



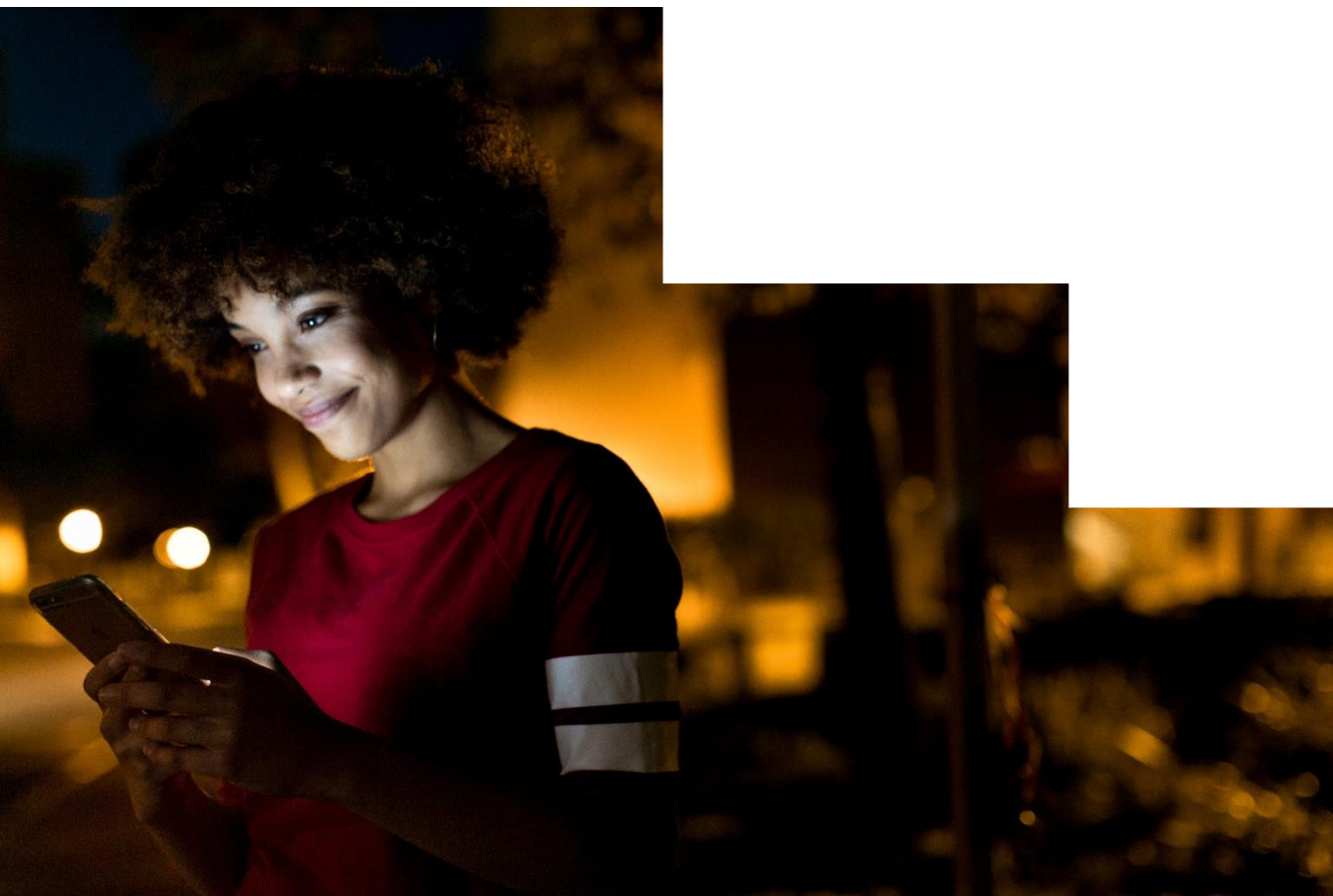
Robotic Process Automation in a Day

Lab 6 – Add AI model to process invoice forms

30 mins

April 2023

Applies to Power Automate Desktop v. 2.31.105.23101 ([more](#))



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Lab Overview

You will complete the following tasks in this lab:

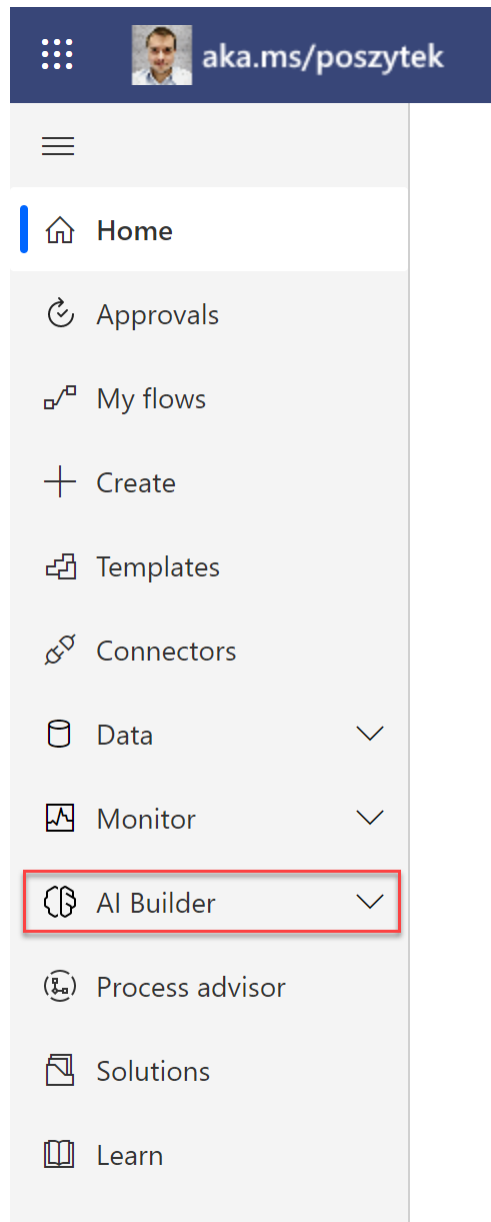
- Build a new AI model for Form Processing
- Train the new AI model to process Contoso Invoice forms
- Integrate the new AI model into the Cloud flow from Lab 6
- Perform a test run of the updated Cloud flow and associated AI Builder-based predictions

