Use Gen AI to Identify and Validate Documents

Instructor-led lab guide



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Tech Jam 2025

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1 Lab Introduction

This hands-on lab explores IBM Business Automation Workflow (BAW) enhanced by Generative AI (GenAI) to streamline business processes and improve decision-making. Participants will gain practical experience integrating GenAI capabilities into workflows to automate content generation, enhance decision logic, and optimize task management. In this lab, attendees will learn how to leverage AI-powered intelligent documents within IBM BAW.

1.1 Lab Scenario

In this lab, you will complete the implementation of a Human Task Activity (highlighted in green in the figure below), which is part of a procurement Process.

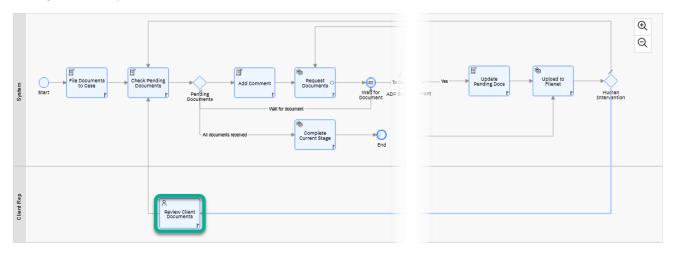


Figure 1. Client Onboarding Case: Review Documents Process

In this activity, a client onboarding specialist must review and validate the client documents. In this lab, you will create an automation that uses LLM to assist the client onboarding specialist. The LLM will automatically classify and summarize the document.

2 Lab Instructions

_1. Open this document: https://ibm.ent.box.com/v/wxO-Agentic-SDK. You will need it when provisioning the environment on your own, and later on when starting the VMs

2.1 Acquire Tech Zone Lab Environment

You can either request a Tech Jam Workshop Tech Zone environment (2.1.1) or provision your own (2.2.2).

- 1. Use a Provisioned Tech Jam Tech Zone Envrionmnet
- 2. Request an envrionmnet using this Slack channel #ba-wxo-tech-jam-access

If you have already requested an envrionmnet and it has been assigned to you, select one of these two links to start using it:

- https://techzone.ibm.com/my/workshops/view/68f134158960dd0f10ed77cc
- https://techzone.ibm.com/my/workshops/view/68f134fd6a904ef13a398ac5

2.1.1 Reserve IBM watsonx Orchestrate ADK and DBA - US East Only

1. Create a Tech Zone Reservation: 1.1 Reserve Tech Zone Environment

Note: This environment includes the Digital Business Automation VM, which provides the IBM Business Workflow runtime required for this lab.

2.2 BAW VM Setup

_1. Access the IBM DBA VM: 1.3.1 Access the DBA VM



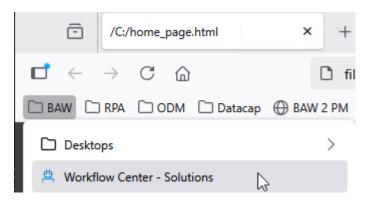
2. Start the BAW Server: 1.3.2 Start IBM Business Automation Workflow Server.

2.3 Open Web Process Designer

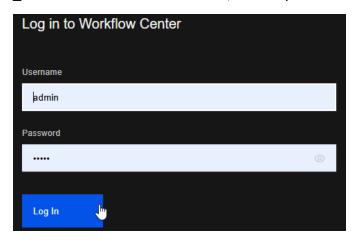
1. Start the **Firefox** Web Browser.



_2. From the Web browser toolbar, select the **BAW > Workflow Center - Solution**.

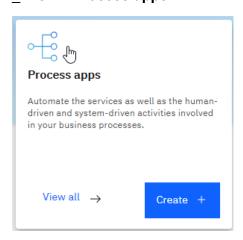


_1. For Username, enter 'admin', and for password, enter 'admin'. Then, click Log In.



2.4 Open Process App

_1. Click Process apps.



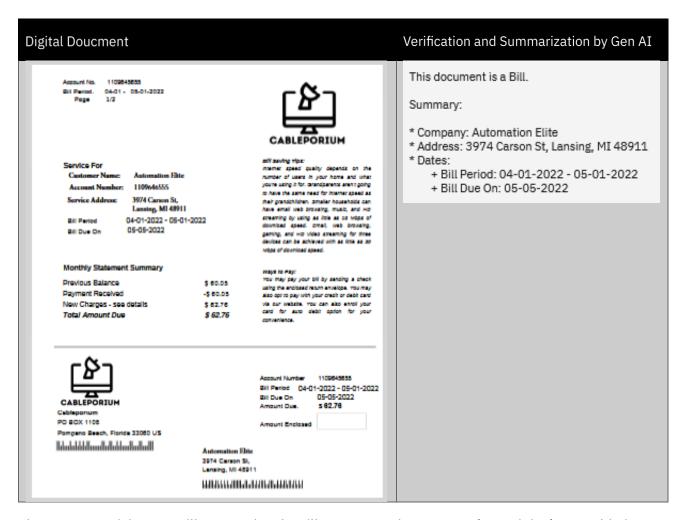
_2. Click **Doc Recognition**.



