

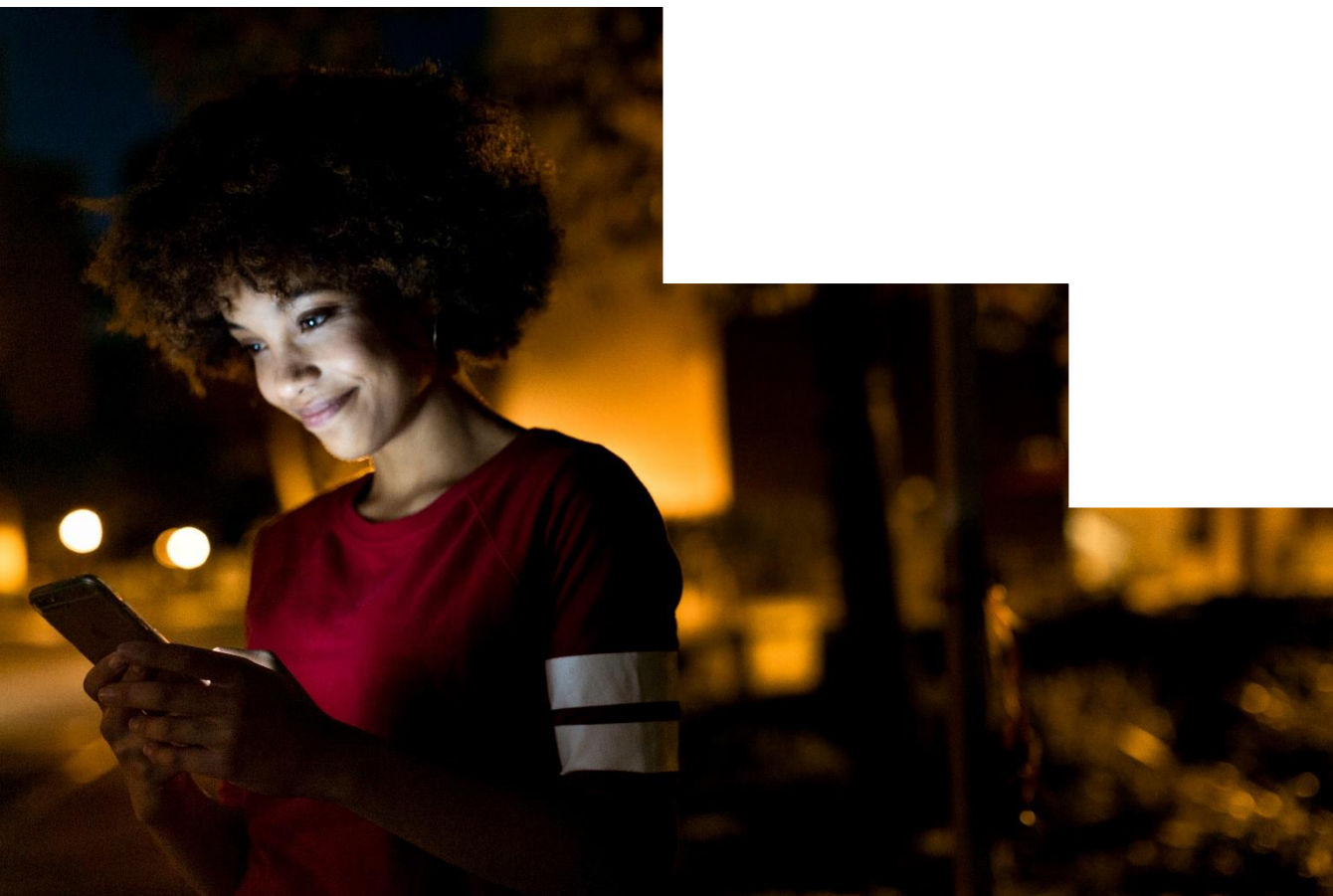


# Robotic Process Automation in a Day

Lab 7 – Add AI model to process invoice forms

30 mins

April 2021



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## Lab Overview

You will complete the following tasks in this lab:

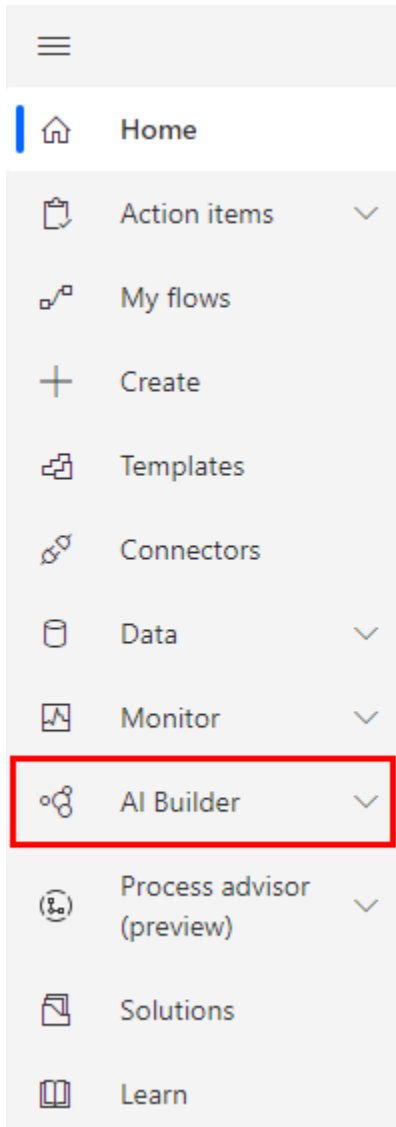
- Build a new AI model for Form Processing
- Train the new AI model to process Contoso Invoice forms
- Integrate the new AI model into the Cloud flow from Lab 6
- Perform a test run of the updated Cloud flow and associated AI Builder-based predictions

## Prerequisites

This lab builds on the initial setup lab (lab 1), and labs 3-6 – ensure these labs are complete.

