PUBLIC

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

DEV-264

Exercises / Solutions

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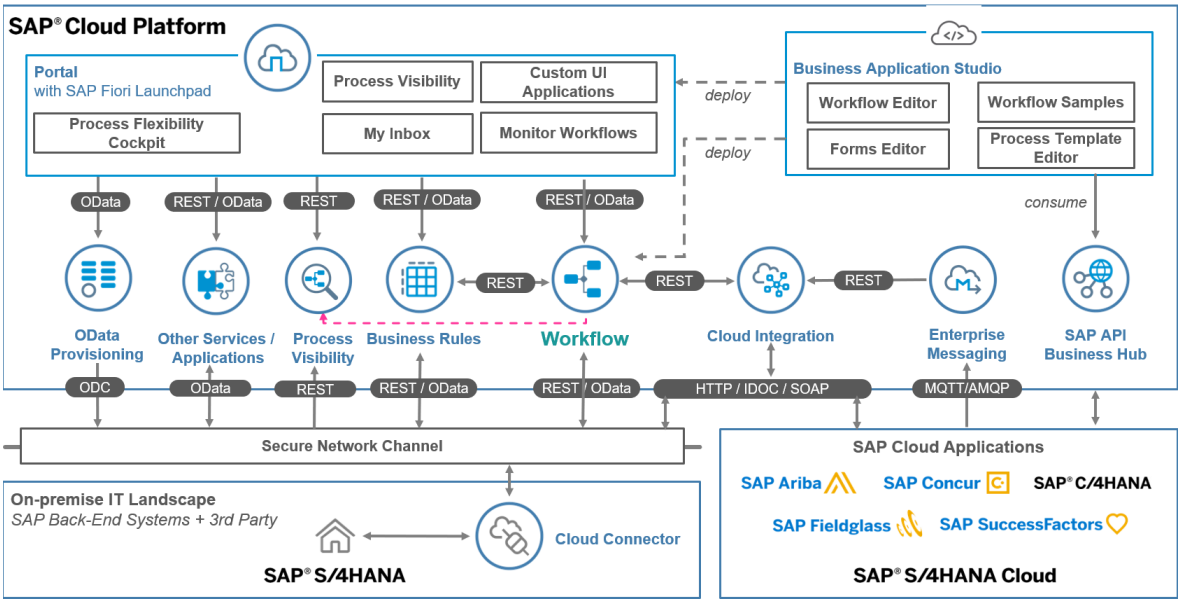
THE BEST RUN SAP®

TABLE OF CONTENTS

SCENARIO **3**
Prerequisite **3**
MODEL WORKFLOW – INVESTMENT APPROVAL WORKFLOW **4**
Create Workspace ***4***
Configure Cloud Foundry End Point ***7***
Create Multi Target Application Project ***8***
Configure Sample Context ***10***
Create Workflow Forms ***19***
Build and Deploy ***30***
SUMMARY **32**

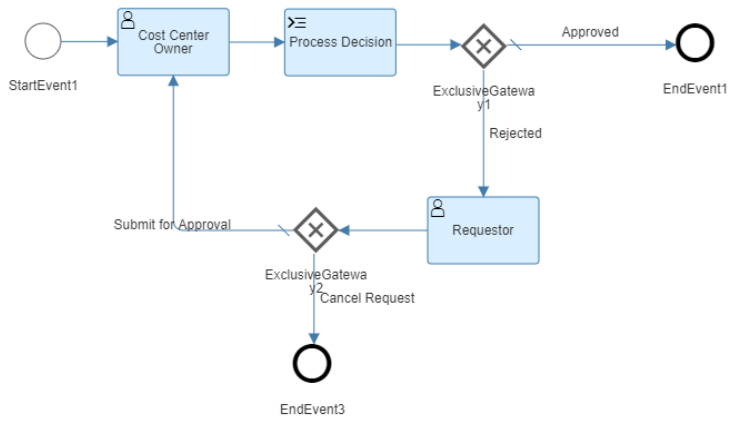
SAP Cloud Platform Workflow Management has Workflow capability enable developers to model workflow based on BPMN 2.0 using SAP Cloud Platform Business Application Studio and deploy to Cloud platform accounts. A workflow consists of different activities, events and gateways. It provides fine granular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

SAP Cloud Platform Workflow – the bigger picture



SCENARIO

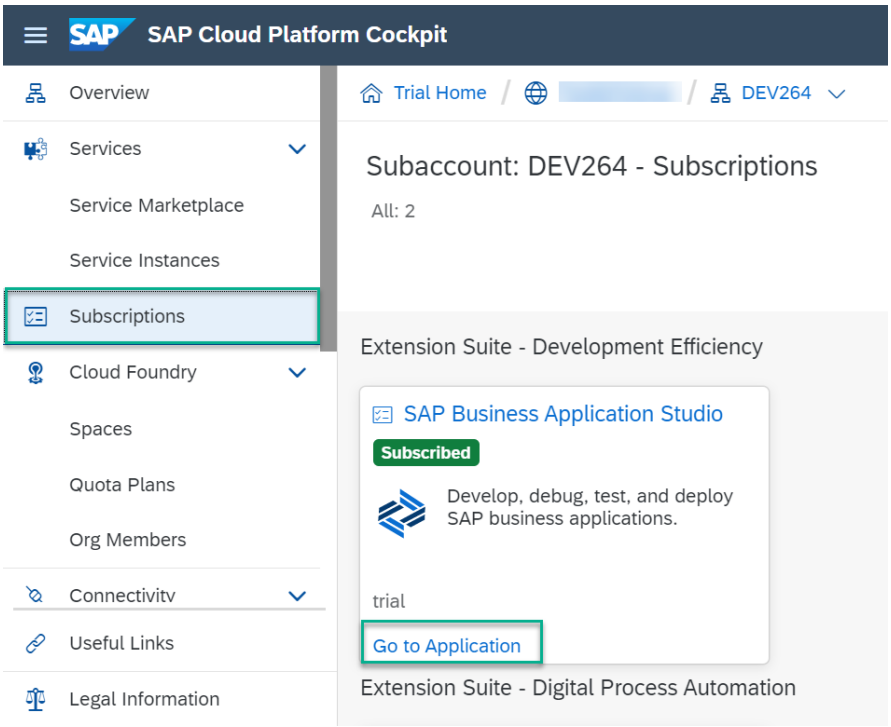
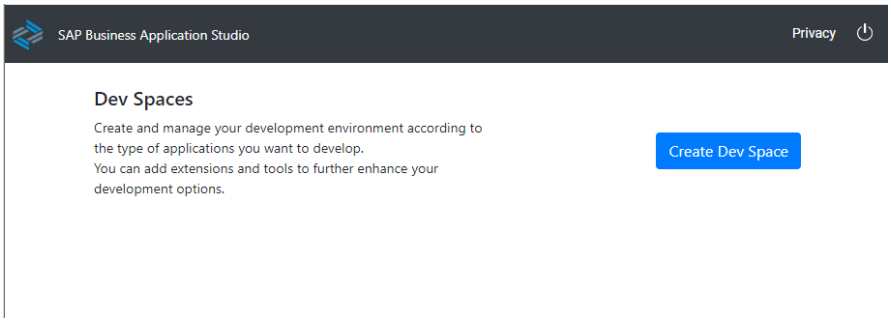
The scenario is an Investment Approval Workflow. A requestor creates a request for approval and Approver can decide Approve or Reject. A rejection enables the requestor to modify the request and submit or cancel the request.

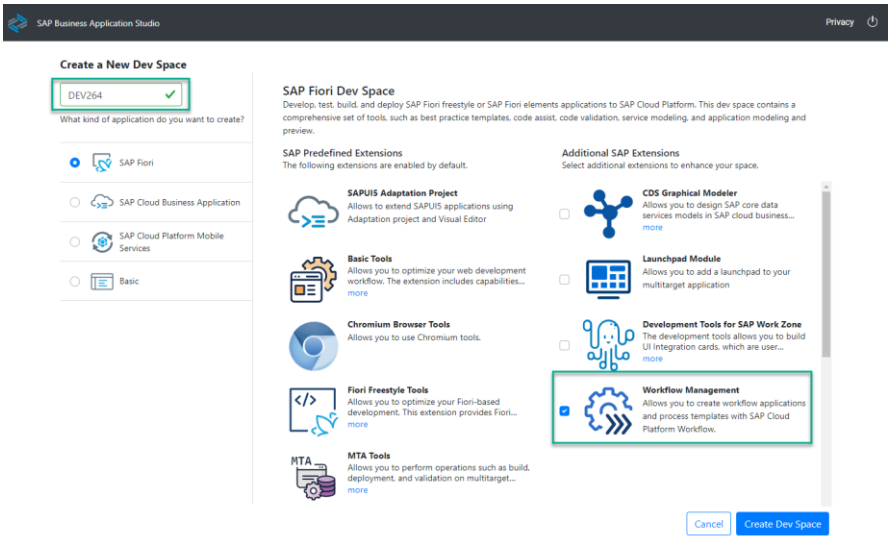
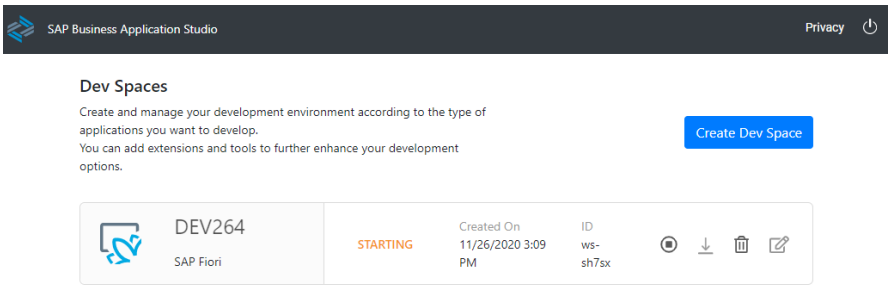
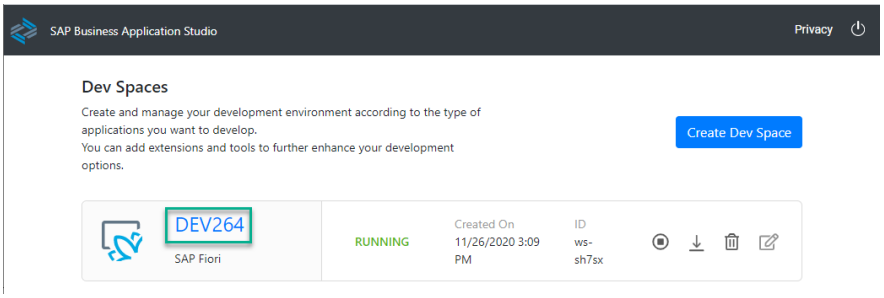


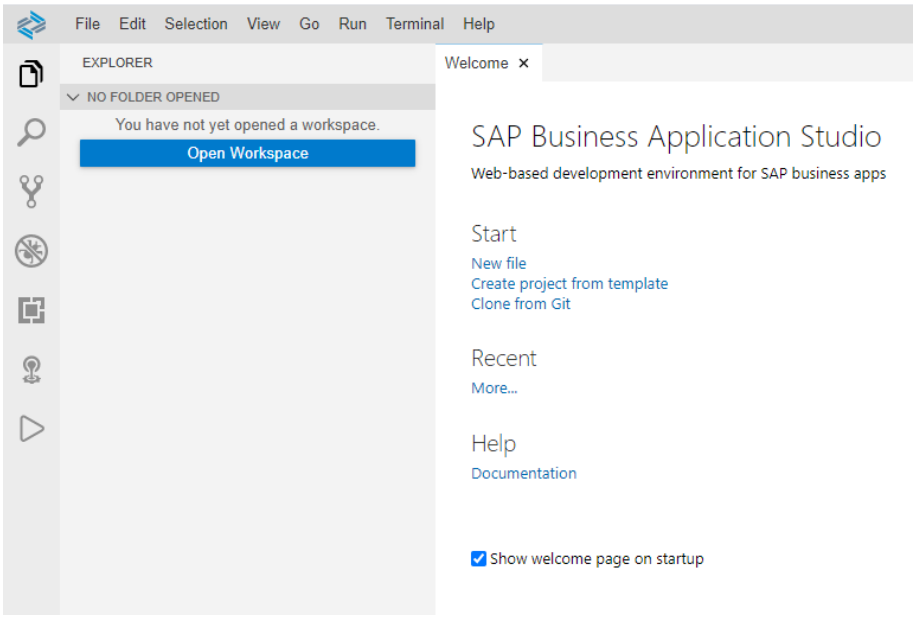
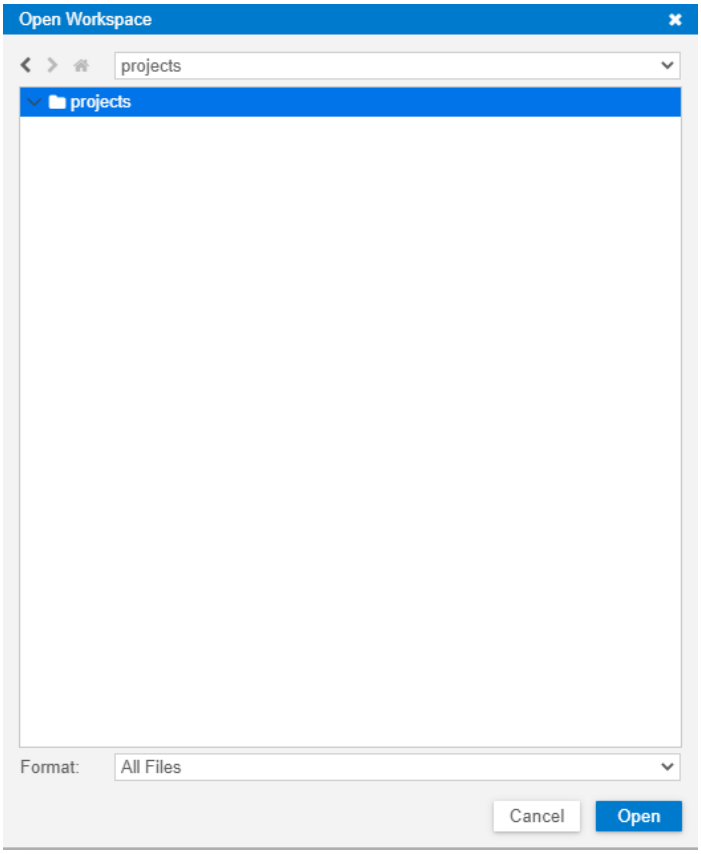
Prerequisite

