

PUBLIC

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

DEV-264

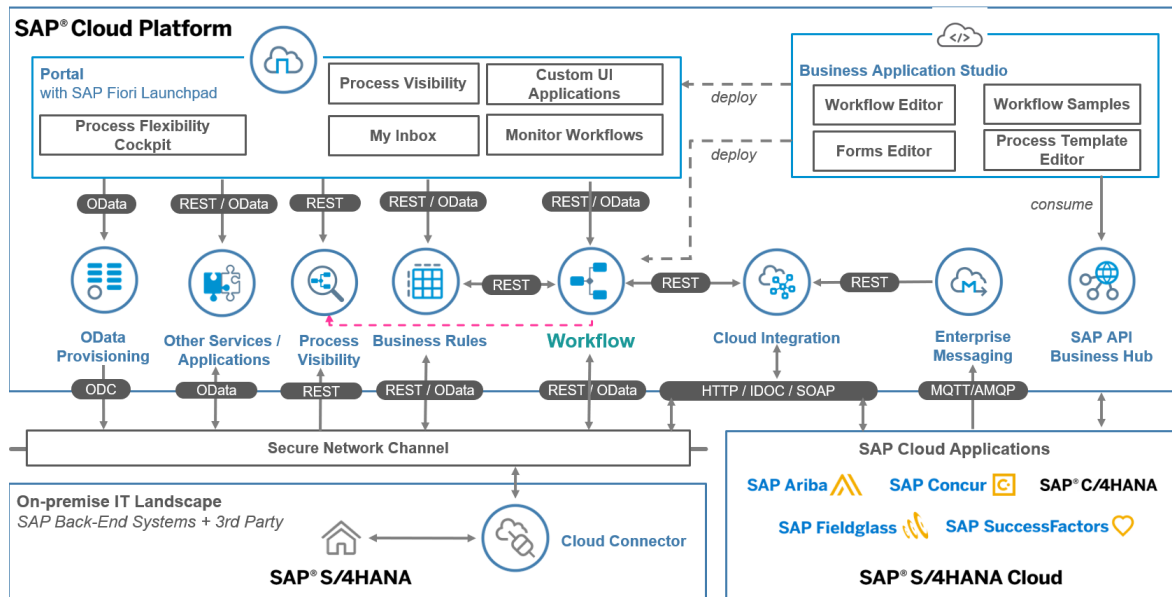
Exercises / Solutions  
Venugopal Chembrakalathil / SAP SE

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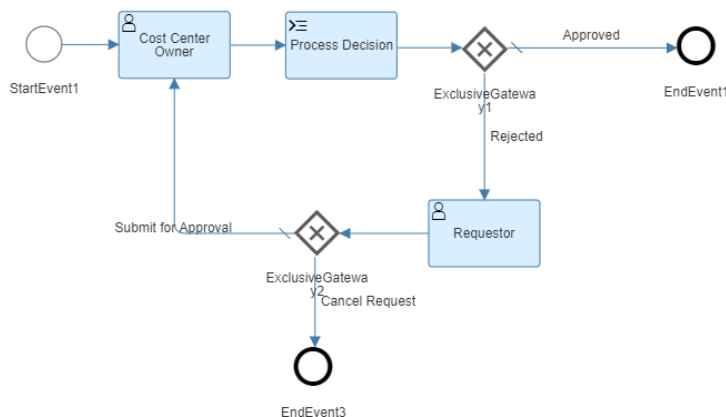
SAP Cloud Platform Workflow Management has Workflow capability enable developers to model workflow based on BPMN 2.0 using SAP Cloud Platform Business Application Studio and deploy to Cloud platform accounts. A workflow consists of different activities, events and gateways. It provides fine granular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

## SAP Cloud Platform Workflow – the bigger picture



## SCENARIO

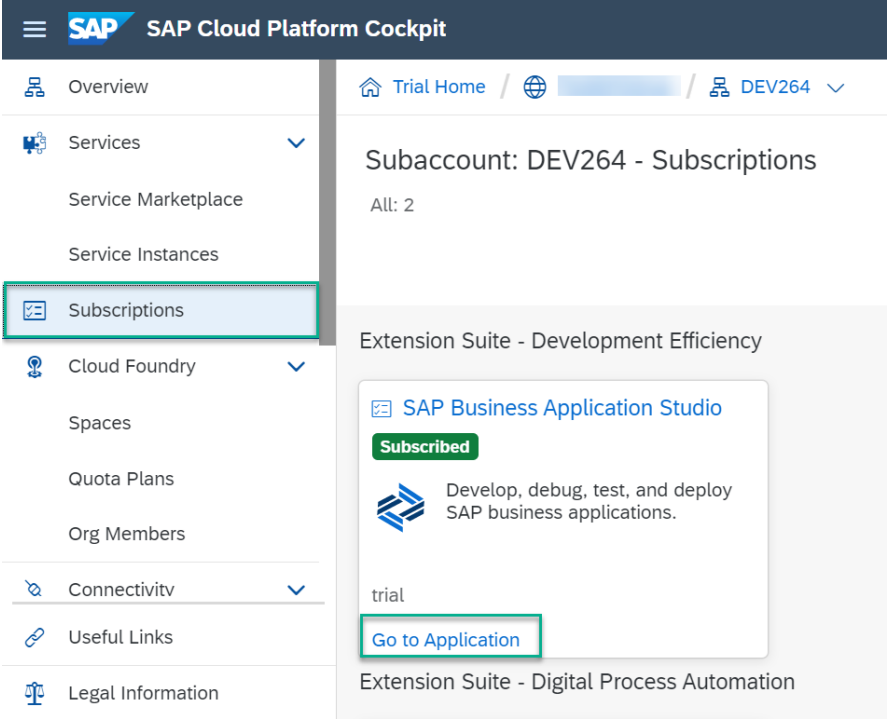
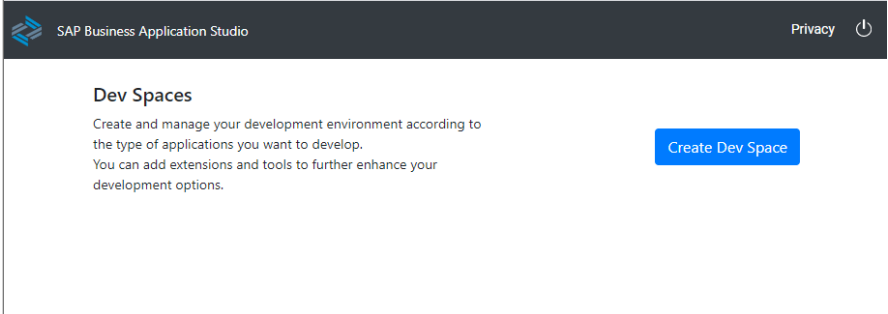
The scenario is an Investment Approval Workflow. A requestor creates a request for approval and Approver can decide Approve or Reject. A rejection enables the requestor to modify the request and submit or cancel the request.

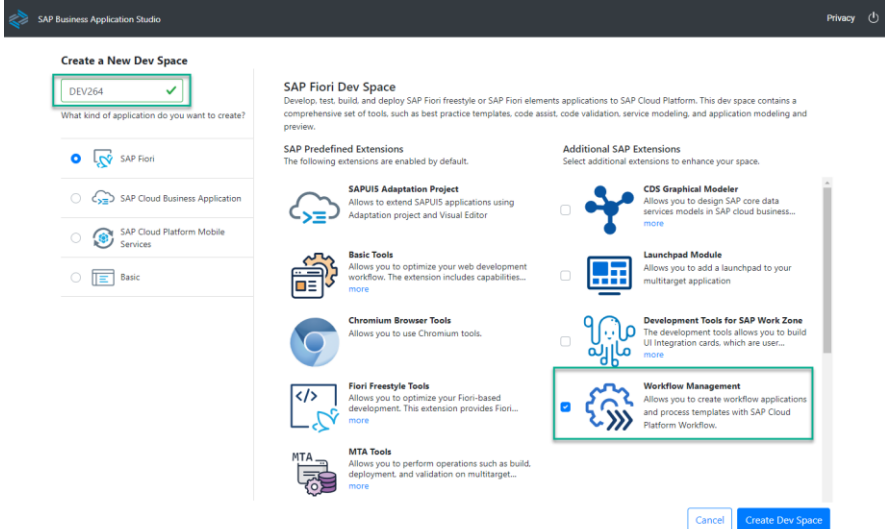
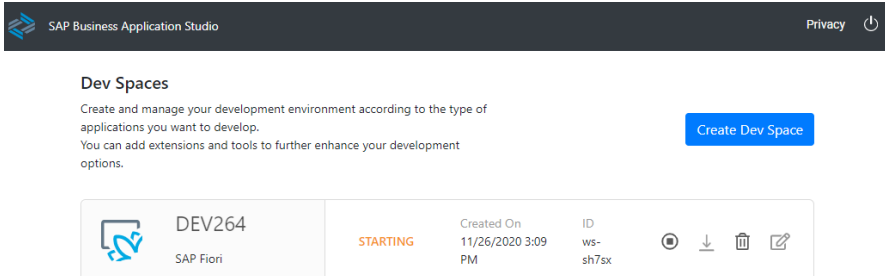
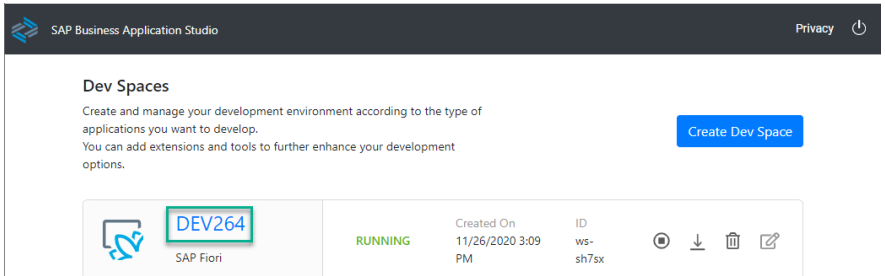