Prerequisites

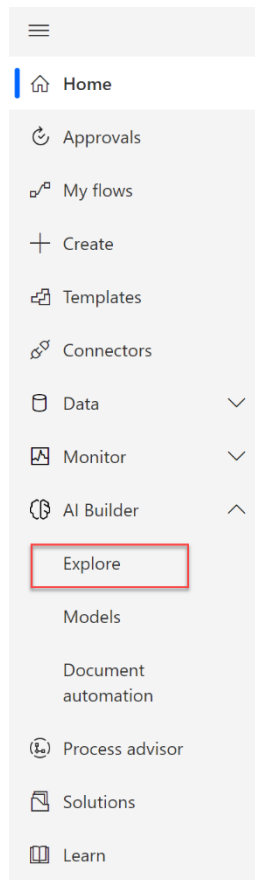
This lab builds on the initial setup lab (lab 1), and labs 2-5 – ensure these labs are complete.

Build and use AI models to enhance user experience in workflows

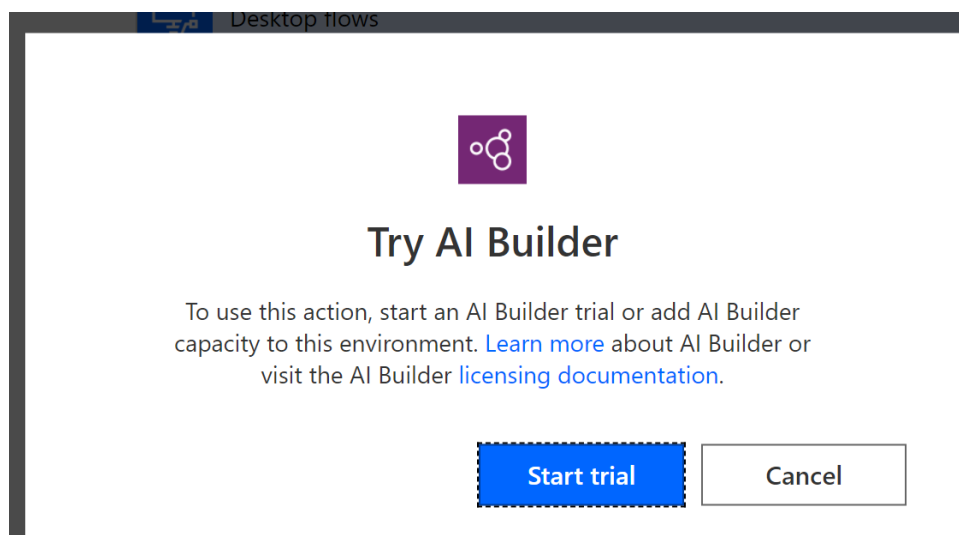
1. Open the test profile in a browser and navigate to <https://make.powerautomate.com/>
2. In the left navigation pane, select AI Builder.



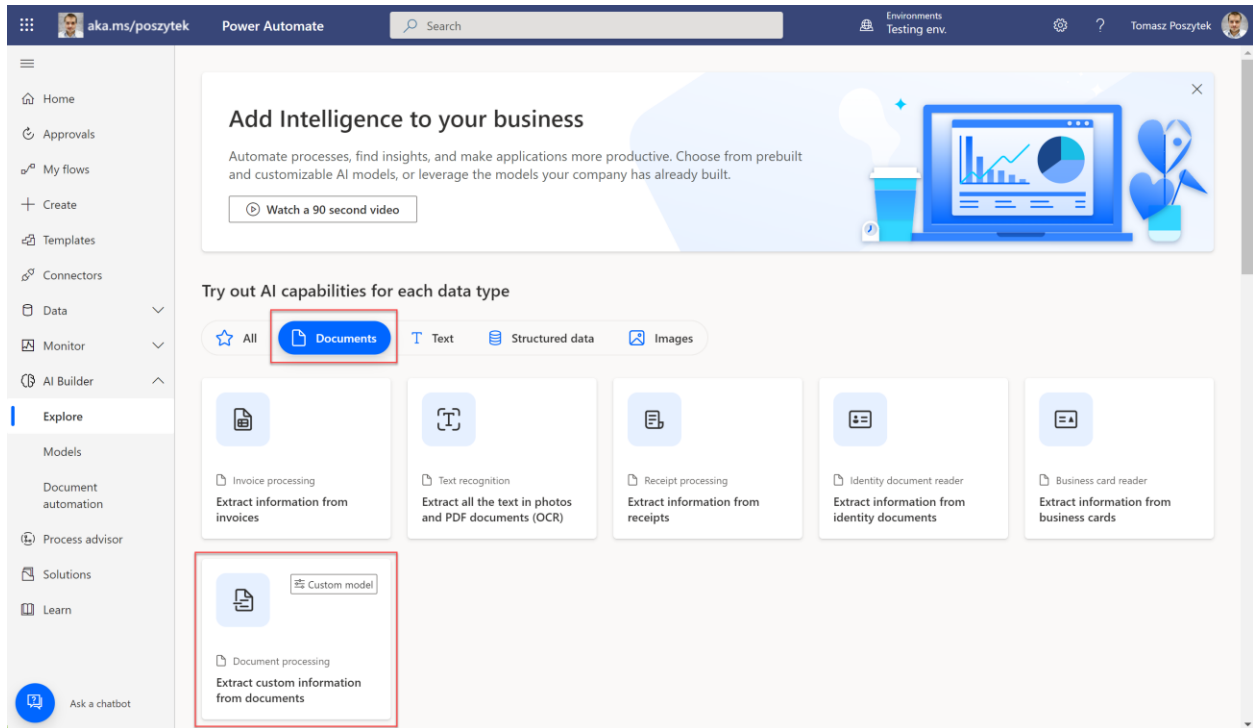
3. Select **Explore**.