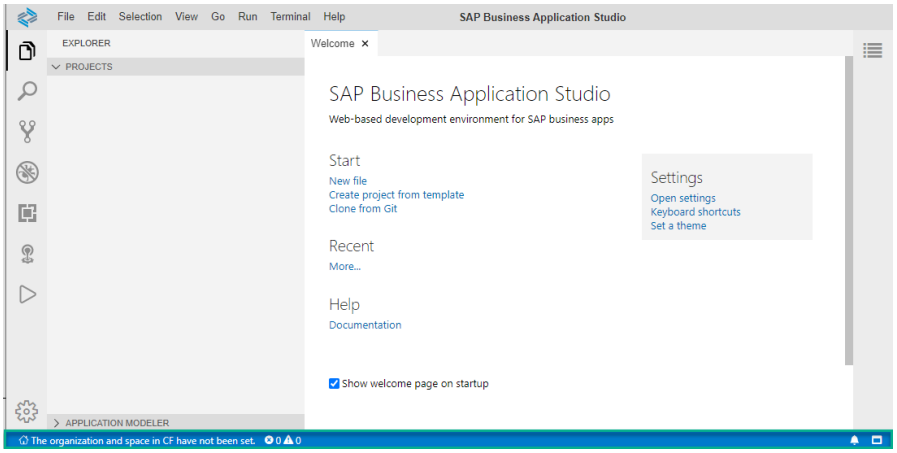
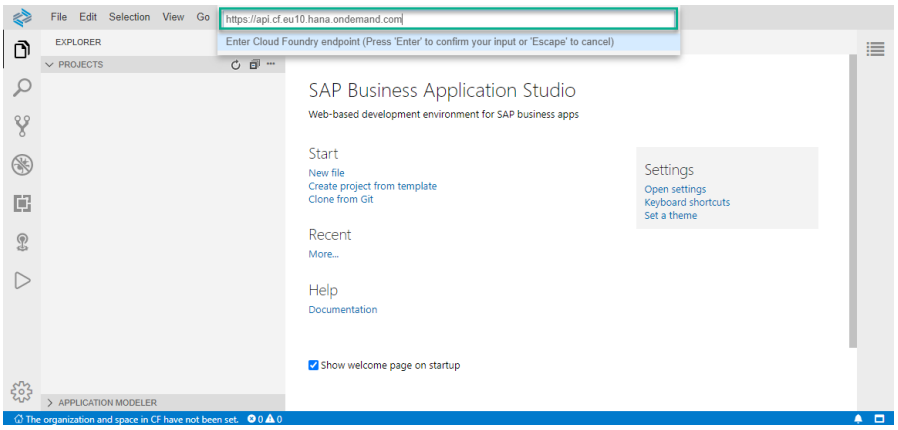
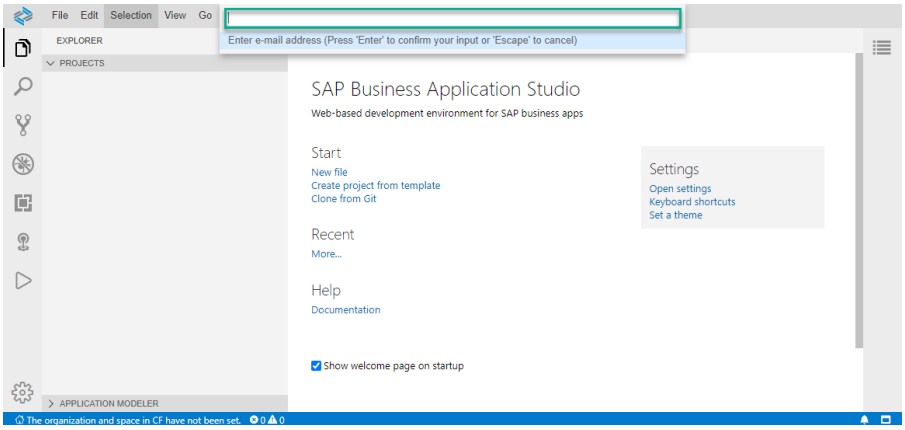
Please setup your SAP Cloud Platform Trial account using setup guide.

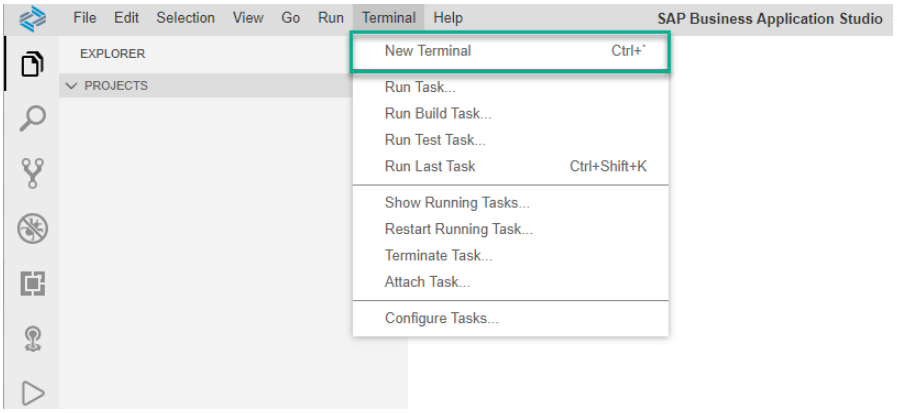
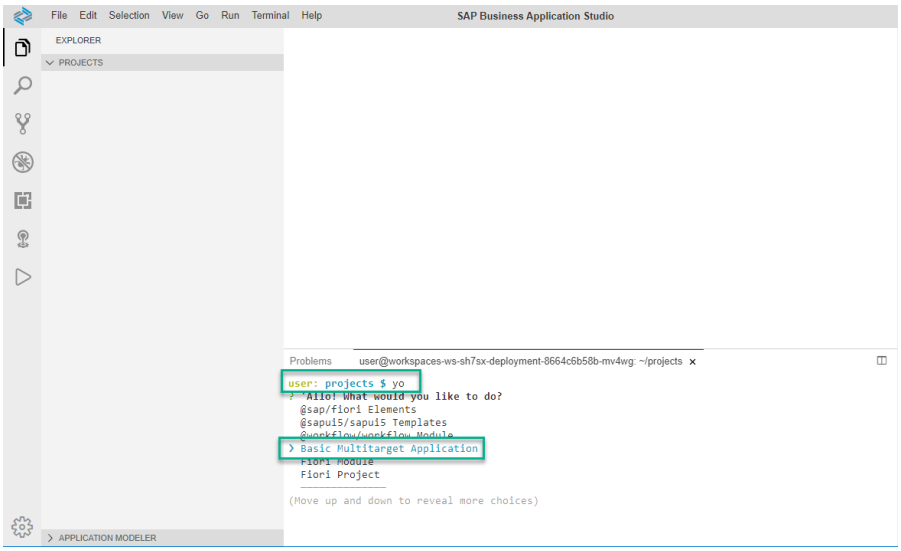
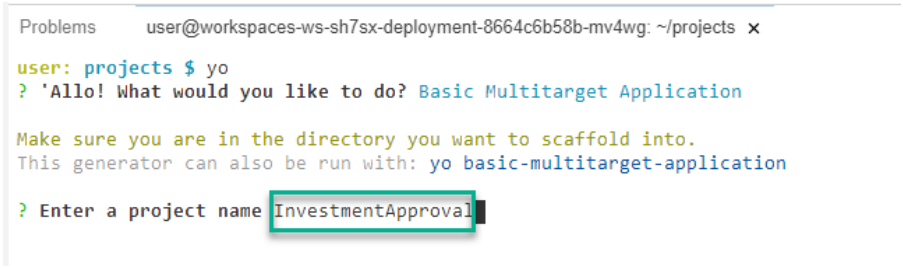
MODEL WORKFLOW – INVESTMENT APPROVAL WORKFLOW

Explanation	Screenshot
1. Select **Subscriptions** in your Sub Account and you see the subscribed applications. 2. Select **SAP Business Application Studio** and click **Go to Application**. SAP Cloud Platform Business Application Studio will be opened in new browser window. Skip steps 3 to 7 If you have already created a dev space with Workflow Management extension.	
Create Workspace 3. Click **Create Dev Space** button.	

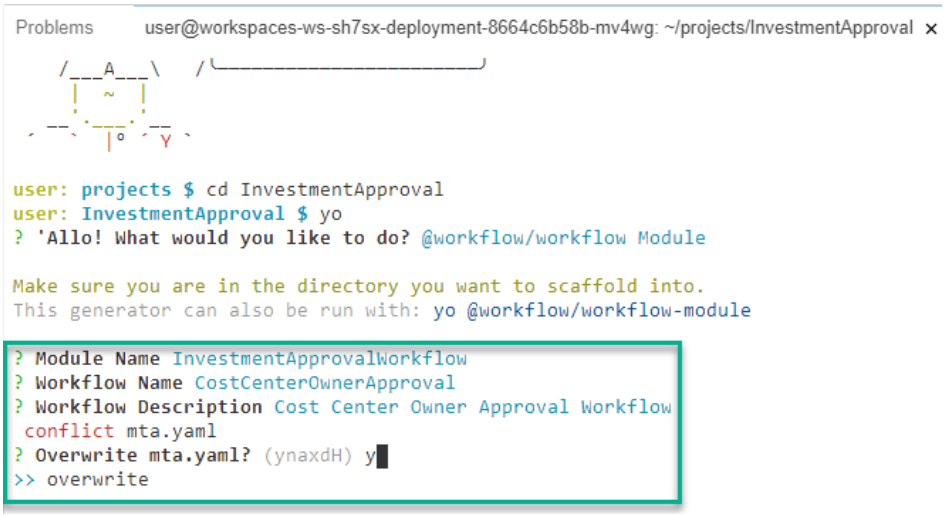
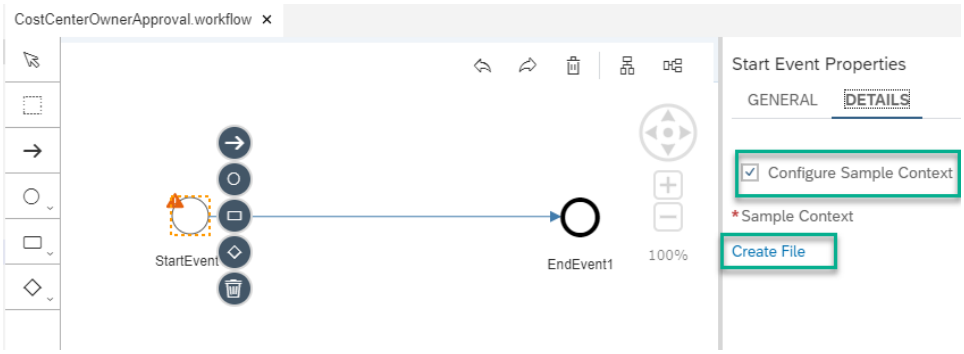
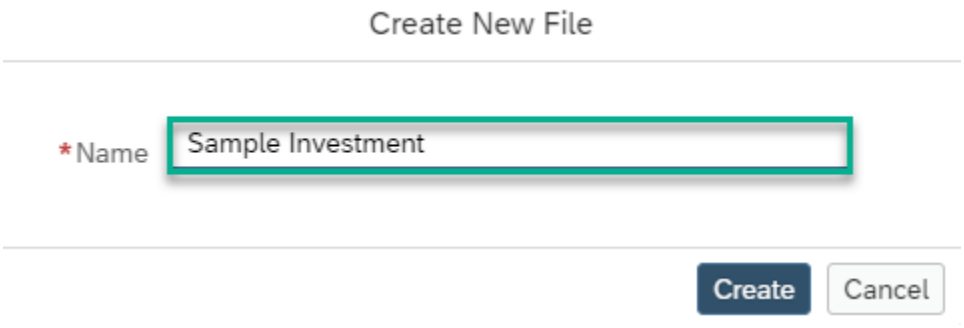
Explanation	Screenshot
4. Enter Dev Space 5. Select **Workflow Management** from Additional SAP Extensions. 6. Click **Create Dev Space**	
7. Setting up the Dev Space will take couple of minutes and show the status as **STARTING**. Wait until the status changing to **RUNNING**.	
8. Click your Dev Space.	

Explanation	Screenshot
9. Click **Open Workspace**.	
10. Select **Projects** and click **Open** button.	