2.5 Author GenAl Service Flow

You will now create a Service Flow with a GenAI Activity to assist knowledge workers in verifying and summarizing customer-submitted documents during the onboarding process.

For example, given a utility bill, Gen Ai will classify and summarize it as shown below.

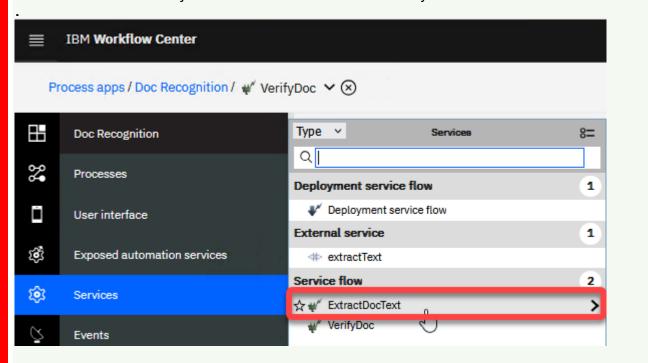


The Gen AI Activity you will create shortly will use a one-shot prompt (no training) to enable it to summarize and classify three types of documents: Utility Bills, Back Statements, and Annual Reports.

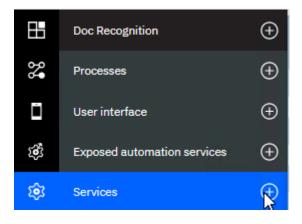
2.5.1 Create Service Flow

You will create a Service flow that, given a text extracted from a digital document, will classify and summarize it.

Note that we have already created a solution Service Flow for you. You can use it as a reference.



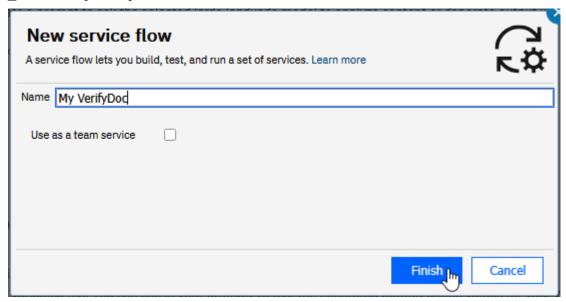
_1. Click the + on Services.



_2. Click Service flow.

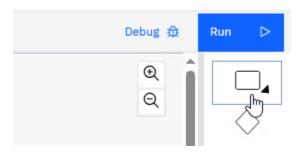


_3. Enter My VerifyDoc and click Finish.

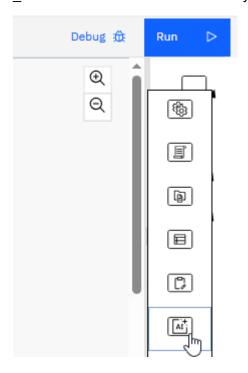


2.5.2 Add GenAl Activity

_1. Click the **Activity** palette.



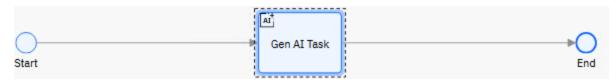
_2. Select the **Generative AI** activity.



_3. While holding the left mouse button, **drag and drop** it onto the wire between the Start and End nodes.



_4. Ensure the Gen AI Task AI Activity has been added as shown below:

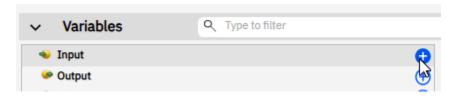


2.5.3 Create Service Flow Variables

1. Click the Variables tab.



_2. Click the **+ icon** on the input.



_3. For Name, enter fileContentText



_4. Click the + icon on the output.



_5. For Name, enter generatedText.

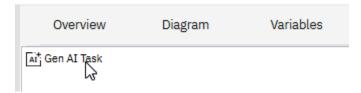


2.5.4 Author the GenAl Activity

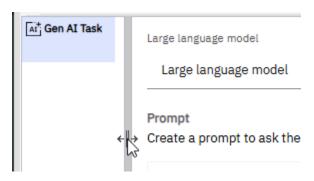
1. Click the **Gen Al** tab.