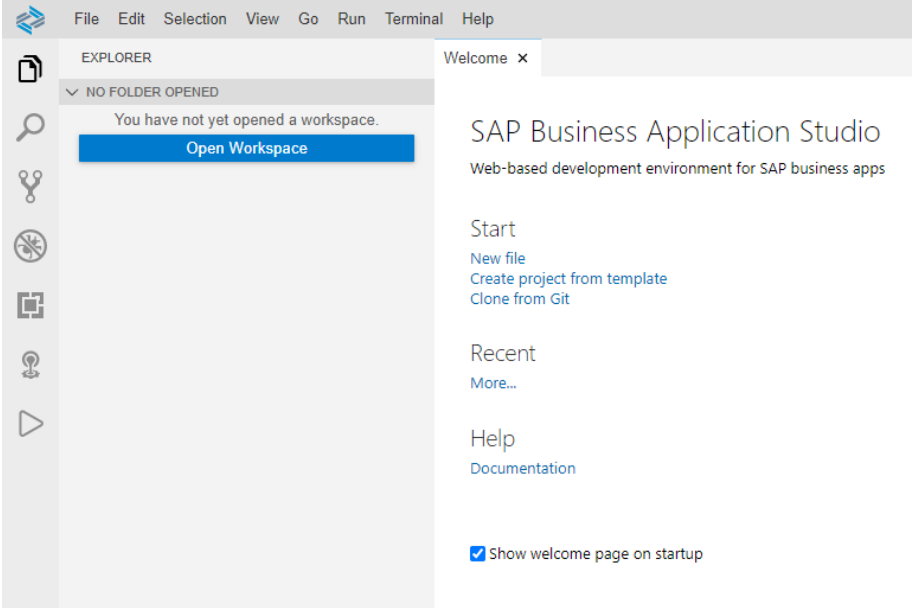
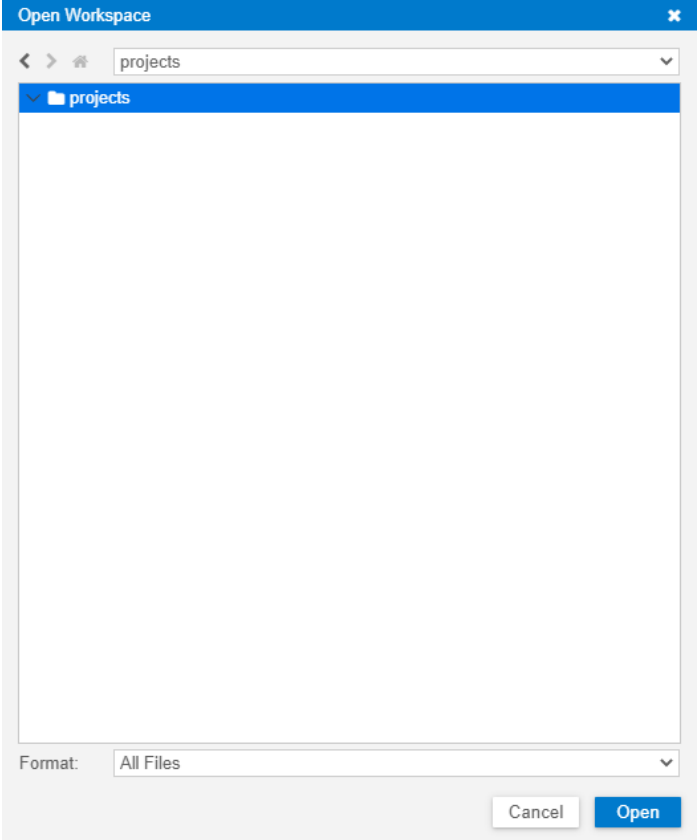
## Prerequisite

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

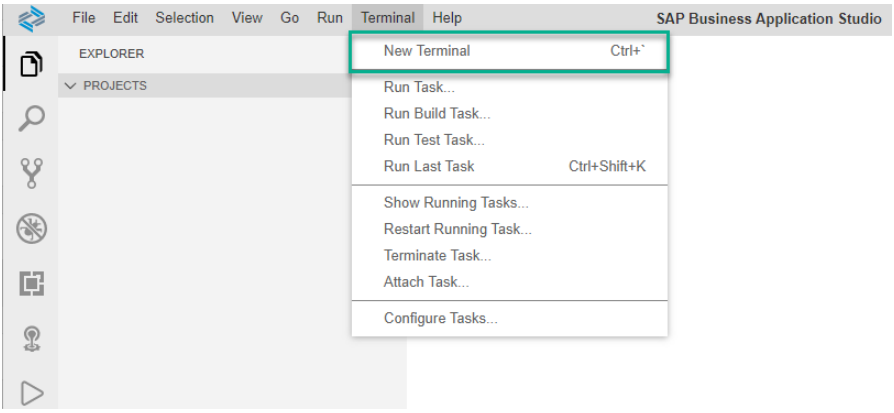
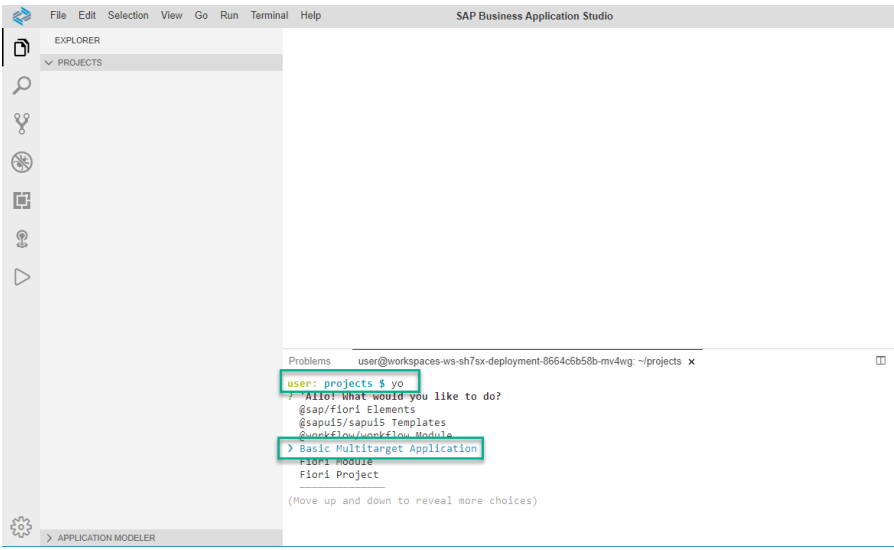
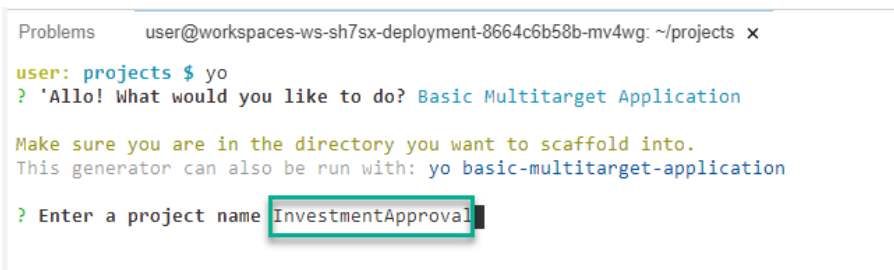
## MODEL WORKFLOW – INVESTMENT APPROVAL WORKFLOW

Explanation	Screenshot
<ol style="list-style-type: none"> <li>1. Select <b>Subscriptions</b> in your Sub Account and you see the subscribed applications.</li> <li>2. Select <b>SAP Business Application Studio</b> and click <b>Go to Application</b>.</li> </ol> <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.</p>
<p><b>Create Workspace</b></p> <ol style="list-style-type: none"> <li>3. Click <b>Create Dev Space</b> button.</li> </ol>	 <p>The screenshot shows the SAP Business Application Studio interface. The header bar includes the SAP Business Application Studio logo, a 'Privacy' link, and 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>


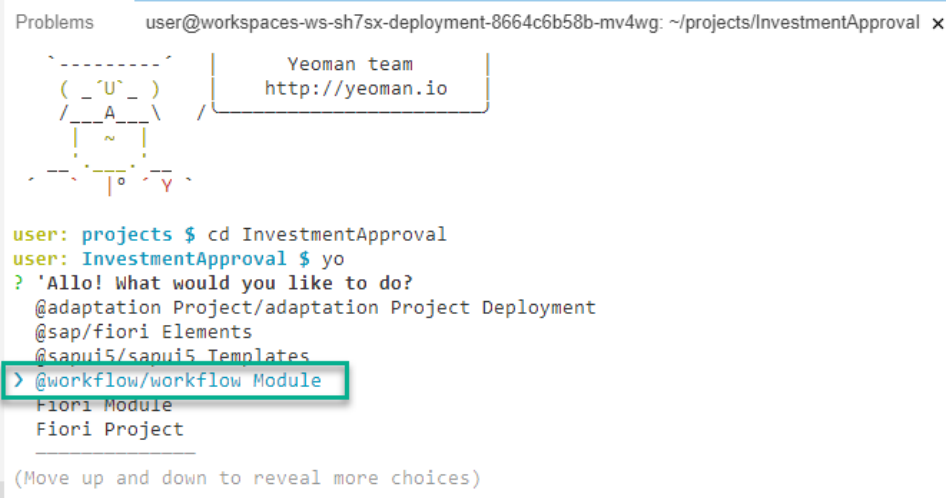
Explanation	Screenshot
<ol style="list-style-type: none"> <li>Enter Dev Space</li> <li>Select <b>Workflow Management</b> from Additional SAP Extensions.</li> <li>Click <b>Create Dev Space</b></li> </ol>	 <p>The screenshot shows the 'Create a New Dev Space' dialog in SAP Business Application Studio. The 'DEV264' text box is highlighted with a green border. The 'Workflow Management' extension is selected under 'Additional SAP Extensions'.</p>
<ol style="list-style-type: none"> <li>Setting up the Dev Space will take couple of minutes and show the status as <b>STARTING</b>. Wait until the status changing to <b>RUNNING</b>.</li> </ol>	 <p>The screenshot shows the 'Dev Spaces' page in SAP Business Application Studio. The 'DEV264' space is shown with a status of 'STARTING'.</p>
<ol style="list-style-type: none"> <li>Click your Dev Space.</li> </ol>	 <p>The screenshot shows the 'Dev Spaces' page in SAP Business Application Studio. The 'DEV264' space is shown with a status of 'RUNNING'.</p>