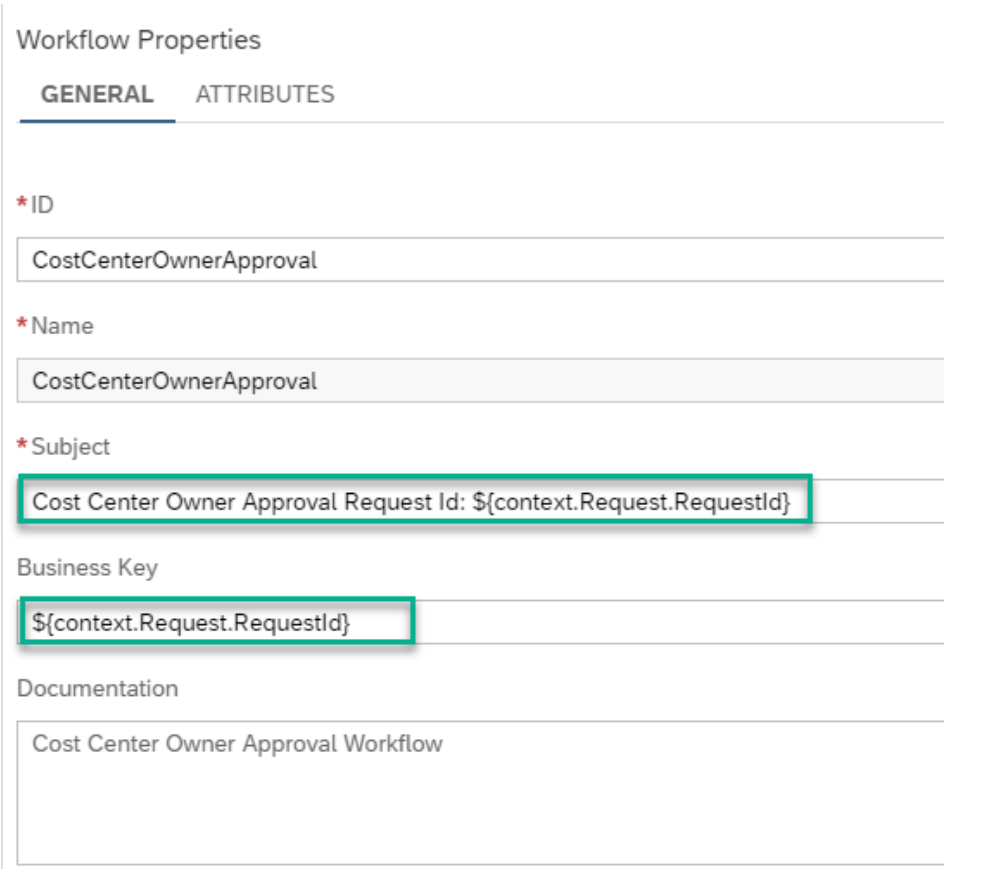
Explanation	Screenshot
Configure Cloud Foundry End Point 11. Click the message in the bottom to configure the endpoint for deployment.	
12. Select the **Cloud Foundry Endpoint**. The url might vary depends on which data center you are using. Europe -eu10 US – us10 Singapore – ap21	
12. Enter your **e-mail**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

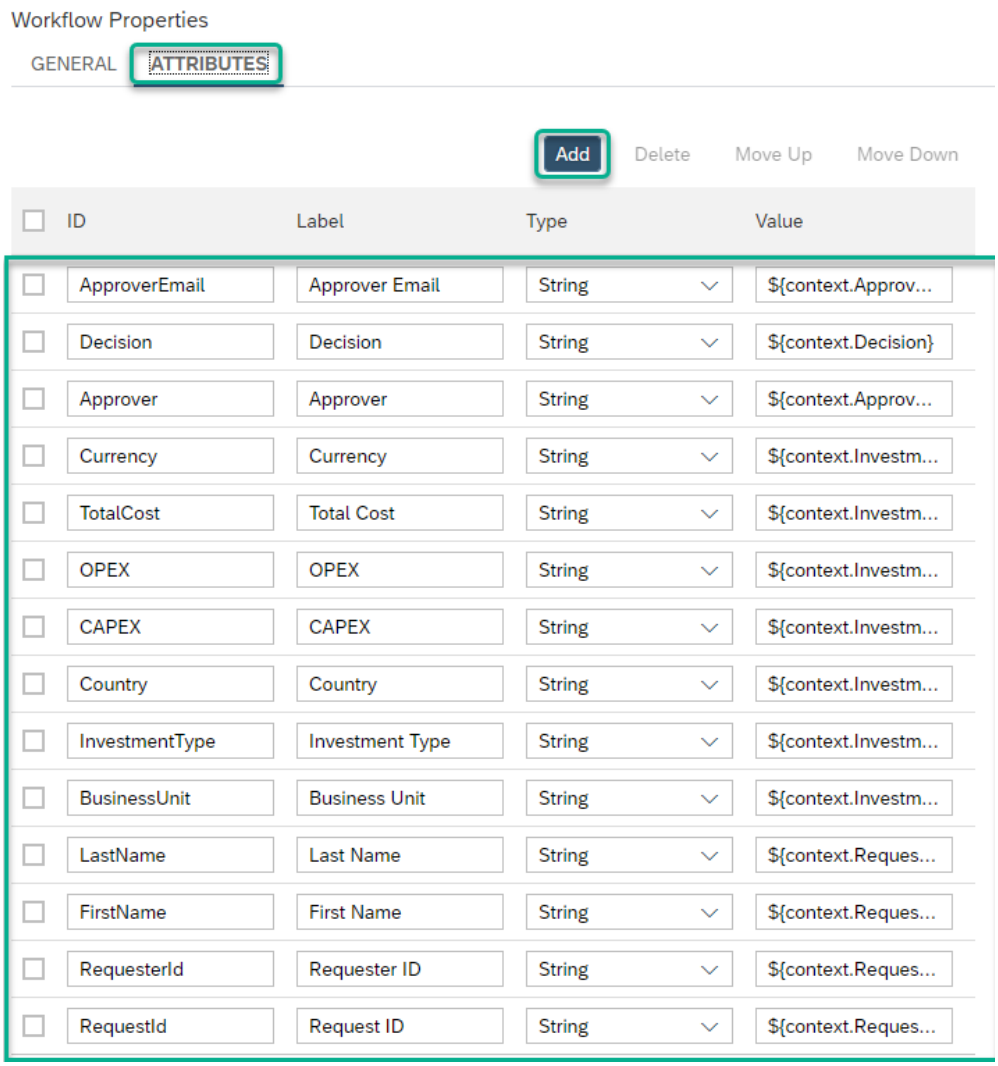
Explanation	Screenshot
Create Multi Target Application Project 14. Select Terminal →New Terminal	
15. In the Terminal make sure you are in the projects directory. 16. Type **yo** and press enter key**.** 17. Select project type as **Basic Multitarget Application** by using up/down arrow key**.**	
18. Enter the **project name** for eg: InvestmentApproval.	

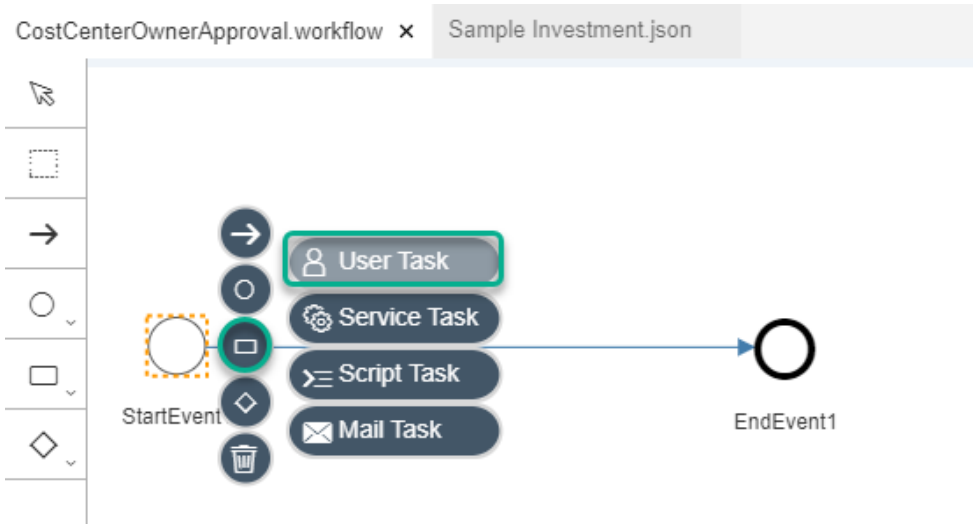
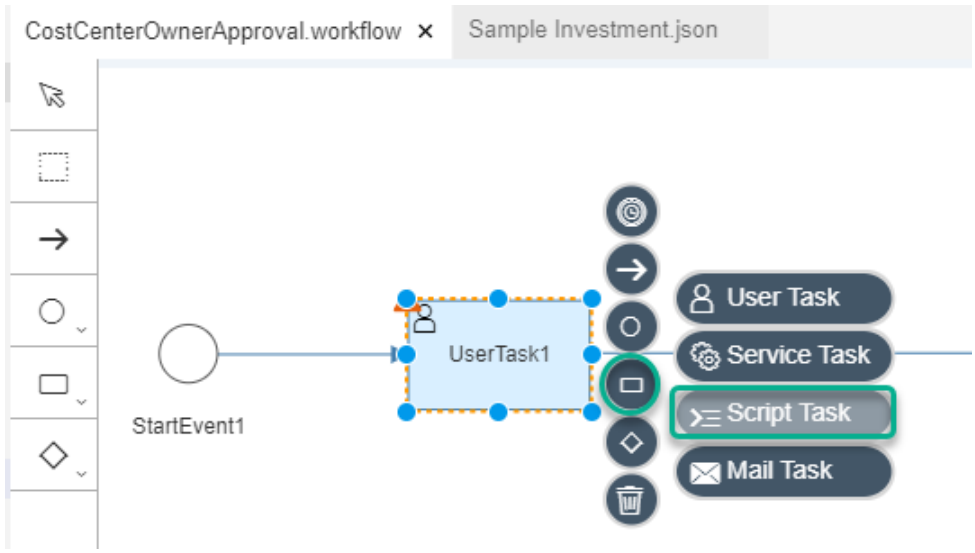
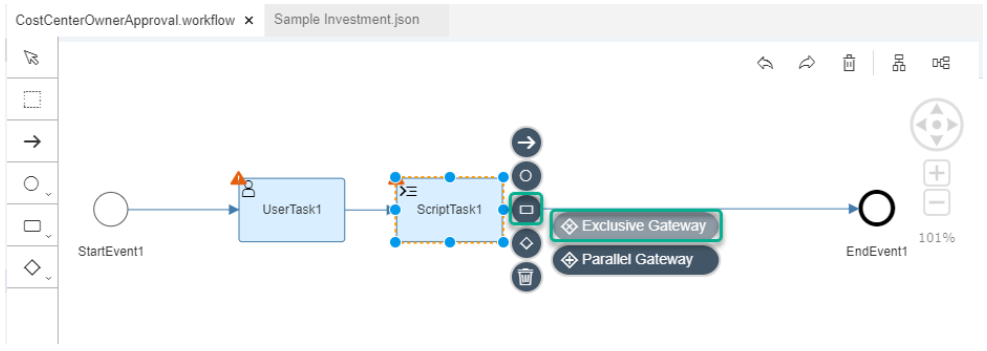
Explanation	Screenshot
19. Use **cd InvestmentApproval** to move the new project directory. 20. Type **yo** again in the newly created project directory.	
21. Select **@workflow/workflow Module** from the list using up/down arrow keys.	

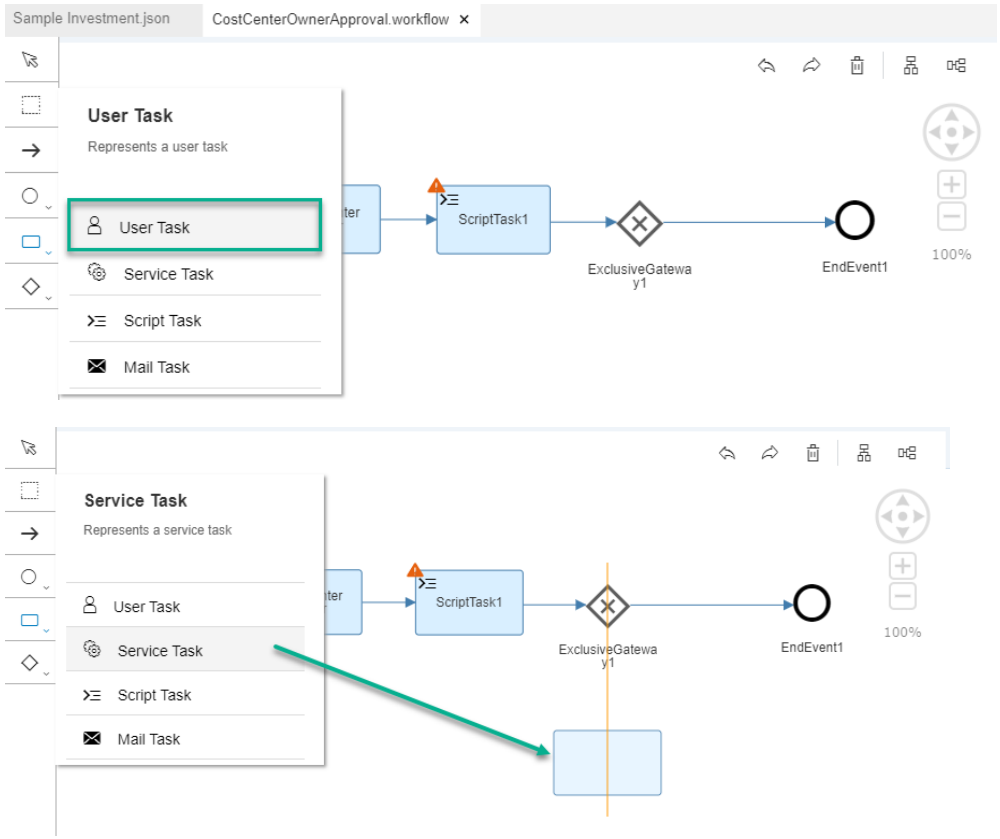
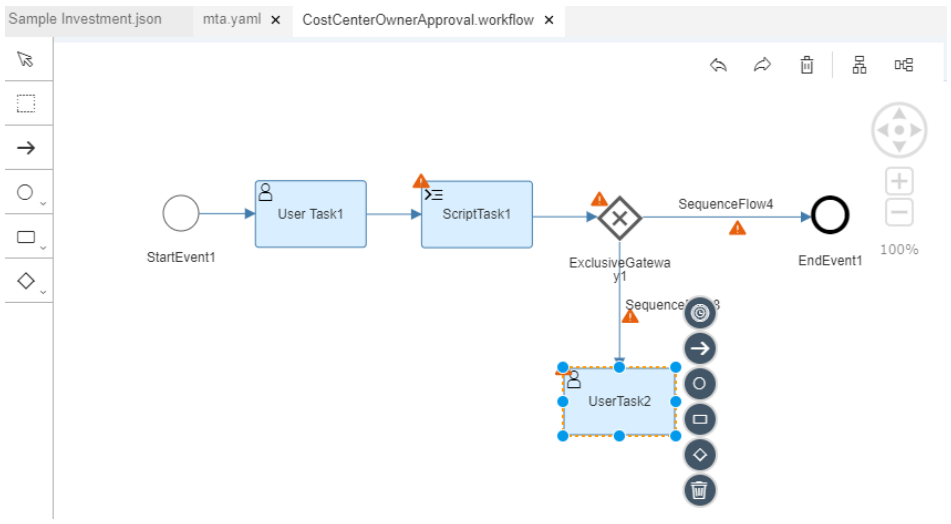
Explanation	Screenshot
22. Enter the following **Module Name**: InvestmentApprovalWorkflow **Workflow Name**: CostCenterOwnerApproval **Workflow Description**: Cost Center Owner Approval Workflow **Overwrite mta.yaml**: y	
Configure Sample Context 23. The new workflow is opened in the workflow editor. 24. Select the **Start event** and Select **DETAILS** section of Start Event properties. 25. Check **Configure Sample Context**. 26. Click link **Create File.**	
27. Enter Name as **Sample Investment** A new file is opened a default sample context.	