4. **Note:** You may see a 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. Click **Start trial** button.



5. Filter to show only models for “Documents” and select **Extract custom information from documents**.

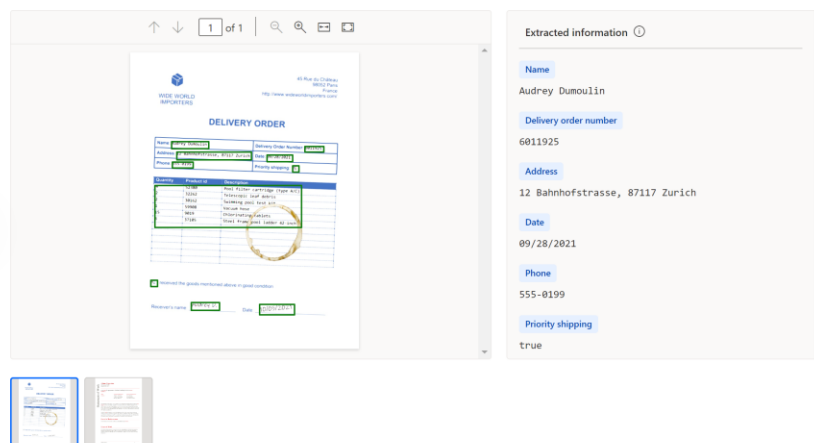


Note: You can as well use the pre-built “Extract information from invoices” model, that is suitable for most of the invoices’ layouts. For this lab however, we would like to show you how a custom model can be built.

6. Click **Get started**

Extract custom information from documents

Easily build, train and publish your own custom model to extract information such as text, table, number, handwritten text, checkbox, and more. Custom models are trained with your own data, so they're tailored to your documents. Check out our [learn module](#) to get started with building a custom document processing model.



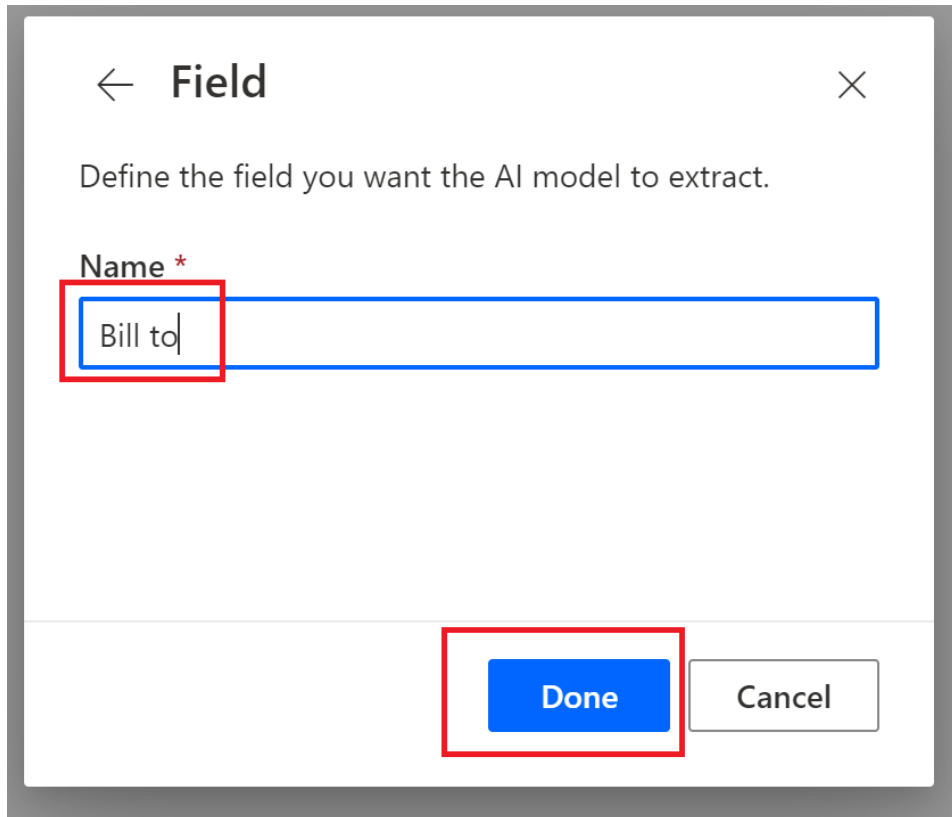
7. Click on its pre-created name and rename it to **Enter invoice information AI model**. Next select the **Structured and semi-structured documents** type and click **Next**.

