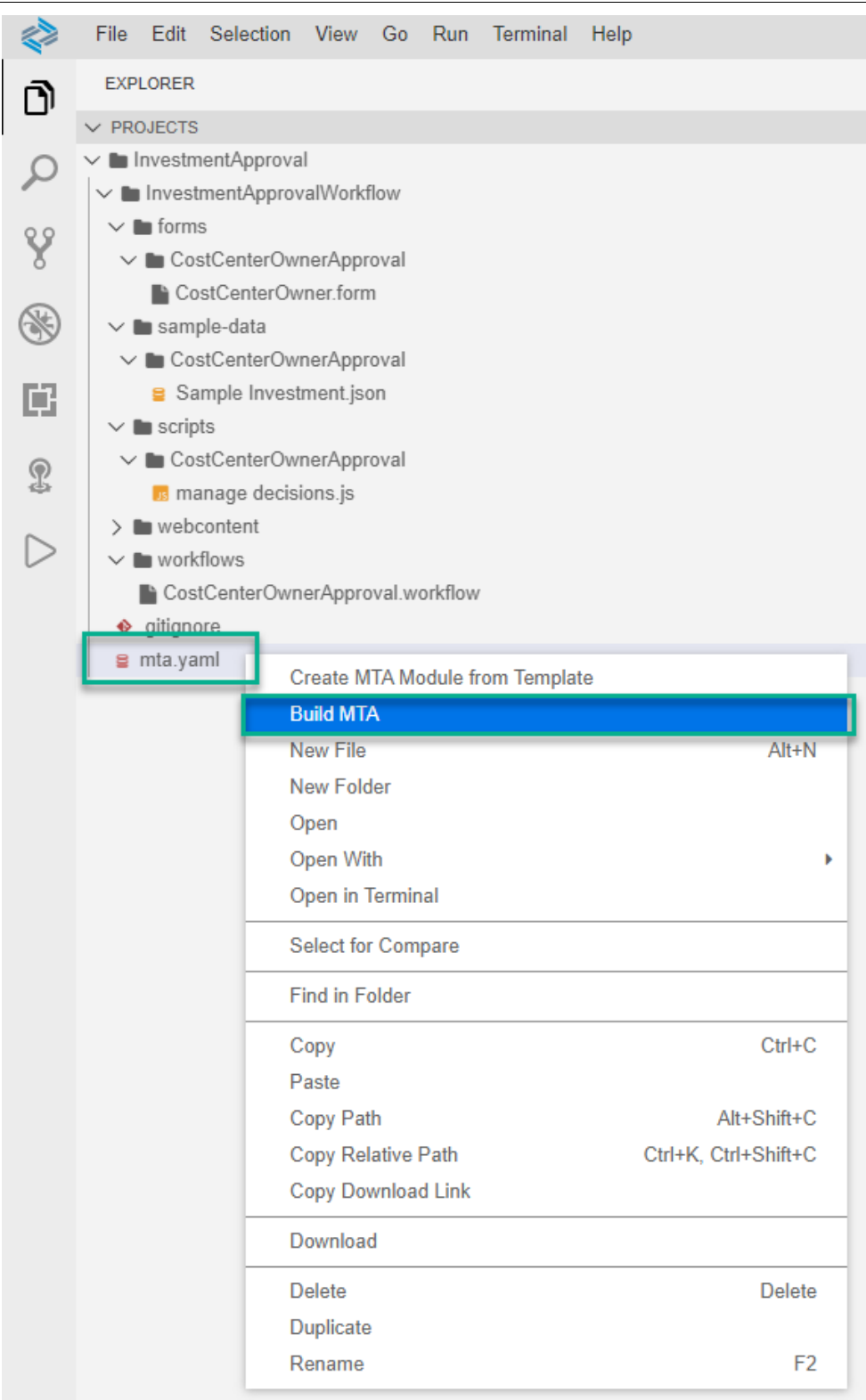
Explanation	Screenshot
<div>97. Select Cost Center Owner as File Name.</div> <div>98. Click OK.</div>	<div><div>Select Form</div><div><div>* Project Name</div><div>home/user/projects/InvestmentApproval/Inv...</div></div><div><div>* File Name</div><div>/forms/Cos...rApproval/CostCenterOwner.</div></div><div><div>* Form Revision</div><div>1.0</div></div><div><div>OK</div><div>Cancel</div></div></div>
<div>99. Select the sequence flow between the Exclusive Gateway and Cost Center Owner user task.</div> <div>100. Enter Name as Submit for Approval</div> <div>101. Check Default check box.</div>	<div><div></div><div><div>Sequence Flow Properties</div><div>ID</div><div>sequenceflow15</div><div>* Name</div><div>Submit for Approval</div><div>Documentation</div><div><div><input checked="" type="checkbox"/> Default</div></div></div></div>