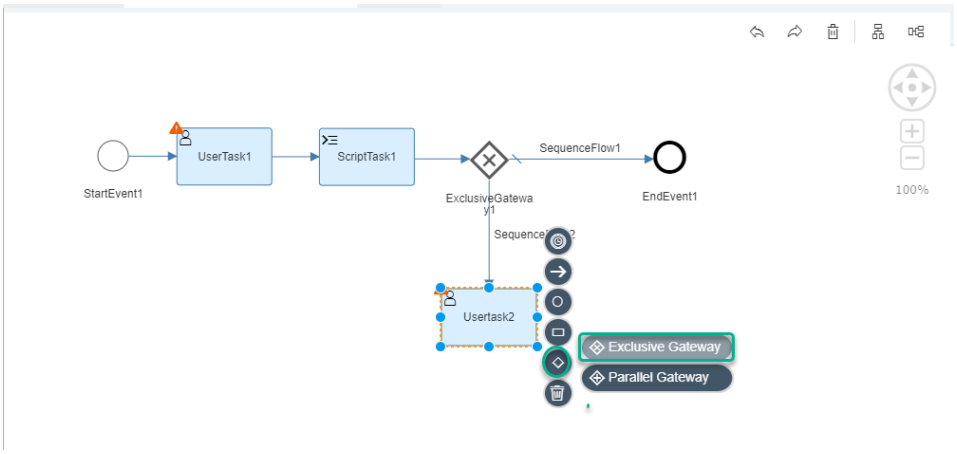
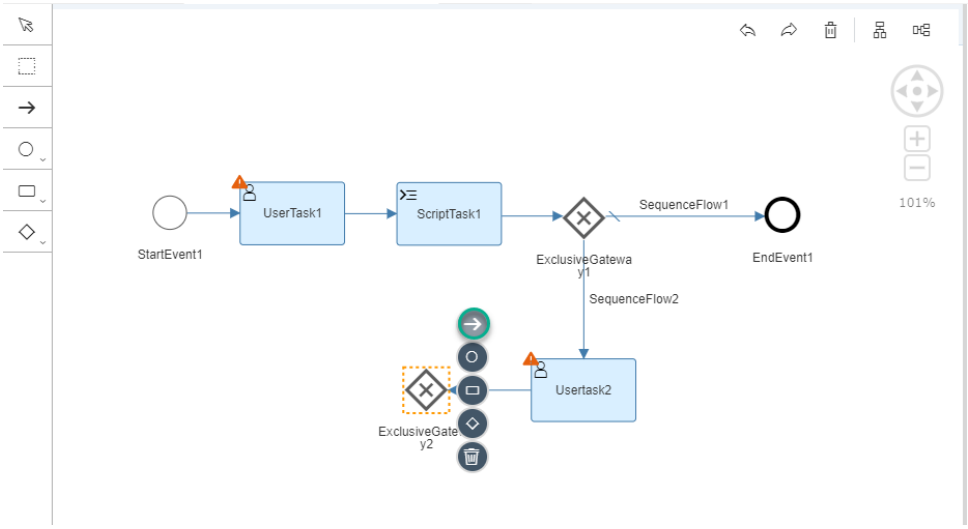
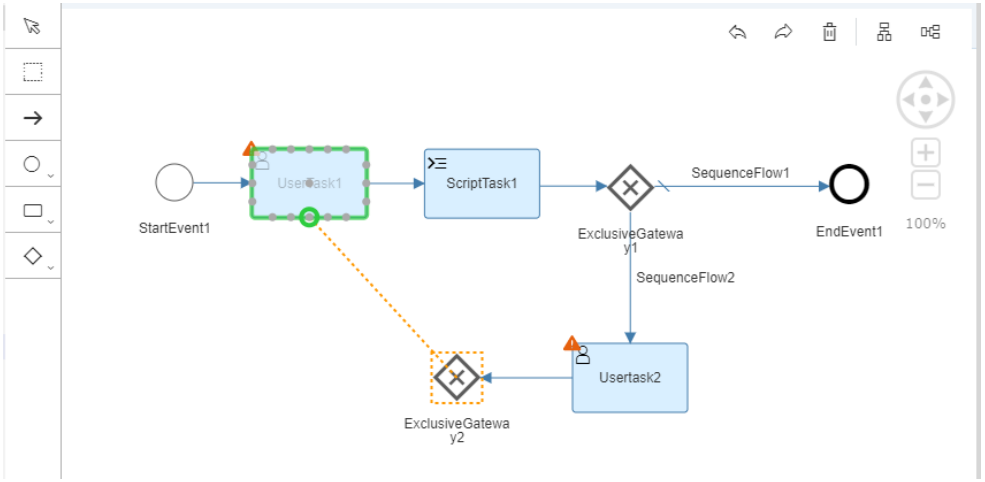
Explanation	Screenshot
28. Copy and paste the content from the file Sample Investment.json shared in the Git repository. Please replace **FirstName, LastName, Email, UserId** with your details. User Id is your cloud platform trial user id. The context has three Elements. **Request**: Requestor info including Request Id **Investment**: Details about the investment **Approver**: Cost Center Approver details.	

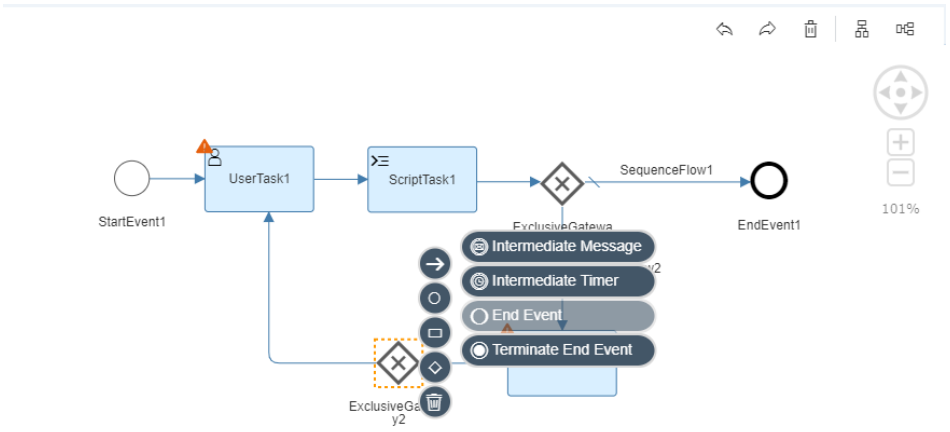
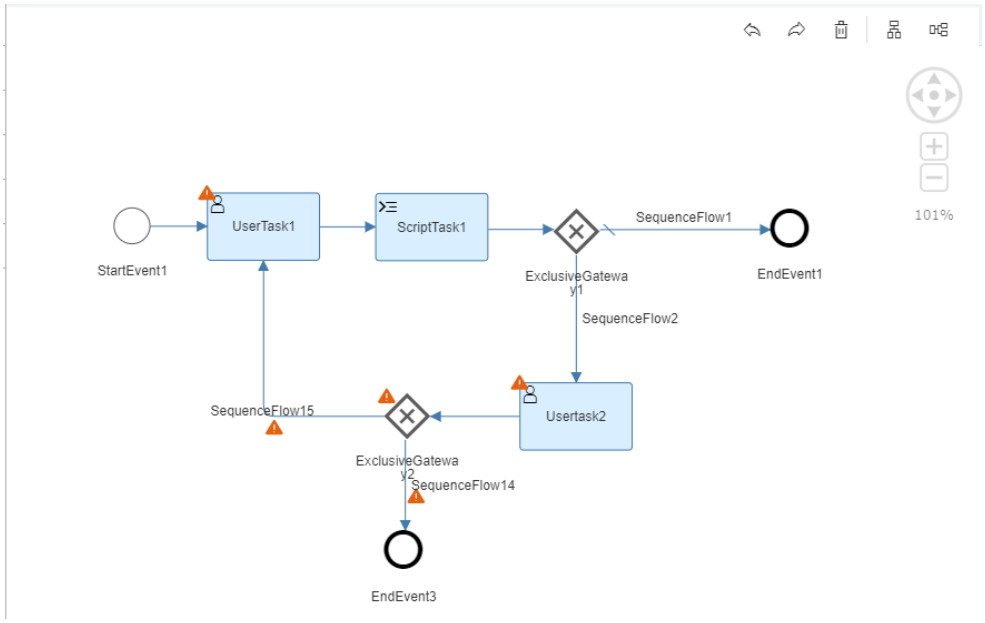
Explanation	Screenshot
29. Select the **GENERAL** Tab from Workflow Properties. 30. Enter the following **Subject**: Cost Center Owner Approval Request Id: ${conext.Request.RequestId} **Business Key**: ${conext.Request.RequestId}	

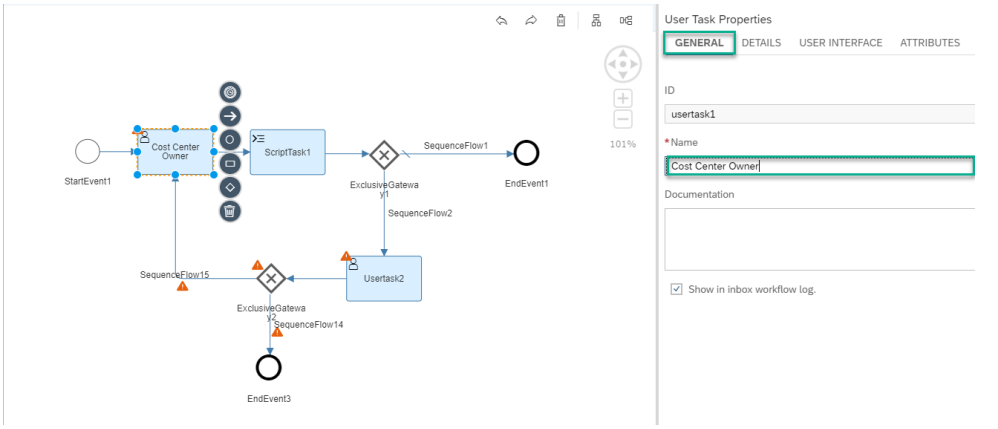
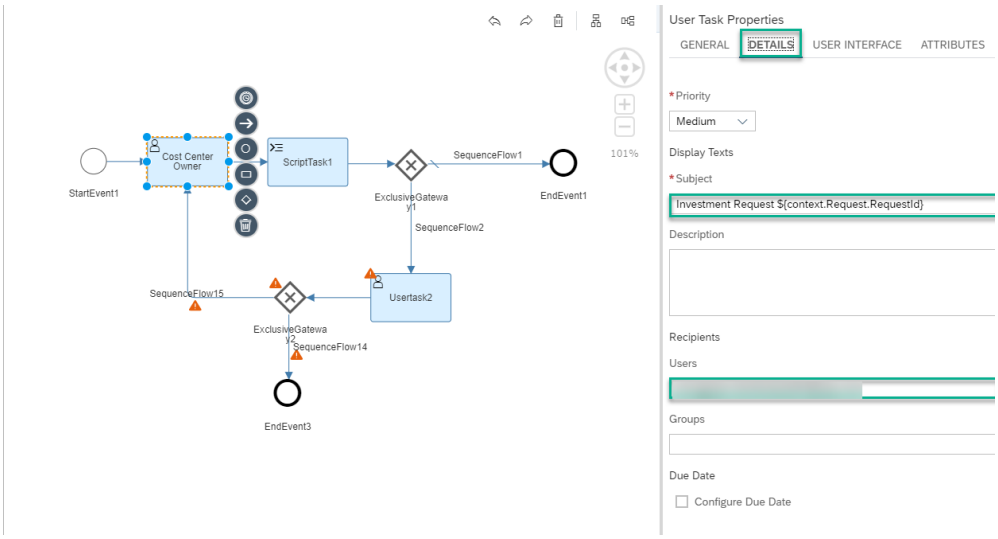
Explanation	Screenshot
31. Select **ATTRIBUTES** and add the following Attributes. Please copy the Context Path of each of this attribute from the attached Workflow Context Attributes JSON file. 32. Click **Add** button to add an attribute.	

