

IBM Cloud Pak for Business Automation Demos and Labs 2026

Introduction to IBM Business Automation Workflow

Jorge D. Rodríguez

jorgedr@us.ibm.com

Swapnil Agrawal

aswapnil@ca.ibm.com

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1 Introduction

1.1 IBM Business Automation Workflow

Organizations often require workflows that are unstructured, require knowledge workers, implement straight-through processes, integrate documents with the workflows and provide system of records. IBM Business Automation Workflow is software that combines business process management and case management capabilities in a single integrated workflow solution to provide these capabilities. It unites information process, and users to provide a 360-degree view of work to help drive more successful business outcomes.

Using the case feature, you can create unstructured workflows that can be triggered using documents and maintain the case information in a system of record for auditability. You do this in the [IBM Case Builder](#).

Using the process features, you can implement the activities in the unstructured workflows as structured tasks that can be both straight-through and require human intervention when required. The process feature also allows developers to create UIs for the end users working on a workflow. You do this in the [IBM Process Designer](#).

Additional information about IBM Business Automation Workflow can be found [here](#).

1.2 Lab Overview

In this lab, you will learn how to create a sample Workflow automation project for the client onboarding scenario. It covers how to build a Workflow project that includes both case and process features and will help you learn more about how the Case Builder and Process Designer integrate. As a part of the lab, you will perform the following exercises:

- **Create the Client Onboarding solution** - In this exercise, you will learn how to [create a Workflow solution](#). You will do this by creating the initial framework of the client onboarding solution in the Case Builder.
- **Create the Client Onboarding Request case type** - In this exercise, you will learn more about [case types](#). A case type identifies the activities, content, views, etc. that are required to manage the case. Using the Case Builder, you will add a case type to the solution created in the previous exercise that will handle the client onboarding request. You will then use the Process Designer to create a custom UI that shows the details of an existing case.
- **Adding activities to the Client Onboarding Request case type** - In this exercise, you will learn how to create and implement [activities](#) in a case type. You will do that by creating some of the activities that are required for the Client Onboarding Request case type in the Case Builder. Then, using the Process Designer, you will implement the details of these activities.

Approximate Duration: 3-4 hours

1.3 Lab Setup Instructions

1. If you are performing this lab as a part of an IBM event, access the document that lists the available systems and URLs along with login instructions. For this lab, you will need to access **IBM Business Automation Studio**.
2. Download the **Legacy Consulting - Banking Information.pdf** from the Lab Data folder onto your computer.

2 Exercise: Create the Client Onboarding solution

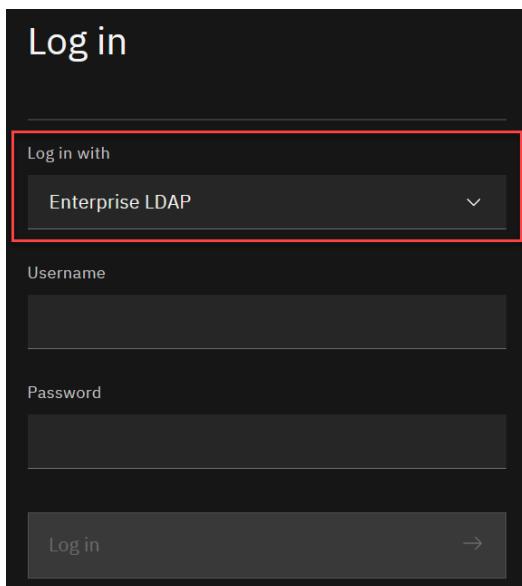
2.1 Introduction

In this exercise, you will learn how to [create a Workflow solution](#) that includes case features. You will do this by creating the initial framework of the client onboarding solution in the Case Builder. The initial framework will define the roles (e.g., Account Manager & Client Rep), the properties (e.g., Client name & approval status) and the documents required (e.g. Client documents & utility bill).

2.2 Exercise Instructions

2.2.1 Create the solution in IBM Business Automation Studio

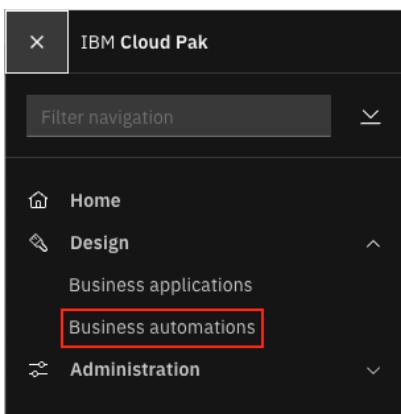
1. In your browser, login to IBM Business Automation Studio using the Enterprise LDAP option.



The homepage contains cards that showcase recent artifacts across all installed Cloud Paks in the system. For IBM Cloud Pak for Business Automation, the recent [business applications](#) and [automation services](#) are shown.

A screenshot of the IBM Business Automation Studio overview page. The page has a dark background with white text. At the top, it says "Overview". Below that are two sections: "Recent business applications" and "Recent automation services". The "Recent business applications" section shows a message: "① No recent business applications" and "No recent business applications". The "Recent automation services" section lists three items: "client_onboarding_lab" (date 05/20/2021), "Client_Onboarding_Workflows" (date 05/18/2021), and "client_onboarding_decisions" (date 05/18/2021). At the bottom of the "Recent automation services" section is a blue "View all" link.

2. In the top-left corner, click on the hamburger menu icon and select **Design → Business automations** to access the automation repository.



This brings up the Business automations page where you can create or reuse automations from different capabilities of IBM Cloud Pak for Business Automation. If a capability is not installed on the system, it will be greyed out. At this point, you may see a dialog for a guided tour. You can choose to go through it now or do it later.

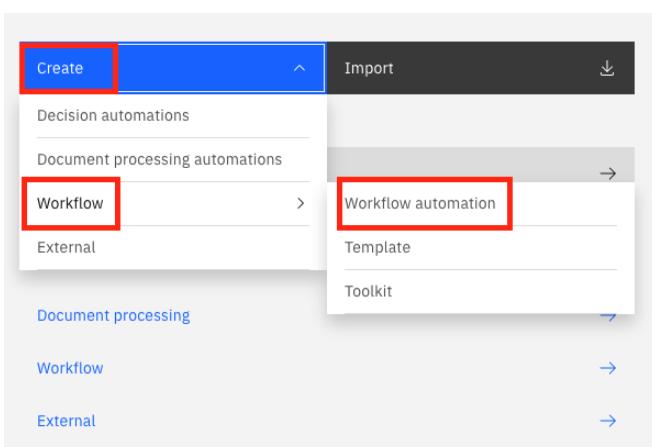
The screenshot shows the 'Business automations' page. At the top, there are buttons for 'Create' and 'Import'. To the right, a list of published automation services is shown:

| Published (2) | |
|--------------------------------------|----------------------|
| Client_Onboarding_Workflows Workflow | Published 09/27/2022 |
| client_onboarding_decisions Decision | Published 09/27/2022 |

Below this, there's a section titled 'Published automation services' with arrows pointing to various categories:

- Decision
- Document processing
- Workflow
- External

3. Click on **Create → Workflow → Workflow automation**.

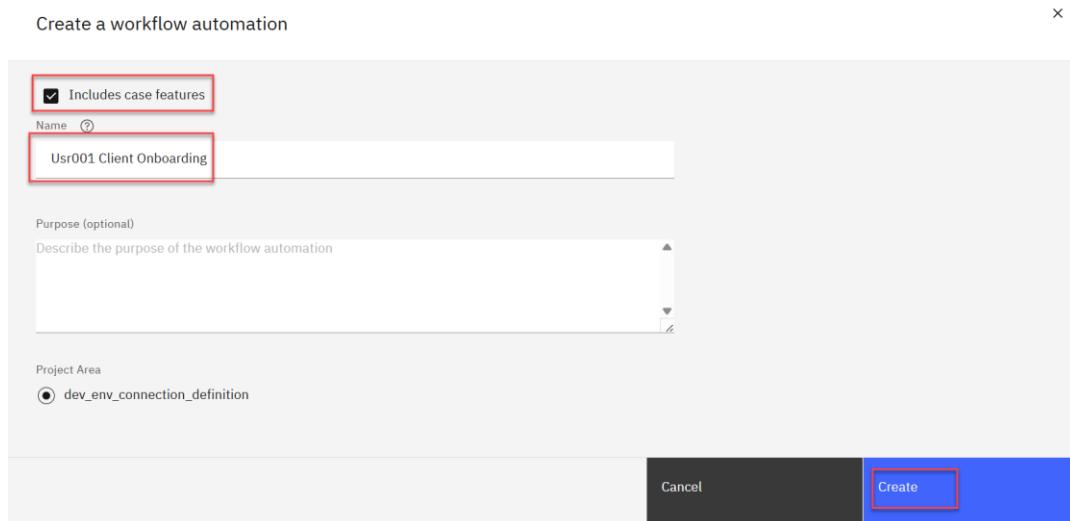


4. Check the **Includes case features** checkbox.

Note: As a best practice, you should include the case features when you want to create a Workflow automation project that contains unstructured activities, is content intensive (i.e., activities triggered by documents) and/or requires persistence (i.e., a permanent system of record). When you create a Workflow automation project with case features, you can design your solution in the Case Builder and implement the activities of the case in the Process Designer.

Historically, a case solution would be required to access the Case Builder and a process application would be required to access the Process Designer. However, with Business Automation Workflow, when you create a Workflow automation project with case features, a case solution is created along with a hidden Process Application for the case and process integration to work seamlessly. This is important to understand from an operations standpoint as processes are not systems of records and require regular cleanup.

5. In the **Name** field, enter **UsrNNN Client Onboarding** where *UsrNNN* is your username.
6. Provide an optional purpose.
7. Click on **Create**.



This launches the Case Builder where you can define your case management solution. Note that the Case Builder may take a few seconds to load.

2.2.2 Create roles in the solution

Roles are the different personas/teams that are required as part of the client onboarding solution i.e., Client Rep & Account Manager.

1. Click on the **Roles** tab.

The screenshot shows the 'Business automations / Workflow Automation' interface. The 'Roles' tab is highlighted with a red box. Below the tabs, there is a card for 'Usr001 Client Onboarding' with details: Solution prefix U001C, Created by usr001 on August 9, 2024, and Modified by usr001 on August 9, 2024. There is also a three-dot menu icon.

2. Click on **Add Role +** in the upper-right corner.

3. In the **Role** field, enter **Client Rep**.

4. Provide an optional description

5. Click on **OK**

The screenshot shows the 'Roles' dialog box. The 'Add Role +' button is highlighted with a red box. The 'Name' field contains 'Client Rep' (which is also highlighted with a red box). The 'Description' field contains 'Handles all activities associated with client interaction'. The 'OK' button is highlighted with a blue box.

6. Repeat the steps before to add another role called **Account Manager**.

The screenshot shows the 'Roles' dialog box again. The 'Add Role +' button is highlighted with a red box. The 'Name' field contains 'Account Manager' (which is highlighted with a red box). The 'Description' field contains 'Reviews the client onboarding request'. The 'OK' button is highlighted with a blue box.

You should now have 2 roles defined in your solution:

The screenshot shows the 'Roles' list. It contains two entries:

- Account Manager: Description - Reviews the client onboarding request
- Client Rep: Description - Handles all activities associated with client interaction

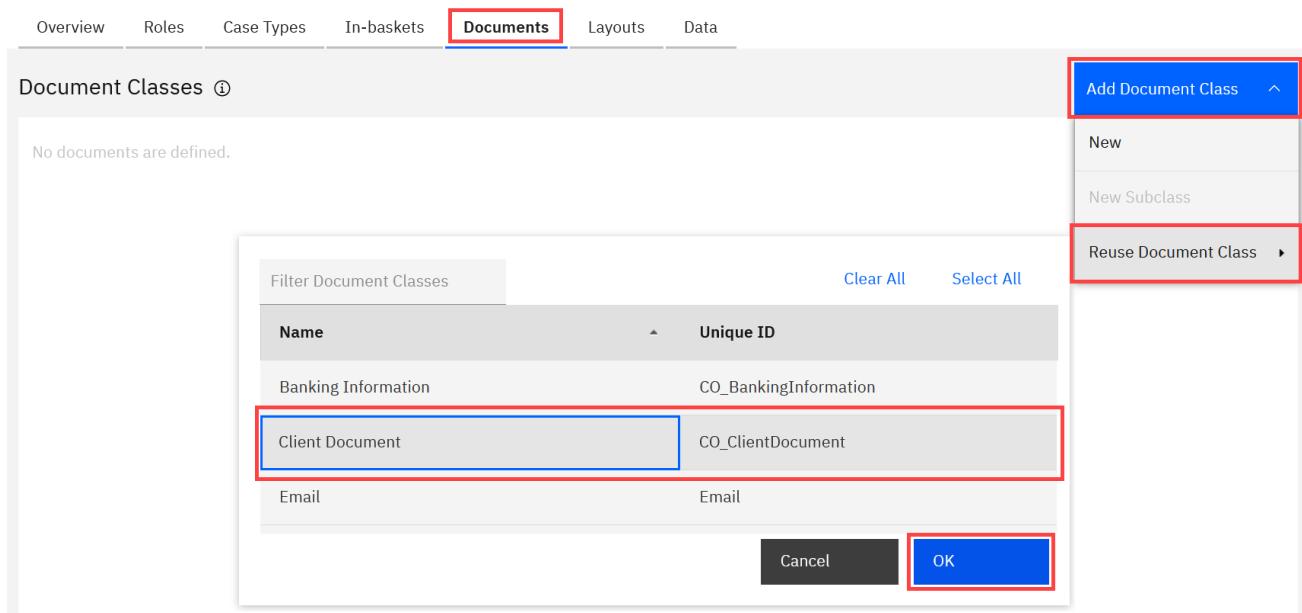
7. Click on **Save** in the upper-right corner.

The screenshot shows the save controls at the top right of the screen. The 'Save' icon (a circle with a checkmark) is highlighted with a red box.

2.2.3 Add document classes to the solution

Next, we will add [document classes](#) that are required as a part of the solution. Document classes help you organize and classify the documents that belong to a case and can contain custom properties. The document classes required for this solution are **Client Document** and **Utility Bill**. These classes have already been defined in the environment and can be re-used in the solution. This is to avoid creating multiple document classes with the same name.

1. Click on the **Documents** tab.
2. Click on **Add Document Class → Reuse Document Class**.
3. Select the **Client Document** class.
4. Click on **OK**.



5. Repeat the previous steps to add the existing **Utility Bill** document class.

Note: You can use Ctrl/Command to select multiple documents at once.

You should now have two document classes defined in your solution:



6. Click on **Save**

2.2.4 Create properties in the solution

Next, we will add some of the [properties](#) required for this solution. Properties are artifacts that can be reused within the solution at various levels to define things such as names, dates, approval status, amounts, etc.

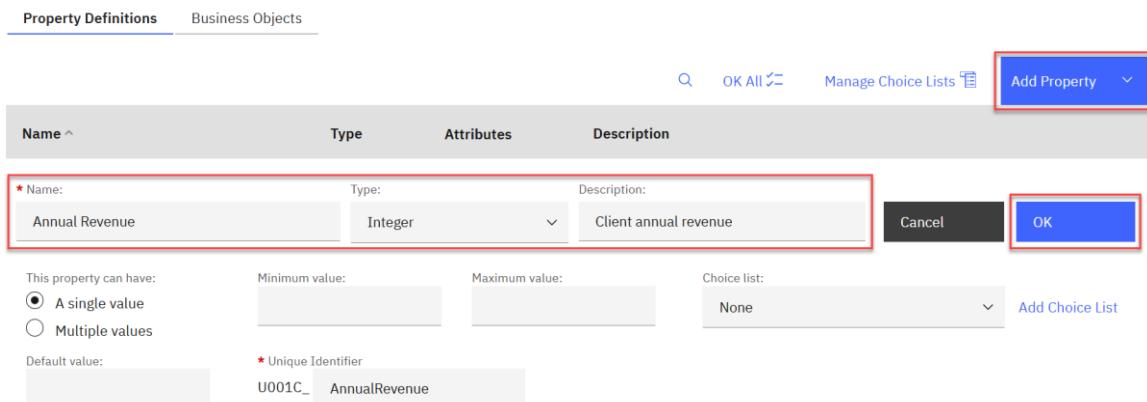
1. Click on the **Data** tab.
2. Click on the **Property Definitions** tab if not yet shown.



3. Click on **Add Property → New**.
4. In the **Name** field, enter **Annual Revenue**.

Note: Make sure you type the name of each property **EXACTLY** as provided in these steps. Use copy/paste if possible. Also make sure to select the correct type, as changing it later may have unexpected side-effects.

5. For the **Type** field, select **Integer**.
6. Provide an optional description.
7. Click on **OK**.



8. Similarly, add the following 6 properties:

Note: Make sure you type the name of each property **EXACTLY** as provided. Use copy/paste if possible. Also make sure to select the correct type, as changing it later may have unexpected side-effects.

| Name | Type | Optional Description |
|--------------------------|---------|---|
| Client Name | String | Name of the client |
| Company Age | Integer | Age of the client's company in years |
| Defaulted Payment | Boolean | Client has previously defaulted a payment |

| | | |
|-------------------------------|---------|--|
| Number of Employees | Integer | Number of employees working for the client |
| Industry | String | The industry the client is interested in |
| All Documents Received | Boolean | Status of required documents |

9. Click on the column header **Name** to sort the list of properties alphabetically

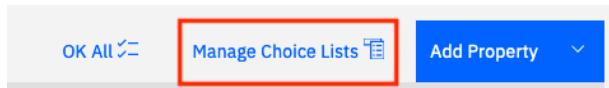
You should now have the following list of 7 property definitions:

| Property Definitions ⓘ | | | |
|------------------------|---------|------------|--|
| Name ^ | Type | Attributes | Description |
| All Documents Received | Boolean | □ | Status of required documents |
| Annual Revenue | Integer | □ | Client annual revenue |
| Client Name | String | □ | Name of the client |
| Company Age | Integer | □ | Age of the client's company in years |
| Defaulted Payment | Boolean | □ | Client has previously defaulted a payment |
| Industry | String | □ | The industry the client is interested in |
| Number of Employees | Integer | □ | Number of employees working for the client |

Note: In the current solution, we have only used simple types such as String, Boolean, etc. However, you can configure a property to be of type **Business Object** which allows you to create more complex types with nested properties.

Next, we need to add a property to hold the status of the approval. The approval status can either be **Under Review**, **Approved** or **Rejected**. To do this, we will add a choice list.

10. Click on **Manage Choice Lists**.



11. In the dialog, click on **Add Choice List+**.

12. In the **Name** field, enter **Approval Status**.

13. Enter **Under Review** for both the **Display Name** and **Value**.

14. Click on **Add Choice Item+**.

15. Enter **Approved** for both the **Display Name** and **Value**.

16. Click on **Add Choice Item+**.

17. Enter **Rejected** for both the **Display Name** and **Value**.

18. Click on **OK**.

19. Click on **Close**.

Manage Choice Lists

| Choice List ^ | List Details | | | | | | | | |
|------------------------------|--|----------------|---------|--------------|--------------|----------|----------|----------|----------|
| No choice lists are defined. | * Name: <input type="text" value="Approval Status"/> Choice list type: String <input type="button" value="Cancel"/> <input type="button" value="OK"/> <table border="1"> <thead> <tr> <th>* Display Name</th> <th>* Value</th> </tr> </thead> <tbody> <tr> <td>Under Review</td> <td>Under Review</td> </tr> <tr> <td>Approved</td> <td>Approved</td> </tr> <tr> <td>Rejected</td> <td>Rejected</td> </tr> </tbody> </table> <input type="button" value="Add Choice Item +"/> | * Display Name | * Value | Under Review | Under Review | Approved | Approved | Rejected | Rejected |
| * Display Name | * Value | | | | | | | | |
| Under Review | Under Review | | | | | | | | |
| Approved | Approved | | | | | | | | |
| Rejected | Rejected | | | | | | | | |
| | <input type="button" value="Close"/> | | | | | | | | |

Next, we will add a property that uses this choice list.

20. Click on **Add Property → New**.
21. In the **Name** field, enter **Approval Status**.
22. Enter an optional description.
23. For the **Choice List** field, select **Approval Status**.
24. For the **Default value** field, select **Under Review**.
25. Click on **OK**.