The screenshot shows the Power Automate interface for creating an AI model. The left sidebar has a navigation menu with the following items: 'Choose document type' (selected), 'Choose information to extract', 'Add collections of documents', 'Tag documents', and 'Model summary'. The main area is titled 'Select the type of documents your model will process'. It contains two options: 'Structured and semi-structured documents' (highlighted with a red box) and 'Unstructured and free-form documents (preview)'. Below the first option, it lists examples: 'invoices, purchase orders, delivery orders, tax forms...'. Below the second option, it lists examples: 'contracts letters, articles, memos...'. At the bottom left, there is a 'Next' button highlighted with a red box. At the top right, there is a 'Model name' dialog box with the text 'Enter invoice information AI model' and 'Rename' and 'Cancel' buttons. The dialog box is also highlighted with a red box. The top bar shows the user's name 'aka.ms/poszytek', the title 'Power Automate', a search bar, and the environment 'Environments Testing env.'.

8. We will now create 4 fields for our AI Model. Click the dropdown arrow next to the **+** **Add** button and select **Field** option.

The screenshot shows the Power Automate interface for creating an AI model. The left sidebar has a navigation menu with the following items: 'Choose document type' (selected), 'Choose information to extract' (selected), 'Add collections of documents', 'Tag documents', and 'Model summary'. The main area is titled 'Choose information to extract'. It contains a list of information to extract, with the example: 'Name, Address, Total amount, Line items... You'll tag them in the documents.' Below the list, there is a '+ Add' button with a dropdown arrow. The dropdown menu is open, showing three options: 'Field' (highlighted with a red box), 'Checkbox', and 'Single page table'.

9. Create the following field **Bill to** by entering its name in the **Name** text box and then click **Done**.



The screenshot shows a dialog box titled "Field" with a back arrow and a close button (X). Below the title, it says "Define the field you want the AI model to extract." There is a text input field labeled "Name *" with a red asterisk. The text "Bill to" is entered in the field, and the entire input area is highlighted with a red rectangle. At the bottom of the dialog, there are two buttons: "Done" (highlighted with a red rectangle) and "Cancel".

10. Repeat the steps above, until the 4 fields that we need to create include:
- Bill to
 - Contact
 - Date
 - Total

11. Click **Next** button.

The screenshot shows the 'Choose information to extract' step in the AI model setup process. On the left, a vertical navigation bar lists five steps: 'Choose document type' (selected), 'Choose information to extract' (4 fields), 'Add collections of documents', 'Tag documents', and 'Model summary'. The main area is titled 'Choose information to extract' and includes a sub-instruction: 'List all pieces of information that you want the AI model to extract from your documents. For example: Name, Address, Total amount, Line items... You'll tag them in the documents.' Below this is a '+ Add' button with a dropdown arrow. A table with two columns, 'Name' and 'Type', contains four entries: 'Bill to' (Field), 'Contact' (Field), 'Date' (Field), and 'Total' (Field). Each entry has a small document icon to its left. At the bottom, there are 'Back' and 'Next' buttons, with the 'Next' button highlighted by a red rectangle.

Name	Type
Bill to	Field
Contact	Field
Date	Field
Total	Field

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

The screenshot shows the 'Add collections of documents' step in the AI model setup process. The left navigation bar now has 'Choose information to extract' (4 fields) and 'Add collections of documents' (0 collections) as the active steps. The main area is titled 'Add collections of documents' and includes the instruction: 'Add sample documents for your model to study. Put similar documents into the same collection.' Below this is a sub-instruction: 'Create a collection for each layout' with an information icon. A 'New collection' button is highlighted with a red rectangle.