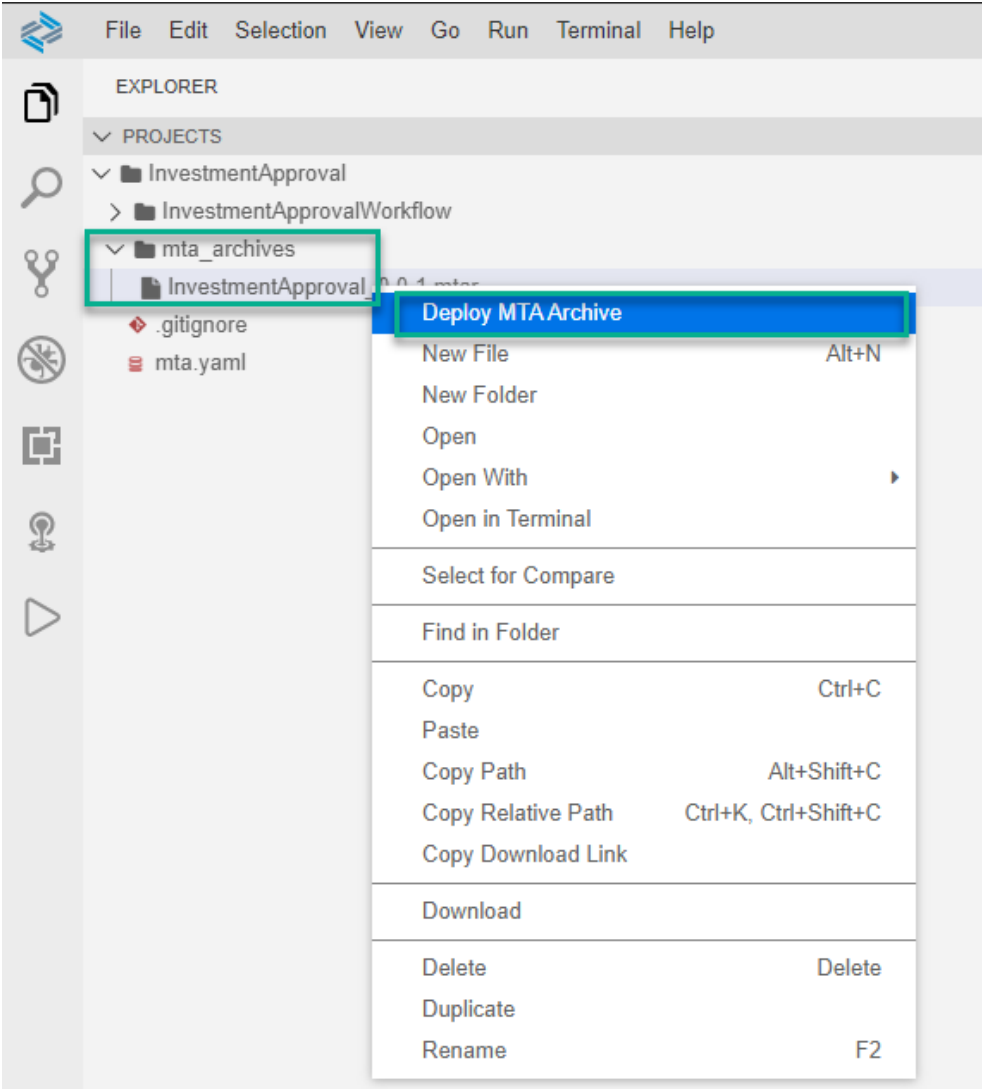

Explanation	Screenshot
<p>102. Select the sequence flow between the Exclusive Gateway and End event3.</p> <p>103. Enter Name as Cancel Request.</p> <p>104. Enter Condition as <code>\${usertasks.usertask2.last.decision=="reject"}</code></p> <p>Make sure the Requestor user task ID is usertask2. If it is different change the ID in the expression.</p> <p>You may copy the condition from the attached file Exclusive Gateway Conditions.</p>	<p>The screenshot displays a BPMN diagram with the following elements: StartEvent1, Cost Center Owner (User Task), Process Decision (Function), ExclusiveGateway1 (Exclusive), Requestor (User Task), and EndEvent3 (End). A sequence flow is being configured from ExclusiveGateway1 to EndEvent3. The properties panel on the right shows the Name 'Cancel Request' and the Condition '\${usertasks.usertask2.last.decision=="reject"}'.</p>

Build and Deploy

- 105. Right click on `mta.yaml` file.
- 106. Select **Build MTA**.

This will start the MTA build and it may take a few seconds to create the mta archive under the folder `mta_archives`.



Explanation	Screenshot
<div>107. Successful build will create a new folder mta_archives and a .mtar file.</div> <div>108. Select the .mtar file and right click.</div> <div>109. Click Deploy MTA Archive.</div>	 <p>The screenshot shows the Visual Studio Code interface. In the Explorer sidebar, the 'InvestmentApprovalWorkflow' folder is expanded, showing a subfolder 'mta_archives' which contains a file 'InvestmentApproval_0.0.1.mtar'. A right-click context menu is open over this file, and the 'Deploy MTA Archive' option is highlighted in blue. Other menu options include 'New File', 'New Folder', 'Open', 'Open With', 'Open in Terminal', 'Select for Compare', 'Find in Folder', 'Copy', 'Paste', 'Copy Path', 'Copy Relative Path', 'Copy Download Link', 'Download', 'Delete', 'Duplicate', and 'Rename'.</p>