Property Definitions ⓘ

| Name ^ | Type | Attributes | Description |
|--|--|--|--|
| * Name: <input type="text" value="Approval Status"/> Type: <input type="text" value="String"/> Description: Approval status of the client onboarding request | <input type="button" value="Cancel"/> <input type="button" value="OK"/> | | <input type="button" value="Add Choice List"/> |
| This property can have: <input checked="" type="radio"/> A single value <input type="radio"/> Multiple values | * Maximum length: <input type="text" value="64"/> | Choice list: <input type="text" value="Approval Status"/> | <input type="button" value="Add Choice List"/> |
| Default value: <input type="text" value="Under Review"/> | * Unique Identifier <input type="text" value="U001C_ApprovalStatus"/> | | |

We will now add the last property for this exercise, to contain the list of services requested by the client.

26. Click on **Add Property → New**.
27. In the **Name** field, enter **Services Requested**.
28. Provide an optional description.
29. For the **This property can have** field, select the **Multiple values** option.
30. Click on **OK**.

Property Definitions Business Objects

| Name ^ | Type | Attributes | Description |
|---|-------------------------|--|---|
| * Name: Services Requested | Type: String | Description: List of services requested by the client | <input type="button" value="Cancel"/> <input type="button" value="OK"/> |
| This property can have: <input type="radio"/> A single value <input checked="" type="radio"/> Multiple values | * Maximum length: 64 | Choice list: None | <input type="button" value="Add Choice List"/> |
| * Unique Identifier U001C_ ServicesRequested | | | |

31. Click on the column header **Name** to sort the list of properties alphabetically.

Your list of property definitions should now look as follows:

Property Definitions Business Objects

| Name ^ | Type | Attributes | Description |
|------------------------|---------|------------|--|
| All Documents Received | Boolean | □ | Status of required documents |
| Annual Revenue | Integer | □ | Client annual revenue |
| Approval Status | String | □ | Approval status of the client onboarding request |
| Client Name | String | □ | Name of the client |
| Company Age | Integer | □ | Age of the client's company in years |
| Defaulted Payment | Boolean | □ | Client has previously defaulted a payment |
| Industry | String | □ | The industry the client is interested in |
| Number of Employees | Integer | □ | Number of employees working for the client |
| Services Requested | String | □ | List of services requested by the client |

32. Click on **Save** .

This concludes exercise 1. In this exercise, we setup the framework necessary to create a case solution. In the next exercise, we will use the various properties, roles, etc. to create a [case type](#) for the solution.

3 Exercise: Create the Client Onboarding Request Case Type

3.1 Introduction

In this exercise, you will learn more about [case types](#). A case type identifies the activities, content, views, etc. that are required to manage the case. Using the Case Builder, you will add a case type to the solution created in the previous exercise that will handle the client onboarding request. You will then use the Process Designer to create a custom UI that shows the details of an existing client onboarding case request.

3.2 Exercise Instructions

3.2.1 Create the case type

1. Open the **UsrNNN Client Onboarding** Workflow project if not already open.
2. Click on the **Case Types** tab.
3. Click on **Add Case Type +**.



4. In the **Case type name** field, enter **Client Onboarding Request**.
5. Provide an optional description.

The screenshot shows the 'Case Type' configuration page. The 'Case Type' tab is selected. Several input fields are highlighted with red boxes:

- 'Case type name:' field containing 'Client Onboarding Request'
- 'Case type unique identifier:' field containing 'U001C_ClientOnboardingRequest'
- 'Case type description:' field containing 'Case type that handles the client onboarding request'

At the bottom, the 'Starting document class:' dropdown is set to '<None>'.

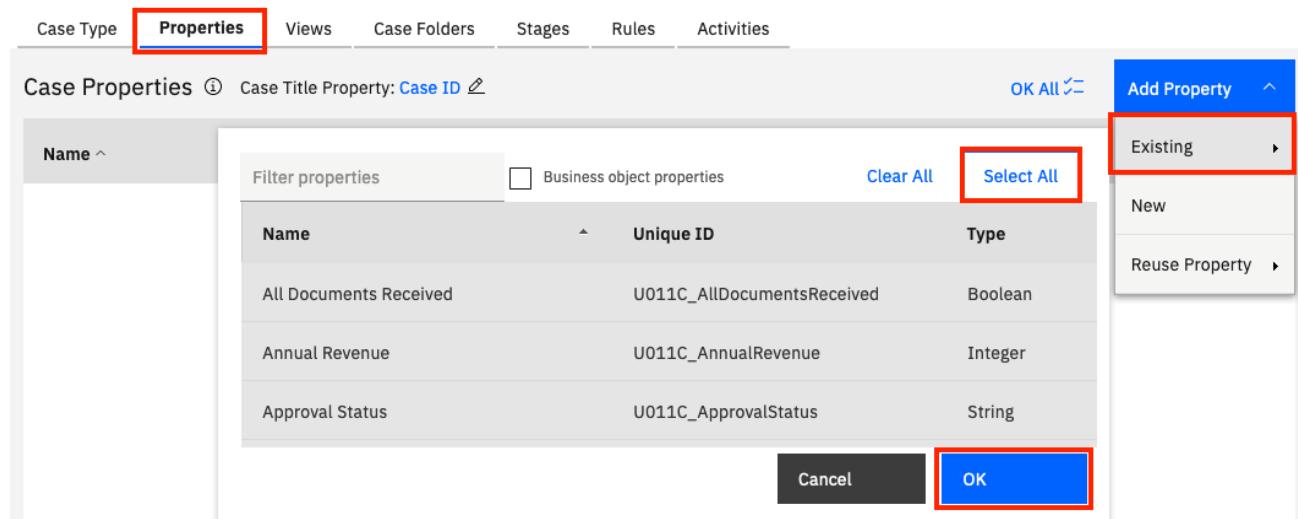
6. Click on **Save**

We will leave the **Starting document class** as **<None>** but it's an important field to note. This field allows the case to be triggered automatically when a document of the selected class is added to the content repository backing the Workflow server. This has several use cases like - starting a mortgage application case if a mortgage application form is uploaded, starting an insurance claim request if a picture of a car is submitted. In this lab, we will start the client onboarding request using the JavaScript API.

3.2.2 Add properties to the case type

Next, we will add properties to the case type.

1. Click on the **Properties** tab.
2. Click on **Add Property → Existing → Select All**.
3. Click on **OK**.



4. Click on **OK All**.



Your case properties must now look as follows (your order may be different but that is fine):

| Name | Type | Attributes | Description |
|------------------------|---------|------------|--|
| All Documents Received | Boolean | □ | Status of required documents |
| Annual Revenue | Integer | □ | Client annual revenue |
| Approval Status | String | □ | Approval status of the client onboarding request |
| Client Name | String | □ | Name of the client |
| Company Age | Integer | □ | Age of the client's company in years |
| Defaulted Payment | Boolean | □ | Client has previously defaulted a payment |
| Industry | String | □ | The industry the client is interested in |
| Number of Employees | Integer | □ | Number of employees working for the client |
| Services Requested | String | □ | List of services requested by the client |

5. Click on **Save**

3.2.3 Create a custom UI for the case details view

Each case type has a case details view. This view allows users to see the details of a case like the summary, properties, activities, comments, documents, etc. You can define this view as a [Client-side human service](#) which offers enhanced flexibility for developers to create a customized UI design.

1. Click on the **Case Type** tab.
2. Click on **New Case Details layout** at the bottom.

Default layout for Add Case page:

Add Case Default (Human Service) New Add Case layout

Default layout for Split Case page:

Split Case Default (Human Service) New Split Case layout

Default layout for Case Details page:

Case Details Default (Human Service) New Case Details layout

3. In the **Name** field, enter **Custom Case Details**.
4. Provide an optional description.
5. Click on **OK**.

Case Type Properties Views Case Folders Stages Rules Activities

Views ⓘ

Case Layouts Case Summary Case Search

OK All Add Layout

| Name ^ | Type | Description ^ |
|--|---|--|
| * Name: Custom Case Details | Description: Custom client-side human service to show the case details | |
| * Unique Identifier: CustomCaseDetails | Type ⓘ Case Details | Case Adapter Page ⓘ Case Details Adapter |
| | | <input checked="" type="checkbox"/> Use as default layout |

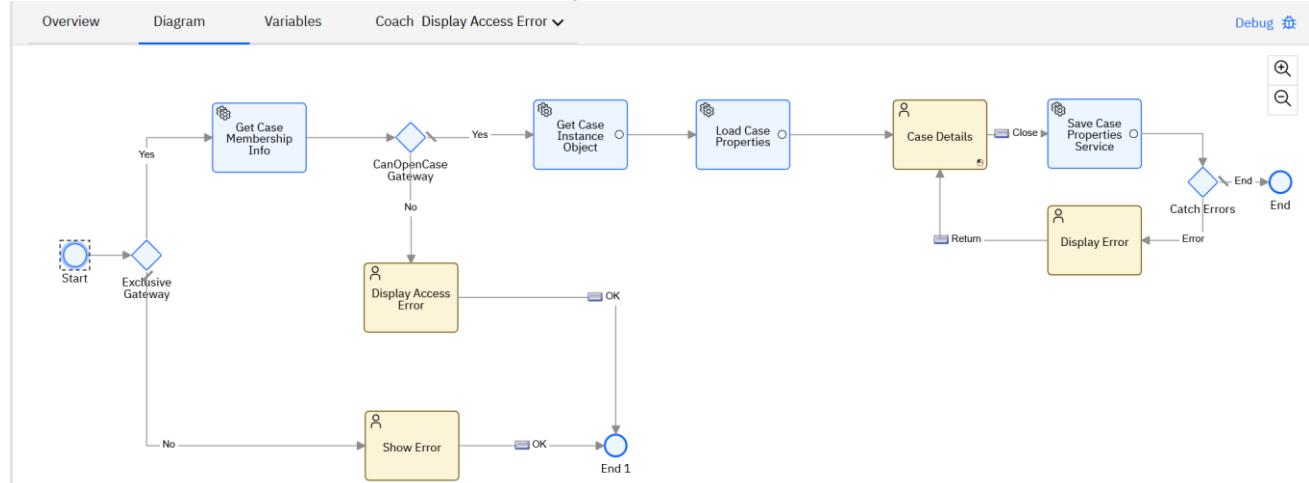
Cancel OK

6. Click on **Save** .
7. Click on **Custom Case Details** to modify its design.

| Name ^ | Type | Description ^ |
|---|--------------|---|
| Custom Case Details | Case Details | Custom client-side human service to show the case d etails |

This opens a new window in IBM Process Designer which contains the diagram included below.

Note: If the IBM Process Designer window does not load the first time, click on the browser's address bar and press Enter to reload the page.

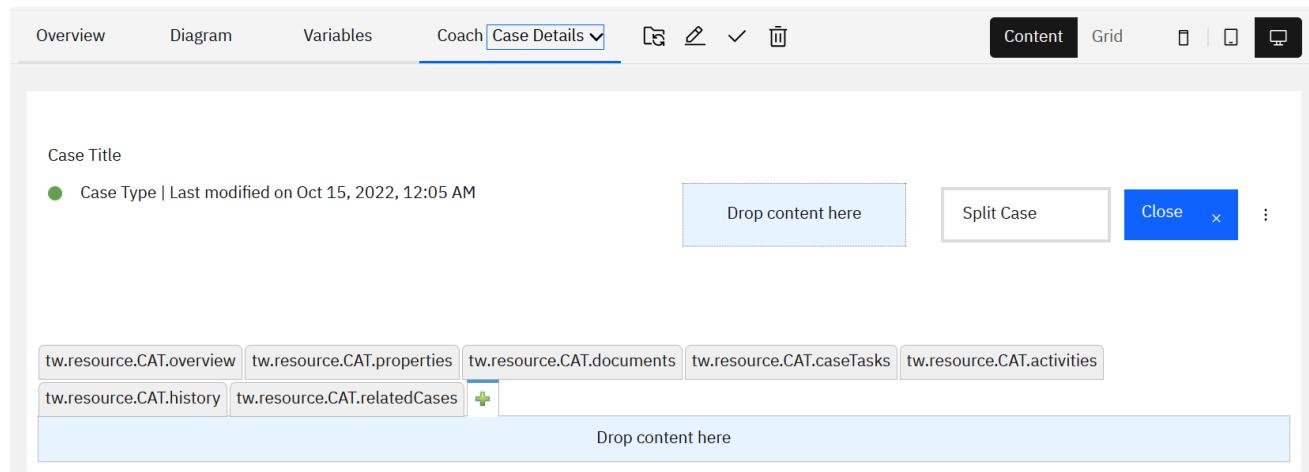


The default diagram consists of four [coaches](#) – **Case Details**, **Display Access Error**, **Display Error** & **Show Error**. Coaches contain the UI of an activity, and each human service can contain multiple coaches. As we are customizing the UI for the case details, we will now edit the **Case Details** coach.

8. Select Coach → Case Details at the top.



This shows the editor for the coach where you can create the UI to be shown when a user looks at the details of a case. A default UI already exists using out-of-the-box views (e.g., case comments, documents, activities, etc.) that can be modified.

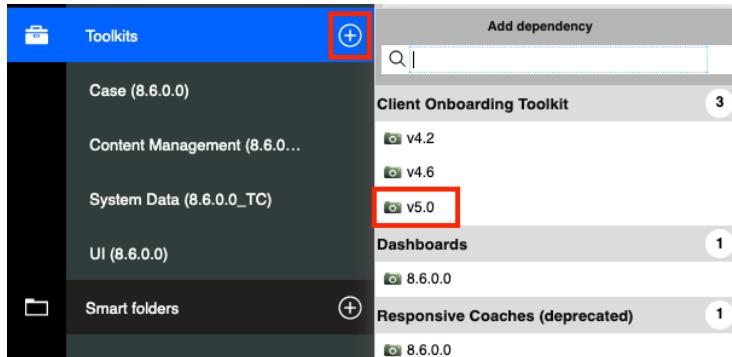


To modify this UI, we will first add a pre-built toolkit dependency to the current project. Toolkits contain shared artifacts that can be reused by other projects. The toolkit contains user interfaces built using the **View** artifact that can be re-used in the client onboarding project.

To learn more about how to create a toolkit and reusable user interfaces like a view, look at **Exercise 1** of the **Introduction to Business Automation Application** lab.

9. In the library pane on the left, click on the + button next to **Toolkits** (you will have to hover over it to see the + button) and select the latest version of the **Client Onboarding Toolkit** (it will differ from the one shown in the screenshot).

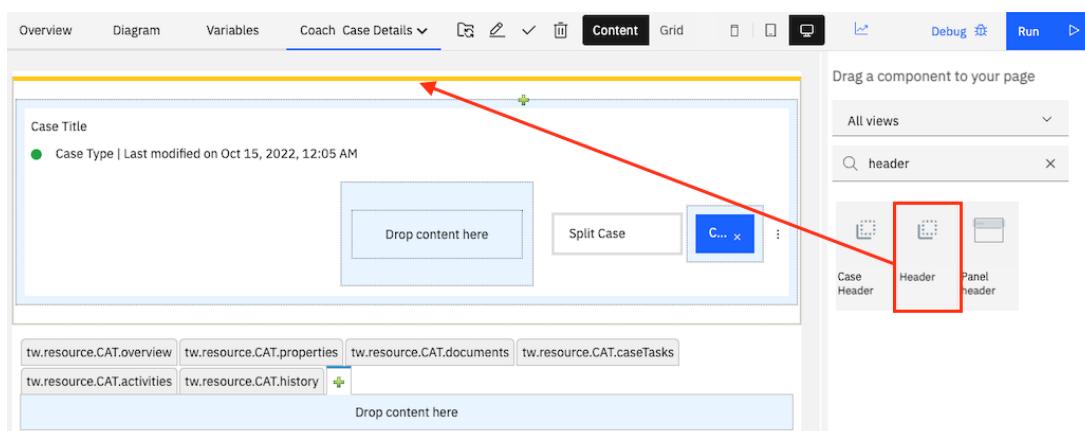
Note: If you don't see the library pane on the left, close the window showing the Process Designer and open it again by clicking on **Custom Case Details**.



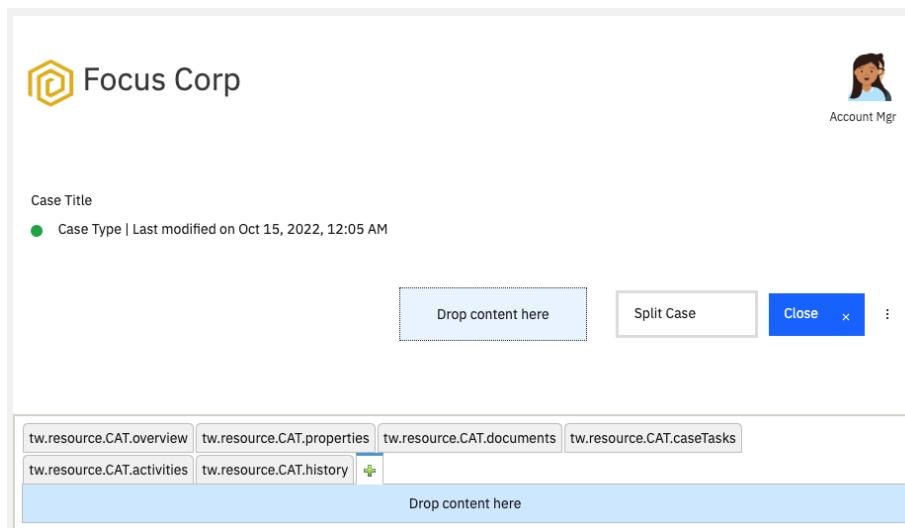
Note: The latest version in your environment will differ from the screenshot.

10. Back in the Coach editor, search for **header** in the right-hand side palette.

11. Drag and drop the **Header** view at the top of the Coach in the editor.

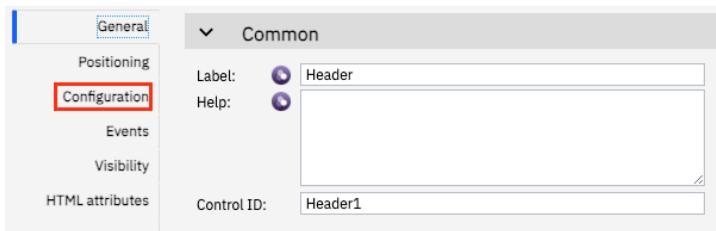


Your UI should now look as follows:



12. Click on the **Header** view just added to the UI.

13. In the **Properties** pane at the bottom, select **Configuration**.

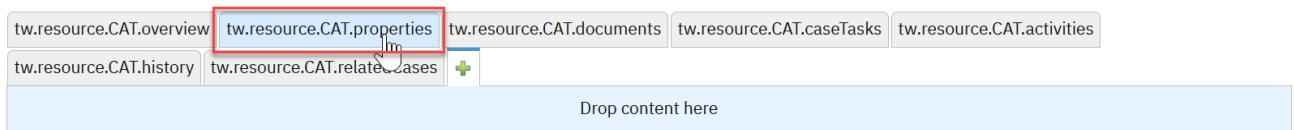


14. For the **Account Manager Visibility** field, select **None**.

15. For the **Client Rep Visibility** field, select or keep **Same as parent**.

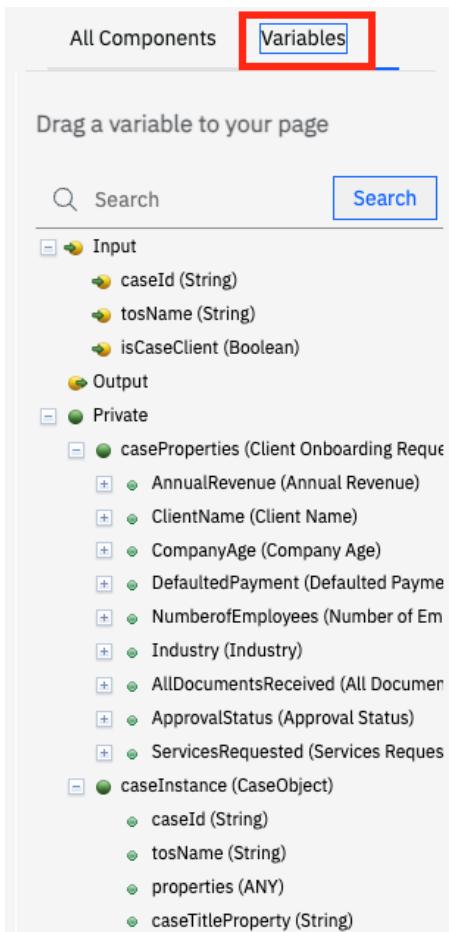
This will hide the Account Manager persona from the header and show the Client Rep one.