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

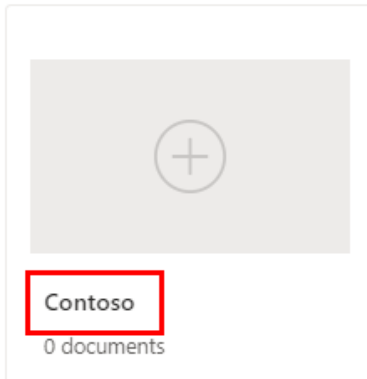
Add collections of documents

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

Create a collection for each layout ⓘ

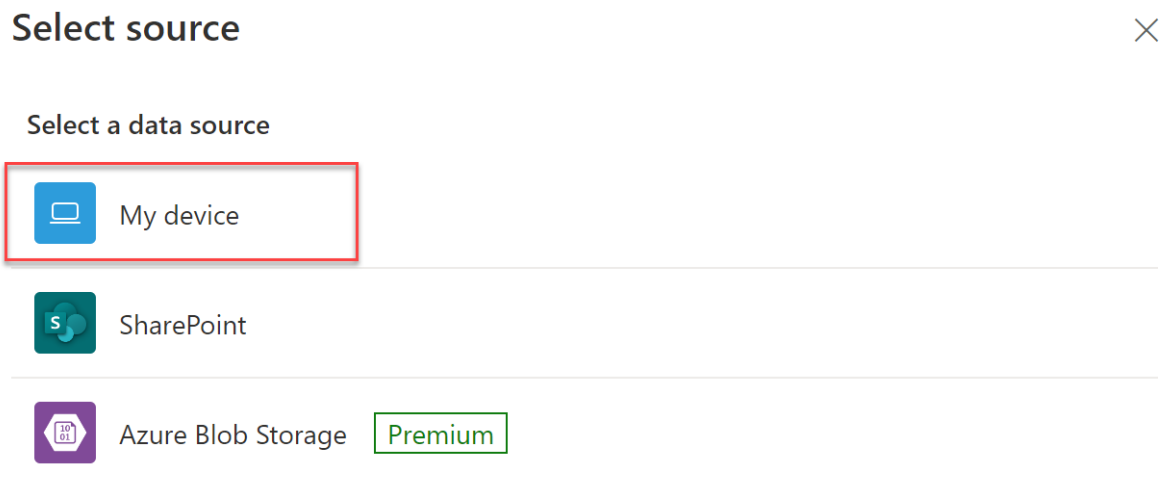
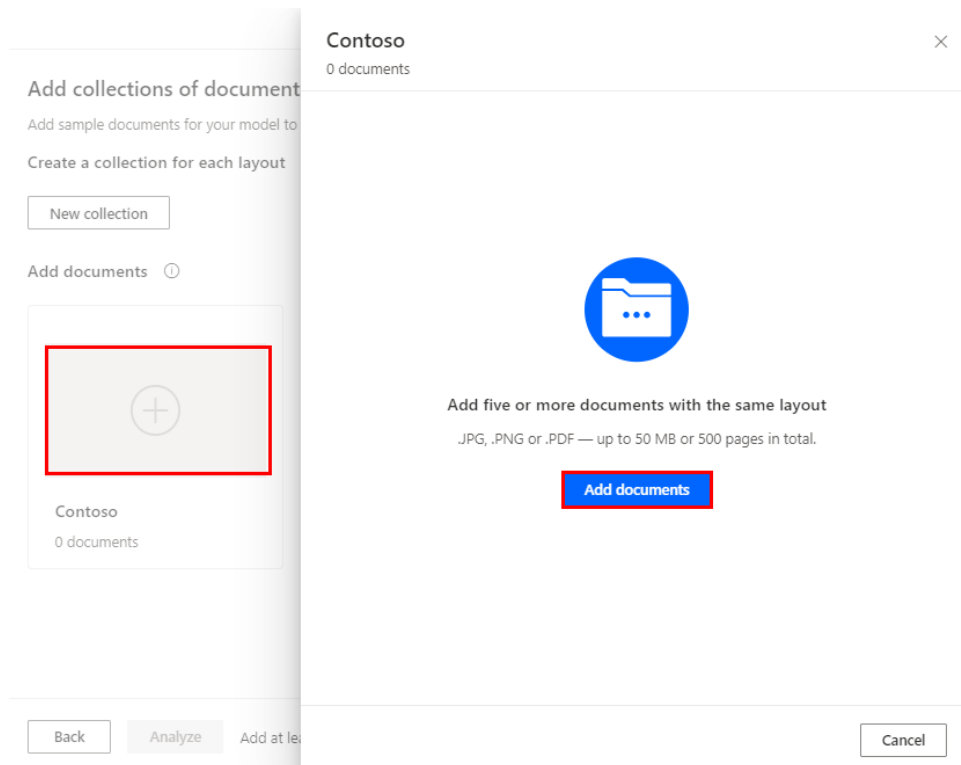
New collection

Add documents ⓘ



14. 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: (You can find them under the **Student lab data packages** folder.

- Contoso_INVOICE_(Fabrikam_UK).pdf
- Contoso_INVOICE_(Litware_CAN).pdf
- Contoso_INVOICE_(Proseware_NY).pdf
- Contoso_INVOICE_(TailSpin).pdf
- Contoso_INVOICE_(WingTip).pdf








15. Select the 5 pdf files used for training and click **Upload 5 documents** button.

Upload documents

×

These documents will be used to train your model.

✓	📄	Name	Size	Status
✓		Contoso_INVOICE_(Fabrikam_UK).pdf	68.7 KB	
✓		Contoso_INVOICE_(Litware_CAN).pdf	68.5 KB	
✓		Contoso_INVOICE_(Proseware_NY).pdf	68.5 KB	
✓		Contoso_INVOICE_(TailSpin).pdf	68.5 KB	
✓		Contoso_INVOICE_(WingTip).pdf	69 KB	

Upload 5 documents

Cancel






16. 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

17. Click Next button.

✓ Choose document type
Structured and semi-structured documents

✓ Choose information to extract
4 fields

✓ Add collections of documents
1 collection

○ Tag documents

○ Model summary

Enter invoice


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

Next

Add at least 5 sample documents for each collection

18. 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. Repeat this step to tag separately for each of the fields: **Bill to**, **Contact**, **Date** and **Total**.

19. Finished tag all the filed in document 1.

The screenshot shows the Power Automate interface for tagging an invoice document. The sidebar on the left lists the steps: Choose document type, Choose information to extract, Add collections of documents, Tag documents, and Model summary. The main area displays an invoice from Contoso Electronics to Liffware Inc. with a table of items and a total amount of \$6,743.12 USD. The right sidebar shows a 'Fields' list with 'Bill to', 'Contact', 'Date', and 'Total' checked.

Contoso Electronics
3720 159th Ave NE
Redmond, WA
98052

INVOICE
Invoice #: 1012
Date: Mar 15, 2019
Due Date: Mar 31, 2019
Balance due: \$6,743.12 USD

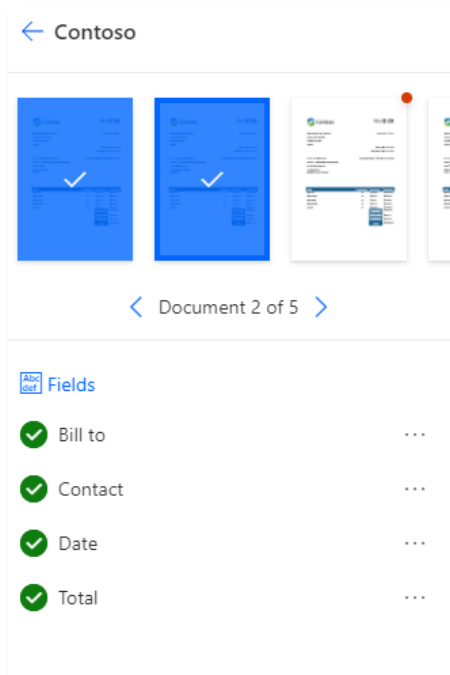
Bill to: Liffware Inc.
Contact: edixon@liffware.com
CF Toronto Centre
220 Yonge St.
ON M5B 2H1, Canada