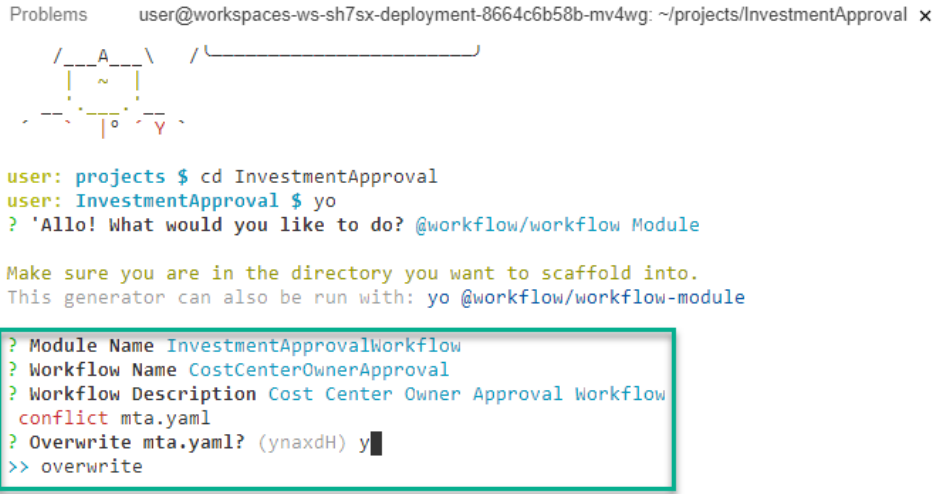
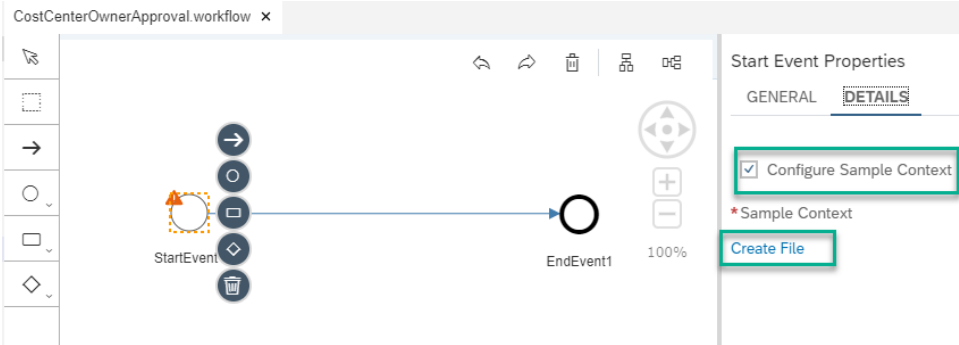
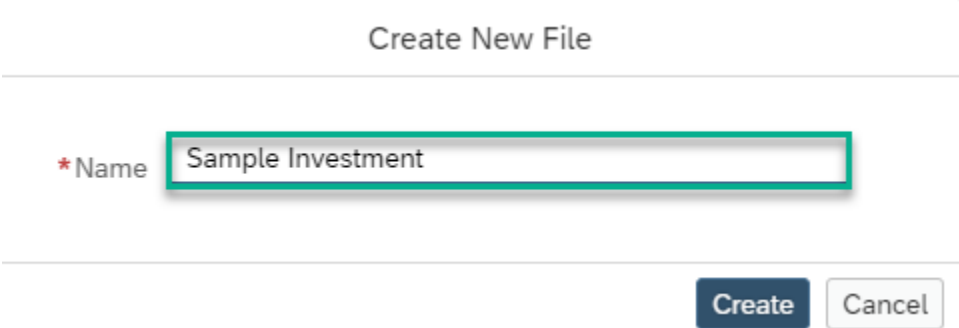
Explanation	Screenshot
9. Click <b>Open Workspace</b> .	 <p>The screenshot shows the SAP Business Application Studio interface. The Explorer view on the left displays 'NO FOLDER OPENED' and a message 'You have not yet opened a workspace.' with a blue 'Open Workspace' button. The main area shows the 'Welcome' page with options to 'Start' (New file, Create project from template, Clone from Git), 'Recent' (More...), and 'Help' (Documentation). A checkbox 'Show welcome page on startup' is checked.</p>
10. Select <b>Projects</b> and click <b>Open</b> button.	 <p>The screenshot shows the 'Open Workspace' dialog box. The 'projects' folder is selected in the file list. The 'Format' dropdown is set to 'All Files'. The 'Open' button is highlighted in blue.</p>

Explanation	Screenshot
<p><b>Configure Cloud Foundry End Point</b></p> <p>11. Click the message in the bottom to configure the endpoint for deployment.</p>	
<p>12. Select the <b>Cloud Foundry Endpoint</b>.</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 <b>e-mail</b> address used as your user in in Cloud Platform.</p> <p>13. Subsequently enter your <b>password</b>, Cloud Platform Trial <b>Sub Account</b> and Cloud Foundry <b>Space</b>.</p>	

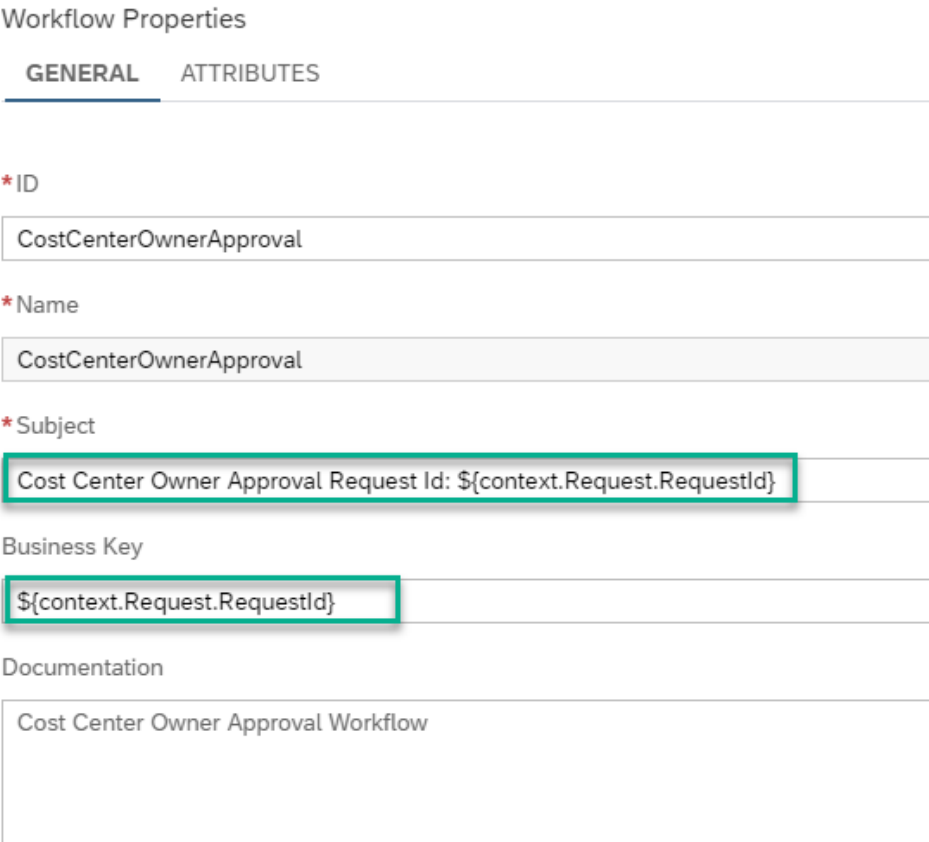
Explanation	Screenshot
<p><b>Create Multi Target Application Project</b></p> <p>14. Select Terminal → New Terminal</p>	 <p>The screenshot shows the SAP Business Application Studio interface. The 'Terminal' menu is open, and 'New Terminal' is highlighted with a red box. The keyboard shortcut 'Ctrl+' is also visible next to it. Other options in the menu include 'Run Task...', 'Run Build Task...', 'Run Test Task...', 'Run Last Task' (with shortcut '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 <b>yo</b> and press enter key.</p> <p>17. Select project type as <b>Basic Multitarget Application</b> 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 in the list 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 <b>project name</b> 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 'Enter a project name'. The prompt 'user: projects \$ yo' is visible at the top of the terminal output.</p>



Explanation	Screenshot
<p>19. Use <b>cd InvestmentApproval</b> to move the new project directory.</p> <p>20. Type <b>yo</b> 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 <b>@workflow/workflow Module</b> from the list using up/down arrow keys.</p>	 <pre> Problems  user@workspaces-ws-sh7sx-deployment-8664c6b58b-mv4wg: ~/projects/InvestmentApproval x  Bye from us! Chat soon. 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 &gt; @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><b>Module Name:</b> InvestmentApprovalWorkflow</p> <p><b>Workflow Name:</b> CostCenterOwnerApproval</p> <p><b>Workflow Description:</b> Cost Center Owner Approval Workflow</p> <p><b>Overwrite mta.yaml:</b> 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 &gt;&gt; overwrite </pre>
<p><b>Configure Sample Context</b></p> <p>23. The new workflow is opened in the workflow editor.</p> <p>24. Select the <b>Start event</b> and Select <b>DETAILS</b> section of Start Event properties.</p> <p>25. Check <b>Configure Sample Context</b>.</p> <p>26. Click link <b>Create File</b>.</p>	
<p>27. Enter Name as <b>Sample Investment</b></p> <p>A new file is opened a default sample context.</p>	

Explanation	Screenshot
<p>28. Copy and paste the content from the file <a href="#">Sample Investment.json</a> shared in the Git repository.</p> <p>Please replace <b>FirstName</b>, <b>LastName</b>, <b>Email</b>, <b>UserId</b> with your details. User Id is your cloud platform trial user id.</p> <p>The context has three Elements.</p> <p><b>Request:</b> Requestor info including Request Id</p> <p><b>Investment:</b> Details about the investment</p> <p><b>Approver:</b> 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 <b>GENERAL</b> Tab from Workflow Properties.</p> <p>30. Enter the following</p> <p><b>Subject:</b> Cost Center Owner Approval Request Id: <code>\${context.Request.RequestId}</code></p> <p><b>Business Key:</b> <code>\${context.Request.RequestId}</code></p>	 <p>The screenshot shows the 'Workflow Properties' dialog box with the 'GENERAL' tab selected. The 'ID' field is populated with 'CostCenterOwnerApproval'. The 'Name' field is also populated with 'CostCenterOwnerApproval'. The 'Subject' field contains the text 'Cost Center Owner Approval Request Id: \${context.Request.RequestId}'. The 'Business Key' field contains the text '\${context.Request.RequestId}'. The 'Documentation' field contains the text 'Cost Center Owner Approval Workflow'.</p>

Explanation	Screenshot
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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