16. Click on the **tw.resource.CAT.properties** tab in the editor.

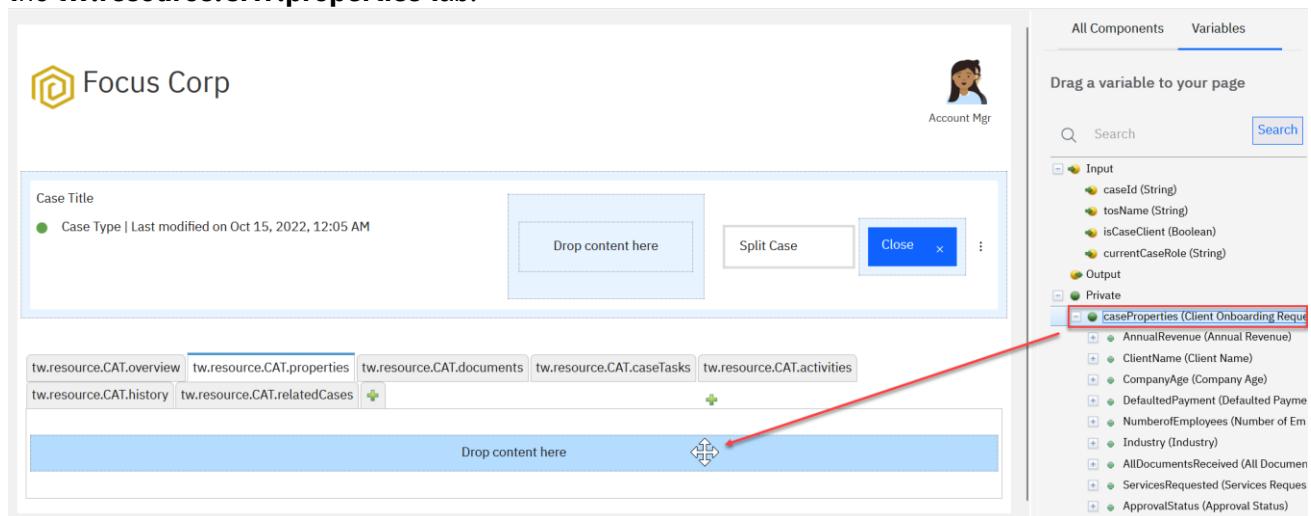


The **tw.resource.CAT.properties** label means that when the UI is generated, the actual label will be retrieved from a resource file **CAT** based on the user's locale. Resource files provide a way to create a UI for different languages.

17. In the right-hand side palette, switch from the All Components tab to the **Variables** tab.



18. Drag and drop the **caseProperties** variable onto the editor where it says **Drop content here** inside the **tw.resource.CAT.properties** tab.



Once you have added that, you should see the UI for the case properties automatically created.

Note: The case properties are automatically added to the Process Designer as a [content object property](#). This allows users to use the case properties like any other variable in the Process Designer.

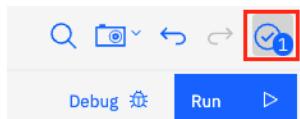
The screenshot shows the Process Designer interface with the 'tw.resource.CAT.properties' tab selected. Below the tabs, there are several input fields with placeholder text: 'tw.local.caseProperties.AnnualRevenue.displayName', 'tw.local.caseProperties.ClientName.displayName', 'tw.local.caseProperties.CompanyAge.displayName', 'tw.local.caseProperties.DefaultedPayment.displayName', 'tw.local.caseProperties.NumberofEmployees.displayName', 'tw.local.caseProperties.Industry.displayName', and 'tw.local.caseProperties.AllDocumentsReceived.displayName'. Below these fields is a table with a single row labeled 'Services Requested' containing the text 'Services Requested'. At the bottom of the screen is a scroll bar.

Note: The case properties can be filtered out in the **Variables** tab of the Client-side human service if you don't want to see them to be included in the editor view.

19. Optionally, rearrange the views in the editor by dragging and dropping them in the order you want.

With that you've successfully created a custom UI for the case details page.

20. Click on the **Finish Editing** button.



Note: In the Case Builder, you click on the **Save** button to save your changes. In the Process Designer, your changes are [automatically saved](#). When you close the editor for an artifact or if your browser crashes, your changes are preserved. You only need to click the **Finish Editing** button to make the artifact available to others for editing as an artifact can only be edited by one person at a time. You can still have other users working on other artifacts in the same Workflow solution in parallel.

In this case, we click on the **Finish Editing** button as we are about to close the Process Designer window and it tells the browser that there are no changes left to be made.

21. Close the Process Designer window to show the Case Builder again.

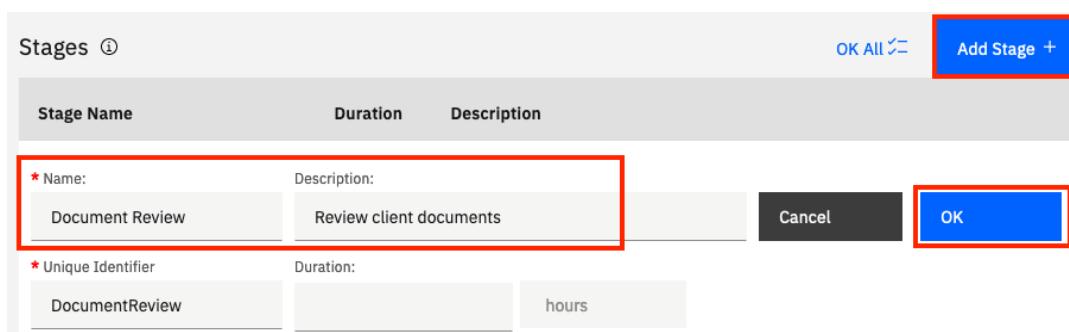
3.2.4 Add stages to the case type

You can define [stages](#) to represent the lifecycle of a case. The first stage starts automatically when the case is started. We will add two stages for this case – **Document Review & Scoreboarding**.

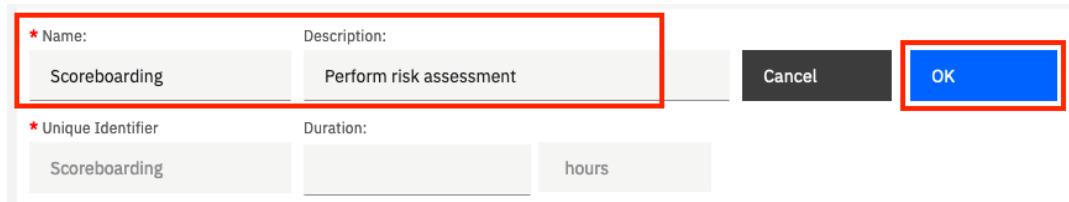
1. Back in the Case Builder, click on the **Stages** tab.



2. Click on **Add Stage +**.
3. In the **Name** field, enter **Document Review**.
4. Provide an optional description.
5. Click on **OK**.



6. Similarly, add another stage called **Scoreboarding**.



You should now have the following 2 stages:

| Stages ⓘ | | |
|-----------------|----------|-------------------------|
| Stage Name | Duration | Description |
| Document Review | | Review client documents |
| Scoreboarding | | Perform risk assessment |

When the **Document Review** stage completes, the **Scoreboarding** stage will begin automatically. In the next exercise, you will define activities that get start automatically when a specific stage begins. You can define multiple activities that start in parallel when a stage begins. A case stage can only be started if the previous stage has completed.

Note: As a part of the low-code JavaScript APIs, developers can also disable/skip certain stages depending on the case.

7. Click on **Save** ⓘ.

3.2.5 Deploy and test the solution

This completes creating the framework for the Case type. We will now deploy the solution so that we can test the customized UI.

1. Click on the **Deploy** button in the upper-right corner.



2. In the confirmation dialog, click on **Deploy**.

Confirmation

You have the following items locked, and the items are unavailable for deployment:

| Type | Name |
|----------|---|
| Solution | Roles and in-baskets |
| Solution | Properties, case types, solution layouts, document classes, business objects, choice lists, solution description, solution icon, case folders, case summary view, case search view, case stages |

Commit my changes and make them available for deployment



Once the solution is deployed and reloaded, you should see the status update in the upper-right corner with two green checkmarks.



Next, we will add the user you are working with to the roles defined in the previous exercise. There are two ways to do this:

1. [Create a security configuration](#) using the Case administration client
2. [Manage the roles](#) in the Case Client

The first approach is typically used for production systems. As we are testing our solution, we will use the second approach.

3. Click on the **Test** button in the upper-right corner.

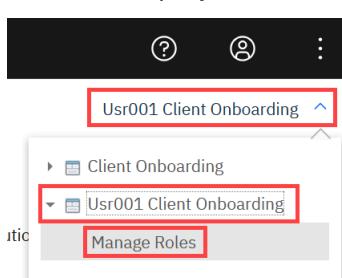


This launches a new window with the [Case Client](#). This is a client used by case workers to complete their work for each case. In newer releases, the case workers can also use IBM Workplace to access their work. Workplace allows knowledge workers to see tasks from both Case and Process (BPM) capabilities in a single unified place. If you want to see what Workplace looks like, you can perform the end-to-end scenario lab.



Note: It may take a few seconds for the entire page to load.

4. In the upper-right corner, click on **UsrNNN Client Onboarding → Manage Roles** for your Workflow automation project.



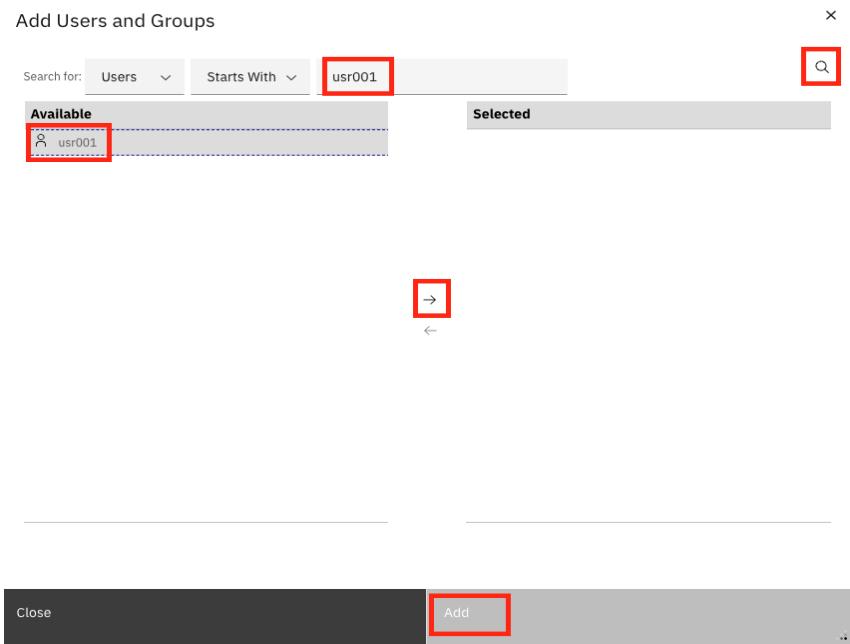
This brings up another window to manage the role memberships.

5. Click on **Add Users and Groups**.



6. In the search field, enter **usrNNN**, where usrNNN is your username, then click the **Search (🔍)** button.
7. Click on the username and then the → button.

8. Click on **Add**.



You should now see the user added as a member to the role.

| Members |
|---------|
| usr001 |

9. Click on the **Client Rep** role.

10. Add the **usrNNN** user to this role just like you did before.

11. Click on **Save** in the bottom-right corner.

This will refresh the Case Client with the following screen:

Cases Work

Usr011 Client Onboarding | Account Manager

Add Case

Search:

Added On

6/3/2021

No items to display

Search Advanced Search

Total: 0 Items 0 - 0 1

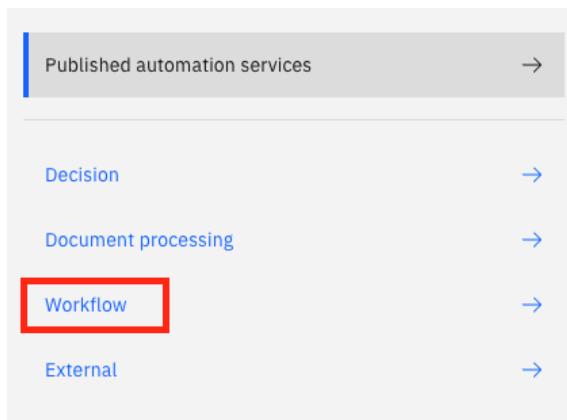
We can use the **Add Case** button here to add and test the case we just created but we will be testing this case often throughout the lab. To do this we will create a Process in the Process Designer that uses the [JavaScript API to start a case](#). We will create a new Process in the same Workflow project, but this Process can be a part of any other project as well.

3.2.5.1 Using JavaScript API to start a case

1. Minimize the Case Client window to go back to the Case Builder. We will come back to the Case Client after starting a new case.
2. Click on **Business automations** in the upper-left corner.

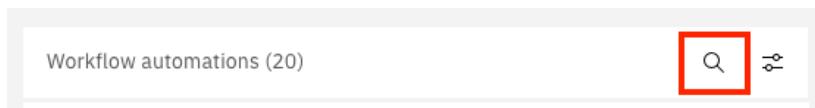
Business automations / Workflow Automation

3. Click on **Workflow**.

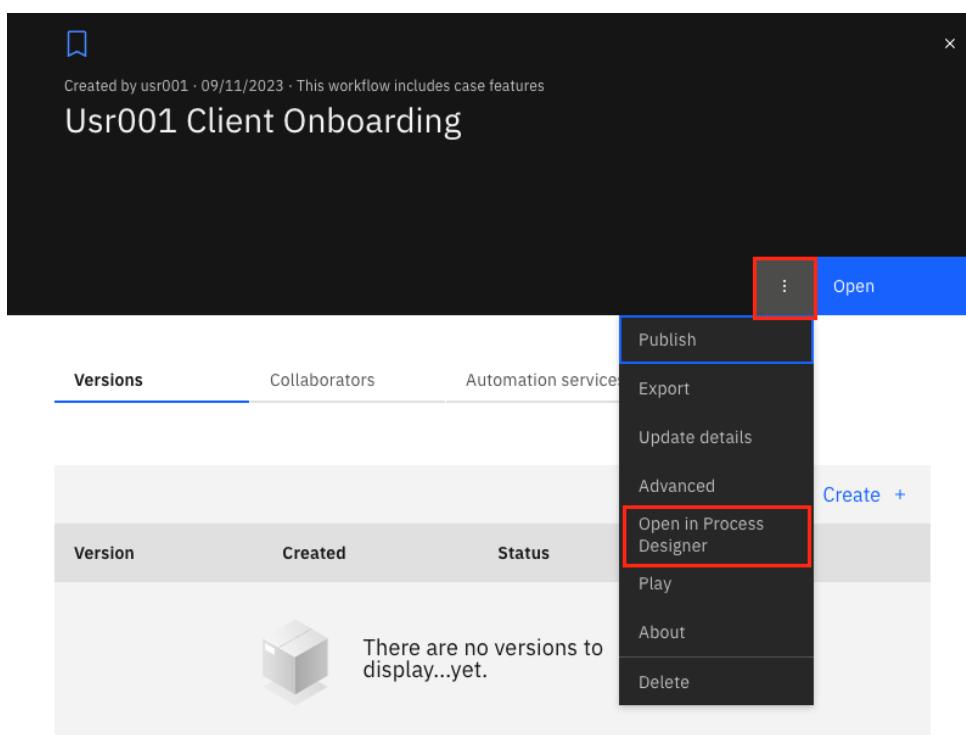


4. Click on your Workflow project **UsrNNN Client Onboarding**. Do NOT click on **Open** but on the tile itself as this will re-open the Case Builder.

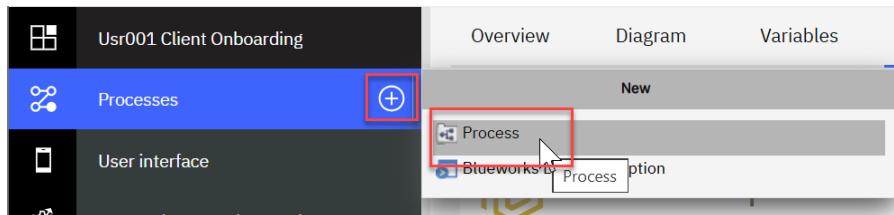
Hint: You can use the search by clicking on the **search** icon the upper-right corner.



5. Click on the **3-dot menu** next to the open button and select **Open in Process Designer**.

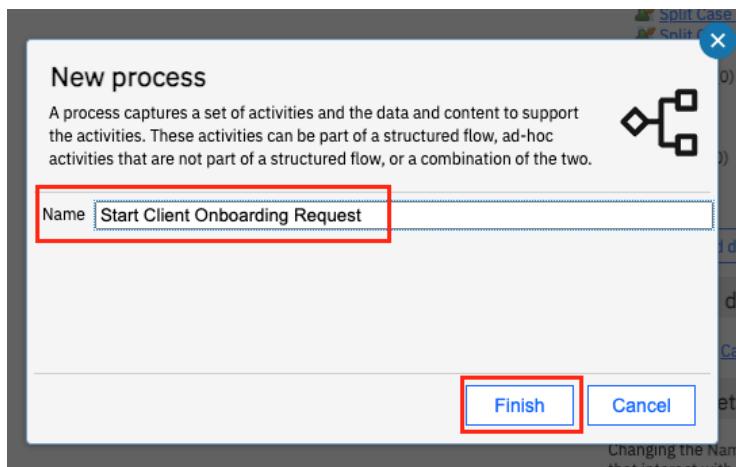


- In the library pane on the left, hover over **Processes** and click on **+** and select **Process**.

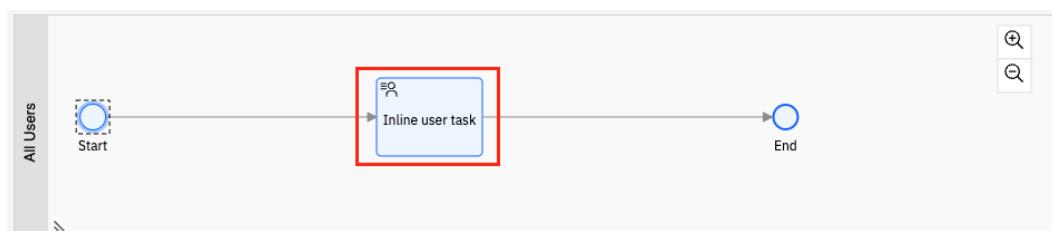


- In the **Name** field, enter **Start Client Onboarding Request**.

- Click on **Finish**.



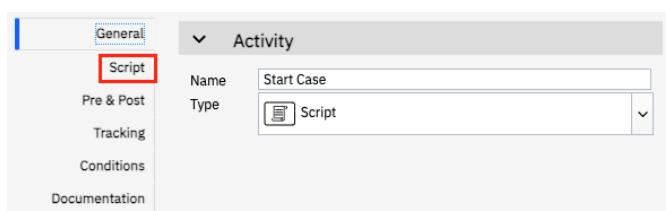
- In the Process that opens, click on the **Inline User Task** node.



- In the **Properties** pane on the bottom, in the **General** tab, under the **Activity** section, select **Script** for the **Type** field (where it currently says **Inline User Task**).

- In the **Name** field, enter **Start Case**.

- Click on the **Script** tab.