Item	Quantity	Unit cost	Amount
Mark 8	10	\$189.75	\$1,897.50
ACC-1000	10	\$45.49	\$454.90
DG-2000	10	\$18.99	\$189.90
NC460-60	10	\$24.33	\$243.30
X1050	17	\$92.96	\$1,580.32
Subtotal			\$5,816.72
Tax (15%)			\$872.51
Shipping			\$322.77
Total			\$6,743.12

Fields:

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

20. Now select the 2nd document. We need to ensure that our fields have been recognized on all our documents by clicking them one by one and examine that we have green checkmarks beside our fields.



21. 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 26, 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

22. We are now ready to train our AI Model and can do so by clicking the **Train** button.

✓ Choose document type
Structured and semi-structured documents

✓ 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](#)


Overview

Owner	Model type	Document type	Collections
Tomasz Poszytek	Document Processing	Structured and semi-structured documents	1

Document sources

Data source	Number of documents
 My device	5 documents

Information to extract

Type	Details
 Fields	<div>Bill to</div> <div>Contact</div> <div>Date</div> <div>Total</div>

Back

Train

Note: This will take a couple minutes to complete.



Your model is training

This may take a while. You can close this window and come back later.

[Go to models](#)

23. After AI Model training is completed, you can 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.

[Edit model](#) [Share](#) [Settings](#) [Delete](#) [Share feedback](#)

ⓘ Your model isn't published yet. Publish to use it in apps and flows. [Learn more](#)

Models > **Enter invoice information AI model**
Document Processing • Not published • Tomasz Poszytek

Accuracy score ⓘ [More details](#)



99%
Excellent

This model correctly predicted 99% of actual results and may be ready to be used. To improve the accuracy score, [review full evaluation](#).

[Publish](#) [Quick test](#)

Information to extract [More details](#)

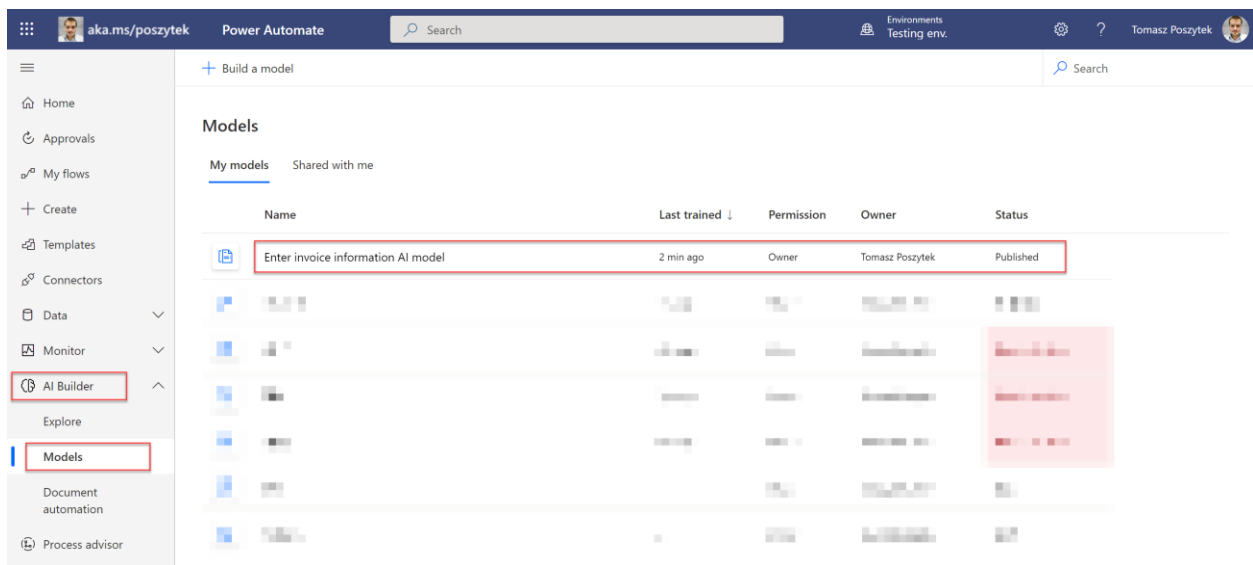
	Bill to	99	
	Contact	99	
	Date	99	
	Total	99	