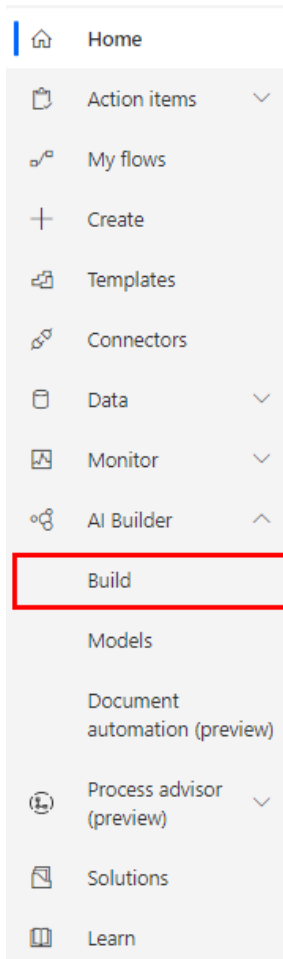
## Build and use AI models to enhance user experience in workflows

1. Open the test profile in a browser and navigate to [powerautomate.microsoft.com](https://powerautomate.microsoft.com)
2. In the left navigation pane, select **AI Builder**.



### 3. Select **Build**.

**Note:** You will see a purple prompt informing you that you need to get AI Builder. You can opt-in for a free, 30 days trial. The trial will also start automatically once you follow the steps below.








## 4. Select Form Processing.











### Enhance your business with AI

Add intelligence to your business. Create tailored AI models to automate processes and find insights. [Learn more](#)

#### Refine a model for your business needs

 <b>Category Classification</b> Categorize text by its meaning so it's easier to analyze.	 <b>Entity Extraction</b> Recognize specific information about your business from data.	 <b>Form Processing</b> Read and save information from standard documents.	 <b>Object Detection</b> Recognize and count things in images.	 <b>Prediction</b> Predict whether something will happen.
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#### Get straight to productivity

 <b>Business Card Reader</b> Automatically process business card information	 <b>Category Classification (preview)</b> Categorize text by its meaning so it's easier to analyze	 <b>Entity Extraction</b> Extract entities and their types from text	 <b>Invoice Processing (preview)</b> Read and save information from invoices	 <b>Key Phrase Extraction</b> Extract the key talking points from text
 <b>Language Detection</b> Identify the language being used in text	 <b>Receipt Processing (preview)</b> Read and save information from receipts	 <b>Sentiment Analysis</b> Analyze positive/negative sentiment in text	 <b>Text Recognition</b> Automatically process text from images	 <b>Text Translation</b> Translate text into a new language automatically

5. Name it **Enter invoice information AI model**. Then click **Create**.

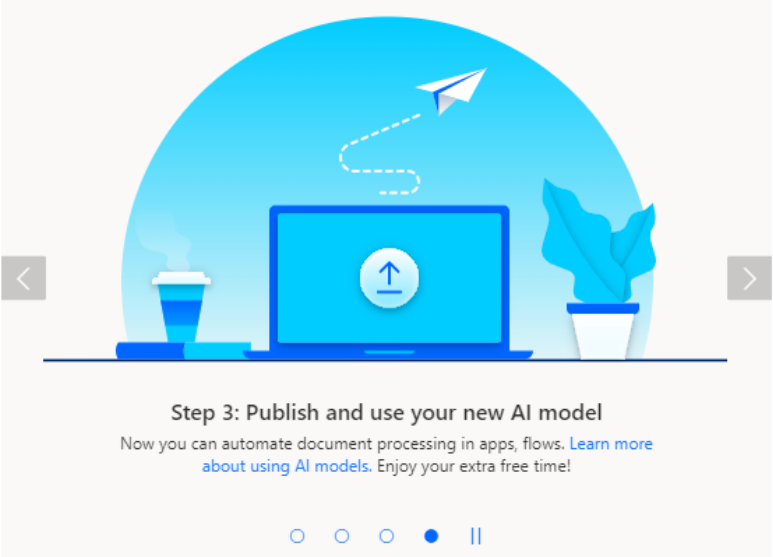
## Form Processing

Premium

Get started

Examples

Best practices




### Step 3: Publish and use your new AI model

Now you can automate document processing in apps, flows. [Learn more about using AI models](#). Enjoy your extra free time!

Name this AI model \*

Enter invoice information AI model

What you'll need

 5+ documents with the same layout

Create

Cancel

Robotic Process Automation in a Day, Lab 7 – Add AI model to process invoice forms

7

6. We will now create 4 fields for our AI Model. Create the following fields by entering its name in the **Enter field** name text box and then click the **+**. Click the **Next** button to continue. The 4 fields that we need to create include:
- Bill to
  - Contact
  - Date
  - Total

**Choose information to extract**  
4 fields

Add collections of documents

Tag documents

Model summary

**Choose information to extract**

Fields Tables (preview)

You'll tag these fields in the documents.

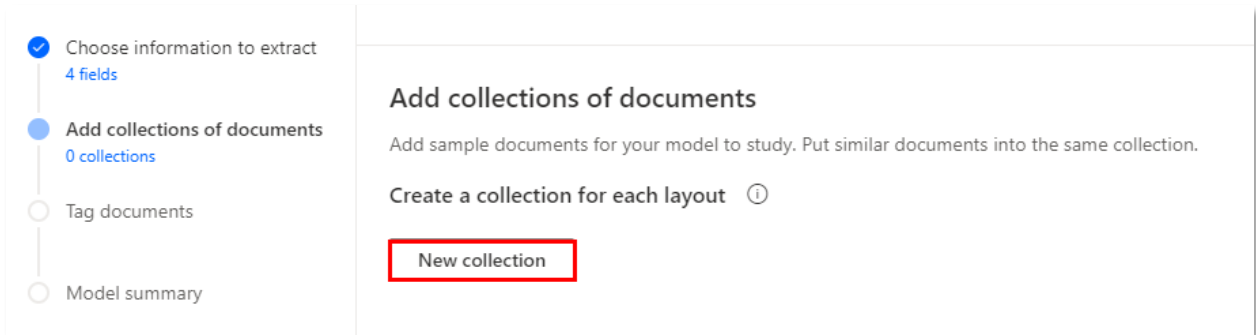
Enter field name +

Bill to × Contact × Date × Total ×

Next



7. Collections allow for the grouping of documents for a particular organizer, customer or counter-party. We will now create a collection for Contoso by clicking on **New collection**.