2. Click Gen Al Task.



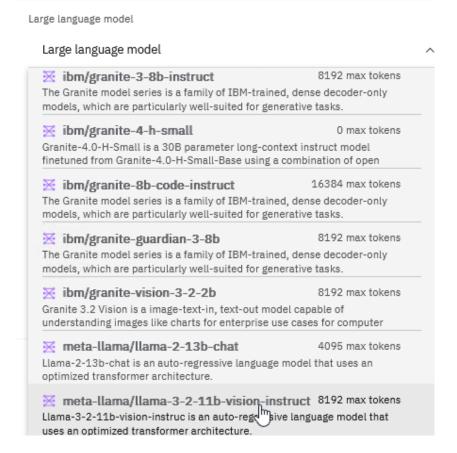
_3. Capture the divider and drag it to the left to expand the Gen Al Editor.



2.5.5 Select the LLM

The IBM Business Automation Workflow is connected to an IBM watsonx.ai instance, which provides a selection of LLMs.

1. From the Large language model dropdown, select meta-llama/llama-3-2-11b-vision-instruct.



2. Verify that the **meta-llama/llama-3-2-11b-vision-instruct** is your LLM.

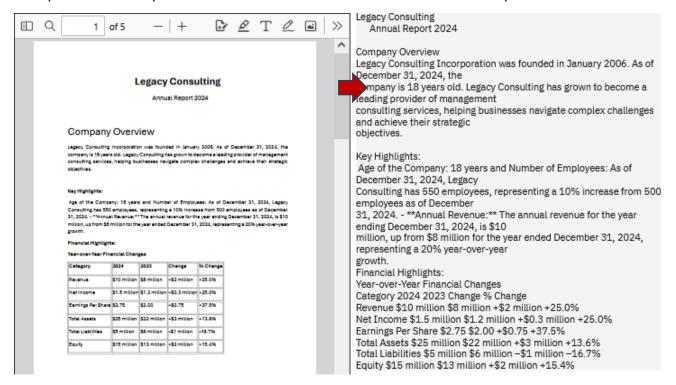
Why did we choose this LLM over another?

The Meta-Llama 3.2-11B-Vision-Instruct model is a multimodal instruction-tuned LLM that can process both text and images. It excels at visual question answering, image captioning, document analysis, and multimodal chat — any scenario where understanding and reasoning over images (with or without accompanying text) is required. It has ~11 billion parameters and supports long-context reasoning (up to ~128K tokens).

However, in this lab, to conserve the precious tokens, we will not supply raw images as the input to this model. Instead, we will first extract text from the image and use it as the input.

2.5.6 Create Input to LLM

The input variable will provide the LLM with the text extracted from the PDF quote file.



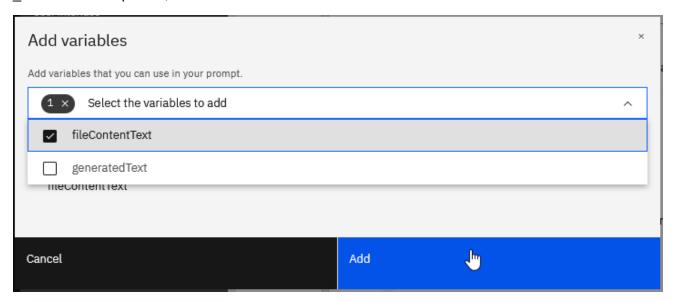
_1. Click Add variables + in the Variables section.

Variables

Add variables that you can use in your prompt. T



2. From the dropdown, select "fileContentText" and then click "Add."



3. In the **Value column**, enter the following text for the quote Variable.

Banking Information Focus Corp This banking information provided here will be used by Focus Corp to withdraw the monthly services fee. Client Name Automation Elite Inc. Bank Name The Digital Bank Bank Phone Number +1-289-333-1234 Bank Address 2190 New Orchard Road, Armonk, New York - 10504 Routing Number 91373084 Account Number 1179476345 Account Type Checking Savings Other By submitting this form, you authorize Focus Corp to withdraw the monthly services fee from he specified bank account. Date 4/21/2021

Variable	Value	
fileContentText	Corp to withdraw the monthly services fee from he specified	Ū

2.5.7 Define Prompt Input

You will define the input the LLM will receive every time you call this Service Flow.

_1. In the *Input section* of the Prompt definition, click the **Add variable +** button.

Prompt

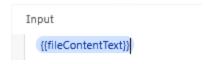
Create a prompt to ask the selected large language model to analyze content or generate output in the context of your pro-



2. Select fileContentText..



_3. You should now see that the input to the LLM is the *fileContentText* variable you will pass to this Service Flow.