13. Copy & paste the following script:

```
// Create a new Client Onboarding Request case
// The record object holds the properties of the case
var newCaseProperties = new tw.object.Record();

// Fetch the acronym of the Workflow project
// This can be used to generate the prefix of the Case properties
var prefix = tw.system.model.processApp.acronym + "_";

// Set property values for the properties defined in the case
// Client
newCaseProperties.setPropertyValue(prefix + "ClientName", "Legacy Consulting");

// Client Additional Info
newCaseProperties.setPropertyValue(prefix + "AnnualRevenue", 2500000);
newCaseProperties.setPropertyValue(prefix + "CompanyAge", 12);
newCaseProperties.setPropertyValue(prefix + "DefaultedPayment", true);
newCaseProperties.setPropertyValue(prefix + "NumberofEmployees", 30);

// Client Services
newCaseProperties.setPropertyValue(prefix + "Industry", "Healthcare");
var servicesRequested = new tw.object.listOf.String();
servicesRequested[0] = "Mental Health Care";
newCaseProperties.setPropertyValue(prefix + "ServicesRequested", servicesRequested);

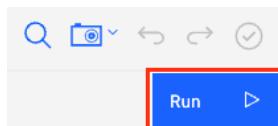
// Reviewed Documents
newCaseProperties.setPropertyValue(prefix + "AllDocumentsReceived", false);

// Create Case using the JavaScript API
tw.system.currentProcessInstance.createCase(prefix + "ClientOnboardingRequest",
newCaseProperties, null, true);
```

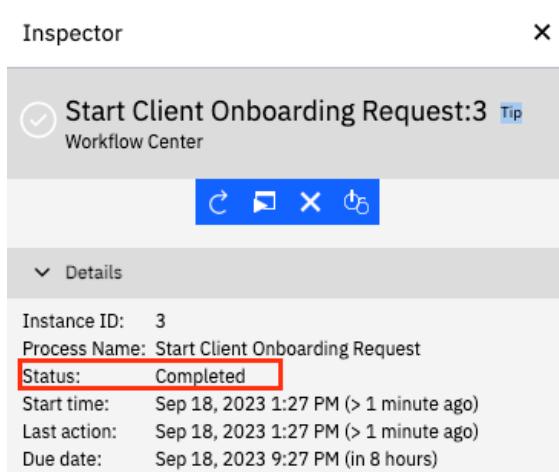
Look at the comments of the code for further explanation on each line.

14. Click on the **Run** button in the upper-right corner to run this process and start the case.

Note: You don't need to save your changes. Clicking on the run button saves all the changes.



The Inspector view will then show up with **Status** set to **Completed**.



Note: If you get an error at this point, compare each property name used in the JavaScript code to the respective property's Unique Identifier assigned to the case properties you created in section 2.2.4.

15. Go back to the window containing the **Case Client**.

If you can't find the window or accidentally closed it, open your Workflow project, and click on the Test button again in the Case Builder.

The screenshot shows a search interface for cases. The top navigation bar has 'Cases' selected. Below it is a search bar with dropdowns for 'Added On' set to '6/3/2021'. A 'Search' button is highlighted with a blue border. The results area shows 'No items to display'. At the bottom, there are buttons for 'Advanced Search' and a pagination bar showing 'Total: 0' and 'Items 0 - 0'.

16. Click on **Search** in the search field.

This screenshot is identical to the previous one, except the 'Search' button is now highlighted with a red box.

You should now see a Case in the **Working** state. If you have multiple cases from multiple attempts before, click on the latest one.

| Title | Added On | ↑ | Case State | Modified By | Modified On | Case Stage |
|--|-------------------|---|------------|-------------|-------------------|-----------------|
| U001C_ClientOnboardingRequest_000000100001 | 8/9/2024, 4:12 PM | | Working | cp4badmin | 8/9/2024, 4:12 PM | Document Review |

17. Click on the **Title** of the case to open the case details.

The customized UI should now open.

This screenshot shows the detailed view of the case 'U001C_ClientOnboardingRequest_000000100001'. The top navigation bar has 'Cases' selected. The title 'U001C_ClientOnboardingRequest_000000100001' is highlighted with a blue border. The header also shows the title and the last modified date ('Aug 9, 2024, 4:12 PM'). On the right, there are 'Split Case' and 'Close' buttons. Below the title, the 'Overview' tab is selected. The details pane shows the case was created by 'cp4badmin' on 'Aug 9, 2024, 4:12:38 PM' and last modified by 'cp4badmin' on 'Aug 9, 2024, 4:12:39 PM'. The status is listed as 'Good'. At the bottom, there are tabs for 'Document Review' and 'Scoreboarding', and a button to 'Add comment'.

18. Click on the **Properties** tab.

The properties from the script must now be visible in the UI.

A screenshot of a software application interface showing the 'Properties' tab selected. The tab bar includes 'Overview', 'Properties' (highlighted with a red box), 'Documents', 'Tasks', 'Activities', 'History', and 'Related Items'. Below the tabs, there are several input fields and dropdown menus:

- Annual Revenue: 2,500,000
- Client Name: Legacy Consulting
- Company Age: 12
- Defaulted Payment
- Number of Employees: 30
- Industry: Healthcare
- All Documents Received
- Approval Status: Under Review
- Services Requested: Mental Health Care
-

Note: You might see the properties in a different order based on your optional customization.

19. Click on the **Activities** tab.

This tab shows that there are no activities. We will add some activities in the next exercise. Keep the Case Client open for future test runs.

20. Click on the **Close** button in the upper-right corner to close the case details page.

A screenshot of the software application showing the 'Activities' tab selected. The tab bar includes 'Overview', 'Properties', 'Documents', 'Tasks', 'Activities' (highlighted with a blue box), 'History', and 'Related Items'. The main content area displays the following:

- Client Onboarding Request | Last modified on Aug 9, 2024, 4:12 PM
- Split Case
- Close**
- Activities
- No Activities

4 Exercise: Adding activities to the Client Onboarding Request Case Type

4.1 Introduction

In this exercise, you will learn how to create and implement [activities](#) in a case type. You will do that by creating some of the activities that are required for the Client Onboarding Request case type in the Case Builder. Then, using the Process Designer, you will implement the details of these activities.

We will create and implement three activities as a part of this exercise:

1. **Initialize Request:** This activity will verify if there are documents to be received from the client. If there are, it will end the activity and wait for client documents. If all client documents are received, it will complete the **Document Review** stage which in turn will automatically start the **Scoreboarding** stage.
2. **Review Client Documents:** This activity will be started when a client document is filed to the case. The activity will contain a human service to manually review the client document that will be completed by the **Client Rep**.
3. **Scoreboarding:** This activity will be started once the **Scoreboarding** stage is started. It will call out to an artificial intelligence backed Decision service to get a risk assessment. If the confidence of this decision service is low, a human service to manually review the client onboarding request will be started that will be completed by the **Account Manager**. The Decision service is pre-built. If you want to learn how to call out to a Decision service from Workflow, look at the [Consume & Publish Automation Services in Workflow](#) lab.

4.2 Exercise Instructions

4.2.1 Create new activities

1. Open the **UsrNNN Client Onboarding** Workflow automation project in Case Builder.

To do this you can go to **IBM Business Automation Studio**, click on **Business automations** in the hamburger menu in the upper-left corner, select the **Workflow** capability and click **Open** for your Workflow automation project.

2. Click on the **Case Types** tab.
3. Open the **Client Onboarding Request** case type.

Business automations / Workflow Automation

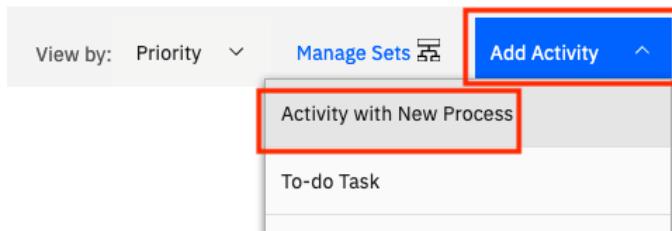
| Name | Description |
|---------------------------|--|
| Client Onboarding Request | Case type that handles the client onboarding request |

Add Case Type +

4. Click on the **Activities** tab.

Case Type Properties Views Case Folders Stages Rules Activities

- Click on **Add Activity** → **Activity with New Process**.



This brings up a dialog that allows you to create an activity with an implementation in the Process Designer. In scenarios where a user may already have an existing implementation in another Workflow project that they want to reuse, they can select Activity with Existing Process.

- In the **Name** field, enter **Initialize Request**.
- Provide an optional description.

Add an activity

The screenshot shows the 'Add an activity' dialog with the 'General' tab selected. The 'Name' field is highlighted with a red box and contains the value 'Initialize Request'. Other tabs include 'Preconditions', 'Activity Properties', and 'Design Comment'.

- For the **This activity** field, select **Is required**.
- Click on **OK**.

The screenshot shows the 'This activity' configuration dialog. Under 'This activity', the 'Is required' checkbox is checked and highlighted with a red box. Other options include 'Is hidden' (unchecked), 'Stopped when the case completes and does not affect case completion' (unchecked), and 'Starts from the parent case snapshot' (unchecked). Below this, there's an 'Assign to set:' section with a dropdown set to '<None>' and a 'Manage Sets' button. A 'Process Task Details Adapter:' dropdown is also shown.

OK

You should now see an activity added to a section of required activities.

The screenshot shows a software interface for managing activities. At the top, there are buttons for 'All activities' (with a help icon), 'View by: Priority', 'Manage Sets' (with a gear icon), and 'Add Activity' (in a blue button). Below this is a section titled 'Required activities' containing a single item: 'Initialize Request'. This item has a description: 'Check if all client documents are received.' and a note: 'Precondition: Case Start Set: <None>'. There are also small icons for a flag and a checkmark.

Next, we will add the **Review Client Documents** activity.

10. Click on **Add Activity → Activity with New Process**.

11. In the **Name** field, enter **Review Client Documents**.

12. Provide an optional description.

| General | Preconditions | Activity Properties | Design Comment |
|---|---------------|---------------------|----------------|
| * Name: Review Client Documents | | | |
| * Unique Identifier: U011C_ ReviewClientDocuments | | | |
| Description: Review any incoming client documents | | | |

13. Click on the **Preconditions** tab.

14. In the dropdown, select the **A document is filed in the case** option.

This ensures that the activity is started when a document is filed in the case.

15. Check the **Activity is repeatable** checkbox.

This ensures that a new instance of the activity is started each time a client document is filed to the case.

16. Click on **Add Condition +**.

17. In the **Property** field, select **All Documents Received**.

18. In the **Value** field, select **False**.

This ensures that the activity is not started after all client documents are received even if a new document is accidentally filed into the case. You can see here that a case activity with a precondition on a document class can also have a precondition on a property value at the same time.

General **Preconditions** Activity Properties Design Comment

What preconditions must be met for this activity to start?

| | |
|---------------------------------|--|
| A document is filed in the case | <input checked="" type="checkbox"/> Activity is repeatable |
|---------------------------------|--|

Any document class

Document Classes:

Client Document
 Utility Bill

The above precondition and the following conditions:

Match: All

| | |
|------------------------------|------------------------|
| Delete All Conditions | Add Condition + |
|------------------------------|------------------------|

| Property | Operator | Value |
|------------------------|----------|-------|
| All Documents Received | is equal | False |

19. Click on **OK**.

This adds the activity to the optional activities section as it won't be required in all cases.

20. Click on **Save** .

Next, we will add the **Scoreboarding** activity.

21. Click on **Add Activity → Activity with New Process**.

22. In the **Name** field, enter **Scoreboarding**.

23. Provide an optional description.

24. In the **This activity** field, select **Is required**.

General Preconditions Activity Properties Design Comment

* Name:
Scoreboarding

* Unique Identifier
U001C_ Scoreboarding

Description:
Perform risk assessment

This activity starts:
 Automatically Manually Discretionally

This activity
 Is hidden
 Is required

25. Click on the **Preconditions** tab.

26. Select **A stage has started** as the precondition.

27. In the **Select a stage** field, select **Scoreboarding**.

General **Preconditions** Activity Properties Design Comment

What preconditions must be met for this activity to start?

| | |
|---------------------|---|
| A stage has started | <input type="checkbox"/> Activity is repeatable |
|---------------------|---|

Select a stage:

| |
|---------------|
| Scoreboarding |
|---------------|

Note: You can create multiple optional/required activities that start in parallel when a certain stage has started. This is one of the benefits of using the case features as it allows you to create unstructured activities and define their lifecycles using stages.

28. Click on **OK**.

You should now have 3 activities in your activities tab as follows:

The screenshot shows the 'All activities' tab with three activities listed:

- Initialize Request**: A required activity with a green checkmark icon. Description: Check if all client documents are received. Precondition: Case Start. Set: <None>.
- Scoreboarding**: A required activity with a green checkmark icon. Description: Perform risk assessment. Precondition: Stage started: Scoreboarding. Set: <None>.
- Review Client Documents**: An optional activity with a blue question mark icon. Description: Review any incoming client documents. Precondition: Documents: Any document Property ... Set: <None>.

29. Click on **Save** .

30. Click on the **Deploy** button in the upper-right corner to re-deploy the solution.



31. In the confirmation dialog, click on **Deploy**.

32. Verify that two green checkmarks show once the solution reloads.

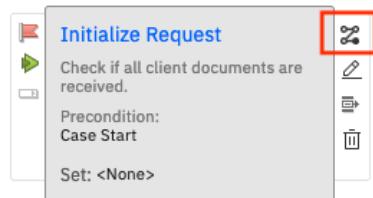


Now, we will implement the process for each activity.

4.2.2 Implement the Initialize Request activity

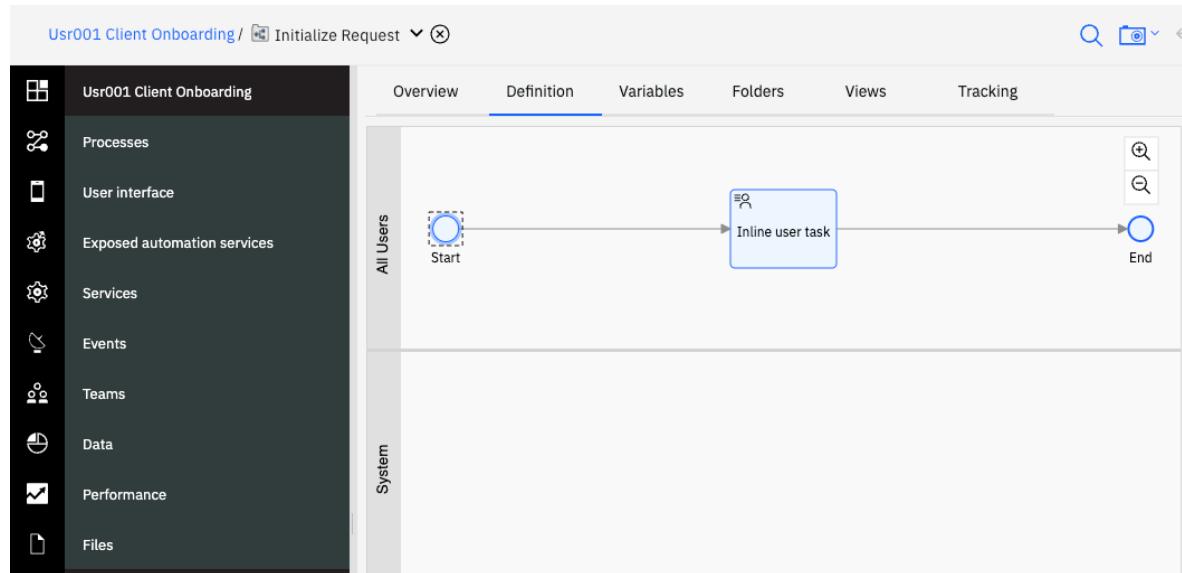
As mentioned in the exercise introduction, the **Initialize Request** activity will check if all client documents are received. If they are, it will complete the current stage – **Document Review**.

1. Click on the **Case Types** tab.
2. Open the **Client Onboarding Request**.
3. Click on **Activities**.
4. Hover over **Initialize Request** and click on the **Open Workflow Designer** icon.



This opens the Workflow Designer with the **Initialize Request** Process.

Note: If the Workflow Designer window does not load the first time, click on the browser's address bar and press Enter to reload the page.

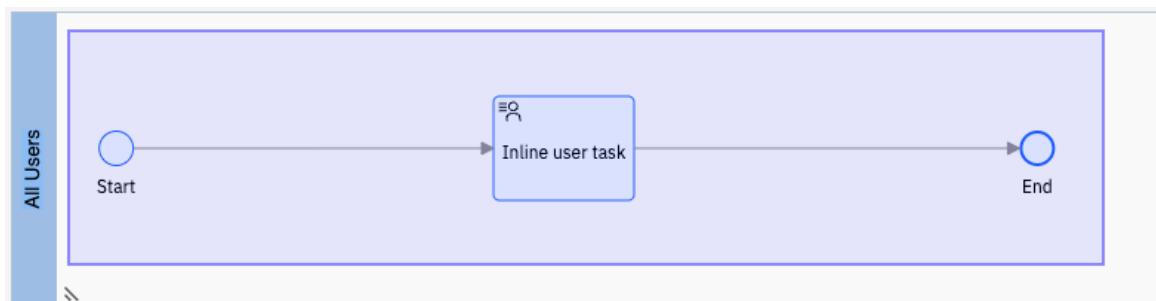


The Process contains two lanes **All Users** and **System**. All Users lanes can be assigned to specific roles and all activities (human services) in that lane will be assigned to that role. Activities (non-human services) in the system lane are performed by the system.

As described in the exercise introduction, the process needs to verify if all client documents are received. If the documents are received, it will complete the current stage - **Document Review**.

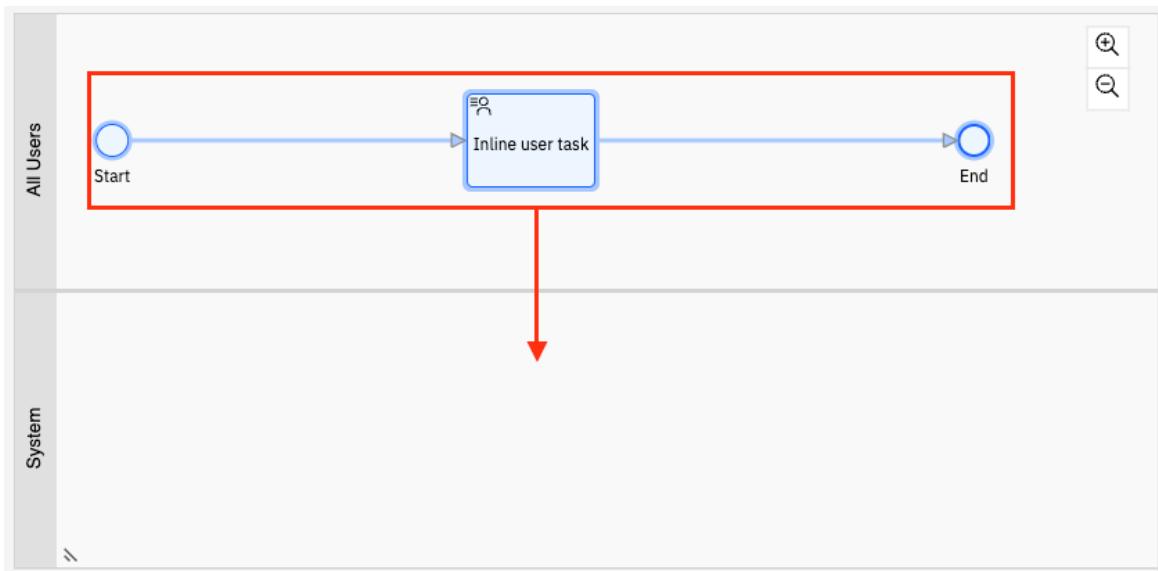
If not, it will end the process without completing the current stage and the case will wait for client documents to be uploaded. To do this, we will create a reusable service flow that can be used in other processes.

5. In the diagram, drag and move your mouse to cover the area of all nodes in the All Users lane.



6. Drag the nodes from the **All Users** lane to the **System** lane.

We do this because this activity contains no human services and is a straight through process to be performed by the system.