8. Double click on **Collection 1** and then rename it to be called **Contoso**.

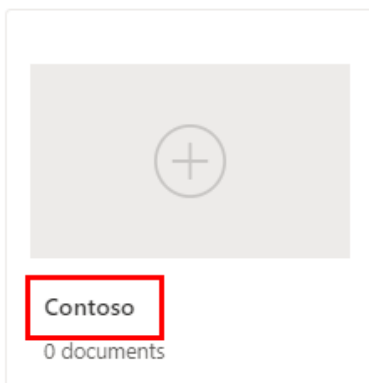
### Add collections of documents

Add sample documents for your model to study. Put similar documents into the same collection.

Create a collection for each layout ⓘ

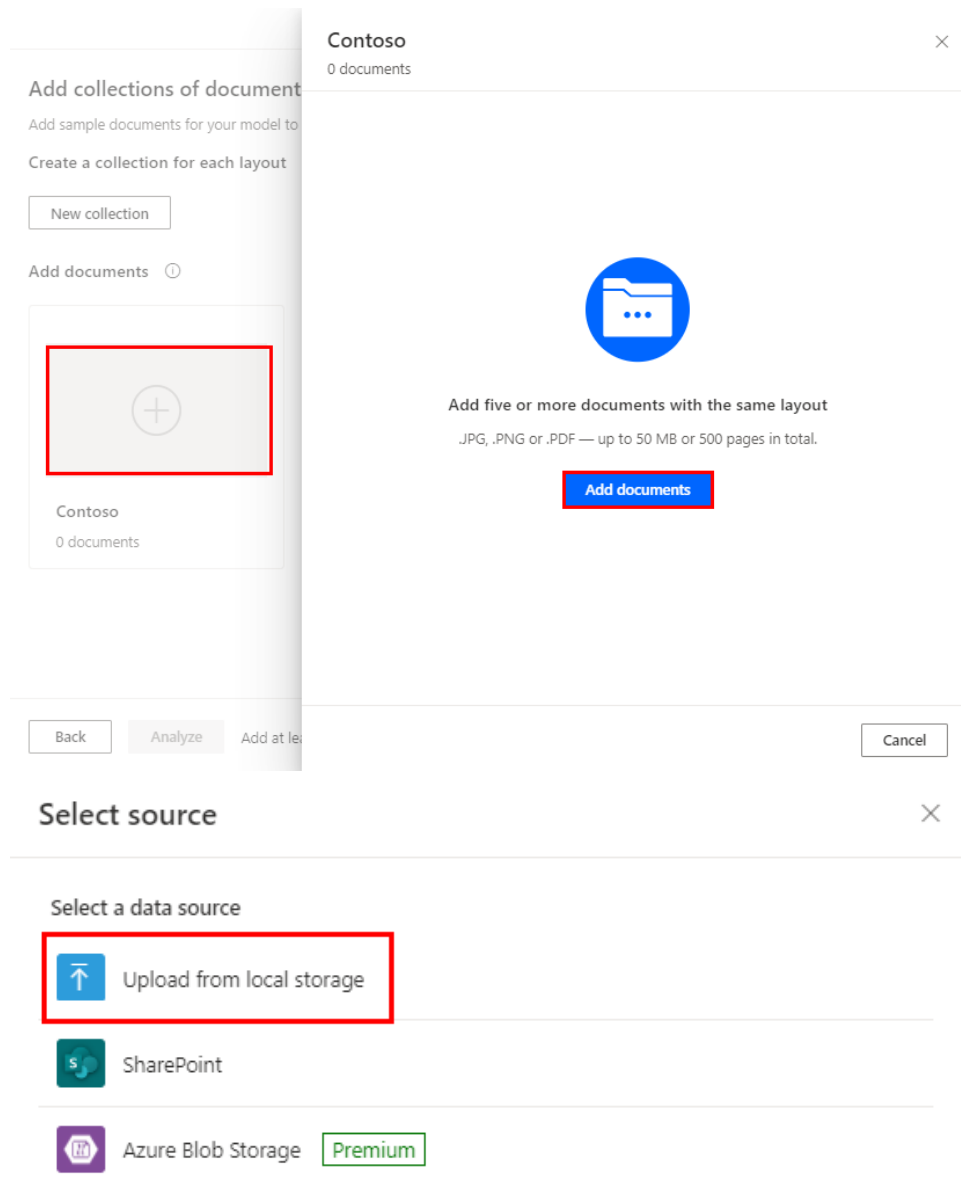
New collection

Add documents ⓘ



Click on the + sign to upload our sample PDF files from the lab resources folder. We will choose to **Upload from local storage**. The documents we want to upload include:

- Contoso\_INVOICE\_(Fabrikam\_UK).pdf
- Contoso\_INVOICE\_(Litware\_CAN).pdf
- Contoso\_INVOICE\_(Proseware\_NY).pdf
- Contoso\_INVOICE\_(TailSpin).pdf
- Contoso\_INVOICE\_(WingTip).pdf








9. Once the documents have been uploaded, we should see a success message like the following image. Click **Close** to continue.

### Upload documents

×

These documents will be used to train your model.

✓ Successfully uploaded 5 of 5 documents

	Name	Size	Status
	Contoso_INVOICE_(Fabrikam_UK).pdf	68.7 KB	Uploaded
	Contoso_INVOICE_(Litware_CAN).pdf	68.5 KB	Uploaded
	Contoso_INVOICE_(Proseware_NY).pdf	68.5 KB	Uploaded
	Contoso_INVOICE_(TailSpin).pdf	68.5 KB	Uploaded

Close

10. We can now analyze our documents by clicking on the **Analyze** button.

✓ Choose information to extract  
4 fields

● Add collections of documents  
1 collection

○ Tag documents

○ Model summary


### Add collections of documents

Add sample documents for your model to study. Put similar documents into the same collection.