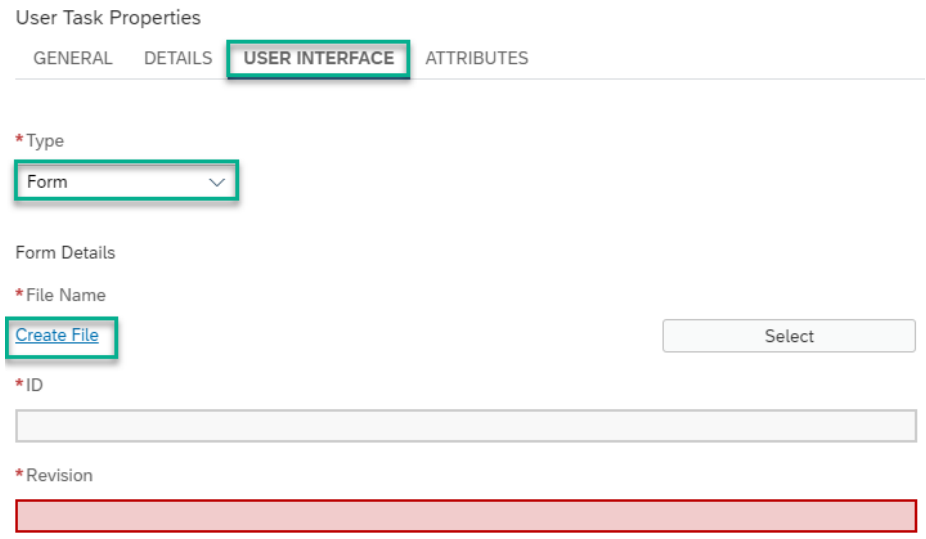
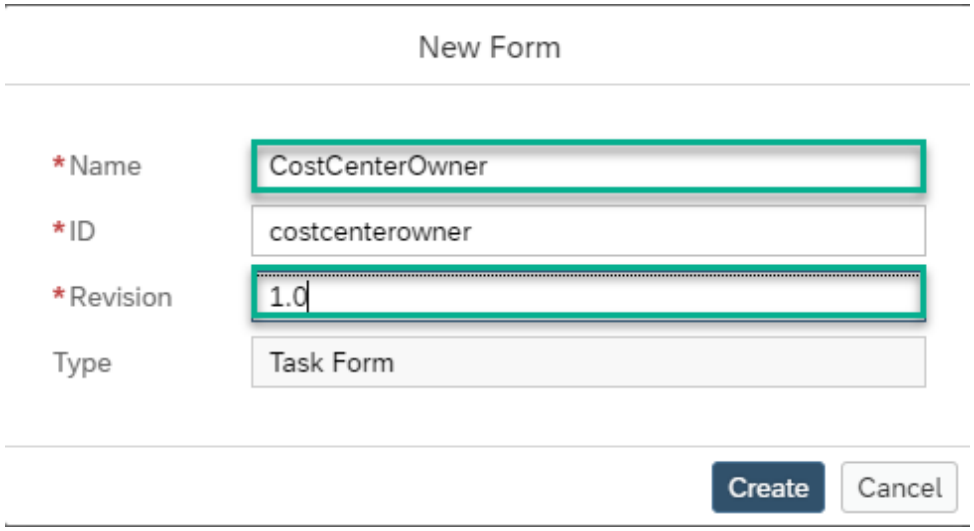
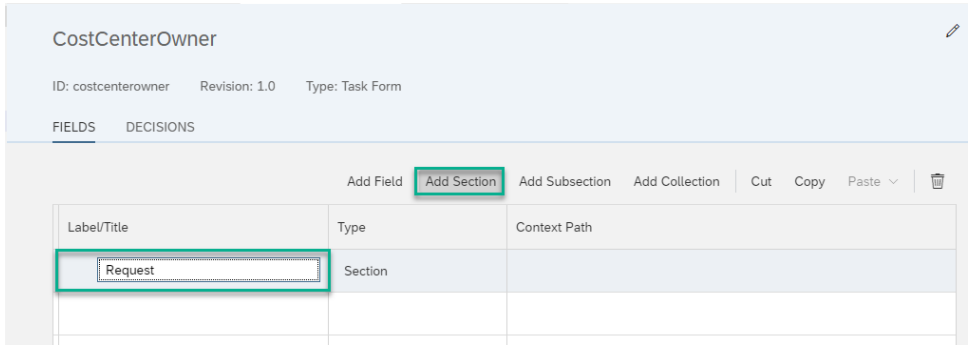
Explanation	Screenshot
33. Before start modeling, please **drag and drop** the **EndEvent1** towards the right side of the editor to keep some space between **Start and End Event**. 34. Select the **StartEvent**, use the speed button and select **User Task.** A user task is added to the workflow model.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

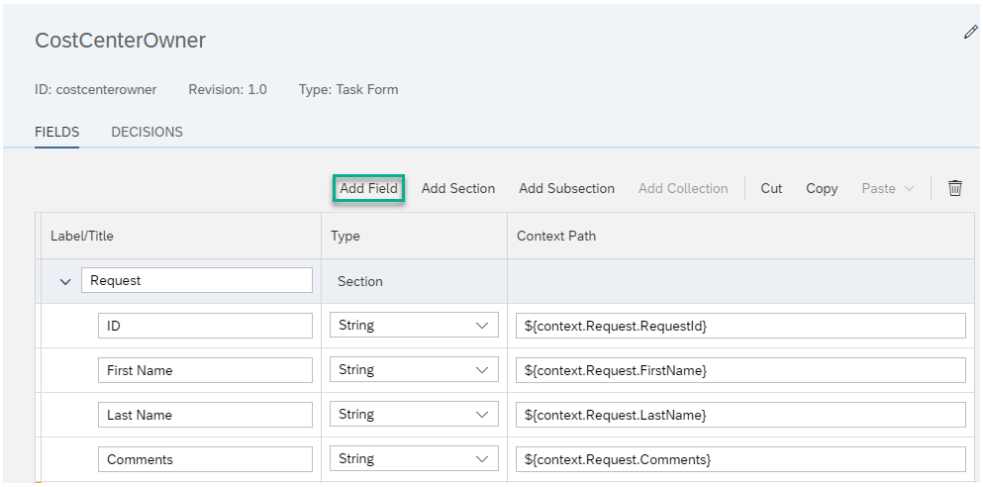
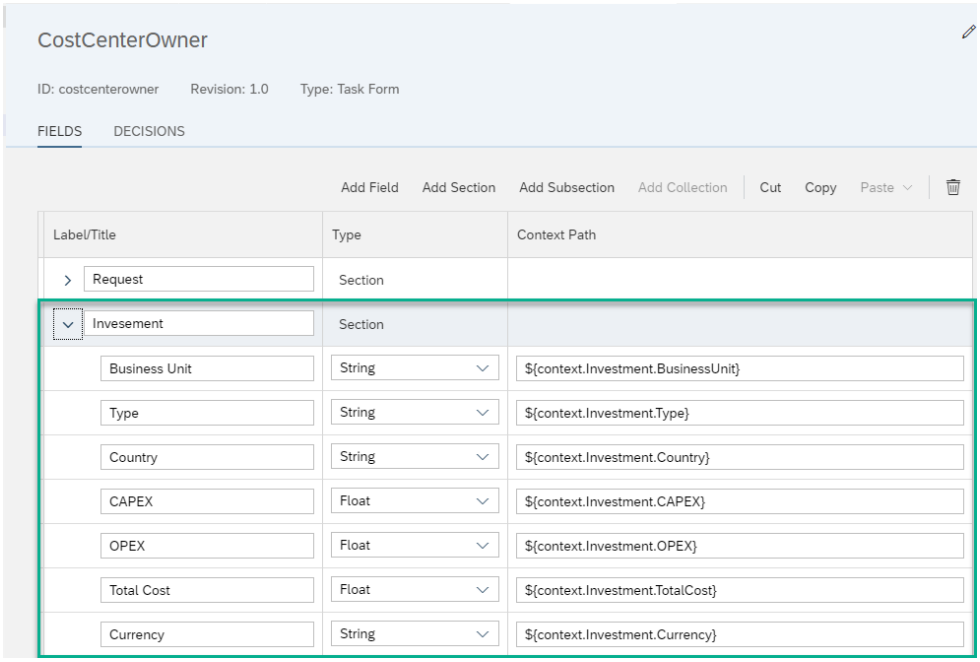
Explanation	Screenshot
39. Select a **User Task** from the palette. 40. Drag and drop the **User Task** just below the **Exclusive Gateway**.	
41. Use **Sequence Flow** from Exclusive Gateway to the new User Task.	

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

Explanation	Screenshot
45. Select **Exclusive Gateway2** and choose **End Event** from speed button.	
46. The workflow model sequence modeling has completed. Do necessary formatting if required.	

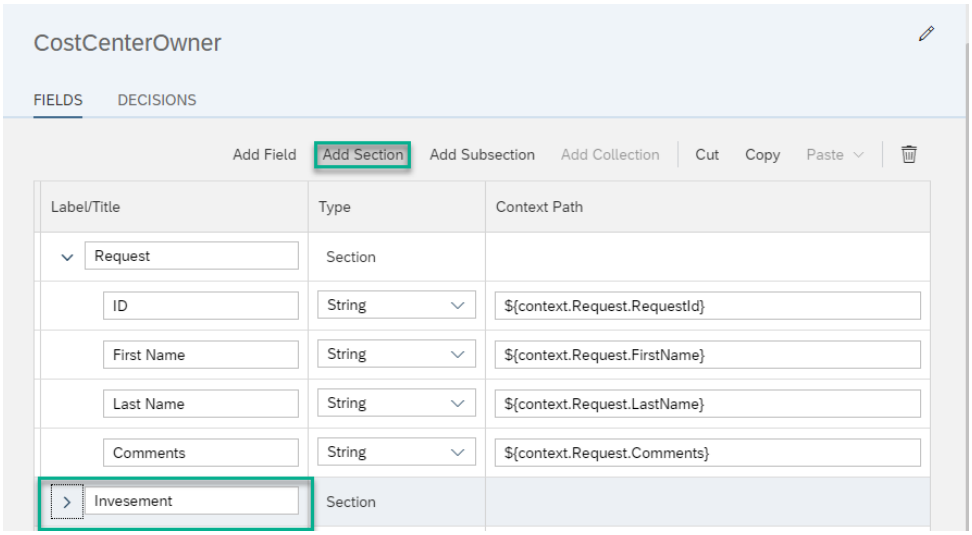
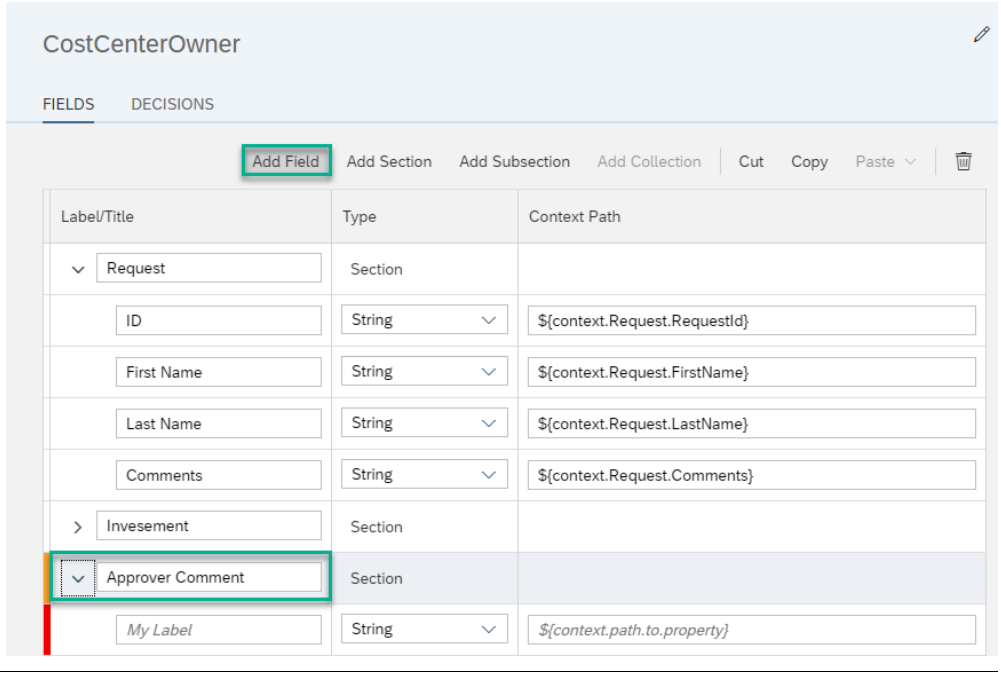
Explanation	Screenshot
47. Select **User Task1** and **User Task Properties**. 48. Under **GENERAL** section, change the Name as **Cost Center Owner.**	
49. Select **DETAILS** section and set the following. **Subject**: Investment Request ${context.Request.RequestId} **Users**: Your Cloud Platform User Id (email id)	