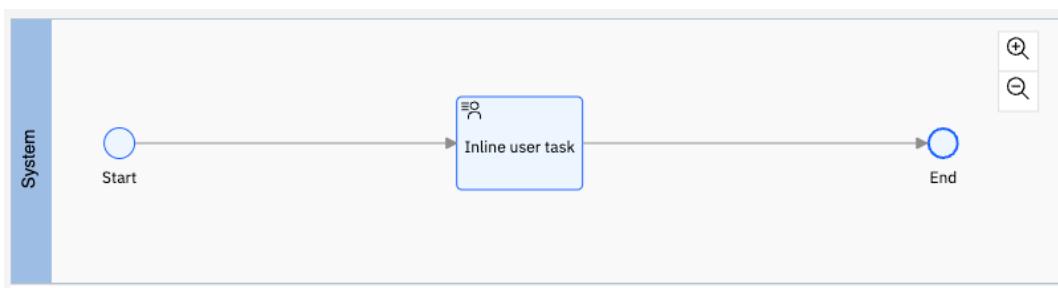


7. Right click anywhere on the **All Users** lane and select **Delete**.



8. Click on **Yes** in the confirm deletion dialog.

Your diagram should now look as follows:



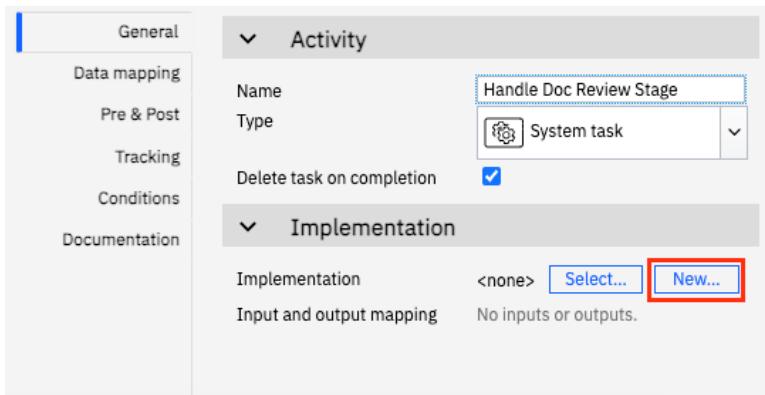
9. Click on the **Inline user task** node.

10. In the properties pane on the bottom, in the **General** tab, select **System Task** as the activity type.

11. In the **Name** field, enter **Handle Doc Review Stage**.

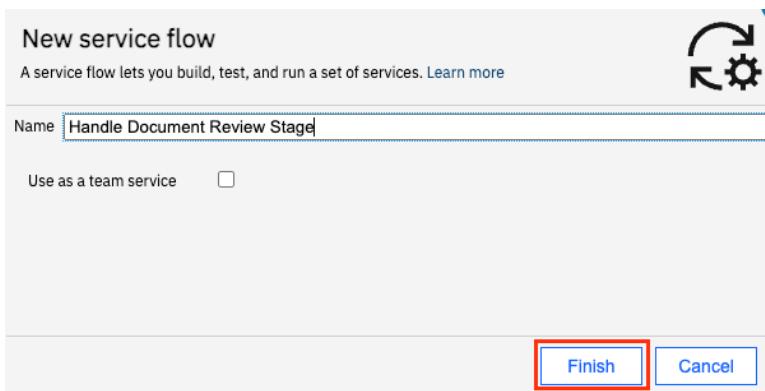
12. Click on the **New** button under **Implementation**.

We will create a service flow here that will add a comment to the case and complete the current stage. It will only do this if all documents are received.

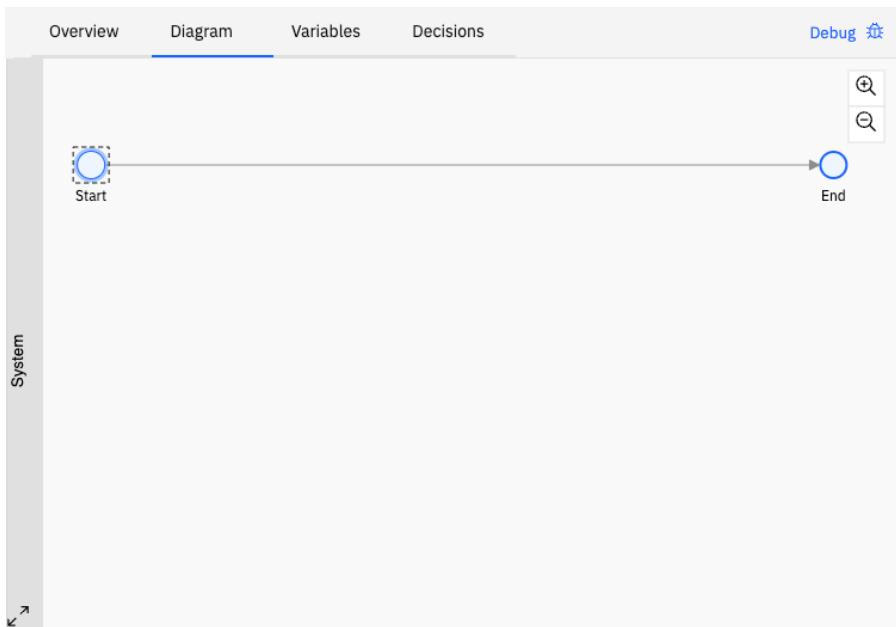


13. In the **Name** field, enter **Handle Document Review Stage**.

14. Click on **Finish**.



This opens the service flow editor with a default diagram:

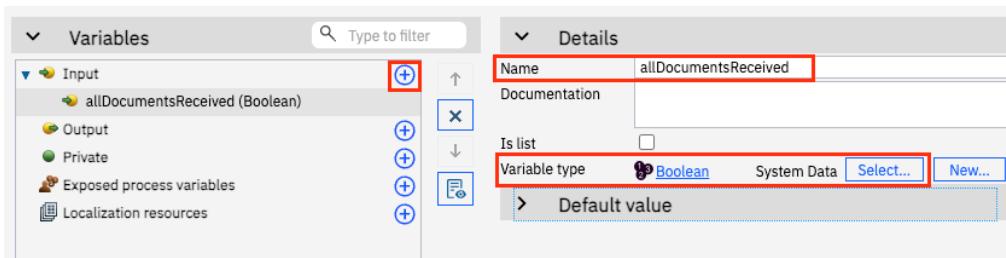


15. Click on the **Variables** tab at the top.

16. Click on the + button next to **Input**.

17. In the **Name** field, enter **allDocumentsReceived**.

18. In the **Variable type** field, click on **Select...** and select **Boolean**.



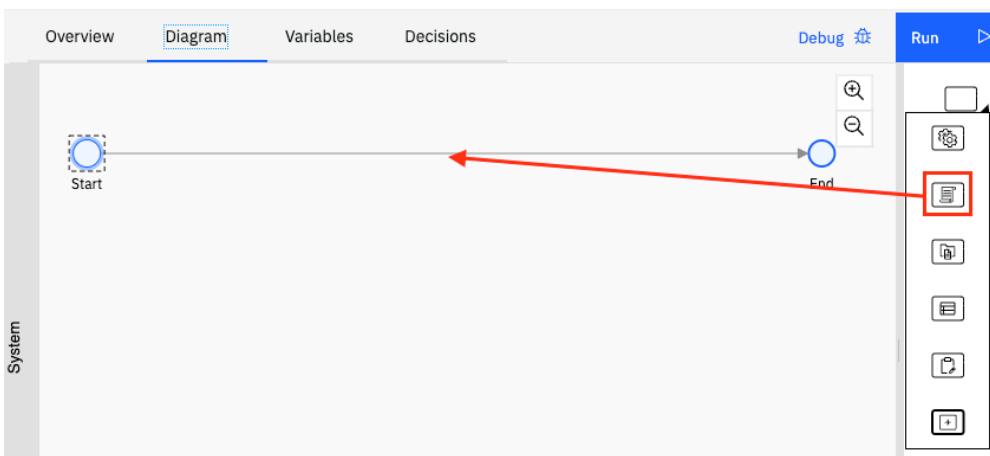
19. Switch back to the **Diagram** tab at the top.



20. In the palette on the right-hand side, click on the arrow for **Activity**.



21. Drag and drop the **Script Task** onto the line connecting the **Start** and **End** nodes.



22. Enter the following script in the **Script** tab at the bottom:

```
if(tw.local.allDocumentsReceived == true) {  
    // add a comment to the case  
    // The "true" input specifies that this action must be performed as an administrator  
    tw.system.currentProcessInstance.parentCase.addCommentToCase("All client documents  
have been received", true);  
  
    // complete current stage as the administrator  
    tw.system.currentProcessInstance.parentCase.completeCurrentStage(true);  
}
```

The comments in the code explain each line. Focus particularly on the 'tw.system.currentProcessInstance.parentCase' part as it provides a way to access Case functions from the Process Designer including actions like disabling a Case stage.

```

1 if(tw.local.allDocumentsReceived == true) {
2   // add a comment to the case
3   // The "true" input specifies that this action must be performed as an administrator
4   tw.system.currentProcessInstance.parentCase.addCommentToCase("All client documents h
5
6   // complete current stage as the administrator
7   tw.system.currentProcessInstance.parentCase.completeCurrentStage(true);
8 }
9

```

23. Switch to the **General** tab.

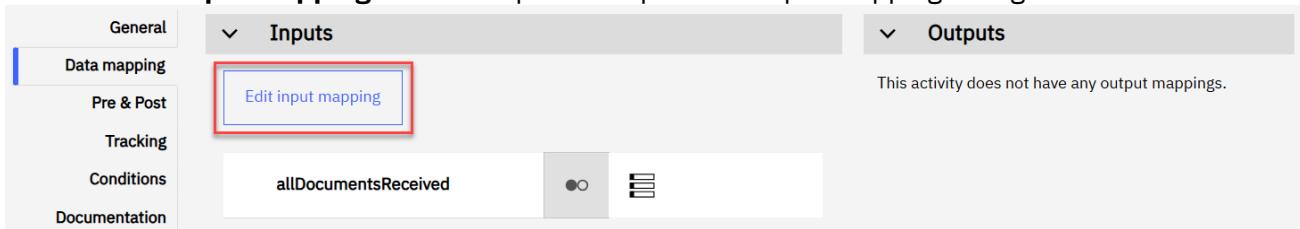
24. In the **Name** field, enter **Handle Doc Review Stage**.

25. In the top-left corner, close the **Handle Document Review Stage** service flow editor.

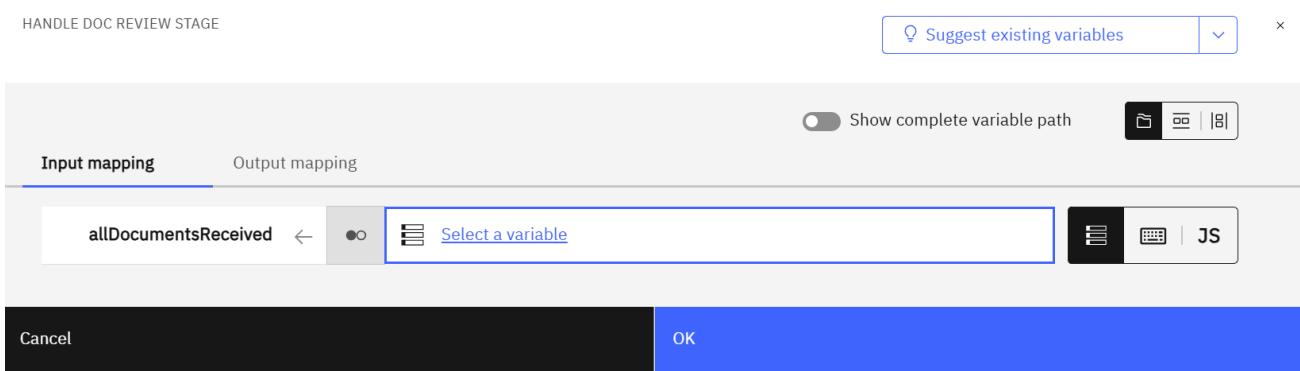


26. In the properties pane of the **Handle Doc Review Stage** system task, click on the **Data mapping** tab to see the currently configured empty data mapping.

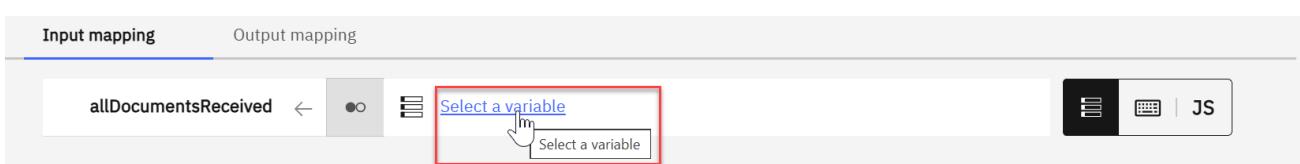
27. Click the **Edit input mapping** button to open the input and output mapping dialog.



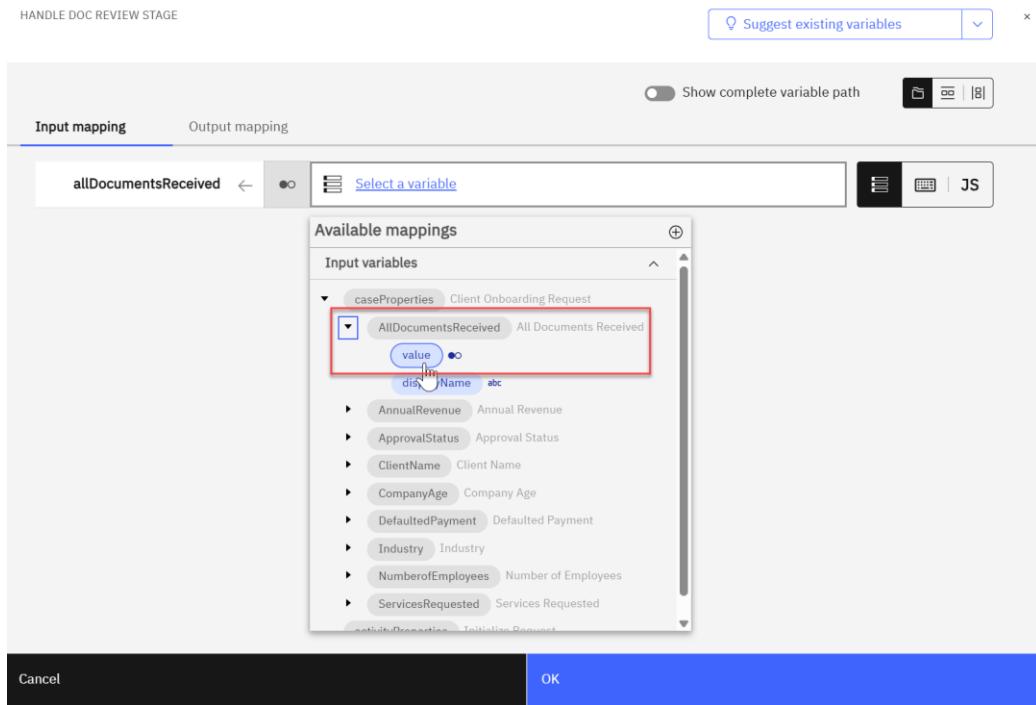
In this dialog, we can see the input variable defined in the service flow implementation.



28. Click on the **Select a variable** link for the **allDocumentsReceived** variable.



29. Expand **caseProperties** → **AllDocumentsReceived** and select **value**.

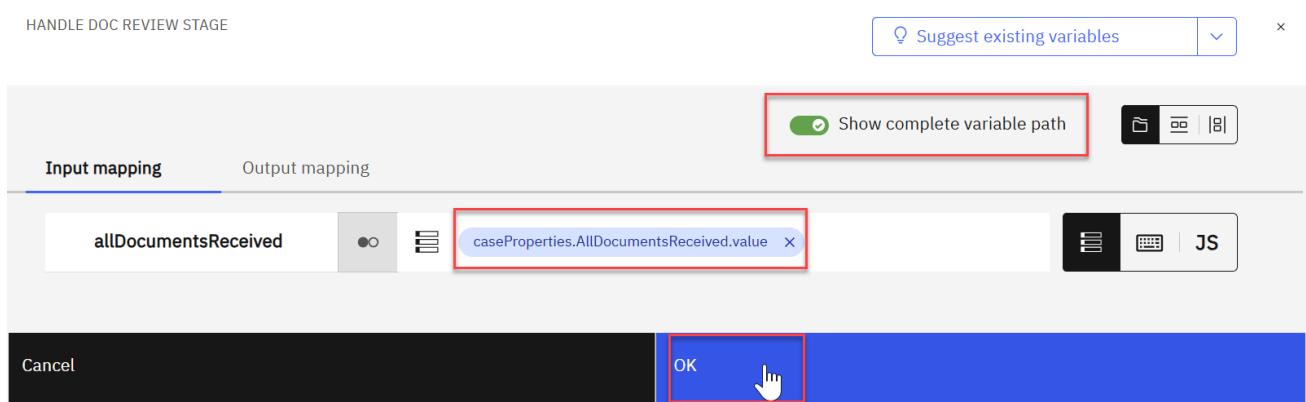


The **Input Mapping** section should now look as follows:



30. As the value of a case property is always accessible via the “property name.value” field, just seeing the selection value is not very helpful.

For such instances toggle the switch **Show complete variable path** to see the property name as well.



31. Click on the **OK** button.

32. Click on **Finish editing** icon in the top-right corner.

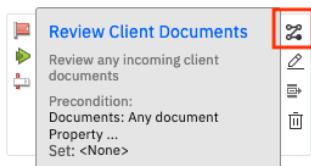


33. **Close** the Process Designer window.

4.2.3 Implement the Review Client Documents activity

As mentioned in the exercise introduction, the **Review Client Documents** activity will be triggered when a new client document is filed into the case. The **Client Rep** will then be able to review the document.

1. Go back to the list of activities in the Case Builder.
2. Hover over **Review Client Documents** and click on the Open Workflow Designer icon.

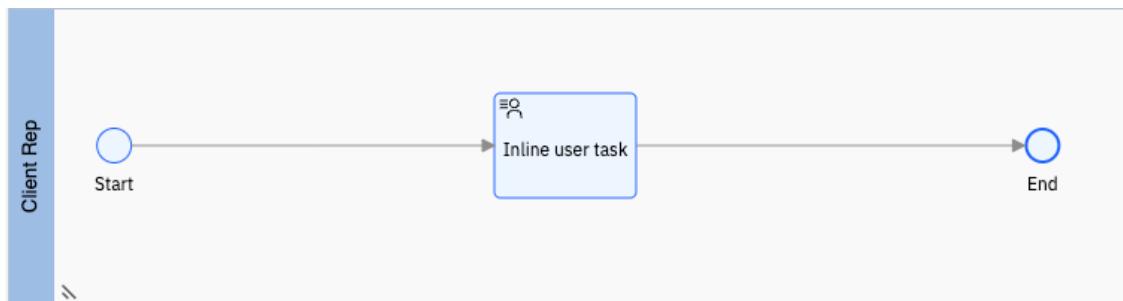


As mentioned in the exercise introduction, in this exercise we will add a human service to manually review the client document and this human service will be completed by the client rep.

3. Click on the empty space in the **All Users** lane.
4. In the properties pane on the bottom, enter **Client Rep** as the name of the lane.
5. For the **Default lane team** field, click on **Select** and select the **Client Rep** team.



Your diagram should now look as follows:



6. Click on the **Inline user task** node.

Note: The inline user task node allows Process developers to quickly create prototype UIs. In our case, we will create a customized UI for the client rep to review the client documents.

7. In the properties pane on the bottom, in the **General** tab, select **User Task** as the activity type.
8. In the name field, enter **Review Client Documents**.
9. Click on **New** for the **Implementation** field.

Activity

| | |
|------|-------------------------|
| Name | Review Client Documents |
| Type | User task |

Implementation

| | | | |
|----------------|--------|-----------|--------|
| Implementation | <none> | Select... | New... |
|----------------|--------|-----------|--------|

Documentation

This brings up the wizard to create a new Client-side human service that we can customize the UI for.

10. Click on the **Next** button.

New client-side human service

The client-side human service enables you to build, test, and run interactive tasks, dashboards, or user interfaces for process instances, and is optimized to run in a web browser.

Name Review Client Documents

Intended for use on multiple devices

Next Finish Cancel

11. Uncheck the **activityProperties** checkbox as we have only defined case properties.

New client-side human service

Select content objects and variables to pass to and return from the client-side human service. Content objects and shared variables are passed by reference. Local variables are passed by value.