Create a collection for each layout ⓘ

New collection

Add documents ⓘ



Contoso  
5 documents

Back

Analyze

Add at least five sample documents for each collection

11. After it completes. We now need to tag our document. For each of our fields we need to hover over the respective area and then click on that area. When we do so, a menu will appear that allows us to assign that area to a specific field. As we do this, our **Fields** list will get checked off. Do this for **Bill to**, **Contact**, **Date** and **Total**.

## 12. Tag the documents

The screenshot shows the 'Tag documents' interface. On the left, a sidebar lists steps: 'Choose information to extract' (4 fields), 'Add collections of documents' (1 collection), 'Tag documents' (selected), and 'Model summary'. The main area displays an invoice from Contoso Electronics to Fabrikam, Inc. The invoice includes a table of items and a summary section. On the right, a 'Fields' list shows 'Bill to', 'Contact', 'Date', and 'Total' all checked with green checkmarks. Red boxes highlight the corresponding areas on the invoice: the 'Bill to' and 'Contact' information, the 'Date' field, and the 'Total' field in the summary table.

Choose information to extract  
4 fields

Add collections of documents  
1 collection

Tag documents

Model summary

Show detected words

Enter invoice information AI model | Save and close

Contoso

INVOICE

Contoso Electronics  
3720 159th Ave NE  
Redmond, WA  
98052

Invoice #: 1001

Date: Jan 15, 2019  
Due Date: Jan 31, 2019

Balance due: \$4,232.16 USD

Bill to: Fabrikam, Inc.  
Contact: invoicing@fabrikam.com  
2 Kingdom Street  
Paddington, London  
W2 6BD

Item	Quantity	Unit cost	Amount
Mark 8	12	\$189.75	\$2,277.00
ACC-1000	3	\$45.49	\$136.47
DG-2000	5	\$18.99	\$119.28
NC460-60	1	\$24.33	\$24.33
X1050	7	\$92.96	\$650.75
Subtotal			\$207.83
Tax (19%)			609.49
Overseas			\$15.84
<b>Total</b>			<b>\$4,232.16</b>

Document 1 of 5

Fields

- ✓ Bill to
- ✓ Contact
- ✓ Date
- ✓ Total

Back Next

**Note:** You may need to change the zoom level in your browser to select the **Total** field – only a small area of that field outside of the table is selectable.

13. We need to ensure that our fields have been recognized on all our documents by clicking them one by one and ensuring we have green checkmarks beside our fields.

← Contoso

< Document 2 of 5 >

**Fields**

- ✓ Bill to ...
- ✓ Contact ...
- ✓ Date ...
- ✓ Total ...

14. After we have validated all 5 documents, we can click on the **Next** button to continue.

3720 159th Ave NE  
Redmond, WA  
98052

Date: Feb 15, 2019  
Due Date: Feb 28, 2019

Bill to: **WingTip Toys**  
Contact: b.friday@wingtip toys.com  
677 5th Ave,  
New York, NY  
10022

**Balance due: \$3,345.87 USD**

Item	Quantity	Unit cost	Amount
Mark 8	5	\$189.75	\$948.75
ACC-1000	15	\$45.49	\$682.35
DG-2000	3	\$18.99	\$56.97
NC460-60	20	\$24.33	\$486.33
X1050	8	\$92.96	\$743.68
Subtotal			\$2918.08
Tax (10%)			\$291.80
Shipping			\$135.99
Total			\$3,345.87

< Document 5 of 5 >

**Fields**

- ✓ Bill to ...
- ✓ Contact ...
- ✓ Date ...
- ✓ Total ...

Back **Next**

15. We are now ready to train our AI Model and can do so by clicking the **Train** button. This will take a couple minutes to complete.

✓ Choose information to extract  
4 fields

✓ Add collections of documents  
1 collection

✓ Tag documents  
5 documents tagged

● Model summary


### Model summary


Review your model's details below. If everything looks good, select Train. [Learn more about training](#)

**Model type**  
Form Processing

**Owner**  
Virtual Agent

**Collections**  
1

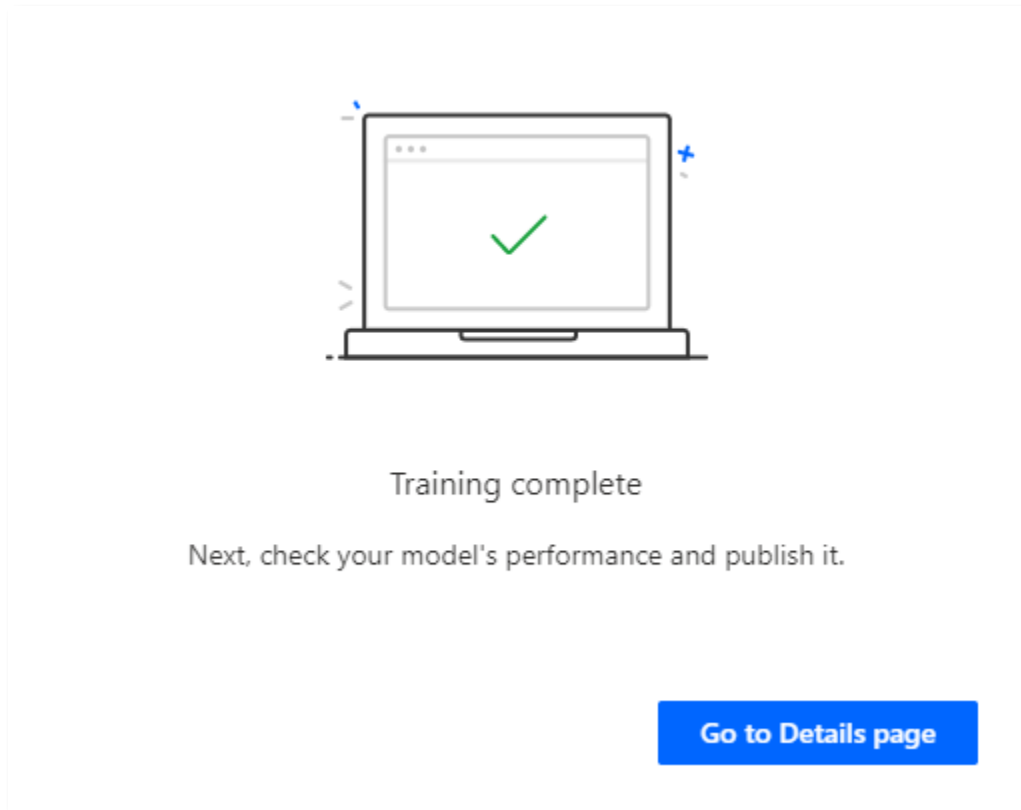
Data source	Number of images
 My device	5 images