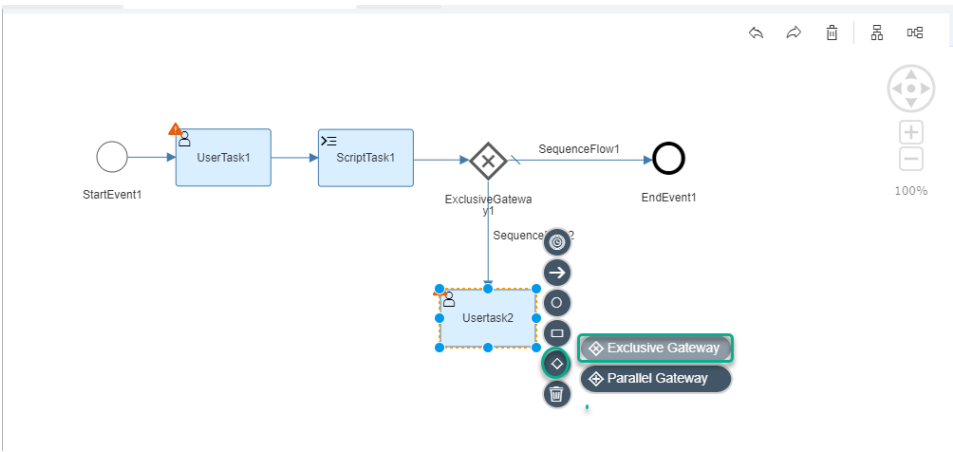
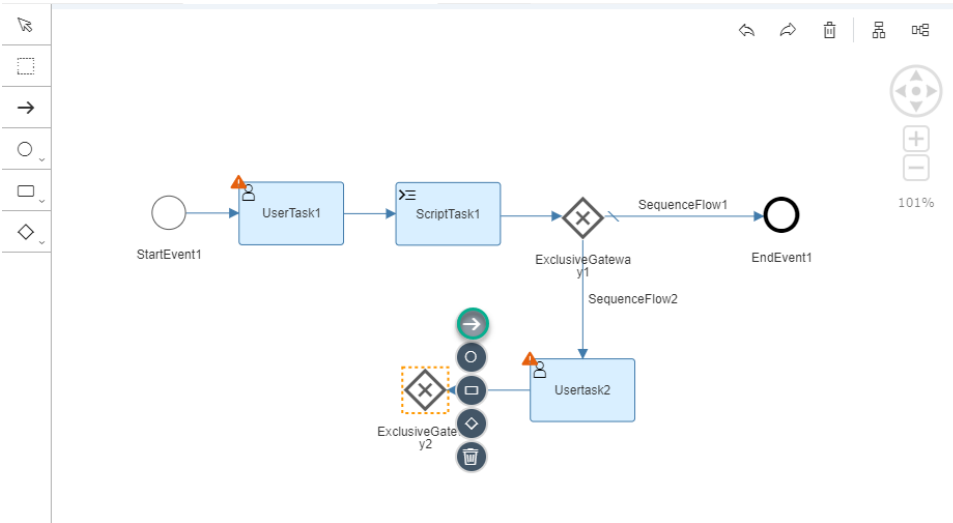
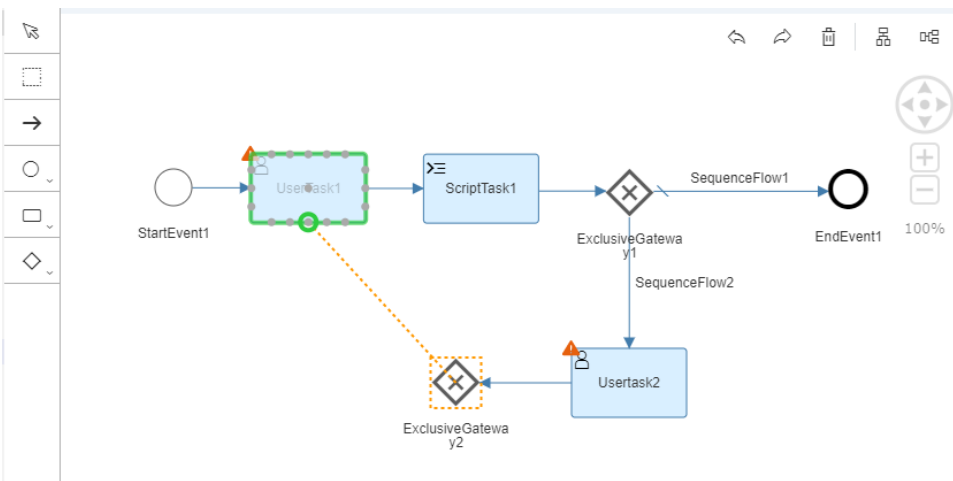
GENERAL ATTRIBUTES

Add Delete Move Up Move Down

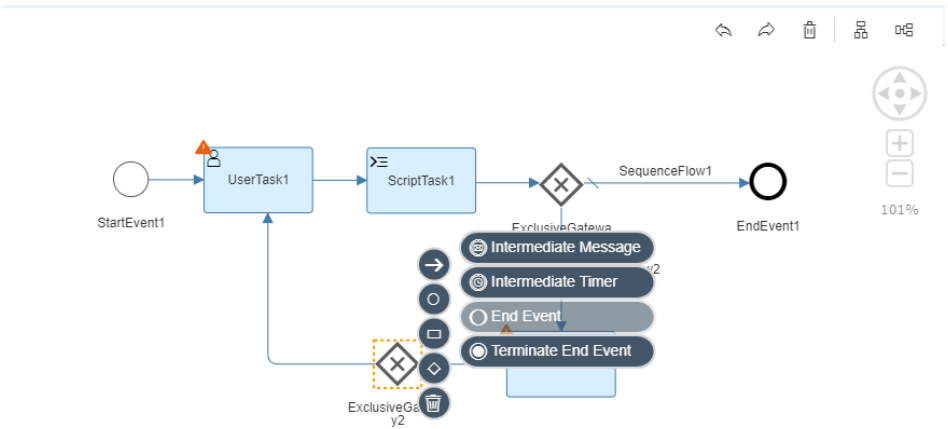
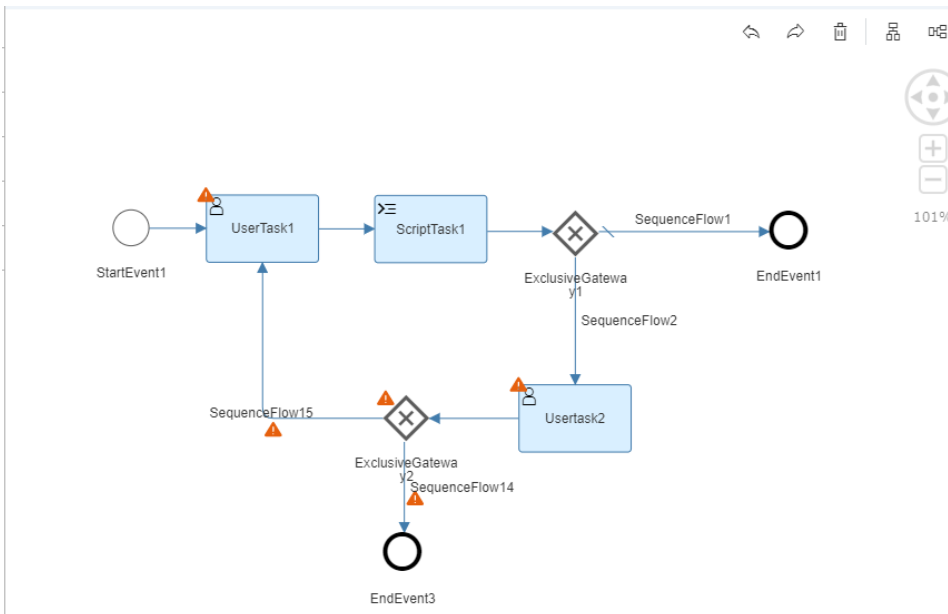
<input type="checkbox"/>	ID	Label	Type	Value
<input type="checkbox"/>	ApproverEmail	Approver Email	String	\${context.Approv...}
<input type="checkbox"/>	Decision	Decision	String	\${context.Decision}
<input type="checkbox"/>	Approver	Approver	String	\${context.Approv...}
<input type="checkbox"/>	Currency	Currency	String	\${context.Investm...}
<input type="checkbox"/>	TotalCost	Total Cost	String	\${context.Investm...}
<input type="checkbox"/>	OPEX	OPEX	String	\${context.Investm...}
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<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...}

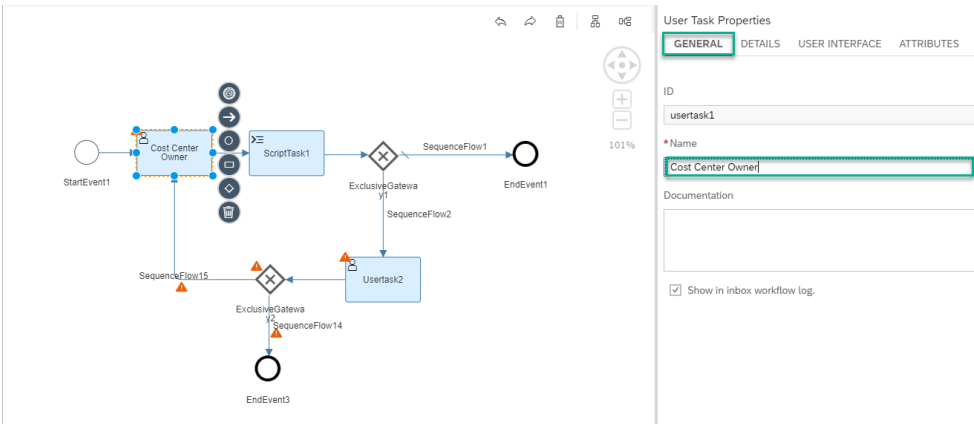
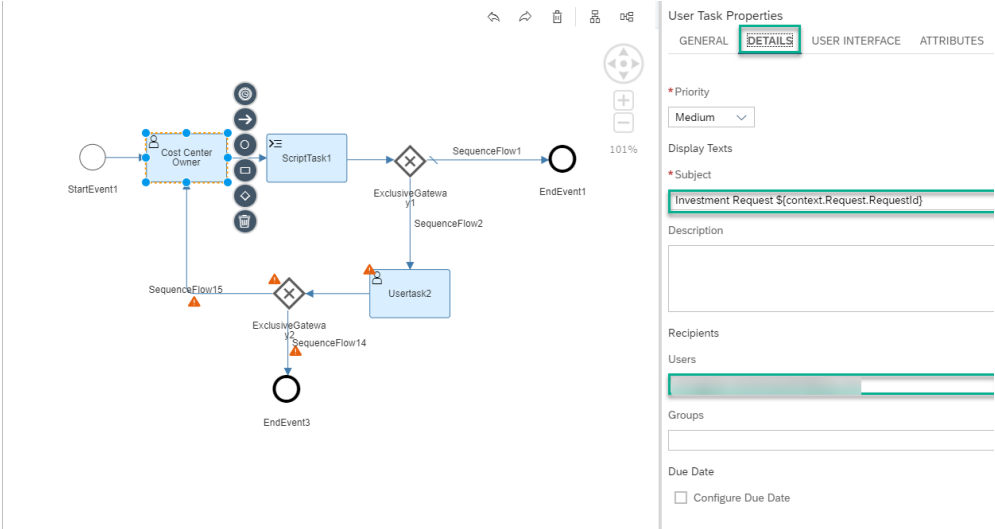
Explanation	Screenshot
<p>33. Before start modeling, please <b>drag and drop</b> the <b>EndEvent1</b> towards the right side of the editor to keep some space between <b>Start and End Event</b>.</p> <p>34. Select the <b>StartEvent</b>, use the speed button and select <b>User Task</b>.</p> <p>A user task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