All | None

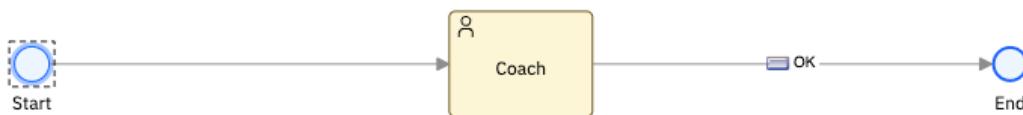
Variables

| Content objects | Use |
|--|-------------------------------------|
| caseProperties (Client Onboarding Request) | <input checked="" type="checkbox"/> |
| activityProperties (Review Client Documents) | <input type="checkbox"/> |

Back Finish Cancel

12. Click on **Finish**.

This opens the Client-side human service editor.

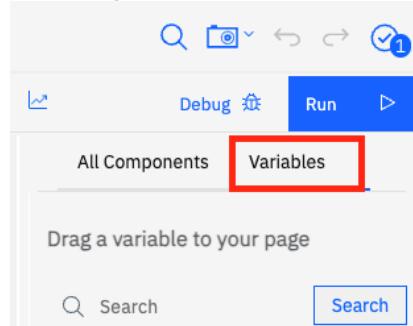


13. Click on the **Coach** tab at the top.

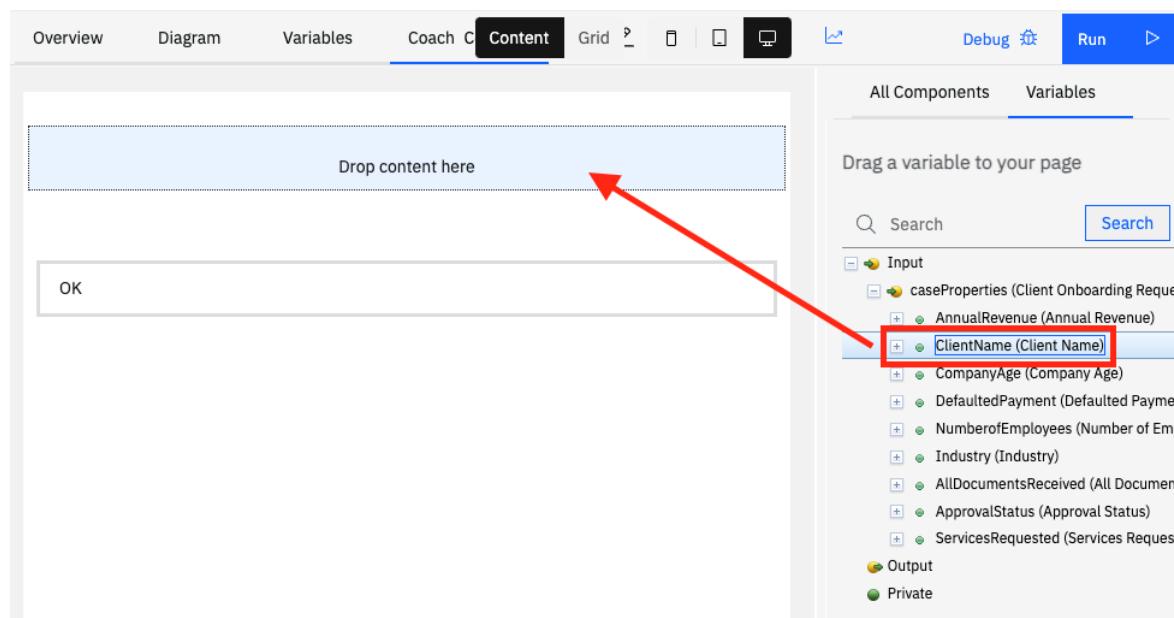


In this UI, we want to add the client name, a view that shows the list of documents filed into the case and the checkbox that lets the user select if all client documents are received.

14. In the right-hand side palette, select the **Variables** tab.



15. Drag and drop the **ClientName** variable onto the editor where it says **Drop content here**.



16. Similarly, drag and drop the **AllDocumentsReceived** variable below the client name field.

Your editor should now look as follows:

tw.local.caseProperties.ClientName.displayName

tw.local.caseProperties.AllDocumentsReceived.displayName

OK

17. In the right-hand side palette, select the **All Components** tab and search for the **Case Folder Tree** view.
18. Drag and drop the **Case Folder Tree** view below the **All documents received** field in the editor.

Drag a component to your page

All views

case folder

Case Folder Tree ...

Your editor should now look as follows:

tw.local.caseProperties.ClientName.displayName

tw.local.caseProperties.AllDocumentsReceived.displayName

Case Folder Tree

OK

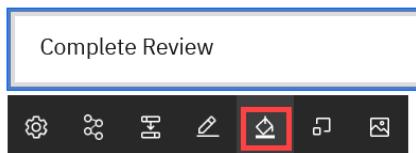
19. Select the **OK** button in the editor.
20. Click on the **Edit** icon.



21. Change the name of the button to **Complete Review**.

22. Select the **Complete Review** button.

23. Click on the **Select color** icon.



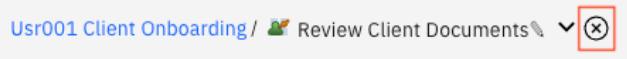
24. Select the **dark blue** color.

Your button should now look as follows:



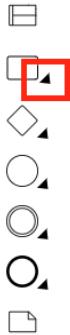
25. Optionally, add the **Header** view at the top of this UI like we did before for the Case Details page.

26. Close the **Review Client Documents** editor using the **x** button in the top-left corner.

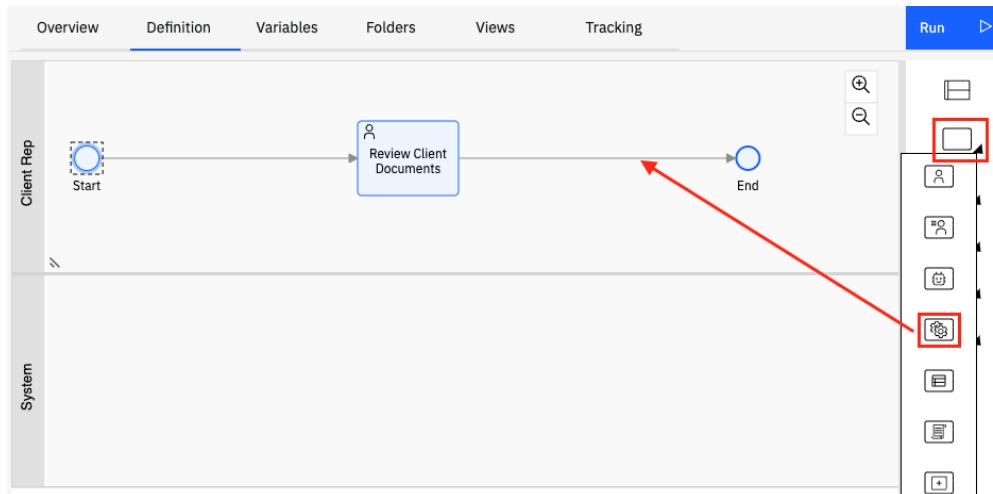


This should bring you back to the **Review Client Documents** Process. We now need to add a system task here to complete the current stage if all client documents are received. We can reuse the service flow created before to do that.

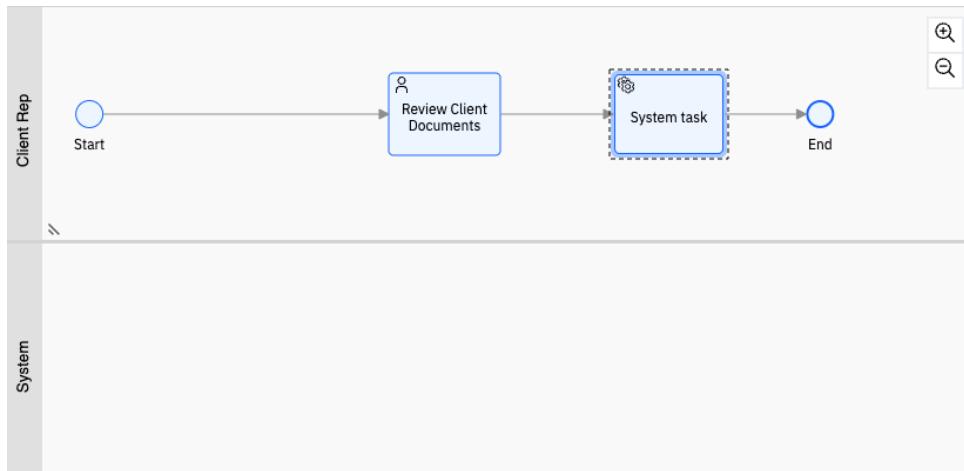
27. Click on the dropdown for the **Activity** node in the right-hand side palette.



28. Drag and drop the **System Task** activity onto the line connecting **Review Client Documents** and the **End** node.

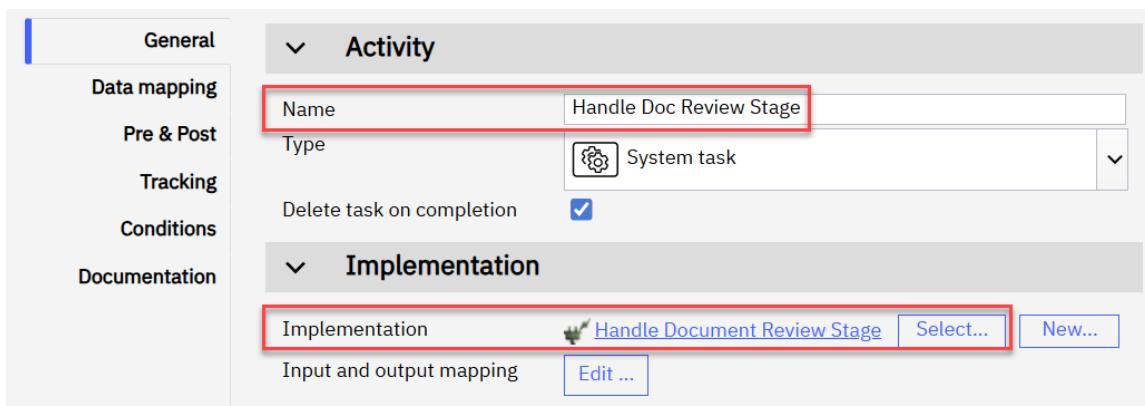


Your diagram should now look as follows:



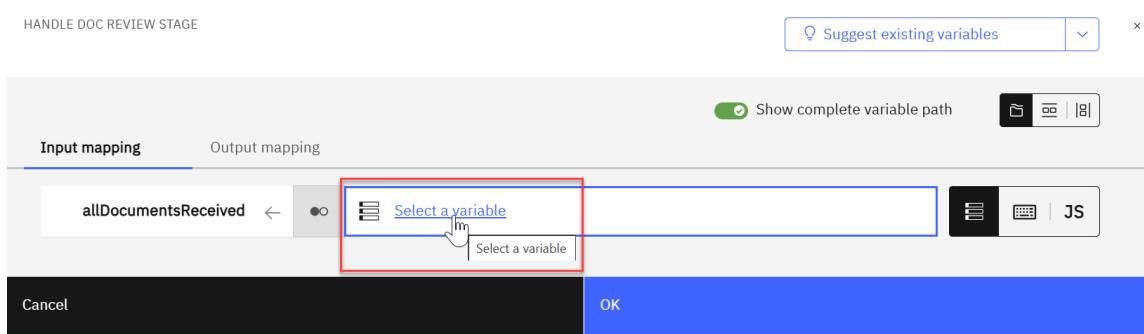
29. In the **General** tab, enter the name **Handle Doc Review Stage**.

30. Under the **Implementation** section, click on **Select** and select **Handle Document Review Stage**.

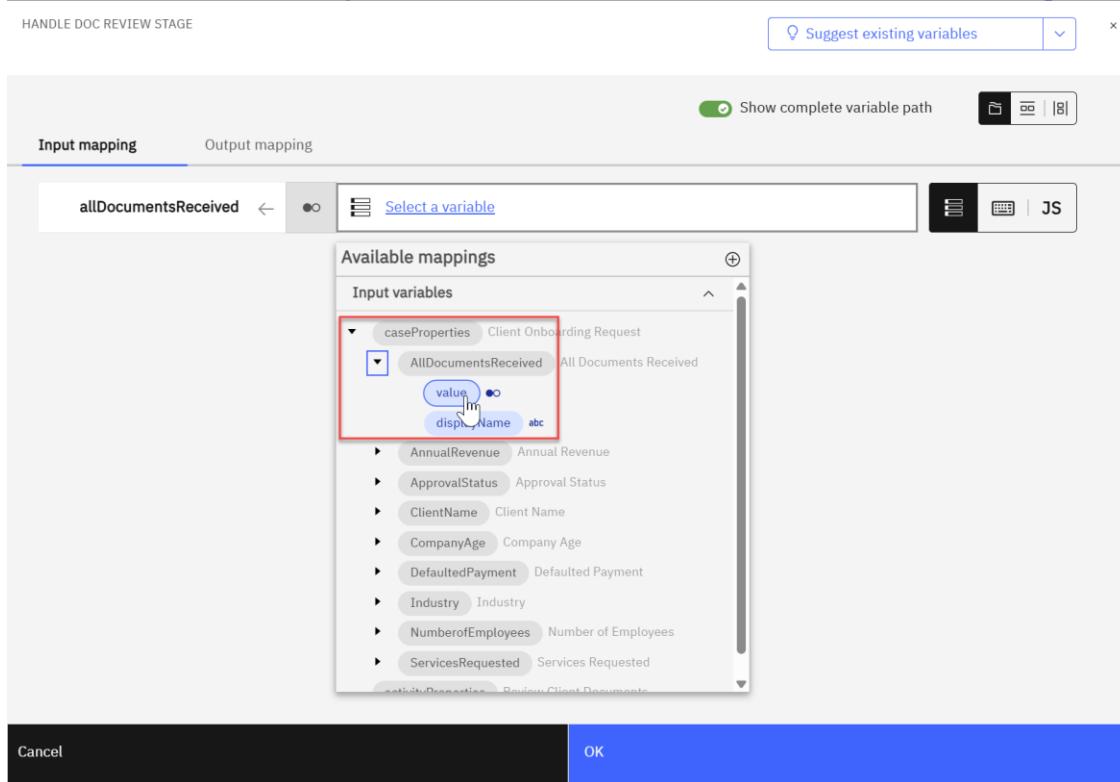


31. Click the **Edit...** button next to the Input and output mapping label to open the input and output mapping dialog.

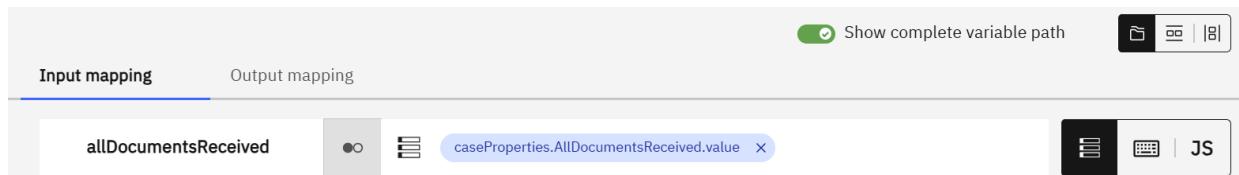
32. Click on the **Select a variable** link for the **allDocumentsReceived** variable.



33. Expand **caseProperties** → **AllDocumentsReceived** and select **value**.



The **Input Mapping** section should now look as follows:



34. Click on the **OK** button.

35. Click on the **Finish editing** button in the upper-right corner.

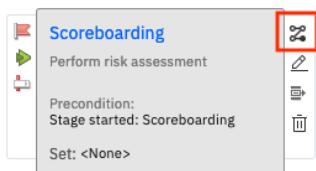


36. **Close** the Process Designer window.

4.2.4 Implement the Scoreboarding activity

Next, we will implement the **Scoreboarding** activity. As described in the introduction of this exercise, the scoreboard activity will call an intelligent decision service to perform risk assessment. If the confidence of the AI model behind the decision service is low, we will start a human service where the account manager can manually review the client onboarding request.

1. Back in the Case Builder, hover over the **Scoreboarding** activity and click on the **Open Workflow Designer** icon.

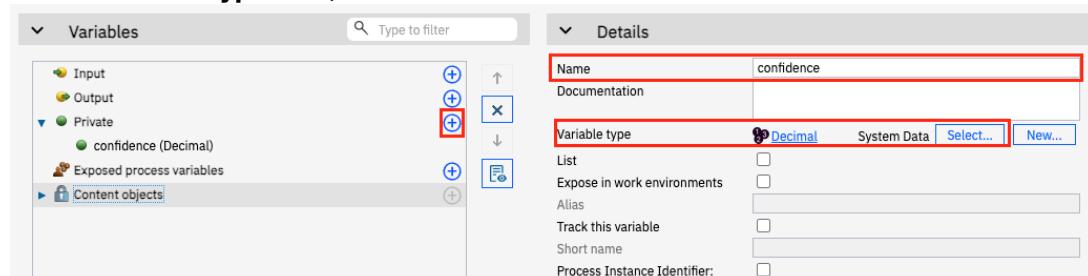


First, we will create some variables that will be used internally by **Scoreboarding** process.

2. Click on the **Variables** tab at the top.



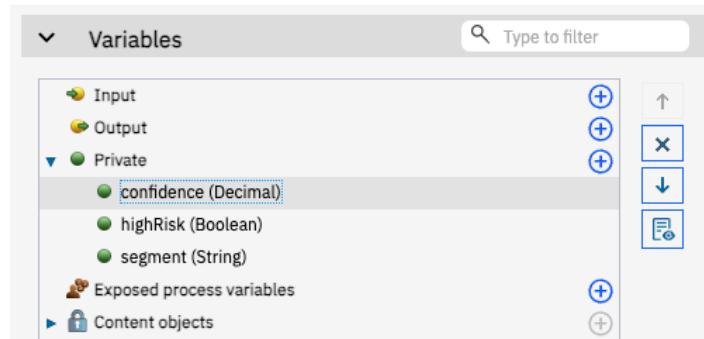
3. Click on the + button next to **Private**.
4. In the **Name** field, enter **confidence**.
5. In the **Variable type** field, click the **Select** button and select **Decimal**.



6. Similarly, add two more private variables as listed in the table below.

| Name | Type |
|----------|---------|
| highRisk | Boolean |
| segment | String |

The Variables section should now look as follows:

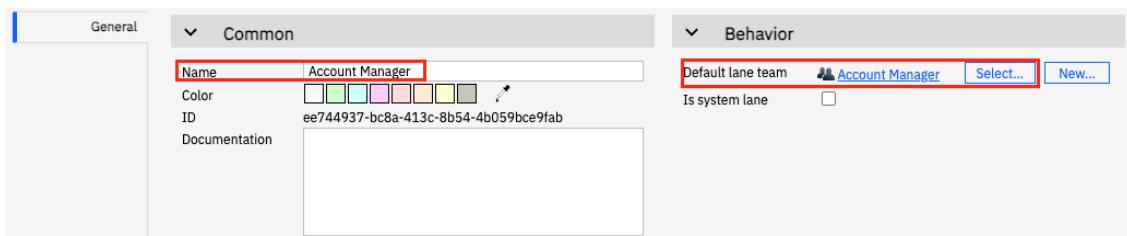


We will now call the intelligent decision service that performs the scoreboard.

7. Switch back to the **Definition** tab at the top.



8. Click on the empty space in the **All Users** lane.
9. In the property pane at the bottom, update the **All Users** lane name and default lane team to **Account Manager**.

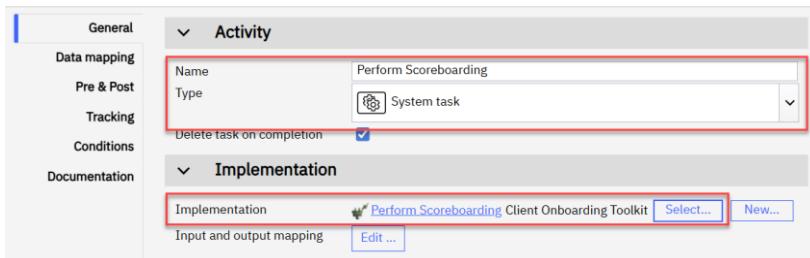


The case roles and process teams are automatically synchronized between the Case Builder and Workflow Designer which allows for easy integration between Case and Process within Workflow.

Note: If you want to assign a user task in a lane directly to a specific user, you can do that using the assignment configuration property of the activity. This is how the client onboarding end-to-end scenario assigns a task directly to the user performing the activities instead of assigning it to the whole team.