Information to extract	Details
 Fields	<div>Bill to</div> <div>Contact</div> <div>Date</div> <div>Total</div>

Back

Train

16. With our AI Model now trained, we can go to the details page by clicking on the **Go to Details page** button.






17. Publish your AI model by clicking **Publish**.

**Note:** Publish your model when you want to make it available to users in your Power Automate environment.

Models > Enter invoice information AI model  
Form Processing • Not published • Virtual Agent

Training document

See details



Publish

Quick test

Selected fields

See more


Bill to


Contact

Date

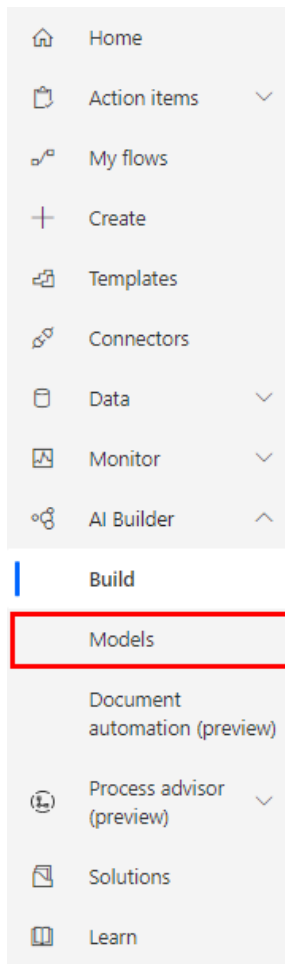
Total

How your model is used

 Power Automate  
Model isn't published

 Power Apps  
Model isn't published

18. You can find your AI models under **AI builder > Models**.



19. Go to **Solutions** and open **Invoice processing solution**.

The screenshot shows the Microsoft Power Platform interface. On the left is a navigation sidebar with the following items: Home, Action items, My flows, Create, Templates, Connectors, Data, Monitor, AI Builder, Process advisor (preview), **Solutions** (highlighted with a red box), and Learn. The main content area is titled 'Solutions' and contains a table with the following data:

Display name
<b>Invoice Processing Solution &lt;MyUserName&gt;</b> (highlighted with a red box)
RPA in a day - Process Advisor
Process Mining Anchor
Process Mining
Power Apps Checker Base
Power Apps Checker
Contextual Help Base
Contextual Help
Common Data Services Default Solution
Default Solution

20. Open **Use Outlook email to trigger Desktop flow**, then click **Edit**.

The screenshot shows the top navigation bar of Microsoft Power Automate with icons for Edit, Share, Save As, Delete, Send a copy, Submit as template, Export, Analytics, Turn off, and a notification bell. Below the bar, the breadcrumb 'Flows > Use Outlook email to trigger Desktop flow' is visible. The main area displays the 'Details' tab for the selected flow. The flow name is 'Use Outlook email to trigger Desktop flow'. The status is 'On'. The owner is listed as 'Owner'. The creation date is 'Dec 13, 11:22 PM' and the modification date is 'Dec 15, 04:44 AM'. The type is 'Automated' and the plan is 'Per-user plan'. An 'Edit' link is located in the top right corner of the details panel.

Details	
Flow	Use Outlook email to trigger Desktop flow
Status	On
Owner	Owner
Created	Dec 13, 11:22 PM
Modified	Dec 15, 04:44 AM
Type	Automated
Plan	Per-user plan

21. Delete **Run a flow built with Power Automate Desktop** step by clicking ... > **Delete**

The screenshot shows the flow editor interface. The first step is 'When a new email arrives (V3)'. The second step is 'Run a flow built with Power Automate Desktop', which is highlighted with a red box. A context menu is open for this step, also with a red box around the 'Delete' option. The menu includes options like 'Copy to my clipboard (Preview)', 'Rename', 'Add a comment', 'Static result (Preview)', 'Settings', 'Configure run after', 'Peek code', and 'Delete'. Below the steps are buttons for '+ New step' and 'Save'.

When a new email arrives (V3)

Run a flow built with Power Automate Desktop

+ New step Save

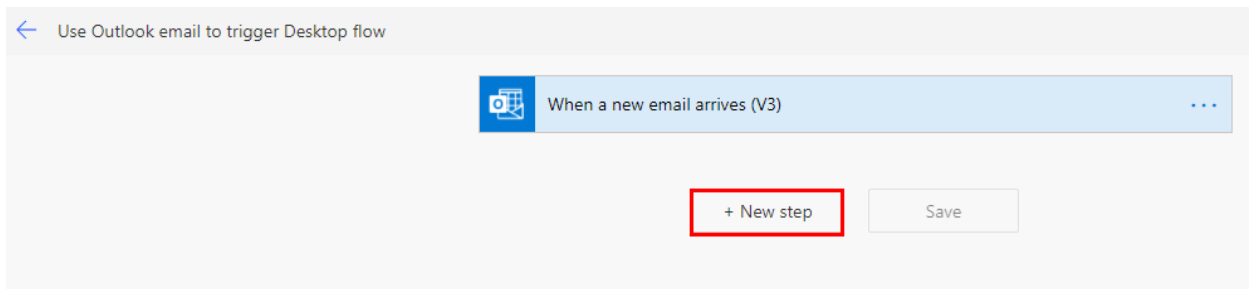
- Copy to my clipboard (Preview)
- Rename
- Add a comment
- Static result (Preview)
- Settings
- Configure run after
- Peek code
- Delete**