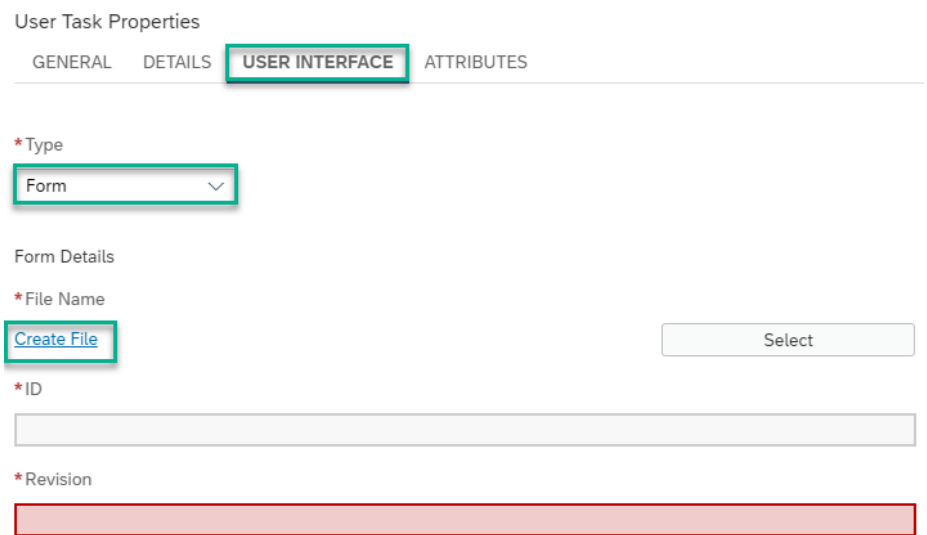
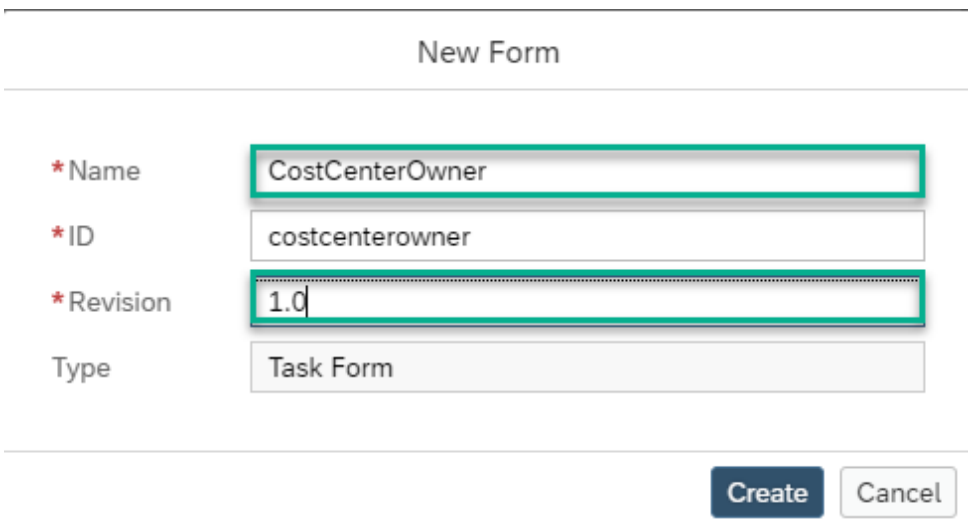
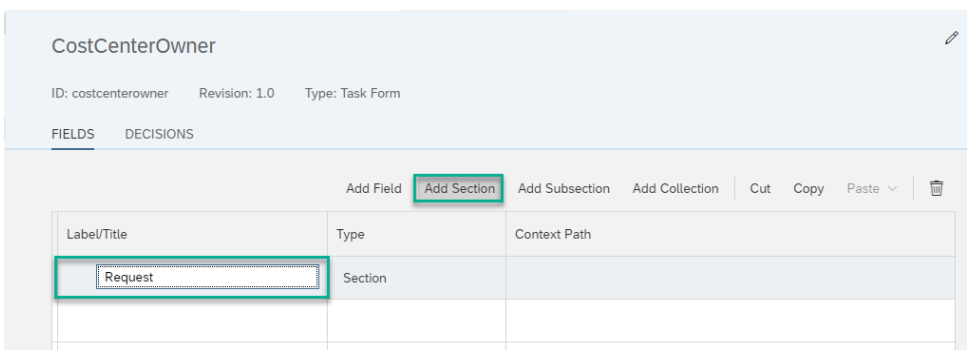
Explanation	Screenshot
<div>39. Select a <b>User Task</b> from the palette.</div> <div>40. Drag and drop the <b>User Task</b> just below the <b>Exclusive Gateway</b>.</div>	<p>The screenshot shows the BPMN editor interface. The top toolbar includes icons for undo, redo, delete, and zoom. The left palette lists task types: User Task, Service Task, Script Task, and Mail Task. The main diagram area shows a workflow starting with a StartEvent1, followed by a User Task1, then a ScriptTask1, and an ExclusiveGateway y1. The 'User Task' is highlighted in the palette, and a green arrow indicates it being dragged to a new position below the ExclusiveGateway y1.</p>
<div>41. Use <b>Sequence Flow</b> from Exclusive Gateway to the new User Task.</div>	<p>The screenshot shows the BPMN editor interface. The top toolbar includes icons for undo, redo, delete, and zoom. The left palette lists task types: User Task, Service Task, Script Task, and Mail Task. The main diagram area shows a workflow starting with a StartEvent1, followed by a User Task1, then a ScriptTask1, and an ExclusiveGateway y1. A new User Task2 is added below the ExclusiveGateway y1. A green arrow indicates a sequence flow being added from the ExclusiveGateway y1 to the new User Task2.</p>

Explanation	Screenshot
42. Select <b>User Task2</b> and choose <b>Exclusive Gateway</b> .	
43. Select newly added <b>Exclusive Gateway</b> and choose <b>Sequence Flow</b> from the speed button.	
44. Drag and drop to <b>User Task1</b> .	



Explanation	Screenshot
<p>45. Select <b>Exclusive Gateway2</b> and choose <b>End Event</b> from speed button.</p>	 <p>The screenshot shows a BPMN editor interface. The main diagram area contains a workflow model starting with 'StartEvent1' (a circle with a triangle), followed by 'UserTask1' (a rounded rectangle), 'ScriptTask1' (a rectangle with a script icon), and 'ExclusiveGateway1' (a diamond with an 'X'). A 'SequenceFlow1' connects the gateway to 'EndEvent1' (a circle). A palette on the right side of the editor shows various BPMN elements: 'Intermediate Message', 'Intermediate Timer', 'End Event' (selected), and 'Terminate End Event'. Below the palette, a dashed box highlights 'ExclusiveGateway2' in the diagram. The editor also shows a toolbar with navigation and zoom controls, and a zoom level of 101%.</p>
<p>46. The workflow model sequence modeling has completed. Do necessary formatting if required.</p>	 <p>The screenshot shows the same BPMN editor interface as the previous one, but with a more complex workflow model. The main diagram area contains a workflow model starting with 'StartEvent1' (a circle with a triangle), followed by 'UserTask1' (a rounded rectangle), 'ScriptTask1' (a rectangle with a script icon), and 'ExclusiveGateway1' (a diamond with an 'X'). A 'SequenceFlow1' connects the gateway to 'EndEvent1' (a circle). Below this, there is another 'ExclusiveGateway2' (a diamond with an 'X') which connects to 'UserTask2' (a rounded rectangle). 'UserTask2' is connected to 'ExclusiveGateway2' by 'SequenceFlow14'. 'ExclusiveGateway2' is also connected to 'EndEvent3' (a circle) by 'SequenceFlow14'. 'ExclusiveGateway1' is connected to 'ExclusiveGateway2' by 'SequenceFlow15'. The editor also shows a toolbar with navigation and zoom controls, and a zoom level of 101%.</p>

Explanation	Screenshot
<p>47. Select <b>User Task1</b> and <b>User Task Properties</b>.</p> <p>48. Under <b>GENERAL</b> section, change the Name as <b>Cost Center Owner</b>.</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 <b>DETAILS</b> section and set the following.</p> <p><b>Subject:</b> Investment Request <code>\${context.Request.RequestId}</code></p> <p><b>Users:</b> Your Cloud Platform User Id (email id)</p>	 <p>The screenshot shows the same BPMN editor interface. The 'User Task Properties' panel is still open, but the 'DETAILS' tab is now selected. 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><b>Create Workflow Forms</b></p> <p>50. Select <b>USER INTERFACE</b> section.</p> <p>51. Change the type as <b>Form</b>.</p> <p>52. Click the link <b>Create File</b>.</p> <p>A popup window is available now to enter Form details.</p>	 <p>User Task Properties</p> <p>GENERAL DETAILS <b>USER INTERFACE</b> ATTRIBUTES</p> <p>*Type Form</p> <p>Form Details</p> <p>*File Name Create File Select</p> <p>*ID <input type="text"/></p> <p>*Revision <input type="text"/></p>						
<p>53. Enter the following. <b>Name:</b> CostCenterOwner <b>Revision:</b> 1.0</p> <p>54. Click <b>Create</b> 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 <b>Add Section</b>. A section contains set of Fields.</p> <p>56. Update the <b>Label / Title</b> of the section as <b>Request</b></p>	 <p>CostCenterOwner</p> <p>ID: costcenterowner Revision: 1.0 Type: Task Form</p> <p>FIELDS DECISIONS</p> <p>Add Field <b>Add Section</b> 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						