10. Select the **Inline user task** node.

11. In the properties pane, in the **General** tab, change the activity type to **System Task** and update its name to **Perform Scoreboarding**.
12. Under **Implementation**, click on the **Select** button and select the **Perform Scoreboarding** service flow.



If you want to learn how to consume a decision service in workflow, please look at the **Consume & Publish Automation Services in Workflow** lab.

13. Click the **Edit...** button next to the Input and output mapping label to open the input and output mapping dialog. Alternatively, switch to the **Data Mapping** tab and click Open...
14. Click on the **Select a variable** link for the **industry** input variable.



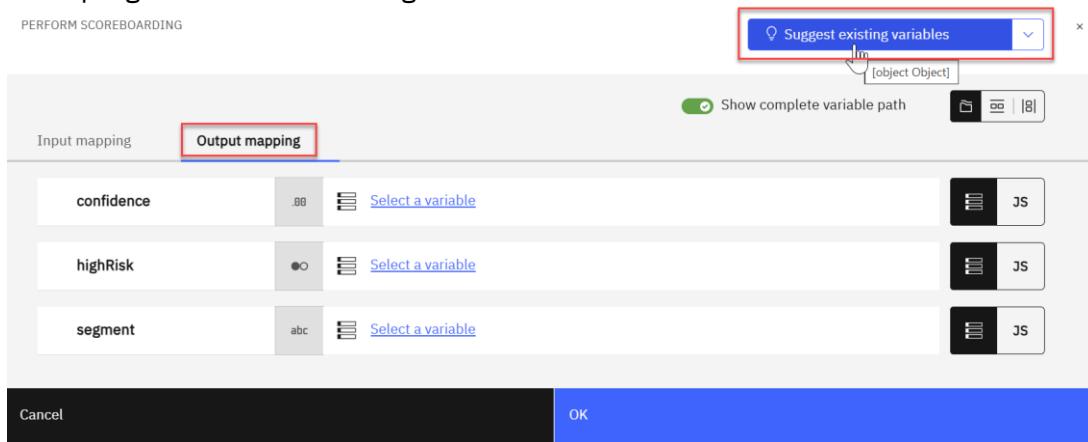
15. Select the **caseProperties → Industry → value** variable.

The screenshot shows the SAP Fiori interface for 'PERFORM SCOREBOARDING'. On the left, there's a table for 'Input mapping' with columns for the input variable, its type (e.g., abc), and the output mapping. The first row shows 'industry' with type 'abc' and an empty output mapping field. To the right is a 'Select a variable' dropdown. Below it is a 'Available mappings' section titled 'Input variables' which lists various case properties and their corresponding values. One entry, 'caseProperties.Industry.value', is highlighted with a red box and has a mouse cursor hovering over it. Other entries include 'caseProperties.ClientOnboardingRequest', 'caseProperties.AllDocumentsReceived', etc.

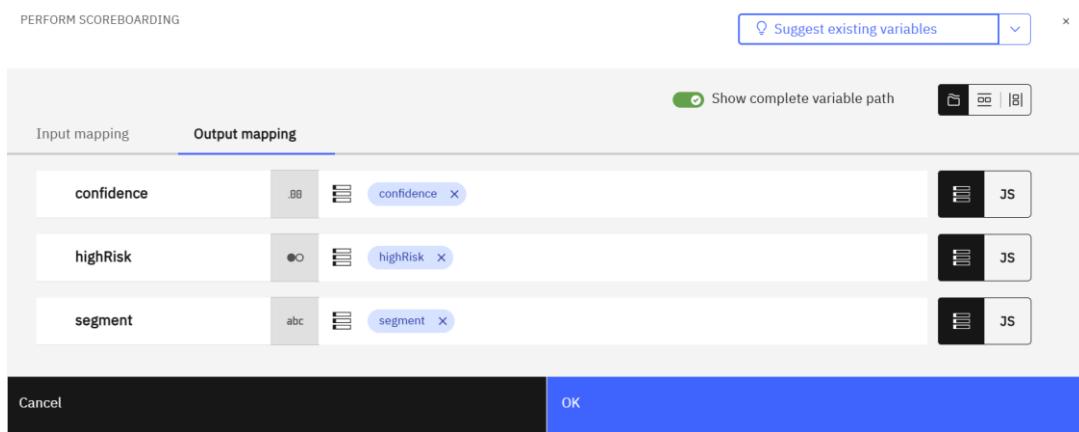
16. Similarly, map all input variables to their matching case properties.

The screenshot shows the SAP Fiori interface for 'PERFORM SCOREBOARDING'. The 'Input mapping' table now contains five rows, each mapping an input variable to a specific case property value. The first row maps 'industry' to 'caseProperties.Industry.value'. The subsequent rows map 'annualRevenue' to 'caseProperties.AnnualRevenue.value', 'companyAge' to 'caseProperties.CompanyAge.value', 'defaultedPayment' to 'caseProperties.DefaultedPayment.value', and 'numberOfEmployees' to 'caseProperties.NumberofEmployees.value'. At the bottom of the screen, there are 'Cancel' and 'OK' buttons, with the 'OK' button being highlighted in blue.

17. Switch to the **Output mapping** tab on the same dialog and click on the **Insert suggestions** link in the top-right corner of the dialog.



The **Output mapping** section should now have variable values automatically filled in.



18. Click the **OK** button to exit the dialog.

This completes the configuration for the **Perform Scoreboarding** activity. Next, we need to move it to the **System** lane as it is a system activity.

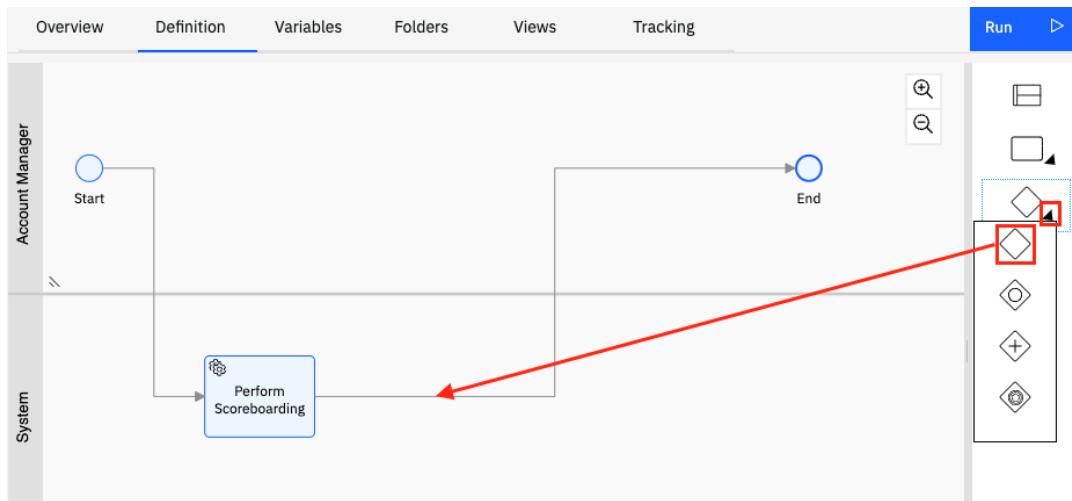
19. Drag and drop the **Perform Scoreboarding** activity from the **Account Manager** lane to the left side of the **System** lane.

Your diagram should now look as follows:



Next, we need to add a gateway to decide whether the next activity should be a human service or not.

20. Drag and drop a gateway to the right of the **Perform Scoreboarding** system activity.

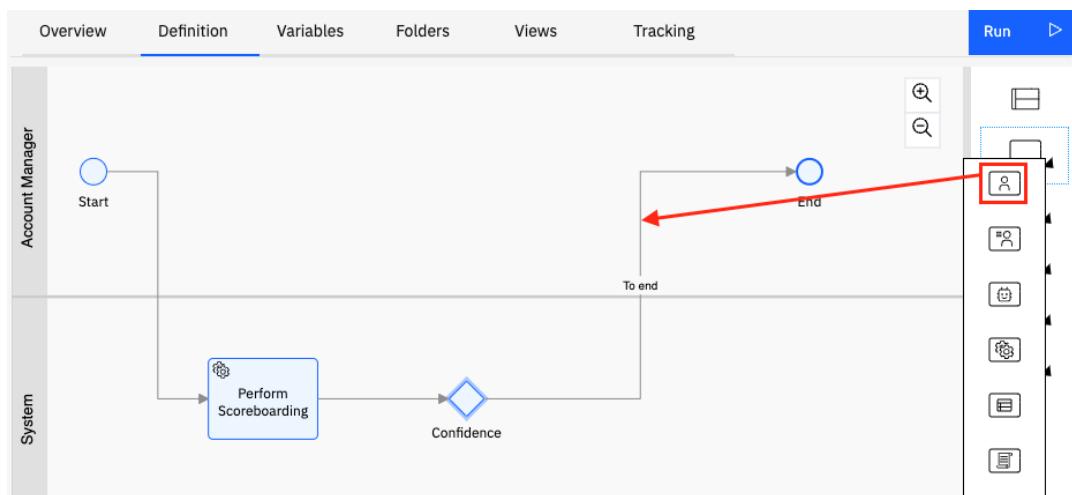


21. In the properties tab at the bottom, in the **General** tab, rename the gateway to **Confidence**.

22. Click on the dropdown for the **Activity** node in the right-hand side palette.



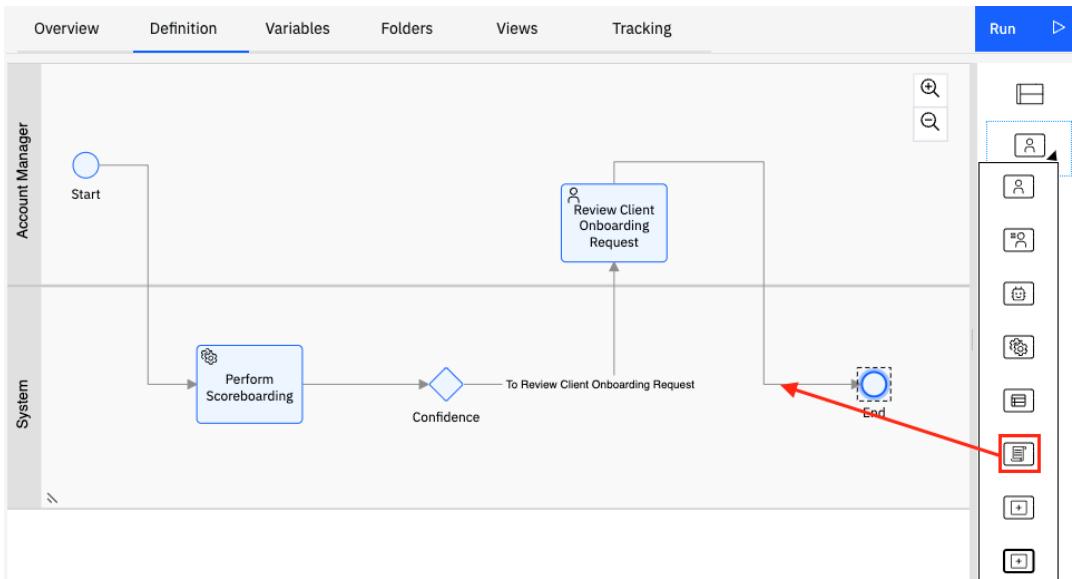
23. Drag and drop a **User Task** to the left of the **End** node in the **Account Manager** lane.



24. Rename the **User task** to **Review Client Onboarding Request**.

25. Move the **End** node to the System lane by dragging it there.

26. Drag a **Server Script** activity to the left of the **End** node in the **System** lane.



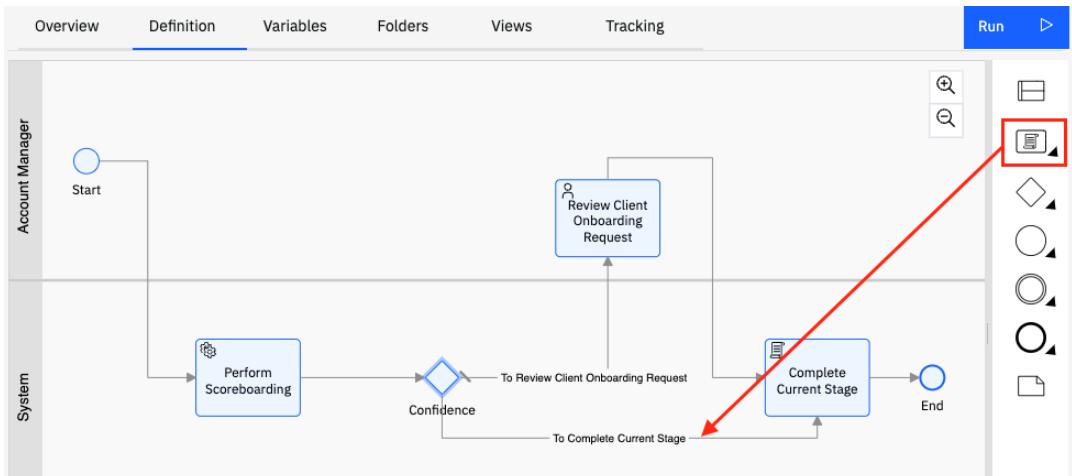
27. Rename the **Script Task** to **Complete Current Stage**.

28. In the **Script** tab, enter the following script:

```
// Complete the Scoreboarding stage  
tw.system.currentProcessInstance.parentCase.completeCurrentStage(true);
```

29. Connect the **Confidence** gateway to the **Complete Current Stage** script task.

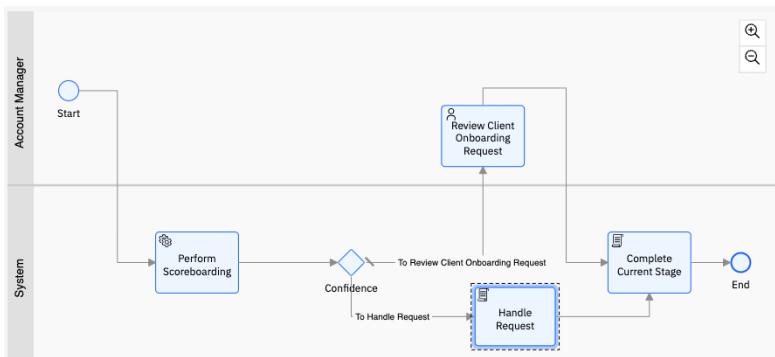
30. Drag and drop another Script task onto the line connecting the **Confidence** gateway and **Complete Current Stage** script task.



31. Rename the script task to **Handle Request** and enter the following script:

```
// For high-confidence decisions, automatically approve or reject  
// the request based on the risk  
if(tw.local.highRisk) {  
    tw.local.caseProperties.ApprovalStatus.value = "Rejected";  
} else {  
    tw.local.caseProperties.ApprovalStatus.value = "Approved";  
}
```

Your diagram should now look similar to the following:

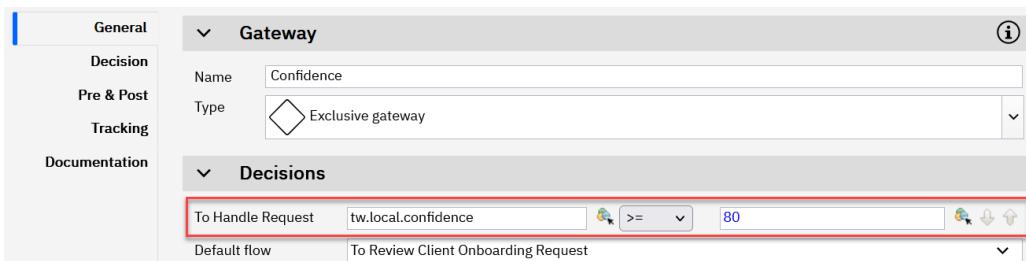


32. Click on the **Confidence** gateway.

33. In the properties pane on the bottom, in the **General** tab, under the **Decisions** section, select the **confidence** variable using the variable picker.

34. In the **operation** field, select the **\geq** operator.

35. In the **value** field, enter **80**.



What this means is, that after the decision service is invoked, if the confidence is greater than or equal to 80%, the scoreboard stage will automatically complete without human intervention and the client onboarding request will be approved or denied based on the risk level.

Next, we will add the UI for the **Review Client Onboarding Request** human service.

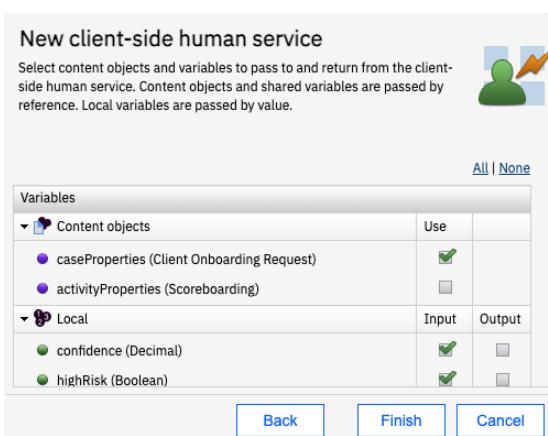
36. Click on the **Review Client Onboarding Request** user task.

37. In the properties pane, in the **General** tab, under the **Implementation** section, click on the **New...** button.

38. In the new client-side human service wizard, click on **Next**.

39. In the variable selector, **uncheck activityProperties**.

40. Also **uncheck** the **Output** for all three of the local variables.



The variable selector helps us define the input and output variables that need to be used by the client-side human service using the variables that are already available in the **Scoreboarding** process. In this case, we require the local variables to be inputs to the human service as the UI will display their values. Output variables are only required if the values are updated and need to be fed back to the process which is not something we need here.

41. Click on **Finish**.

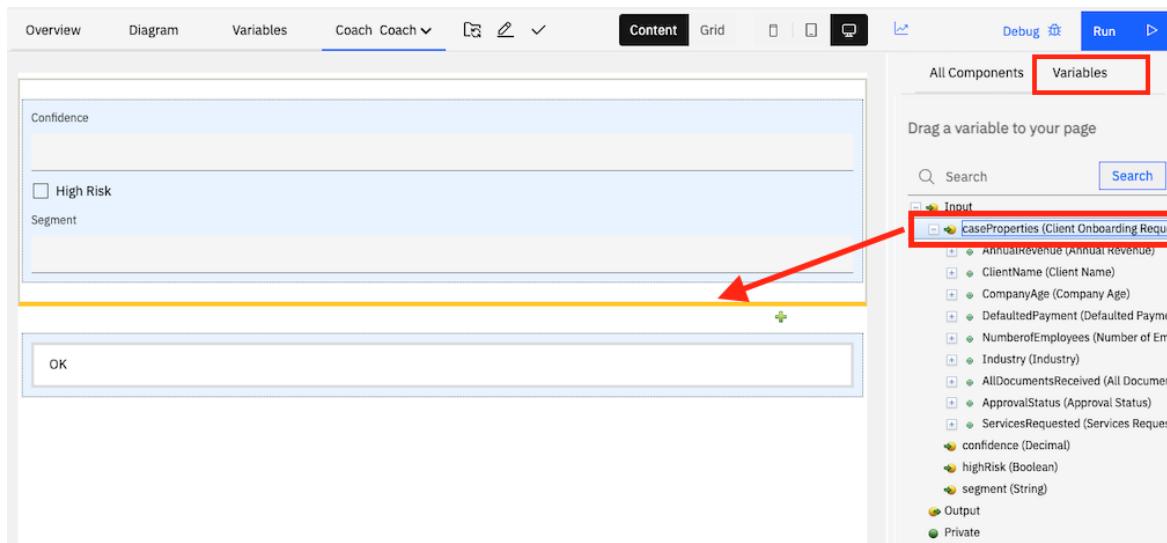
42. Click on **Coach**.



A default UI with the local variables is already created.