Connection references

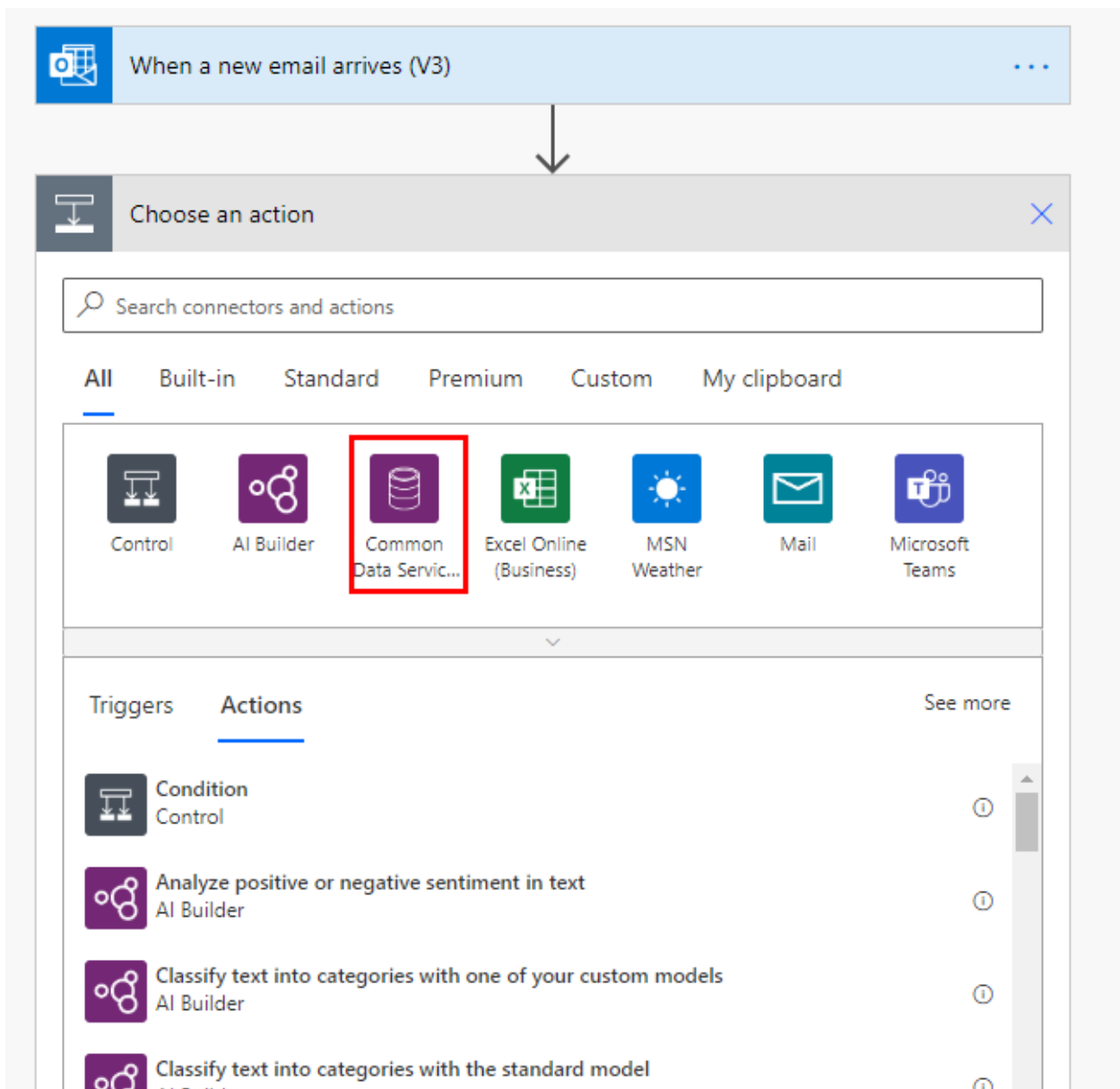
Other connection references

- Desktop flows
- + New connection reference

22. Add a new step.

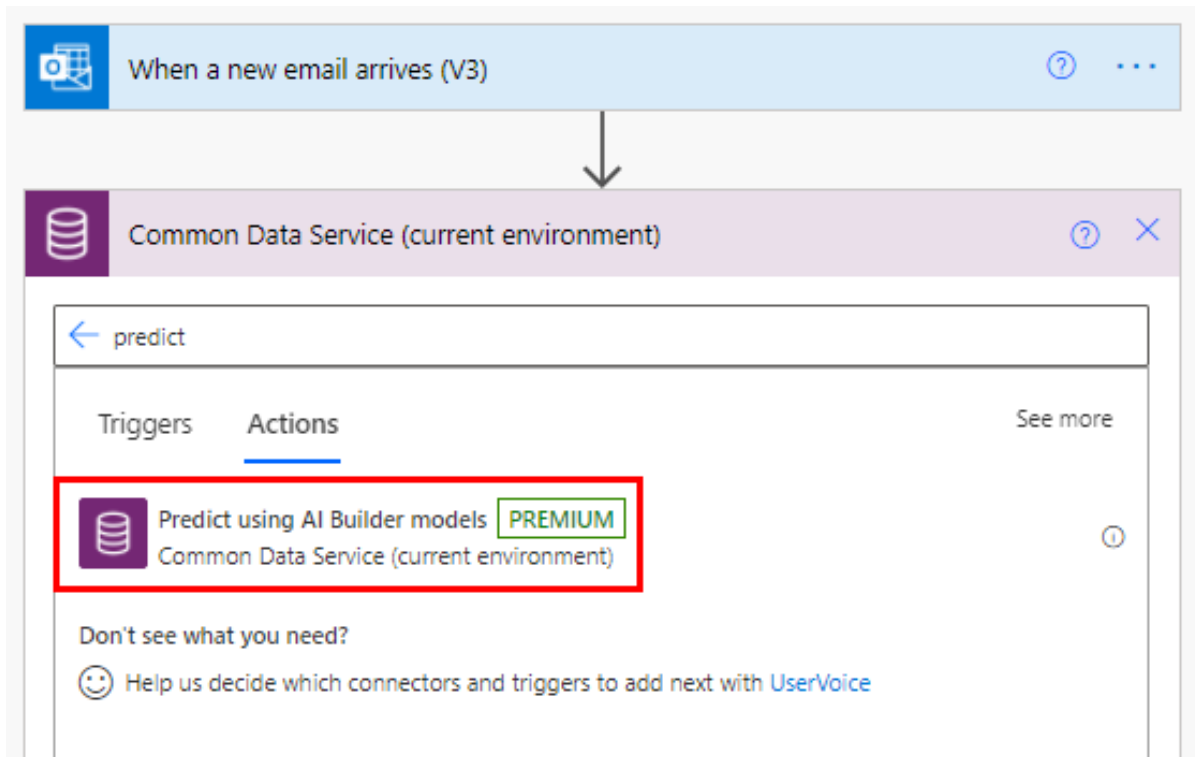


23. Select **Common Data Service (current environment)**.



24. Search for **Predict** using the search bar. Select **Predict using AI Builder models**.

**Note:** The Microsoft Dataverse logo recently changed to the following icon, but the functionality remains the same:



25. Use the following values:

In the Model field, choose: **Enter invoice information AI model**

In the Document type field, choose **Attachment Content-Type** (select from Dynamic content for action **When a new email arrives (V3)**)

In the Document field, choose: **Attachments Content** (select from Dynamic content for action **When a new email arrives (V3)**)

**Note:** When populating the **Predict** action that includes referencing the **Attachments** array, an **Apply to each** loop will be added to the flow canvas. This occurs since the **Attachments** array can technically include more than one attachment. For the purpose of this lab, we will only send in a single attachment.

The screenshot displays a Power Automate flow canvas. At the top, a blue trigger card labeled "When a new email arrives (V3)" is connected to a grey "Apply to each" loop card. Below the loop card, a section titled "\* Select an output from previous steps" contains a selection box with "Attachments" chosen. Underneath this is a purple "Predict" action card. The "Predict" card has three required fields: "\* Model" with the value "Enter invoice information AI model", "\* Document type" with the value "Attachments C...", and "\* Document" with the value "Attachments C...". At the bottom of the canvas, there are two buttons: "+ New step" and "Save".

26. Change the flow name to **Enter invoice information flow**. Then click **Save**.

The screenshot shows the Microsoft Power Automate interface. At the top, the flow name is "Enter invoice information flow", which is highlighted with a red box. Below the flow name, the first step is a trigger: "When a new email arrives (V3)". An arrow points down to the second step, which is an "Apply to each" loop. Inside the loop, there is an action: "Predict using AI Builder models". This action is configured with the following settings:

- \*Select an output from previous steps: Attachments x
- \*Model name: Enter invoice information AI model
- \*Document type: Attachments C... x
- \*Document: Attachments C... x

At the bottom of the interface, there are two buttons: "+ New step" and "Save". The "Save" button is highlighted with a red box.

27. Add an action by clicking **Add an action** icon.



When a new email arrives (V3)

Apply to each

\* Select an output from previous steps

Attachments x

Predict using AI Builder models

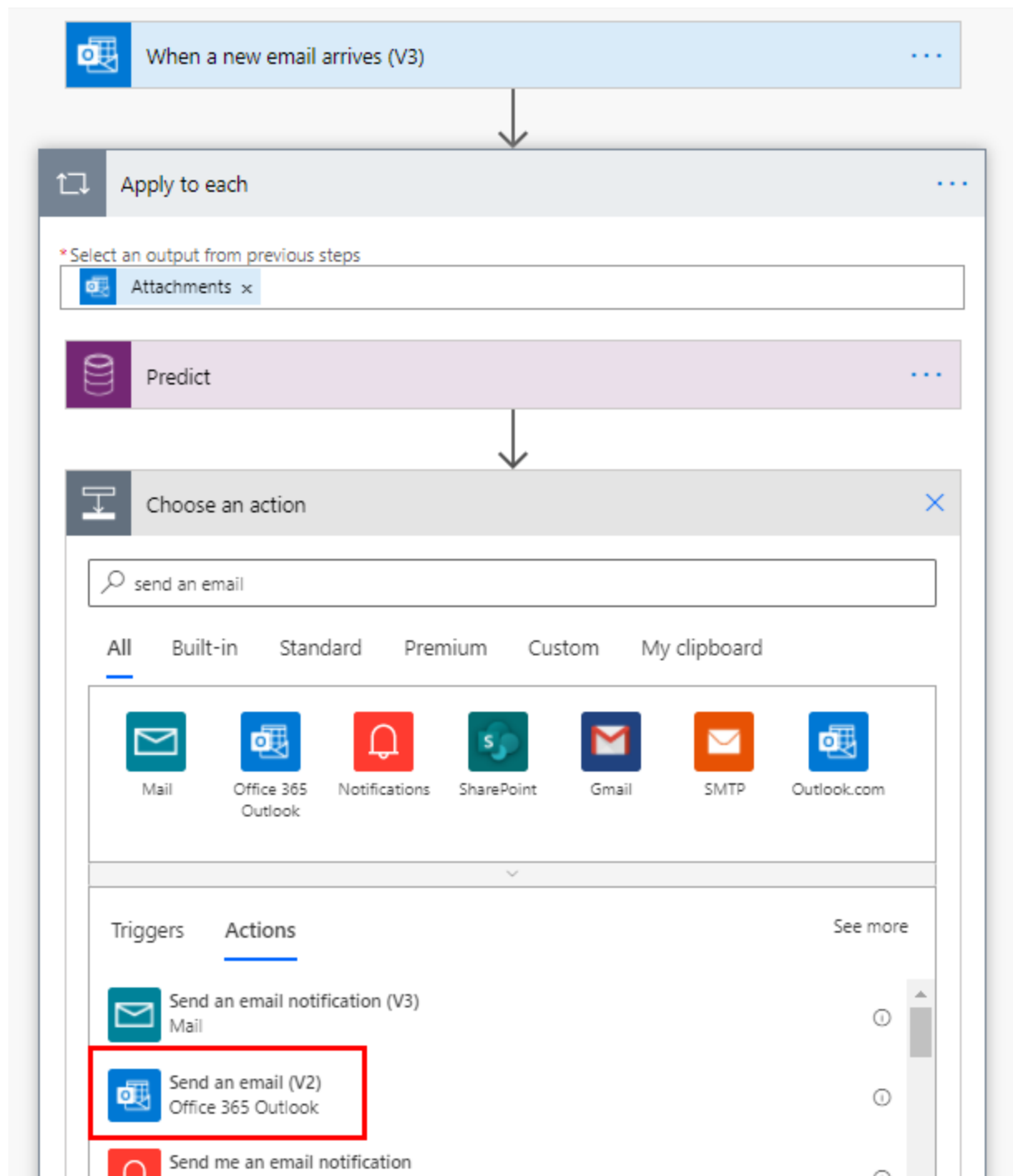
\* Model name: Enter invoice information AI model