How to use your model

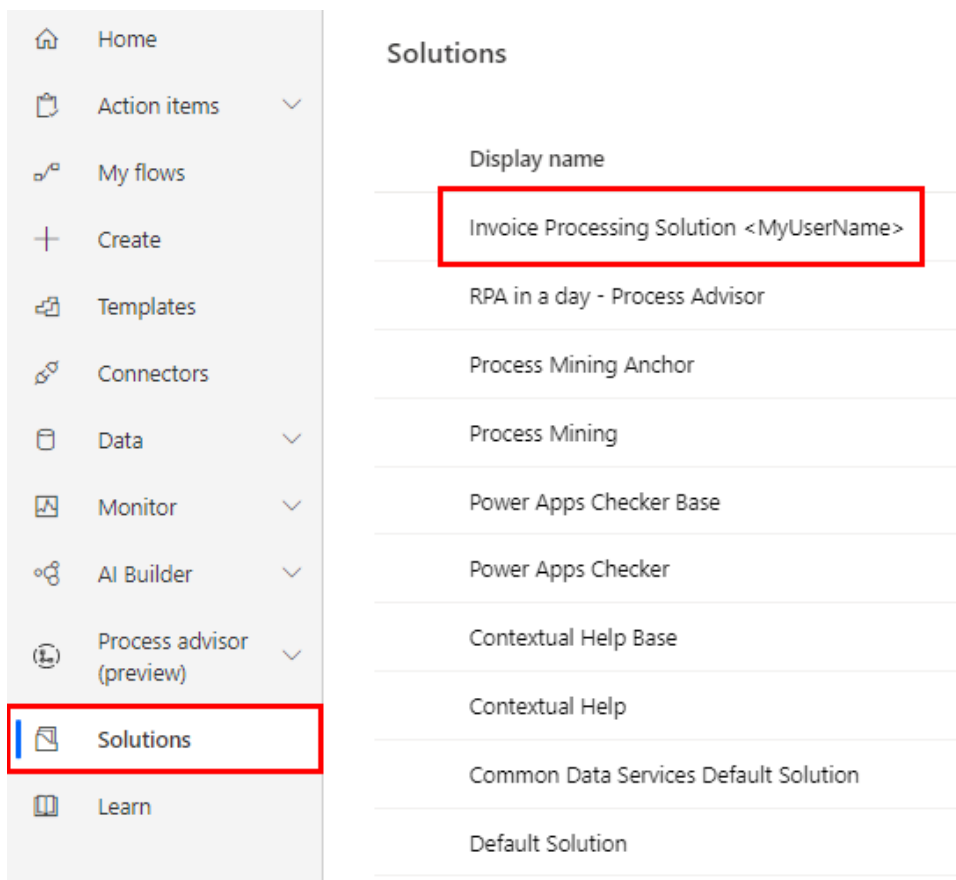
Power Automate
Model isn't published

Power Apps
Model isn't published

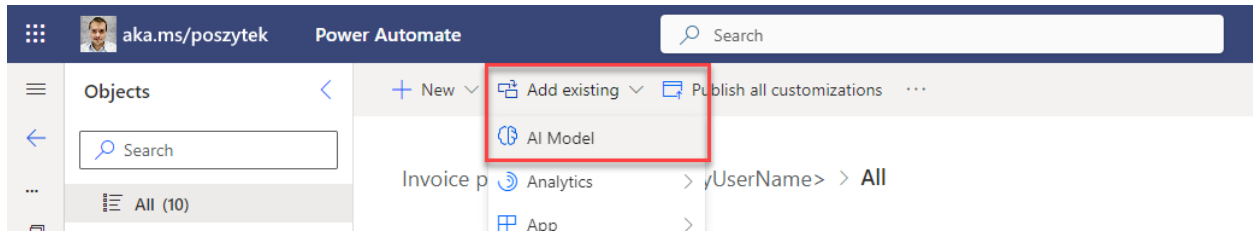
24. You can find your AI models under AI builder > Models.



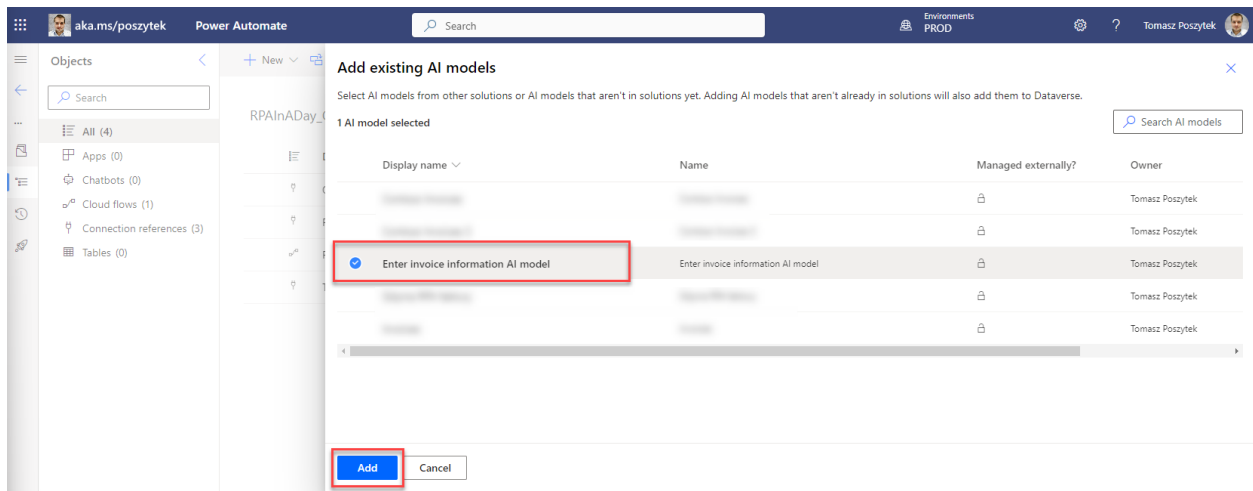
25. Now you have an AI model trained and published. Next, you will learn how to use this AI model that you just trained in your automation. From the left navigation menu, go to **Solutions** and open **Invoice processing solution**.