2.5.8 Define Prompt Context

You will define a prompt to instruct the LLM to categorize and summarize a document.

We will use a one-shot prompt with no training examples!

_1. In the Context section of the Prompt definition, add the text below.

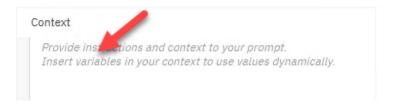
Identify the document as Bill, Banking Information, or Annual Report.

Provide a summary of the document, including only the names or company names, addresses, and dates.

Do not include any amounts.

Prompt

Create a prompt to ask the selected large language model to an:



2. The Context section should look exactly as shown below.

Identify the document as Bill, Banking Information, or Annual Report.

Provide a summary of the document, including only the names or company names, addresses, and dates.

Do not include any amounts.

2.5.9 Define Parameters

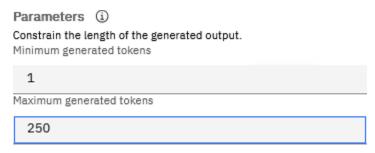
To limit the length of the generated output, we can specify the minimum and maximum number of tokens that the LLM can generate from the Parameters pane. In our case, we will need more than the default 50 tonnes.

What is a token?

A token is a sequence of characters that holds semantic meaning for a model. Before LLM processing, the words in your prompt text are converted into tokens. Similarly, the raw output from the model is also in the form of tokens. These output tokens are then converted back into words to be displayed as the final result.

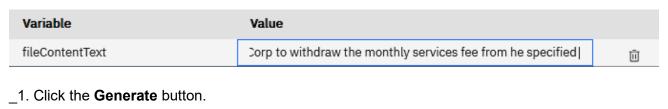
Each LLM has a maximum limit on the total number of tokens, which includes both the tokens in the input prompt and the tokens in the generated output. You can view those limits in the LLM descriptions in the Large language model dropdown menu. For more information about tokens, see Tokens and tokenization

1. In the *Parameters* section, for *Maximum generated tokens*, enter **250**.



2.5.10 Test the Gen Al Task

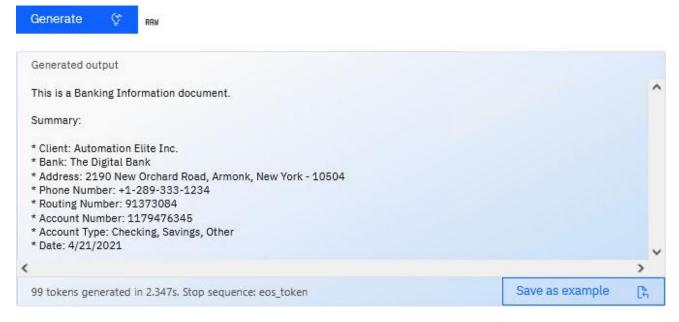
We can use the default value for the input quote variable to test our Gen Al Task.



Parameters (i)
Constrain the length of the generated output.



_2. You should now see that the document has been correctly identified and labeled as "Banking Information," with the document summary included below.



Note the **Save as example** button. If you decide to train the model with a set of documents (multi-shot prompt), you can use it to add this run to the training example section. Also note that 99 tokens were generated, which is why we increased the maximum generated tokens to 250.

2.5.11 Map Gen Al Task Activity to Service Flow Variables

We will map the Gen Al Task output variables to the Service Flow's output variables. This will allow the callers of the Service Flow to interact with the Gen Al Task.

Note that we do not need to map the qute variable explicitly because it has already been associated as input to the Gen Al Task in the Gen Al Editor.

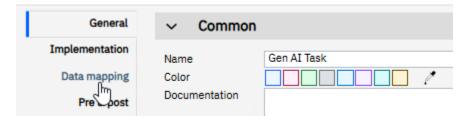
_1. Click the **Diagram** tab.



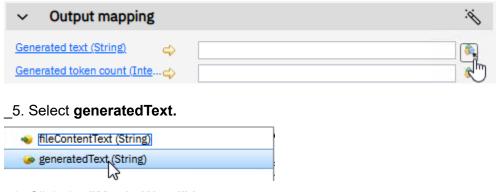
Select the Gen Al Task activity.



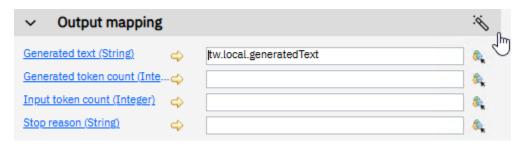
3. Click the **Data Mapping** tab.