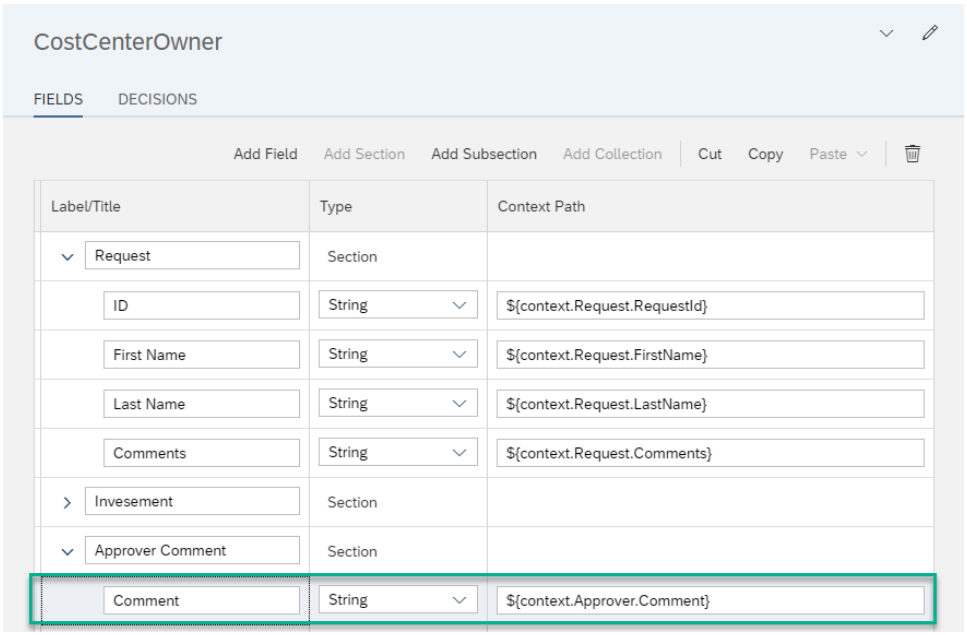
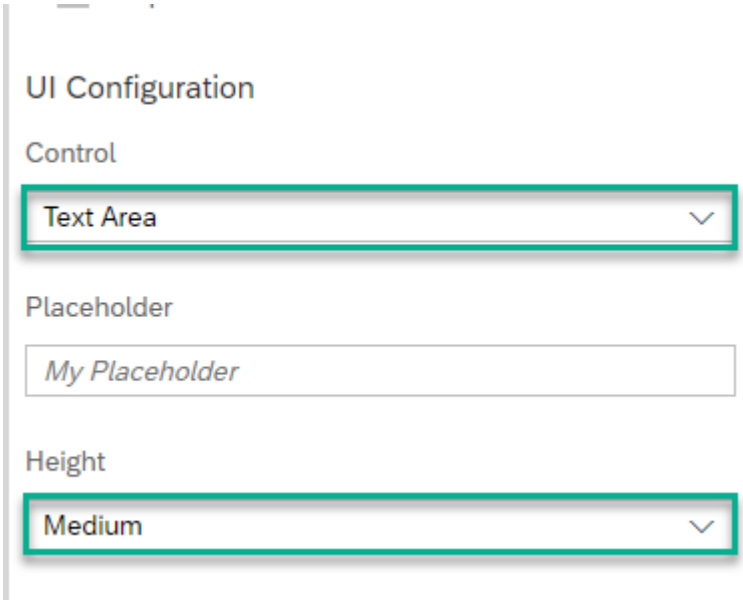
Explanation	Screenshot
Create Workflow Forms 50. Select **USER INTERFACE** section. 51. Change the type as **Form**. 52. Click the link **Create File**. A popup window is available now to enter Form details.	
53. Enter the following. **Name**: CostCenterOwner **Revision**: 1.0 54. Click **Create** button. You can see the Forms Editor opened to model the new task UI.	
55. Click **Add Section**. A section contains set of Fields. 56. Update the **Label / Title** of the section as **Request**	

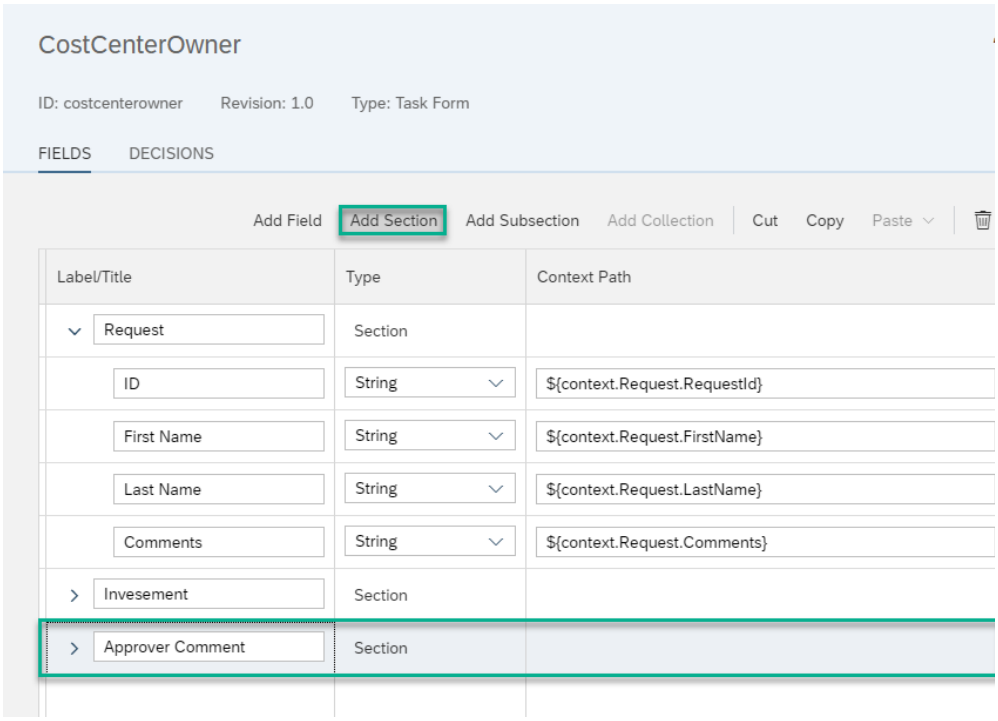
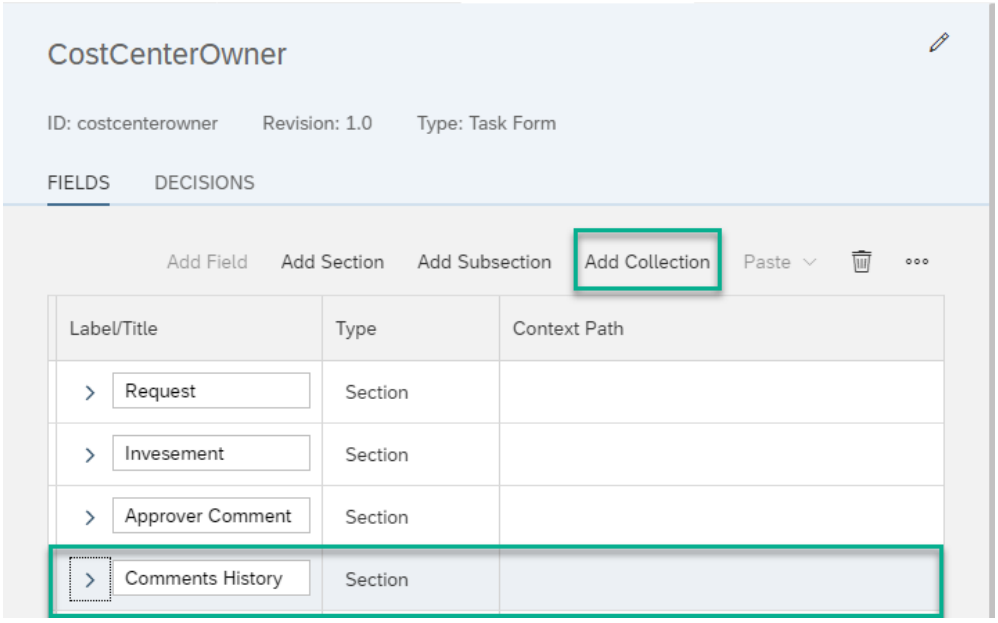
Explanation	Screenshot
57. Select Request and click **Add Field** to add the following fields. Copy the Context Path from the attached file CostCenterOwnerApprovalTask	
58. Add a new Section **Investment**. 59. Add the following Fields. Copy the Context Path from the attached file CostCenterOwnerApprovalTask	

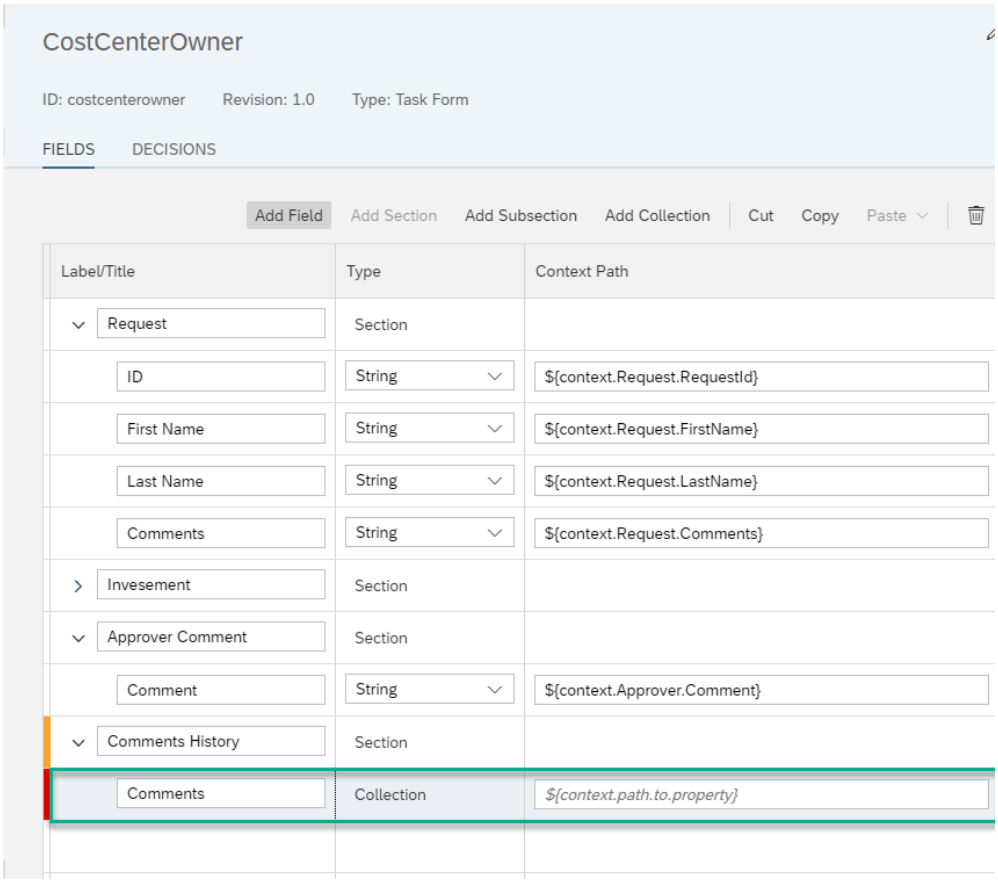
Label	Type	Context Path
ID	String	${context.Request.RequestId}
First Name	String	${context.Request.FirstName}
Last Name	String	${context.Request.LastName}
Commments	String	${context.Request.Comments}

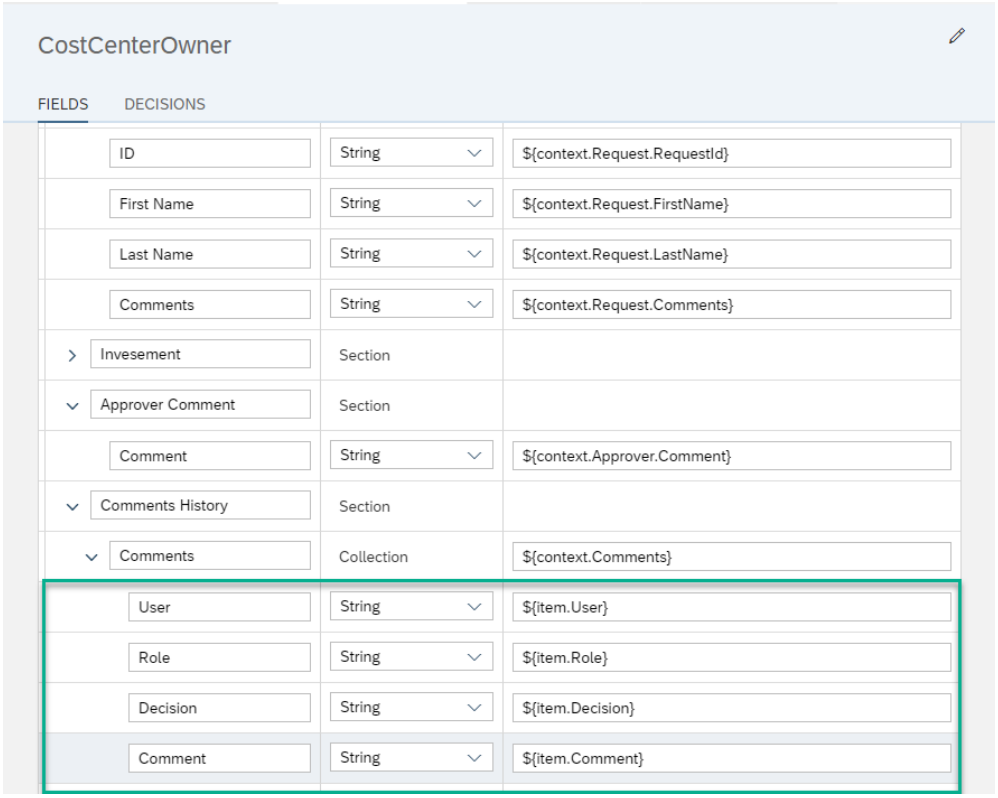
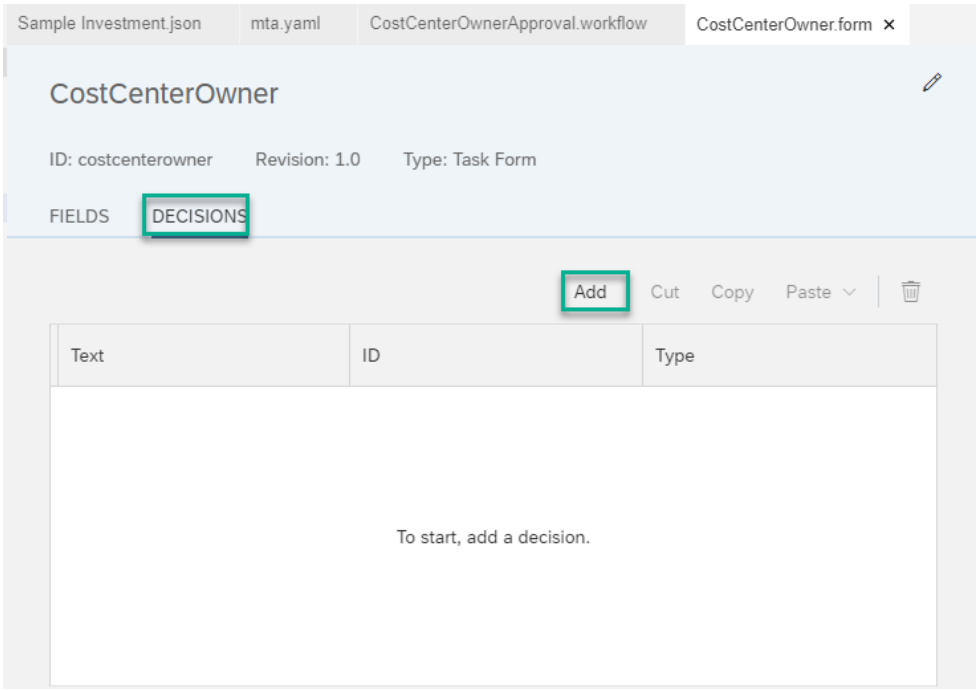
Label	Type	Context Path
Business Unit	String	${context.Investment.BusinessUnit}
Type	String	${context.Investment.Type}
Country	String	${context.Investment.Country}
CAPEX	Float	${context.Investment.CAPEX}
OPEX	Float	${context.Investment.OPEX}
Currency	String	${context.Investment.Currency}