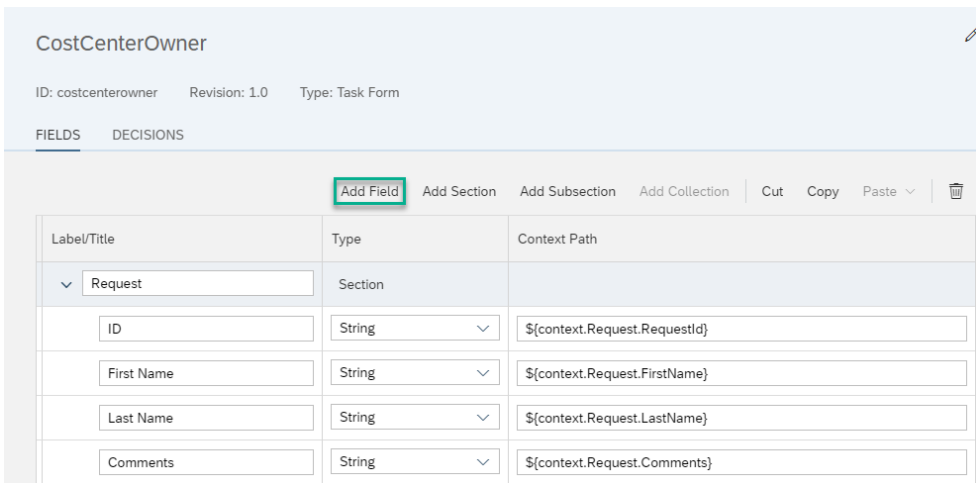
Explanation

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



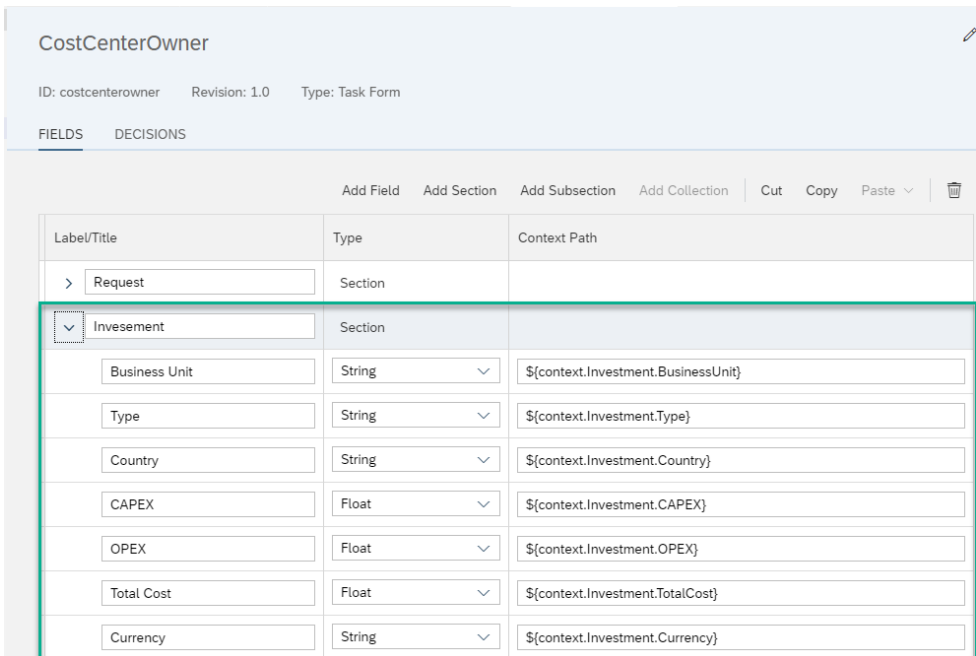
The screenshot shows the 'CostCenterOwner' form editor. The 'Request' section is expanded, showing four fields: ID (String), First Name (String), Last Name (String), and Comments (String). The 'Add Field' button is highlighted in the top toolbar.

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

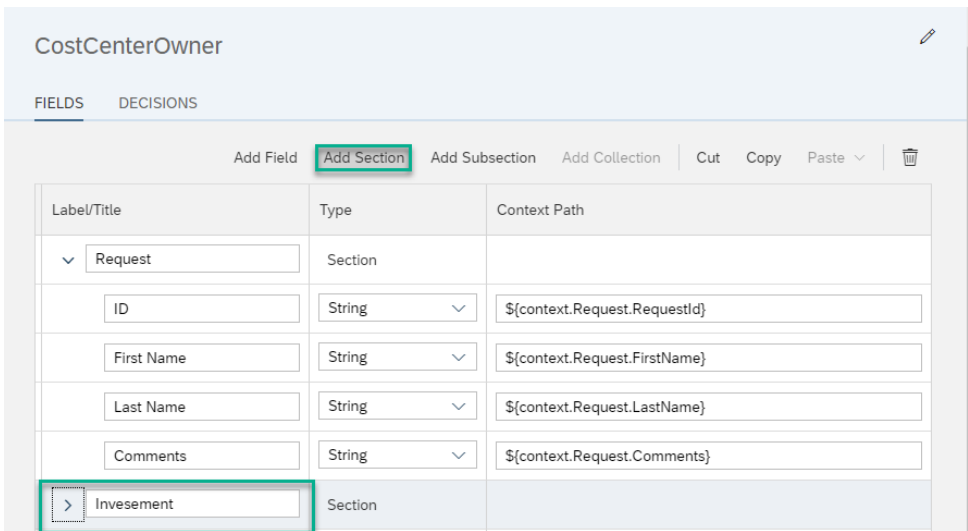
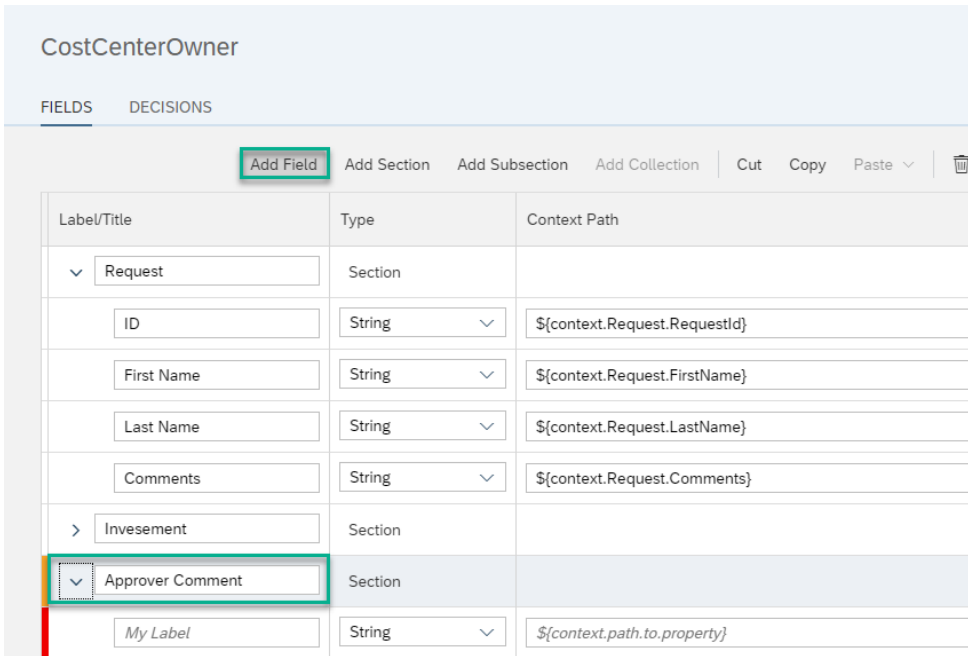
59. Add the following Fields.

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 editor. The 'Investment' section is expanded, showing seven fields: Business Unit (String), Type (String), Country (String), CAPEX (Float), OPEX (Float), Total Cost (Float), and Currency (String). The 'Add Field' button is highlighted in the top toolbar.