\* Document type: Attachments C... x

\* Document: Attachments C... x

Add an action

28. Send an email using **Send an email (V2)** to the sender acknowledging the invoice is received.



29. On the To field click on "Add dynamic content" and search for "From"

The screenshot displays a Power Automate flow with the following steps:

- When a new email arrives (V3)**: The initial trigger.
- Apply to each**: A loop action containing:
  - Attachments**: A connector action.
  - Predict**: An AI model action.
- Send an email (V2)**: The final action, which is currently open for configuration.

In the **Send an email (V2)** configuration pane, the **To** field is selected, and the **Add dynamic content** button is highlighted with a red box. The right-hand pane shows the **Dynamic content** search results, where the **from** field is selected (highlighted with a red box) and the **From** dynamic content item is listed below (also highlighted with a red box).

30. Fill up the rest of the fields for the email step:

- Subject: "Thanks for sending the invoice"
- Body:

We recieved an invoice with below details:

Total displayName x	:	Total value x
Date displayName x	:	Date value x
Contact displayName x	:	Contact value x
Bill to displayName x	:	Bill to value x

We will process and get back to you shortly.

Thanks,  
Contoso



**Send an email (V2)**

\* To: From x

\* Subject: Thanks for sending the invoice

\* Body:

Font 12 **B** *I* U [Color] [Background Color] [Link] [Unlink] [Code]

We recieved an invoice with below details:

Total displayName x	:	Total value x
Date displayName x	:	Date value x
Contact displayName x	:	Contact value x
Bill to displayName x	:	Bill to value x

We will process and get back to you shortly.

Thanks,  
Contoso

[Show advanced options](#) ✓

31. Click Save.

The screenshot displays the Microsoft Power Automate 'Apply to each' loop configuration. The 'Predict' action is connected to the 'Send an email (V2)' action. The email body contains a table of invoice details and a closing message. The 'Save' button at the bottom is highlighted with a red rectangle.

**Workflow Configuration:**

- Apply to each** (Loop icon)
- Select an output from previous steps**
  - Attachments x
- Predict** (AI Model icon)
- Send an email (V2)** (Email icon)

**Email Details:**

- To:** From x
- Subject:** Thanks for sedning the invoice
- Body:**

Font 12 **B** *I* U [Rich Text Editor Icons]

We recived an invoice with below details:

Total displayName x	:	Total value x
Date displayName x	:	Date value x
Contact displayName x	:	Contact value x
Bill to displayName x	:	Bill to value x

We will process and get back to you shortly.

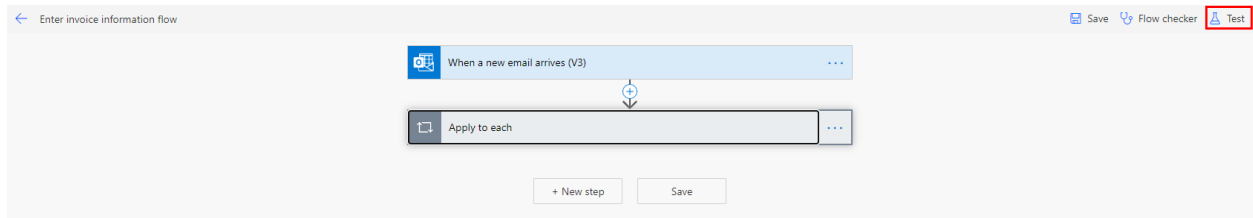
Thanks,  
Contoso

[Show advanced options](#) v

**Buttons:**

- + New step
- Save** (Highlighted with a red rectangle)

32. Trigger the flow to test by sending an email. In a separate tab, open the Office 365 Outlook app.



33. Compose a new email with the following settings:

- To: {email address of the user identity you are using in this lab}
- Subject: **new invoice**
- Attachments: **newinvoice.jpg** (from the lab resource files)

**Note:** This attachment can be in any of the jpg or pdf format and AI builder model can process both. Here we just use jpg file in this exercise.

**Note:** Your email signature may be viewed as an attachment. That will block this flow logic unless we add more validation. So, we recommend you try to send email without signature.

34. Send the email and wait for the flow to run.

35. It will show whether your flow ran successfully, and you will receive an acknowledgment email



[EXTERNAL] Thanks for sending the invoice



Ali Sharifi <admin@M365x183173.OnMicrosoft.com>

To ● Ali Sharifi

We received an invoice with below details:

Total: \$6,743.12

Date: Mar 15, 2019

Contact: [adixon@litware.com](mailto:adixon@litware.com)

Bill to: Litware Inc.

We will process and get back to you shortly.

Thanks,

Contoso

36. You can open the run result to view the output from the Predict action. It should contain the data parsed from the file. Those output will be able to be consumed by following actions. We will cover that in next lab #8.

# Check your knowledge

Lab 7

7 mins

1. After uploading our sample documents in AI Builder, we can click the \_\_\_\_\_ button to evaluate our documents to look for patterns within the documents.

- A. Analyze
- B. Back
- C. New collection
- D. None of the above

Answer: A. Analyze

2. How do we tag our document when we finish analyzing?

- A. Hover over the respective area and then click on that area
- B. Hold down CTRL and click on that area
- C. Hold down ALT and click on that area
- D. Hold down Shift and click on that area

Answer: A. Hover over the respective area and then click on that area

3. Do we need to ensure that our fields have been recognized on all our documents by clicking them one by one and ensuring we have green checkmarks beside our fields?

- A. True
- B. False

Answer: A. True, fields need to be recognized across all documents for the document to be trained properly.



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