43. In the right-hand side palette, select the **Variables** tab.

44. Drag and drop the **caseProperties** variable below the **segment** field in the editor.

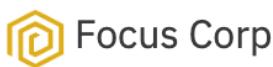


45. Optionally, rearrange the views in the editor by dragging and dropping them in the order you want.

46. Optionally, add the **Header** view to the top of the editor.

47. Rename the **OK** button at the bottom to **Complete Review** and change its color to **dark blue**.

Your UI should look like the screenshot below (it may vary slightly based on the optional steps you completed):



Account Mgr

Confidence

High Risk

Segment

tw.local.caseProperties.AnnualRevenue.displayName

tw.local.caseProperties.ClientName.displayName

tw.local.caseProperties.CompanyAge.displayName

tw.local.caseProperties.DefaultedPayment.displayName

tw.local.caseProperties.NumberofEmployees.displayName

tw.local.caseProperties.Industry.displayName

tw.local.caseProperties.AllDocumentsReceived.displayName

tw.local.caseProperties.ApprovalStatus.displayName

Services Requested

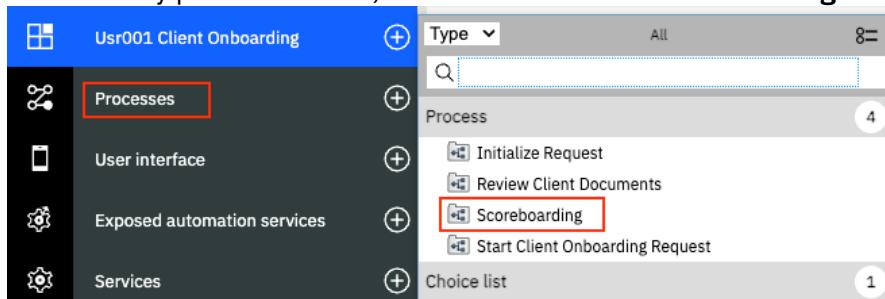
Services Requested

Complete Review

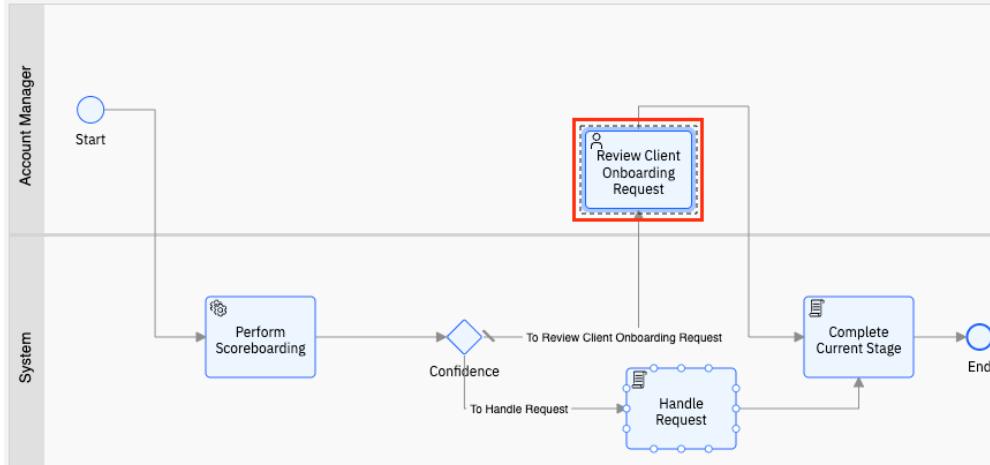
48. Click the **Finish editing** button.



49. In the library pane on the left, select **Processes** → **Scoreboarding**.



50. Click on the **Review Client Onboarding Request** user task.



51. In the properties pane on the bottom, click on the **Data mapping** tab.

The properties pane displays the 'Data mapping' tab, which is highlighted with a red box. The pane includes tabs for General, Assignments, Pre & Post, Tracking, Conditions, and Documentation. Under the 'Inputs' tab, there are four mappings listed:

- caseProperties: Mapped from a gray box to a blue circle labeled 'caseProperties'.
- confidence: Mapped from a gray box containing '.88' to a blue circle labeled 'confidence'.
- highRisk: Mapped from a gray box containing '●' to a blue circle labeled 'highRisk'.
- segment: Mapped from a gray box containing 'abc' to a blue circle labeled 'segment'.

The 'Outputs' tab shows a message: "This activity does not have any output mappings."

Notice how the input variable mapping for the **Review Client Onboarding Request** was automatically done for you. We are passing the variables available in the **Scoreboarding** process to the input expected by the **Review Client Onboarding Request** user task.

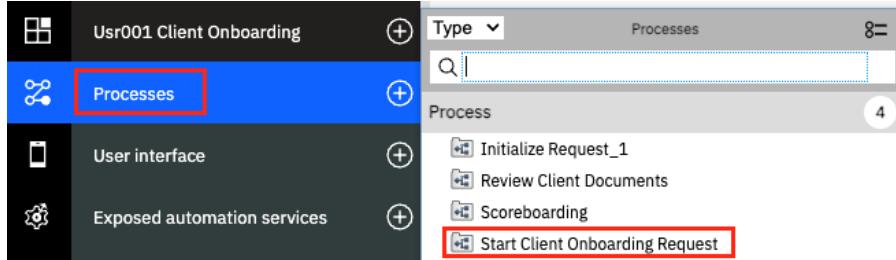
52. Click the **Finish editing** button to save any pending changes if necessary.



4.2.5 Test the final solution

We are now done with building the solution. Next, we will test the case and the activities created by starting the case using sample values.

1. In the library pane on the left, select **Processes** → **Start Client Onboarding Request**.

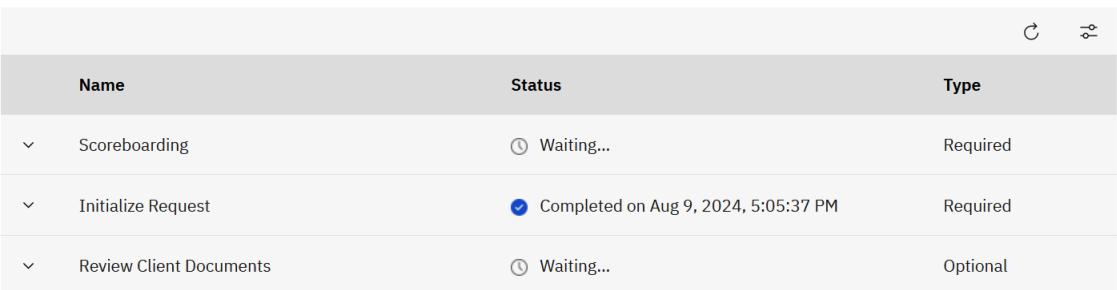


2. Click on the **Run** button in the upper-right corner to start a new case using the sample values we created previously.
3. Go back to the Case Client window that was open earlier. If you have closed it, you can access it again by clicking the **Test** button in the Case Builder for your project. Keep the Process Designer open for future test runs.
4. In the Case Client, click on the **Search** button to search for cases added.
5. Verify that the **Stage** (last column) in the search results is **Document Review**.
6. Click on the **Title** for the latest case to open the case details UI.

The screenshot shows the Case Client search results. The search criteria are 'Added On' set to '6/4/2021'. The results table has columns: Title, Added On, Case State, Modified By, Modified On, and Case Stage. The first result, titled 'U001C_ClientOnboardingRequest_000000110001', has a 'Case Stage' of 'Document Review'. The 'Search' button is highlighted with a red box.

7. In the Case Details UI, click on the **Activities** tab.

You will see the **Initialize Request** task was **Completed** and the other two tasks are **Waiting**.



The screenshot shows the Case Details UI Activities tab. The table has columns: Name, Status, and Type. There are three tasks:

- Scoreboarding: Status is "Waiting...", Type is "Required".
- Initialize Request: Status is "Completed on Aug 9, 2024, 5:05:37 PM", Type is "Required".
- Review Client Documents: Status is "Waiting...", Type is "Optional".

This means that the case is waiting for client documents to be uploaded to the case folder. Typically, this can happen in several ways. In the Client Onboarding end-to-end scenario, we upload the document to the case folder after it has been captured by IBM Automation Document Processing (ADP). For this lab, we will add a document to the case folder manually.

8. Click on the **Documents** tab.

9. Click on the + button to add a document and select **Add Document**.

The screenshot shows a software interface with a navigation bar at the top. The 'Documents' tab is selected and highlighted with a red box. Below the navigation bar is a table header with columns: Name, Modified By, and Last Modified. To the right of the table is a toolbar with icons for Refresh, Search, Add, and New. A dropdown menu is open over the 'Add' icon, showing options: 'Add Document' (highlighted with a blue box and a cursor icon) and 'Add Folder'. Below the table, a message says 'No items to display at this time.'

10. In the **Add File** dialog, select **Client Document** as the **Document Type**.

11. Click on **Select** and pick the **Legacy Consulting - Banking Information.pdf** file downloaded as a part of the lab setup instructions.

12. Click on **Upload**.

The screenshot shows the 'Add File' dialog. At the top left is a 'Select...' button with a file icon, which is highlighted with a red box. Next to it is the file name 'Legacy Consulting - Banking Information.pdf'. Below this is a 'Document Type' dropdown menu with 'Client Document' selected, also highlighted with a red box. There are other fields for 'Client Name' and 'Reference ID' which are empty. Below these is a 'Name' field containing 'Legacy Consulting - Banking Information.pdf'. At the bottom left is a checkbox 'Keep dialog open'. At the bottom right are two buttons: 'Cancel' and 'Upload', with 'Upload' highlighted with a red box and a cursor icon.

13. Click on the **Activities** tab.

14. Click on the **Refresh** icon.

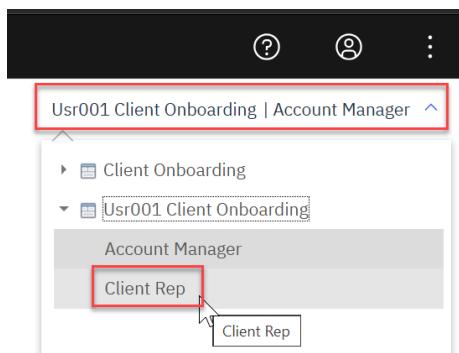
The screenshot shows the 'Activities' tab selected and highlighted with a red box. Below the tab is a table header with columns: Name, Status, and Type. To the right of the table is a toolbar with icons for Refresh (highlighted with a red box), Refresh All, and Filter.

You will notice that the **Review Client Documents** activity has now started as its precondition was that a client document be filed into the case.

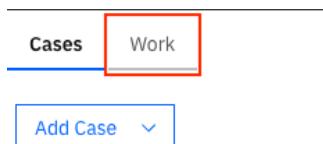
| Name | Status | Type |
|-------------------------|-------------------------------------|----------|
| Scoreboarding | Waiting... | Required |
| Review Client Documents | Started on Sep 21, 2023, 12:41 PM | Required |
| Initialize Request | Completed on Sep 21, 2023, 11:22 AM | Required |

Next, we will assume the role of a Client Rep to review the document added.

15. Click on the **UsrNNN Client Onboarding | Account Manager** dropdown in the upper-right corner and select the **Client Rep** role.



16. Once the role is switched, click on the **Work** tab.



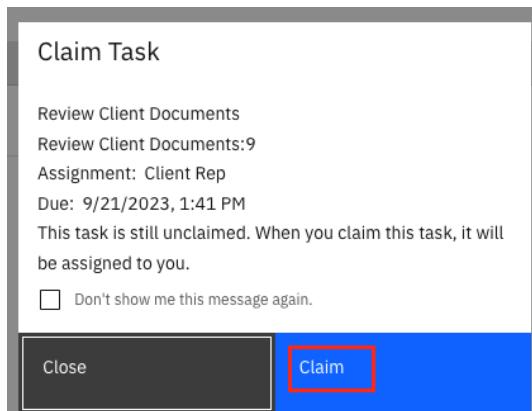
17. The **Client Rep** task list should now have a new task – **Review Client Documents**.

| Client Rep (1) | My Work (0) | |
|---|---------------------|---------------------------|
| Filter | No filters applied | |
| Reset | | |
| Step Name | Time Created | Subject |
| Review Client Documents | 9/21/2023, 12:41 PM | Review Client Documents:9 |

18. Click on the task name to open it.

As the task is assigned to the **Client Rep** role, you will need to claim it as **usrNNN**.

19. Click on the **Claim** button.



The UI for the task should now open as follows:

Client Name

Legacy Consulting

All Documents Received

Select the documents that you want to add to the new case

 Legacy Consulting - Banking Information.pdf

Complete Review

20. Check the **All Documents Received** checkbox.

21. Click on **Complete Review** to complete the task.

Client Name

Legacy Consulting

All Documents Received

Select the documents that you want to add to the new case

 Legacy Consulting - Banking Information.pdf

Complete Review

22. Switch back to the **Cases** tab on top.

23. Click on **Search** to search for cases.

24. Verify that the **Stage** for the latest case is now set to **Scoreboarding**.

25. Click on the title of the case to open the case details.

The overview page should look as follows:

Overview Properties Documents Tasks Activities History Related Items

Document Review Scoreboarding Add comment 

| | |
|------------------|----------------------|
| Created by | cp4badmin |
| Created on | Mar 6, 2024, 4:51 PM |
| Last modified by | cp4badmin |
| Last modified on | Mar 6, 2024, 4:57 PM |
| Status | Good |

cp4badmin
All client documents have been received
Mar 6, 2024, 4:57 PM

As you can see the comment that we added as a part of the JavaScript code has now been added to the case and the stage is set to **Scoreboarding**. The comment was made by the admin user as it's a part of the JavaScript API that uses an admin user.

Depending on the security configuration, anyone with access to a case can add comments to the Case using the out-of-the-box Case comments view included as a part of the default case details UI.

26. Click on the **Activities** tab.

The **Review Client Documents** activity should now be marked **Completed** and the **Scoreboarding** activity should be **Started**.

| Name | Status | Type |
|-------------------------|-------------------------------------|----------|
| Scoreboarding | Started on Sep 21, 2023, 1:12 PM | Required |
| Initialize Request | Completed on Sep 21, 2023, 12:52 PM | Required |
| Review Client Documents | Completed on Sep 21, 2023, 1:12 PM | Required |

The Scoreboarding activity would have completed automatically if the confidence of the decision service was high. We will switch back to the **Account Manager** role next to review the client onboarding request manually.

27. Switch the role in the upper-right corner to **Account Manager**.

28. Click on the **Work** tab at the top.

There should be a new activity **Review Client Onboarding Request** for the **Account Manager**.

| Account Manager (1) | My Work | |
|----------------------------------|--------------------|------------------|
| Filter No filters applied Reset | | |
| | | |
| Step Name | Time Created | Subject |
| Review Client Onboarding Request | 9/21/2023, 1:12 PM | Scoreboarding:13 |

29. Click on the **title** of the task, then **claim** it to open it.

30. The UI should show the risk assessment values:

Confidence

75.31

High Risk

Segment

Segment 2

The **confidence** here is approximately **75** which is lower than our threshold of **80** which is why a manual review is required. The decision service also marked this request as high risk and classified the client as **Segment 2**.

31. For the **Approval Status** field, select **Rejected**.

32. Click on **Complete Review**.

Approval Status

Rejected

Complete Review

33. Click on the **Cases** tab at the top.

34. Click on **Search** to search for cases.

35. The latest case should now have a **Case State of Complete** and **Case Stage of Completed**.

| Title | Added On | ↑ | Case State | Modified By | Modified On | Case Stage |
|--|-------------------|---|------------|-------------|-------------------|------------|
| U011C_ClientOnboardingRequest_000000100003 | 6/4/2021, 3:14 AM | | Complete | cp4badmin | 6/4/2021, 3:46 AM | Completed |

36. Optionally, click on the title of the case to see the details of the completed case.

We have now tested the path of the client onboarding request where human intervention was required. We now need to test the path where the request is processed automatically i.e., all client documents have been received and the decision service returns a high confidence.

37. Go back to the Workflow Designer.

If you have closed it, you can re-open it by selecting the Workflow project in IBM Business Automation Studio and using the 3-dot menu to open it again.

38. Click on the **Start Case** script task in the **Start Client Onboarding Request** Process.

Make sure you type the values exactly as provided in the following steps.

39. Modify the **annual revenue** in line 14 to **50000000**.

40. Modify the **company age** in line 15 to **30**.

41. Modify the **defaulted payment** in line 16 to **false**.

42. Modify the **number of employees** in line 17 to **75**.

43. Modify the **industry** in line 20 to **Finance**.

44. Modify the **services requested** in line 22 to **Corporate Credit Card**.

45. Modify the **all documents received** in line 26 to **true**.

Note: The line numbers may be slightly different for you if the copy/paste of the script changed the formatting of the code.

Your script should look as follows:

Script

This editor uses standard JavaScript syntax. Press Ctrl-space while typing to receive assistance with the script syntax and contents.

```
1 // Create a new Client Onboarding Request case
2 // The record object holds the properties of the case
3 var newCaseProperties = new tw.object.Record();
4
5 // Fetch the acronym of the Workflow project
6 // This can be used to generate the prefix of the Case properties
7 var prefix = tw.system.model.processApp.acronym + "_";
8
9 // Set property values for the properties defined in the case
10 // Client
11 newCaseProperties.setPropertyValue(prefix + "ClientName", "Legacy Consulting");
12
13 // Client Additional Info
14 newCaseProperties.setPropertyValue(prefix + "AnnualRevenue", 50000000);
15 newCaseProperties.setPropertyValue(prefix + "CompanyAge", 30);
16 newCaseProperties.setPropertyValue(prefix + "DefaultedPayment", false);
17 newCaseProperties.setPropertyValue(prefix + "NumberofEmployees", 75);
18
19 // Client Services
20 newCaseProperties.setPropertyValue(prefix + "Industry", "Finance");
21 var servicesRequested = new tw.object.listOf.String();
22 servicesRequested[0] = "Corporate Credit Card";
23 newCaseProperties.setPropertyValue(prefix + "ServicesRequested", servicesRequested);
24
25 // Reviewed Documents
26 newCaseProperties.setPropertyValue(prefix + "AllDocumentsReceived", true);
27
28 // Create Case using the JavaScript API
29 tw.system.currentProcessInstance.createCase(prefix + "ClientOnboardingRequest", newCaseProperties, null, true);
```

46. Click on the **Run** button to start a case with the updated sample values.

As before, the changes will automatically be saved on clicking **Run**.

47. Go back to the Case Client.

48. In the **Cases** tab, click on **Search** to search for cases.

The latest case should be marked **completed** as no human intervention was required.

| Title | Added On | ↑ | Case State | Modified By | Modified On | Case Stage |
|--|-------------------|---|------------|-------------|-------------------|------------|
| U011C_ClientOnboardingRequest_000000100003 | 6/4/2021, 3:14 AM | | Complete | cp4badmin | 6/4/2021, 3:46 AM | Completed |
| U011C_ClientOnboardingRequest_000000100004 | 6/4/2021, 4:01 AM | | Complete | cp4badmin | 6/4/2021, 4:01 AM | Completed |

49. Click on the **title** of the latest case to open it.

The overview page should show the completed stages and the comments added automatically.

The screenshot shows the Case Client overview page for a specific case. The top navigation bar includes tabs for Overview, Properties, Documents, Tasks, Activities, History, and Related Items. The Overview tab is selected. Below the tabs, there are two sections: Document Review and Scoreboarding. The Document Review section contains a list of documents with their status (e.g., Received, Pending, etc.). The Scoreboarding section shows a progress bar and a comment from user 'cp4badmin' stating 'All client documents have been received'. The main content area displays detailed case information: Created by (cp4badmin), Created on (Mar 6, 2024, 5:06 PM), Last modified by (cp4badmin), Last modified on (Mar 6, 2024, 5:06 PM), and Status (Completed). A 'Add comment' button is also present.

50. Click on the **Properties** tab.

The **Approval Status** should have **Approved** selected.

Approval Status

Approved

51. Click on the **Activities** tab.

The **Initialize Request & Scoreboarding** activities should be marked **Completed** and the optional **Review Client Documents** activity is in **Waiting** state as a manual review was not required.

| Name | Status | Type |
|-------------------------|-------------------------------------|----------|
| Initialize Request1 | Completed on Sep 22, 2023, 10:25 AM | Required |
| Scoreboarding | Completed on Sep 22, 2023, 10:25 AM | Required |
| Review Client Documents | Waiting... | Optional |

That concludes the testing of the solution built. In the client onboarding end-to-end scenario, a bot is called after a client is approved/rejected to update legacy systems. If you are interested to learn more about IBM Robotic Process Automation and how Workflow can call a bot, please look at the **IBM Robotic Process Automation** lab.

Congratulations on completing the Introduction to Business Automation Workflow lab!