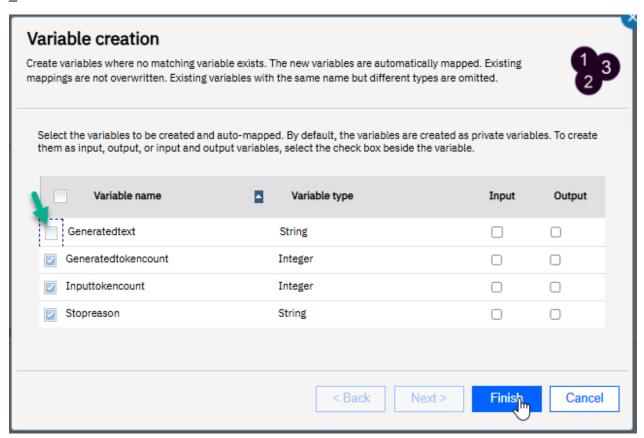
4. On the Generated text (string) variable, click the variable picker icon.



_6. Click the "Magic Wand" icon.

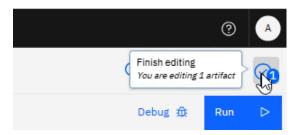


_7. Unselect the "Generated text" variable and click Finish.



This action will create private variables to map the Gen AI Task variables. We can use private variables since they don't need to be mapped as the Output of the Service Flow. The users of the Service Flows are not interested in the internal workings of the LLM!

8. Click the "Finish editing" icon to ensure that all your work is saved.

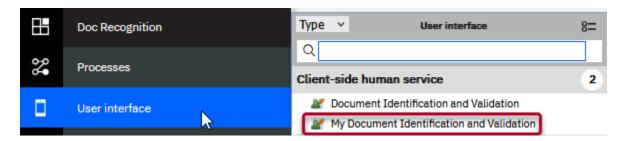


2.6 Add Gen Al Service Flow to Human Task

The Gen AI Service Flow (My Gen AI Document Processing) you just authored is intended for use in the Human Task invoked from the Porcurmente Porcess.

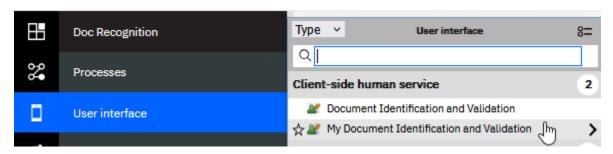
In this lab, we have partially authored the Human Activity (the official term is Client-side Human Service – CSHS) for you. Your task is to add and configure the "My VerifyDoc" Service Flow that you have just authored (My Gen AI Document Processing).

We have also created a partially implemented Human Task Activity for you: *My Document Identification and Validation*. You will need to configure it to invoke the *My VerifyDoc* Service Flow you just created.

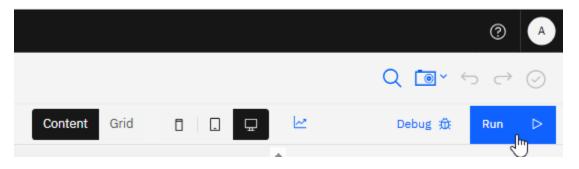


2.6.1 Examine the "My Document Identification and Validation" Client Side Human Service

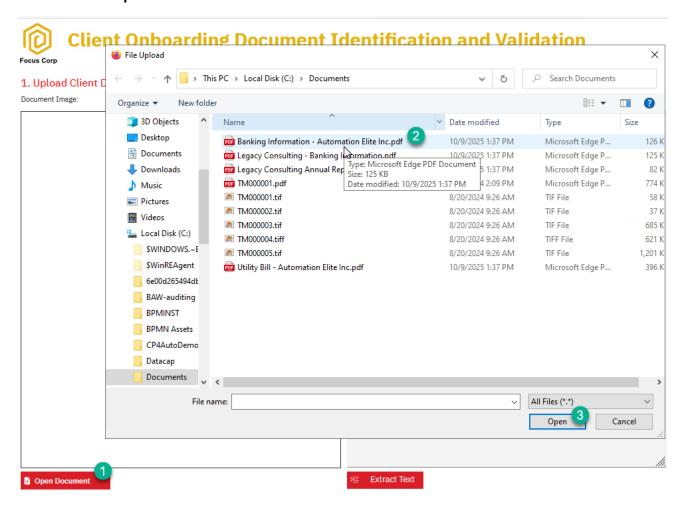
_1. Click User interface, and then click My Document Identification and Validation.