Explanation	Screenshot
60. Select section **Investment**. 61. Click Add **Section**.	
62. Change the **Label/Title** of the section as **Approver Comment**. 63. Click **Add Field**.	

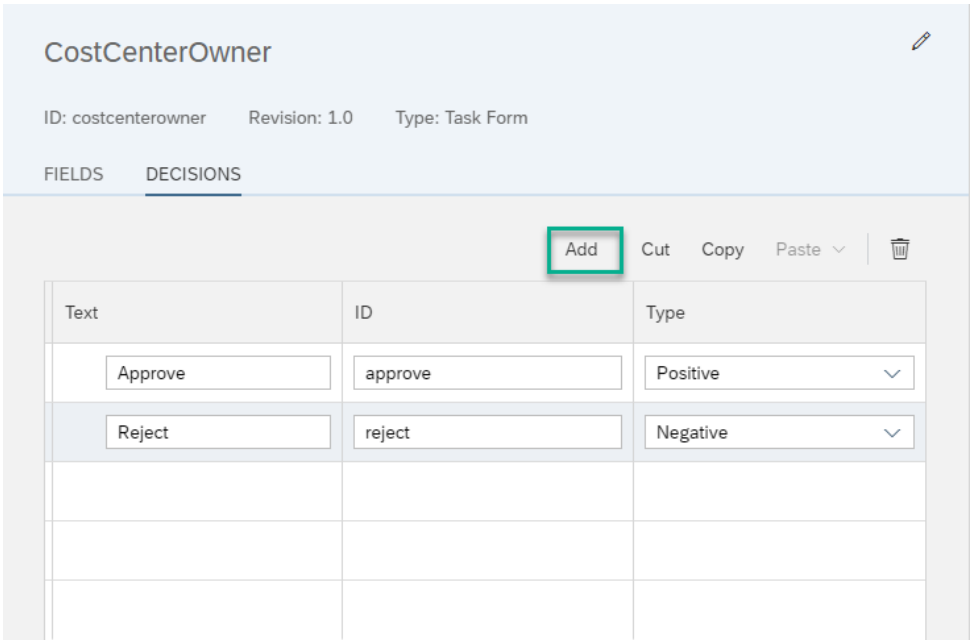
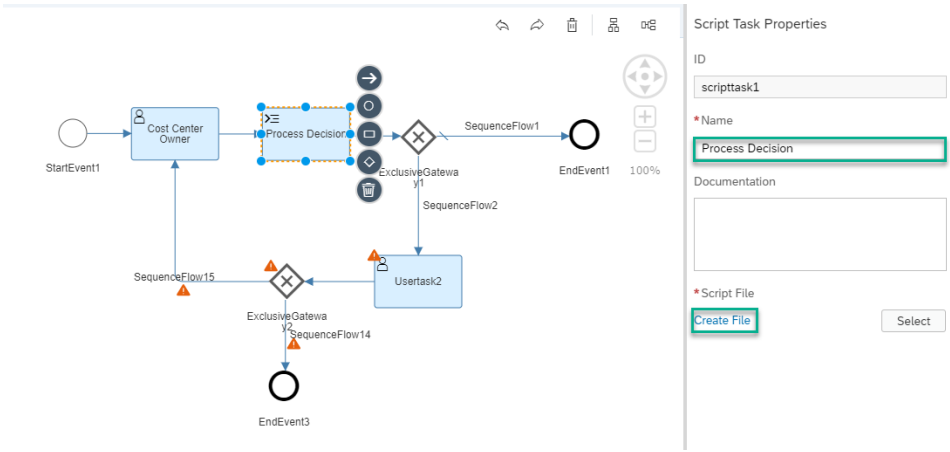
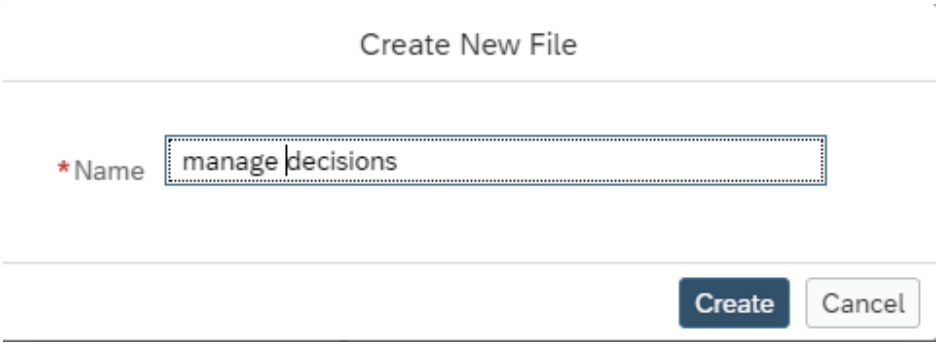
Explanation	Screenshot
64. Update the **Label/Title** of the new Field as **Comment**. 65. Update the **Context Path** ${context.Approver.Comment}	
66. Select the **Comment** field. 67. Select **Control** as **Text Area**. 68. Select **Height** as **Medium.**	

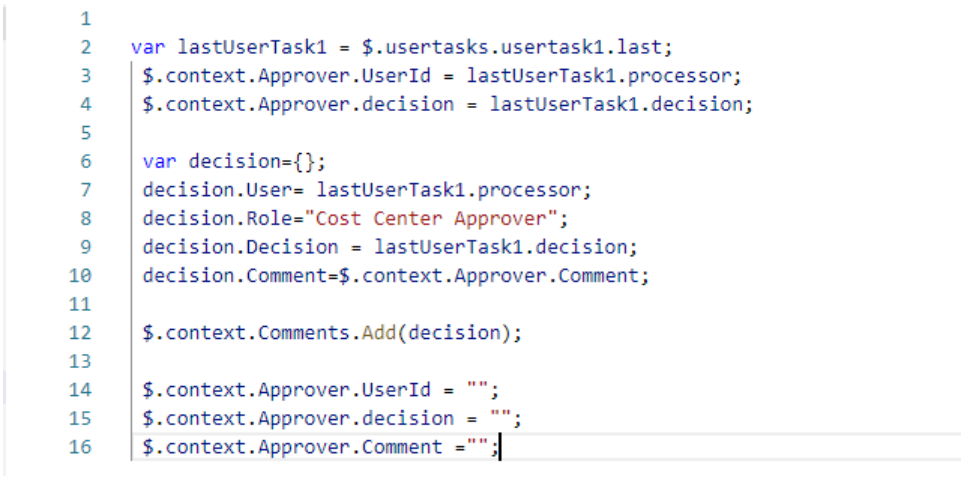
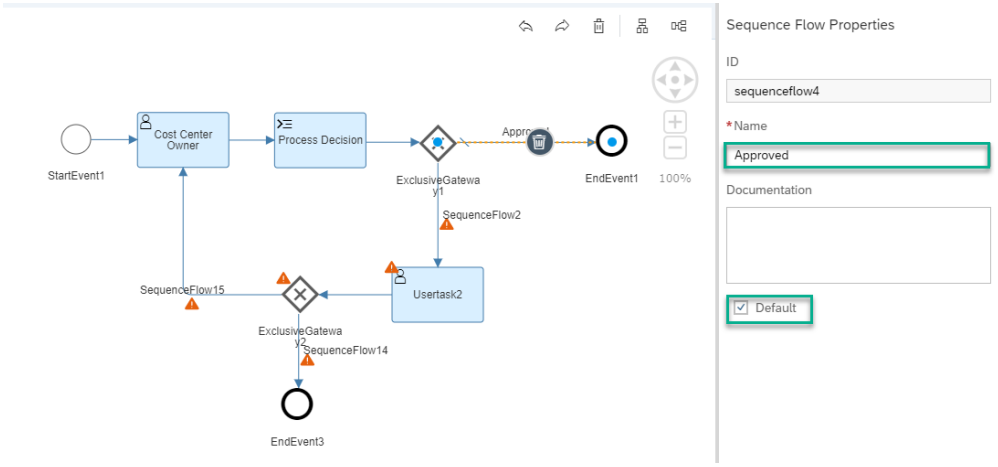
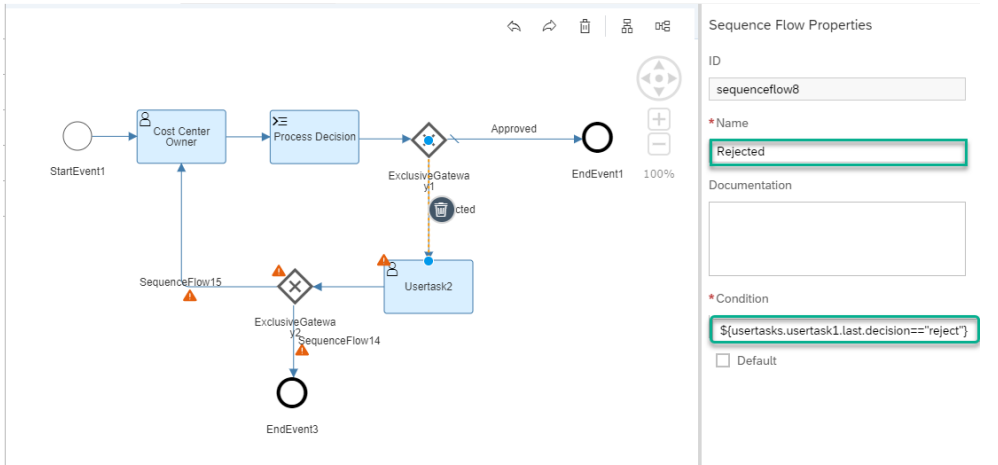
Explanation	Screenshot
69. Add a new Section. Click **Add Section.**	
70. Update **Label/Title** of the newly added Section as **Comments History.** 71. Click **Add Collection.**	

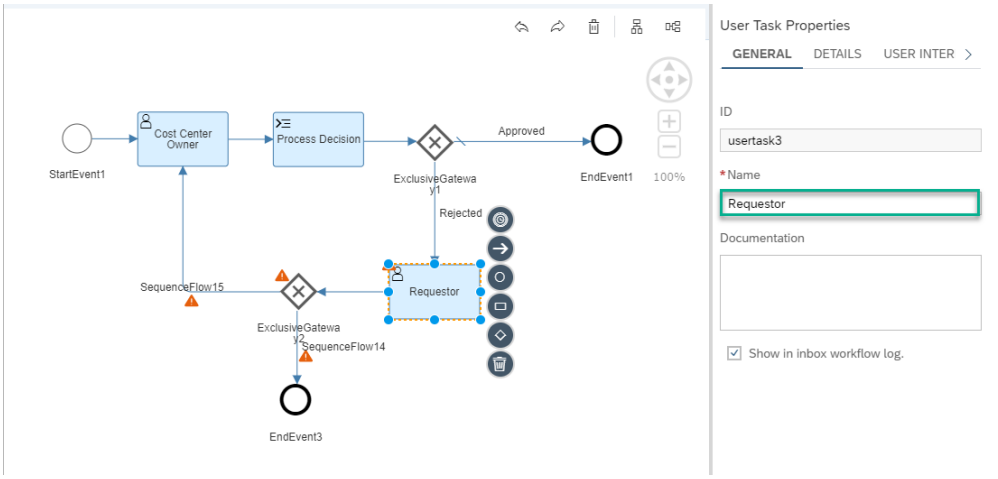
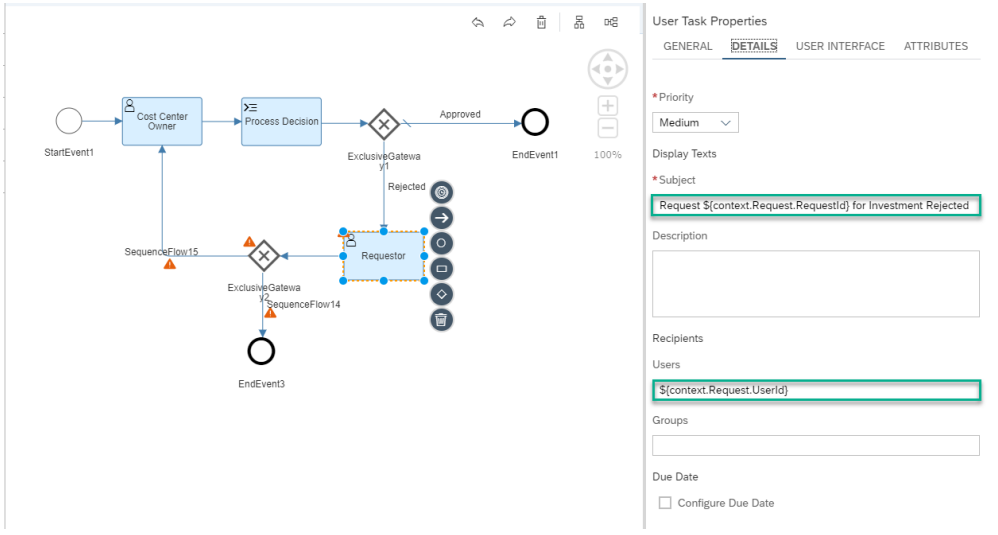
Explanation	Screenshot
72. Update the **Label/Title** as **Comments**. 73. Update the **Context Path** as **${context.Comments}**.	