<div>110. Successful deployment will show the log.</div>	 <p>The screenshot shows the 'Problems' panel in VS Code, displaying the output of the 'Task: Deploy MTA Archive'. The log shows the upload of the .mtar file and the successful deployment of the 'workflow_mta' service. The log text is as follows:</p> <pre>Uploading 1 files... /home/user/projects/InvestmentApproval/mta_archives/InvestmentApproval_0.0.1.mtar OK Operation ID: c443e49b-318f-11eb-a634-eeee0a8b72e6 Deploying in org "DEV264" and space "dev" Detected MTA schema version: "3" No deployed MTA detected - this is initial deployment Detected new MTA version: "0.0.1" Processing service "workflow_mta"... Creating service "workflow_mta" from MTA resource "workflow_mta"... 1 of 1 done Creating service key "InvestmentApprovalWorkflow-workflow_mta-credentials" for service "workflow_mta"... Uploading content module "InvestmentApprovalWorkflow" in target service "workflow_mta"... Deploying content module "InvestmentApprovalWorkflow" in target service "workflow_mta"... Skipping deletion of services, because the command line option "--delete-services" is not specified. Process finished. Use "cf dmol -i c443e49b-318f-11eb-a634-eeee0a8b72e6" to download the logs of the process. Terminal will be reused by tasks.</pre>

SUMMARY

You have modeled a workflow and successfully deployed in your SAP Cloud Platform trial account. In the Next hands on guide, you will Execute and Monitor the Workflow. Please see more details on SAP Cloud platform Workflow in [help portal](#).

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