2. Click the **Run** button.

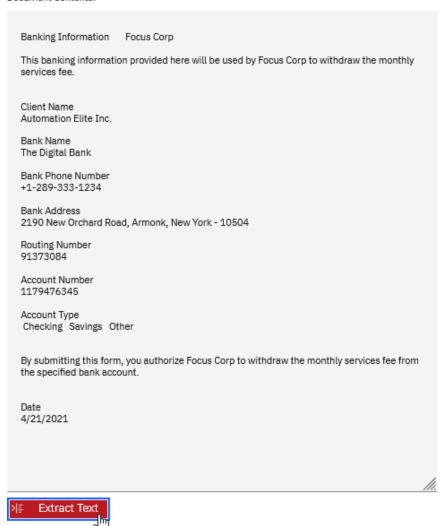


_3. Click the "Open Document" button, select Banking Information – Automation Elite Inc.pdf, and then clike Open.

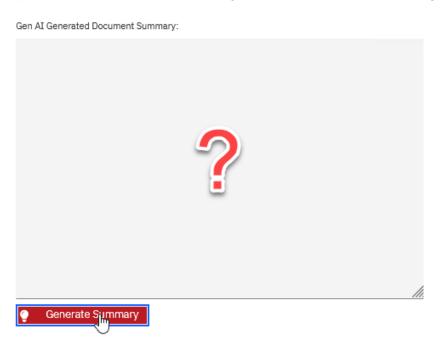


_4. Click the Extract Text button to extract text from the PDF document.

Document Contents:



_5. Click the "Generate Summary" button, and note that nothing happens.



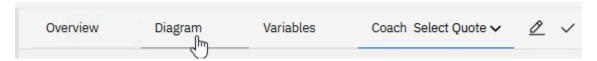
In the next few lab steps, you will configure the Client-side Human Service UI to send the document text to the Gen AI Service Flow you created and display the document classification and summary.

_6. Click the **X** button to close the Chrome Web Browser Window.

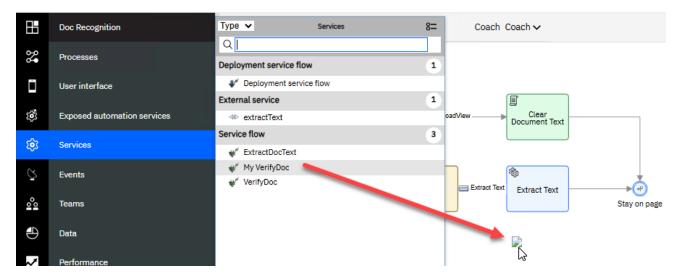


2.6.2 Add "My VerifyDoc" Service Flow

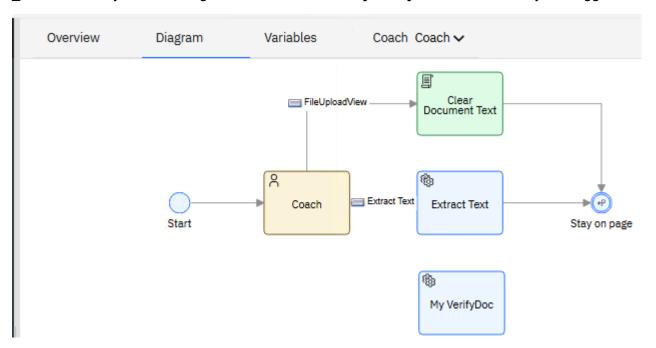
1. Click the **Diagram** tab.



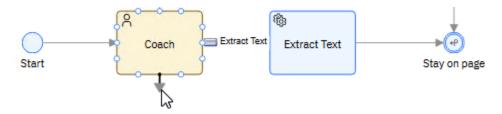
2. Click "Services," then drag and drop "My VerifyDoc" onto the Diagram.



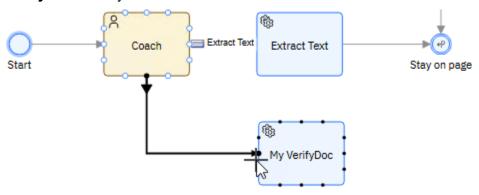
_3. Please verify that the Diagram now includes the My VerifyDoc Service Flow you dragged.



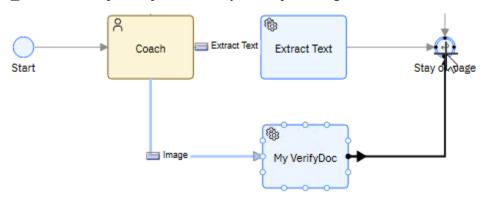
_4. Hover over the bottom right boundary of the **Coach** Activity – you should see a connecting arrow as shown below.



_5. While holding down the left mouse button on the connecting arrow, make a connection to **My VerifyDoc** Activity.



_6. Connect My VerifyDoc Activity to Stay on Page. Use the method described in steps 4-5.