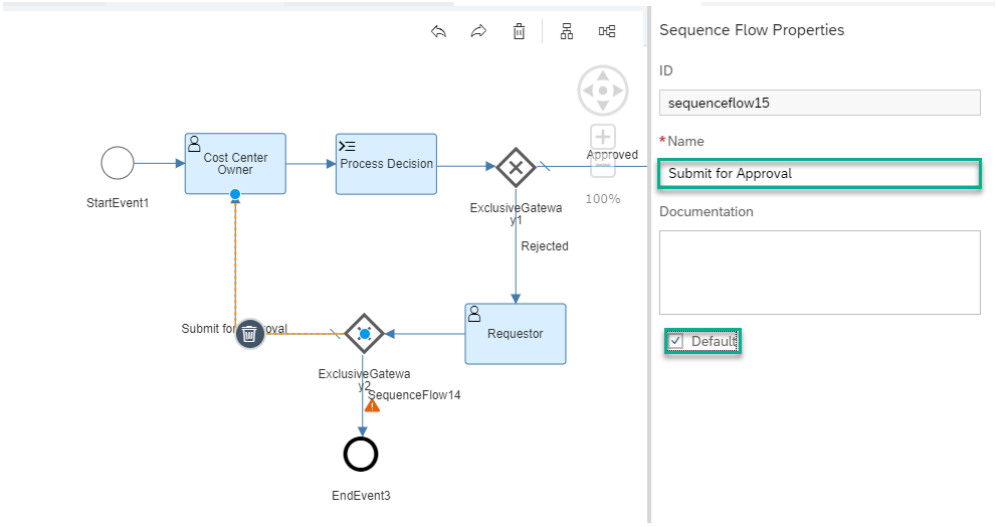
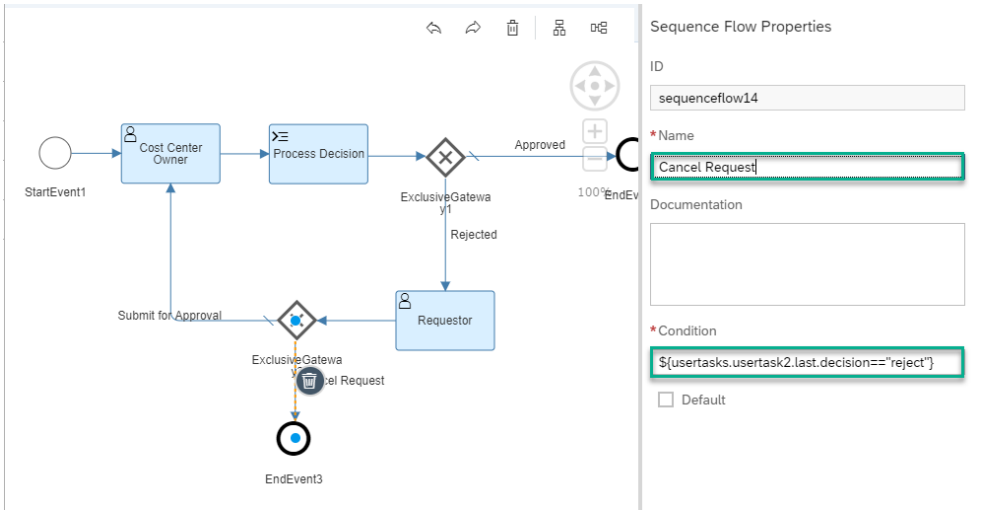
Explanation	Screenshot
74. Select **Comments** and click **Add Field** to add the following fields. Copy the Context Path from the attached file CostCenterOwnerApprovalTask	
75. Select **DECISIONS.** 76. Click **Add.**	

Label	Type	Context Path
User	String	${item.User}
Role	String	${item.Role}
Decision	String	${item.Decision}
Commment	String	${item.Comment}

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

Explanation	Screenshot
82. Copy and paste the scripts from the attached manage decisions.js.	
83. Select the **sequence flow** between the **exclusive gateway** and **end event**. 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 ${usertasks.usertask1.last.decision=="reject"} You may copy the condition from the attached file Exclusive Gateway Conditions.	

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

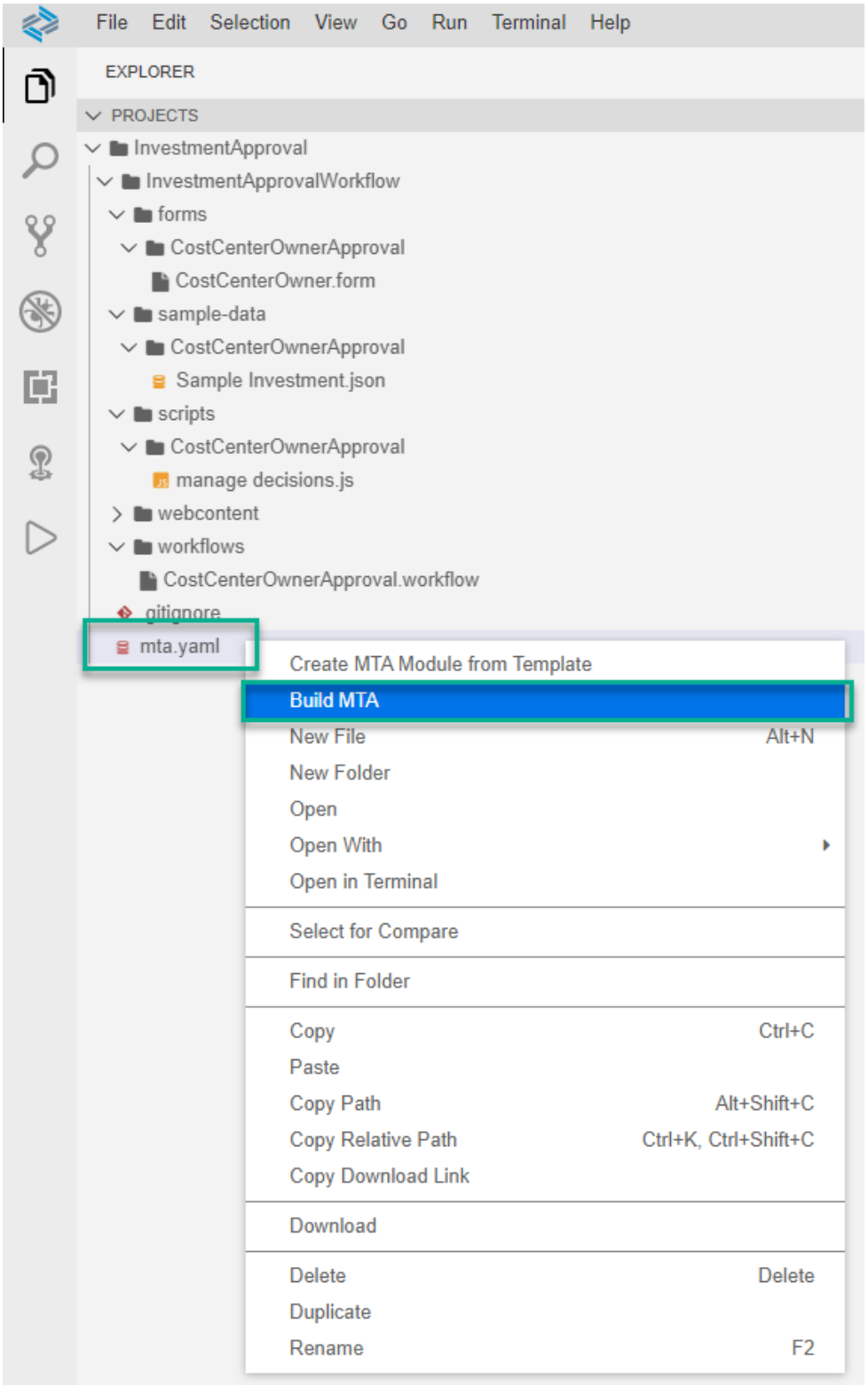
Explanation	Screenshot
94. Select the sequence flow between the Exclusive Gateway and Cost Center Owner user task. 95. Enter **Name** as Submit for Approval 96. Check **Default** check box.	
97. Select the **sequence flow** between the **Exclusive Gateway** and **End event**. 98. Enter **Name** as Cancel Request. 99. Enter **Condition** as ${usertasks.usertask2.last.decision=="reject"} Make sure the Requestor user task ID is usertask2. If it is different change the ID in the expression. You may copy the condition from the attached file Exclusive Gateway Conditions.	

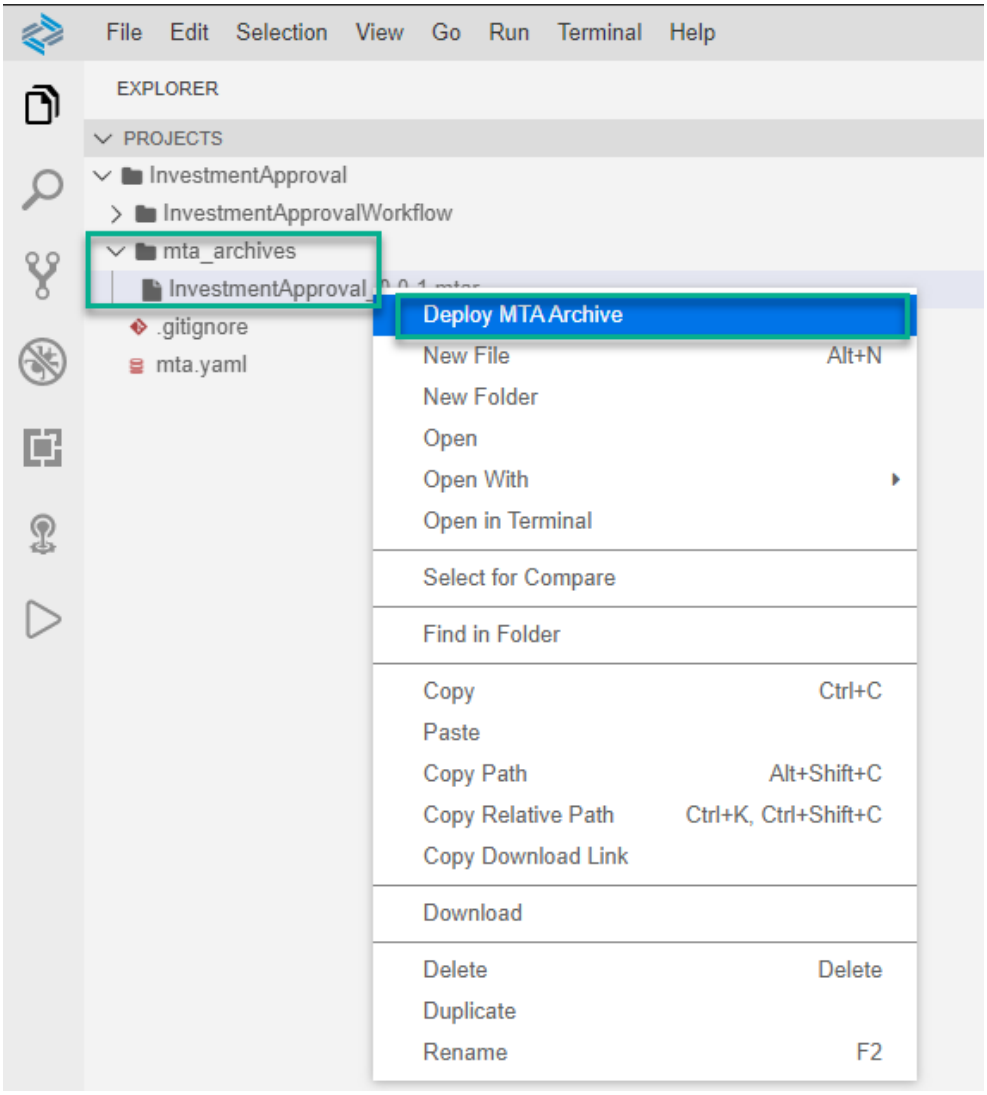
Build and Deploy

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
102. Successful build will create a new folder **mta_archives** and a .mtar file. 103. Select the .mtar file and right click. 104. Click **Deploy MTA Archive**.	
105. Successful deployment will show the log.	

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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