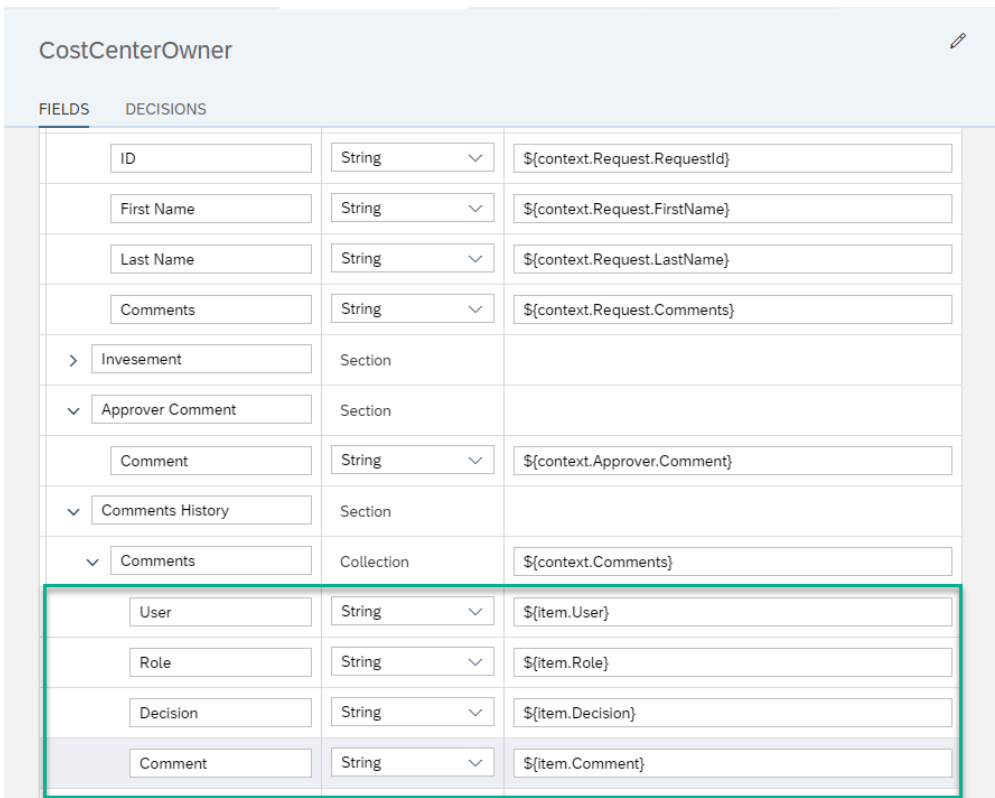
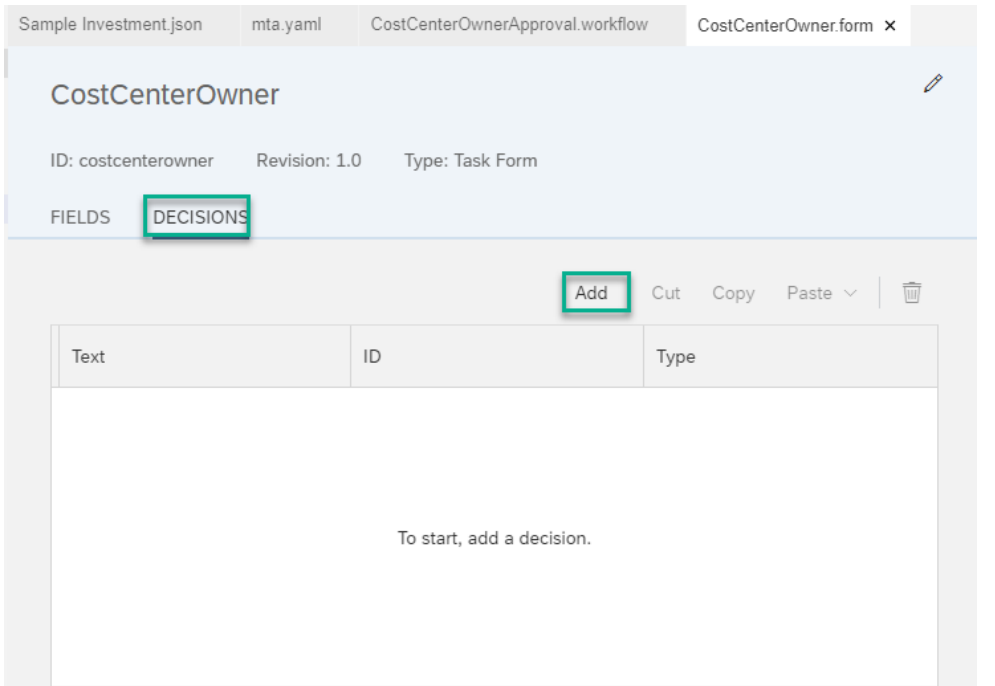
Explanation	Screenshot																											
60. Select section <b>Investment</b> . 61. Click Add <b>Section</b> .	 <p>CostCenterOwner</p> <p>FIELDS DECISIONS</p> <p>Add Field <b>Add Section</b> Add Subsection Add Collection Cut Copy Paste</p> <table><tr><th>Label/Title</th><th>Type</th><th>Context 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 <b>Label/Title</b> of the section as <b>Approver Comment</b> . 63. Click <b>Add Field</b> .	 <p>CostCenterOwner</p> <p>FIELDS DECISIONS</p> <p><b>Add Field</b> 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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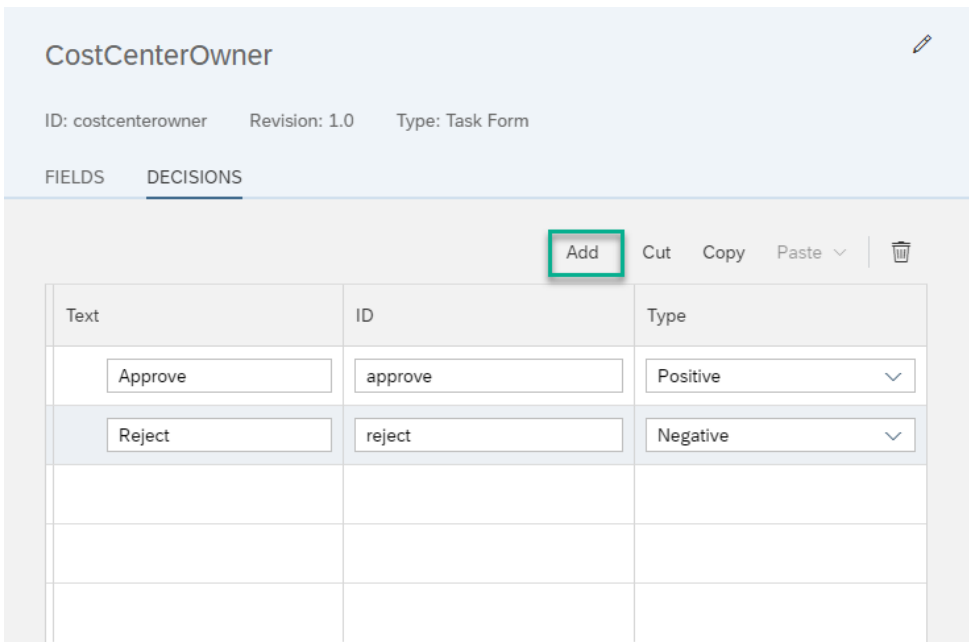
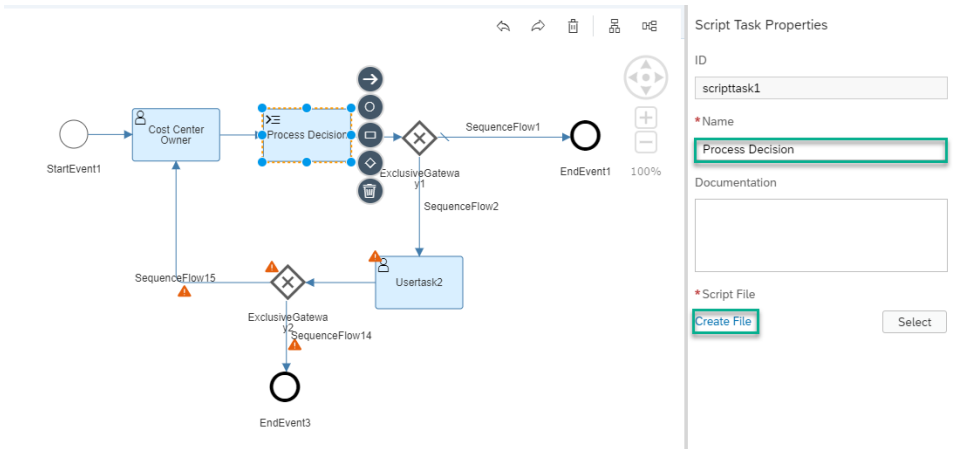
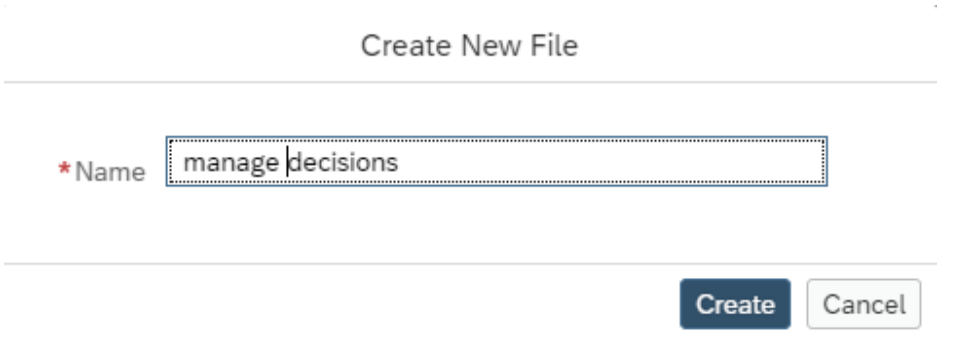
Explanation	Screenshot																											
<div>64. Update the <b>Label/Title</b> of the new Field as <b>Comment</b>.</div> <div>65. Update the <b>Context Path</b> <code>\${context.Approver.Comment}</code></div>	<div><div>CostCenterOwner</div><div><div>FIELDS</div><div>DECISIONS</div></div><div><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>
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Approver Comment	Section																											
Comment	String	<code>\${context.Approver.Comment}</code>																										
<div>66. Select the <b>Comment</b> field.</div> <div>67. Select <b>Control</b> as <b>Text Area</b>.</div> <div>68. Select <b>Height</b> as <b>Medium</b>.</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 <b>Add Section</b> .	
70. Update <b>Label/Title</b> of the newly added Section as <b>Comments History</b> . 71. Click <b>Add Collection</b> .	

Explanation	Screenshot																																	
72. Update the <b>Label/Title</b> as <b>Comments</b> .	<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>
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73. Update the <b>Context Path</b> as <b><code>\${context.Comments}</code></b> .																																		

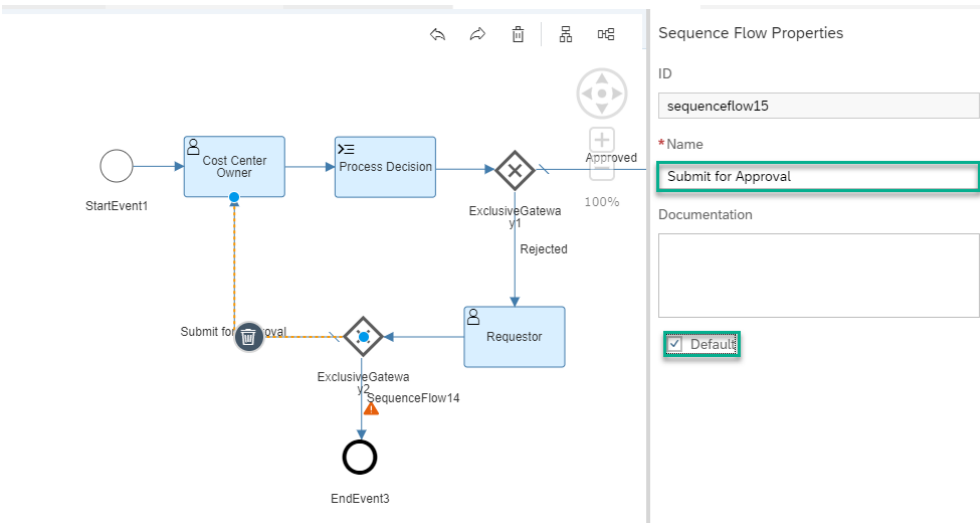
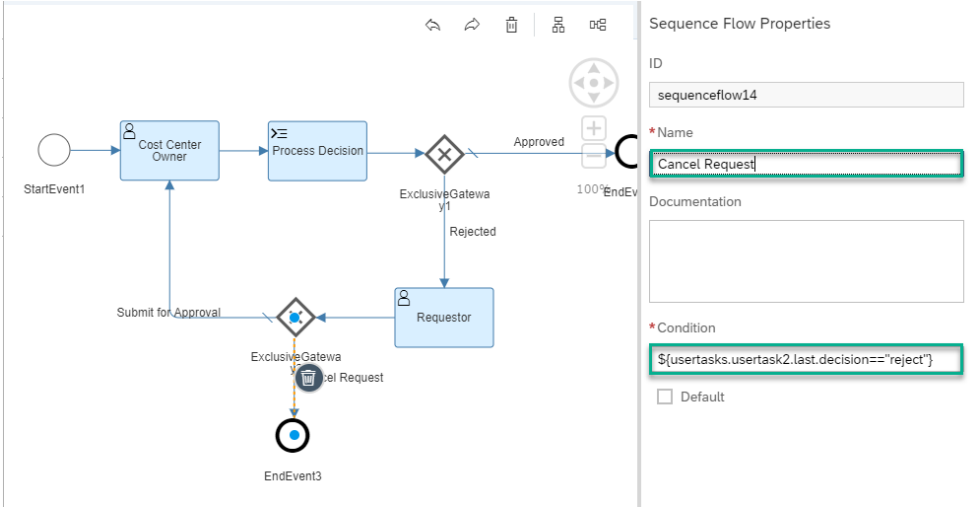


Explanation	Screenshot															
<p>74. Select <b>Comments</b> and click <b>Add Field</b> to add the following fields.</p> <p>Copy the Context Path from the attached file <u>CostCenterOwnerApprovalTask</u></p> <table><tr><th>Label</th><th>Type</th><th>Context Path</th></tr><tr><td>User</td><td>String</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}														
<p>75. Select <b>DECISIONS</b>.</p> <p>76. Click <b>Add</b>.</p>																

Explanation	Screenshot									
<p>77. Click <b>Add</b> 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 <b>Process Decision</b>.</p> <p>79. Click <b>Create File</b> link.</p>										
<p>80. Enter file name as <b>manage decisions</b>.</p> <p>81. Click <b>Create</b> button.</p>										

Explanation	Screenshot
82. Copy and paste the scripts from the attached <a href="#">manage decisions.js</a> .	<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 <b>sequence flow</b> between the <b>exclusive gateway</b> and end event.  84. In Sequence flow properties enter <b>Name</b> as Approved.  85. Check the <b>Default</b> checkbox.	
86. Select <b>sequence flow</b> between the <b>ExclusiveGateway1</b> and <b>UserTask2</b> .  87. Enter <b>Name</b> as Rejected.  88. Enter the condition as <code>\${usertasks.usertask1.last.decision=="reject"}</code>  You may copy the condition from the attached file <a href="#">Exclusive Gateway Conditions</a> .	