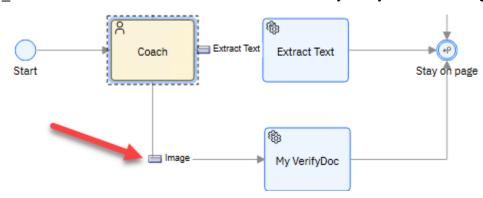


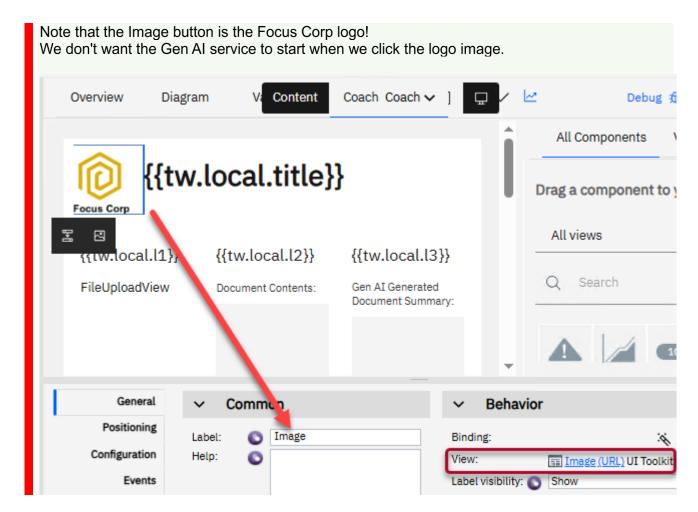
This connection ensures that after you execute the *My GenAI Document Processing* Activity, control returns to the UI.

2.6.3 Associate "Generate Summary" Button with "My VerifyDoc" Service Flow

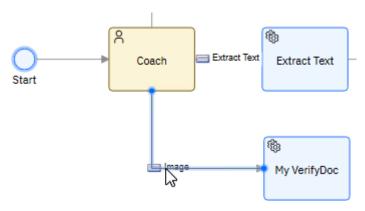
By default, the Generate Summary Button in the Coach was not associated with My VerifyDoc Service Flow. Let's correct this.

_1. Note that the button associated to Coach and My VerifyDoc is the Image button.

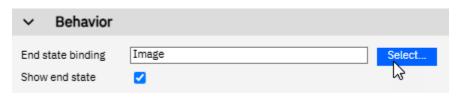




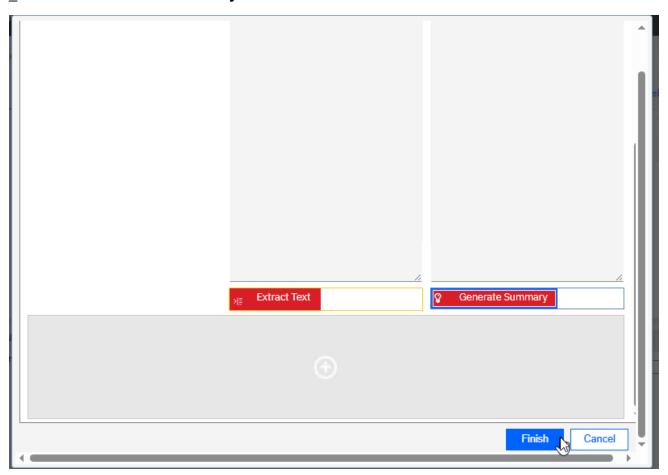
_2. Click the **Image** link.



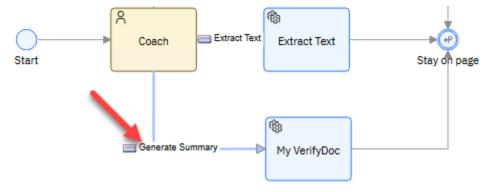
_3. Click the "Select..." button.



_4. Select the **Generate Summary** button and click **Finish**.



_5. Verify the **link** is now associated with the **Generate Summary** button.



2.6.4 Map "My VerifyDoc" Service Flow Interface

Before we perform variable mapping, let's examine the figure below to understand the flow and the variables involved.