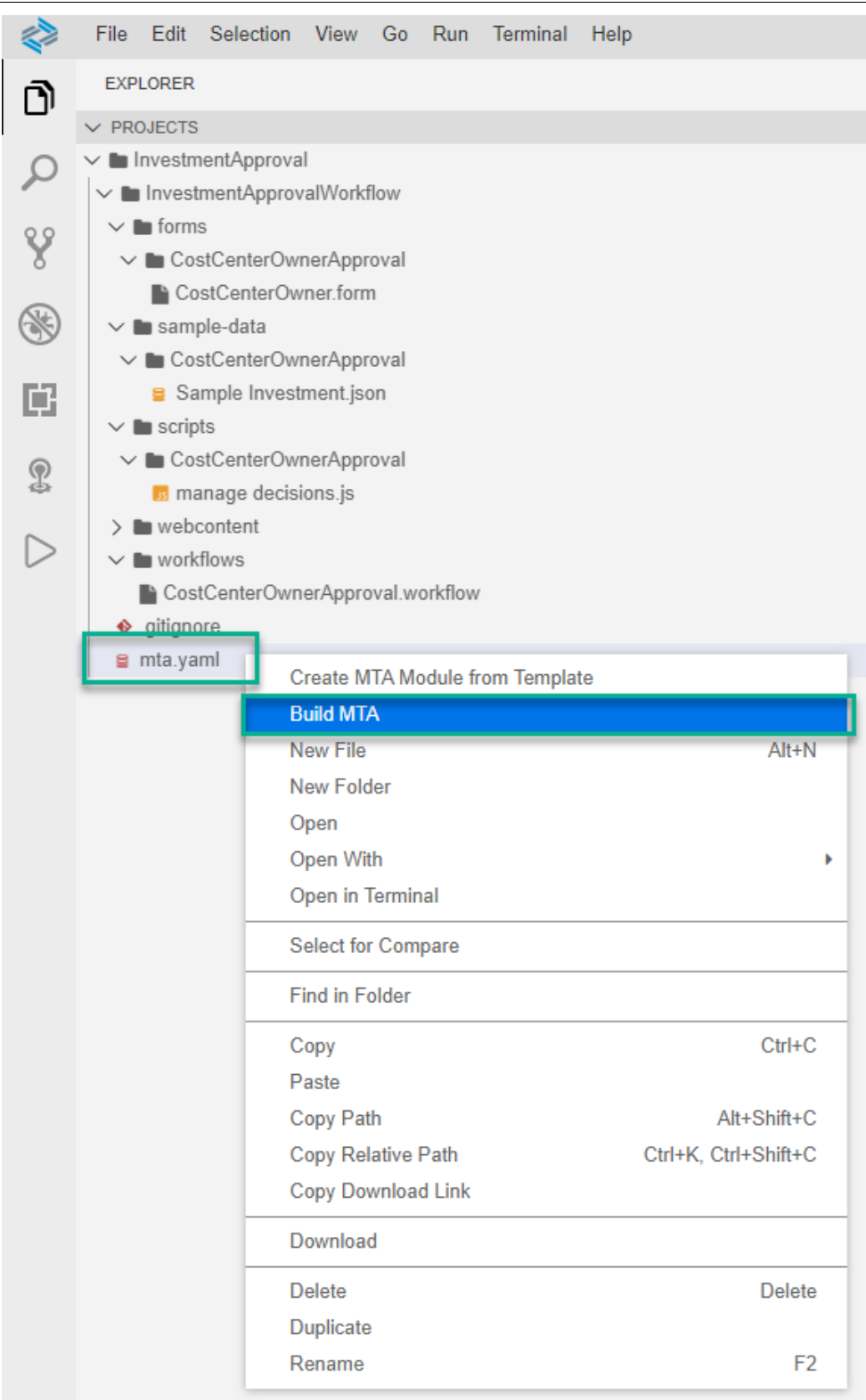
Explanation	Screenshot
<div>89. Select <b>UserTask2</b> and in User Task Properties select <b>GENERAL</b> tab.</div> <div>90. update the <b>Name</b> as Requestor.</div>	
<div>91. Select <b>Details</b> tab.</div> <div>92. Set <b>Subject</b> as Request \${context.Request.RequestId} for Investment Rejected.</div> <div>93. Set <b>Users</b> as \${context.Request.UserId}</div>	

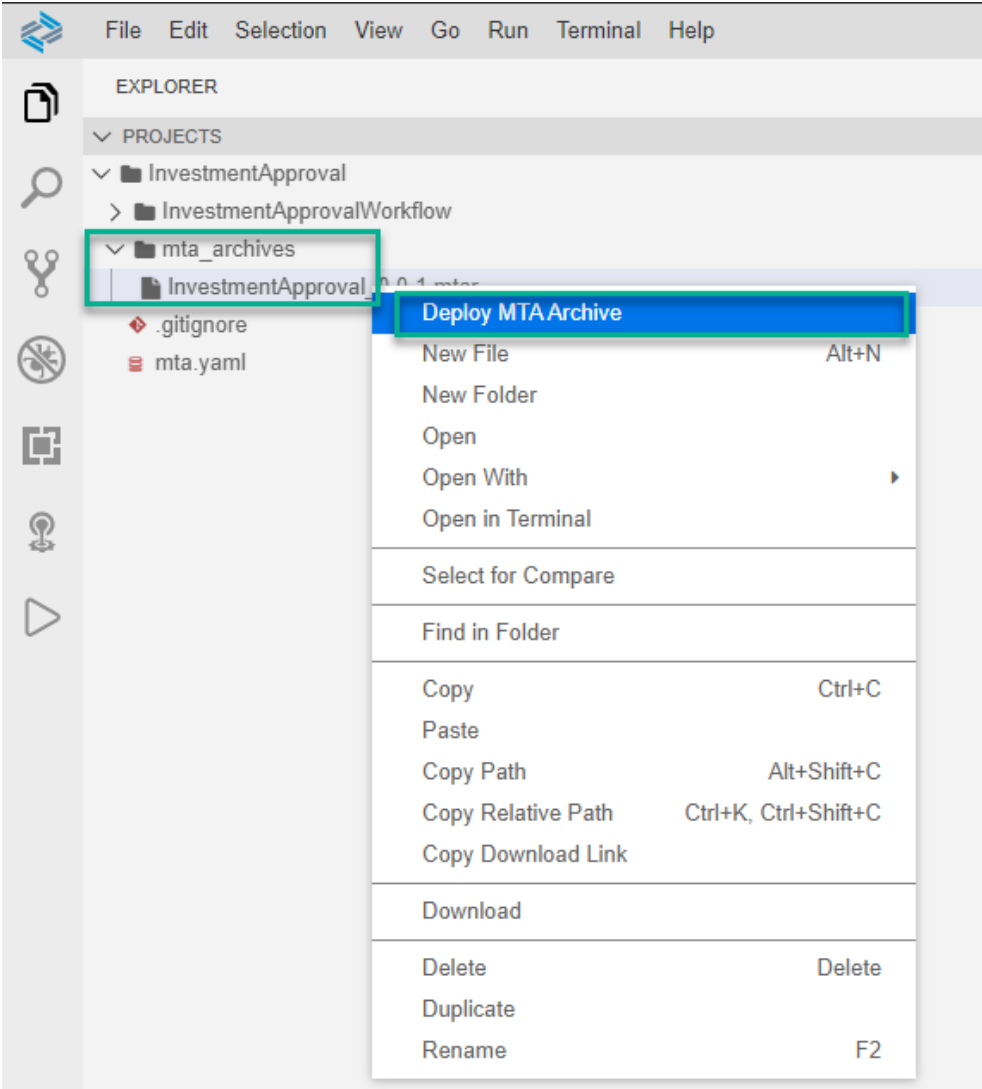

Explanation	Screenshot
<p>94. Select the sequence flow between the Exclusive Gateway and Cost Center Owner user task.</p> <p>95. Enter <b>Name</b> as Submit for Approval</p> <p>96. Check <b>Default</b> check box.</p>	 <p>The screenshot shows a BPMN diagram with a StartEvent1, a Cost Center Owner user task, a Process Decision, an Exclusive Gateway, and a Requestor user task. A sequence flow labeled 'Submit for Approval' connects the Exclusive Gateway to the Cost Center Owner user task. The 'Sequence Flow Properties' panel on the right shows the ID 'sequenceflow15', the Name 'Submit for Approval', and the 'Default' checkbox checked.</p>
<p>97. Select the <b>sequence flow</b> between the <b>Exclusive Gateway</b> and <b>End event</b>.</p> <p>98. Enter <b>Name</b> as Cancel Request.</p> <p>99. Enter <b>Condition</b> 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 <a href="#">Exclusive Gateway Conditions</a>.</p>	 <p>The screenshot shows the same BPMN diagram as the previous one, but with a new sequence flow labeled 'Cancel Request' connecting the Exclusive Gateway to an EndEvent3. The 'Sequence Flow Properties' panel on the right shows the ID 'sequenceflow14', the Name 'Cancel Request', and the Condition <code>\${usertasks.usertask2.last.decision=="reject"}</code>. The 'Default' checkbox is unchecked.</p>

**Build and Deploy**

- 100. Right click on `mta.yaml` file.
- 101. 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>102. Successful build will create a new folder <b>mta_archives</b> and a .mtar file.</div> <div>103. Select the .mtar file and right click.</div> <div>104. Click <b>Deploy MTA Archive</b>.</div>	 <p>The screenshot shows the Visual Studio Code interface. In the Explorer sidebar, the 'InvestmentApprovalWorkflow' folder is expanded, and the 'mta_archives' folder is selected. A right-click context menu is open over the 'mta_archives' folder, with the 'Deploy MTA Archive' option highlighted in blue. Other options in the menu 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>105. Successful deployment will show the log.</div>	 <p>The screenshot shows the Visual Studio Code Problems panel. The title bar indicates 'Task: Deploy MTA Archive'. The log content 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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