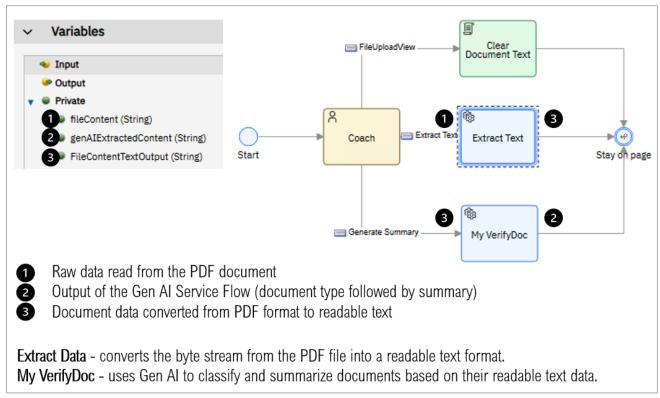
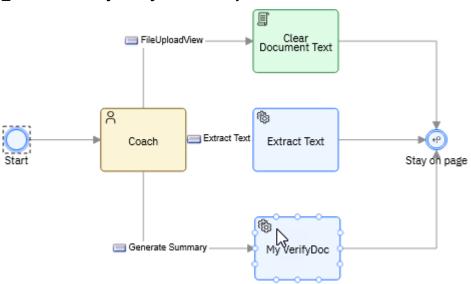


Figure 2. Service Flows and Variables

_1. Click the "My VerifyDoc" Activity.



Click the **Data mapping** tab.



_3. Click **Open...** to open the Mapping Editor.



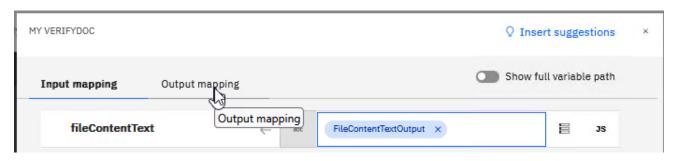
4. Click the **Select a variable** icon.



_5. Select the **FileContentTextOutput** variable.



_6. Click the output mapping tab.



_7. Click the **Select a variable** icon.



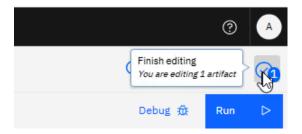
_8. Select the **genAlExtractedContent** variable.



9. Click **OK** to close the Mapping Editor.

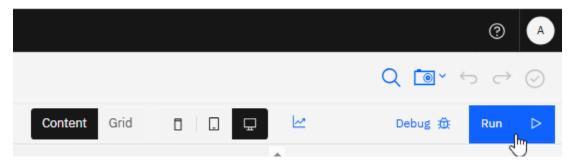


_10. Click the "Finish editing" icon to ensure that all your work is saved.



2.7 Test the "My Document Identification and Validation" CSHS

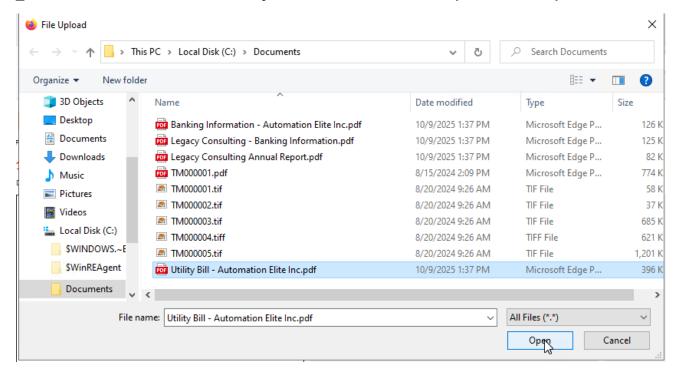
_1. Click the Run button.



_2. Click the **Open Document** button.



_3. From C:\Documents, select Utility Bill - Automation Elite Inc.pdf and click Open.



_4. Verify that the document image appears as shown below:

1. Upload Client Doucument

Document Image:



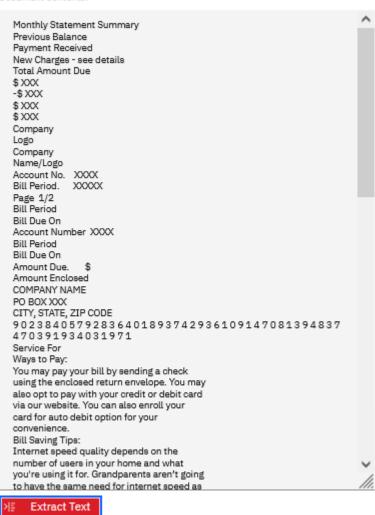
5. Click the **Extract Text** button.



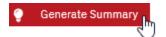
_6. Verify that the extracted text appears as shown below:

2. Extract Text from Client Doucument

Document Contents:



7. Click the **Generate Summary** button.



_8. Verify that the Al-generated output appears as shown below:

3. Generate Client Doucument Summary

Gen AI Generated Document Summary:



- _9. If you like, repeat steps 2-8 to try the other four documents.
- Banking Information Automation Elite Inc.pdf
- Egacy Consulting Banking Information.pdf
- Legacy Consulting Annual Report.pdf

This marks the end of the lab.

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