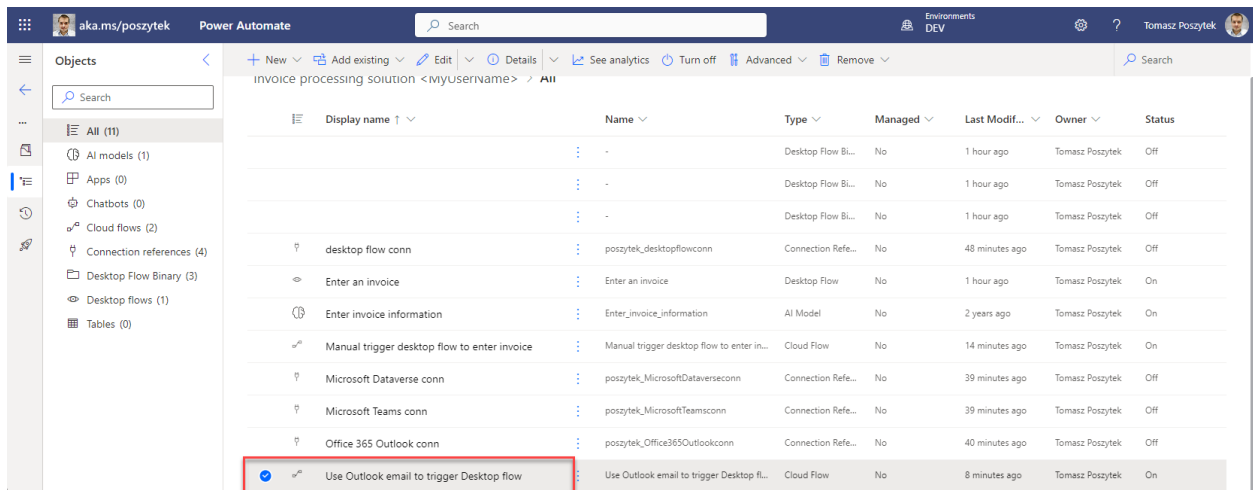
26. You need to add the AI Model to the solution. To do that, click **Add existing** → **AI Model**.













27. Select the **Enter invoice information** AI model and click **Add** button.



28. Open **Use Outlook email to trigger Desktop flow** cloud flow.



29. Click Edit

 Edit  Share  Save As  Delete  Send a copy  Submit as template  Export  Analytics  Turn off  Reconnect

Flows > Use Outlook email to trigger Desktop flow

Details

Flow

Use Outlook email to trigger Desktop flow

Owner

Status

On

Created

Dec 13, 11:22 PM

Modified

Dec 15, 04:44 AM

Type

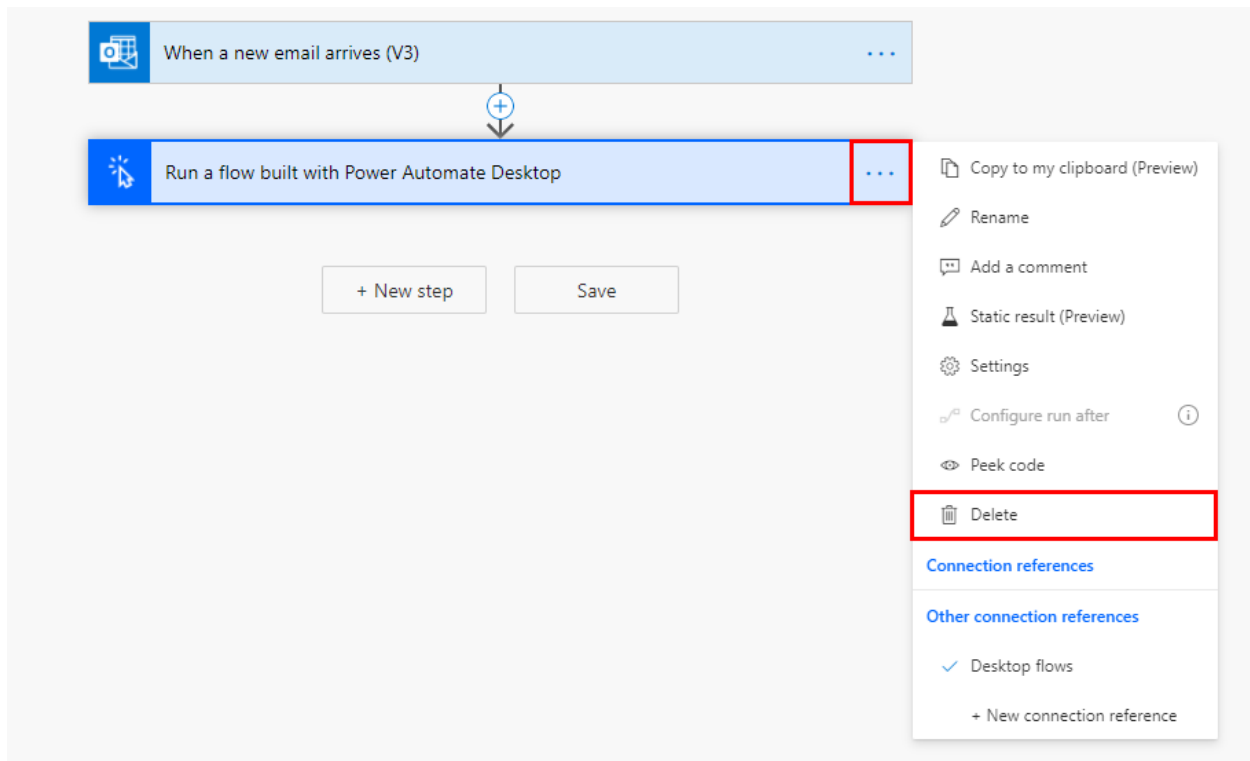
Automated

Plan

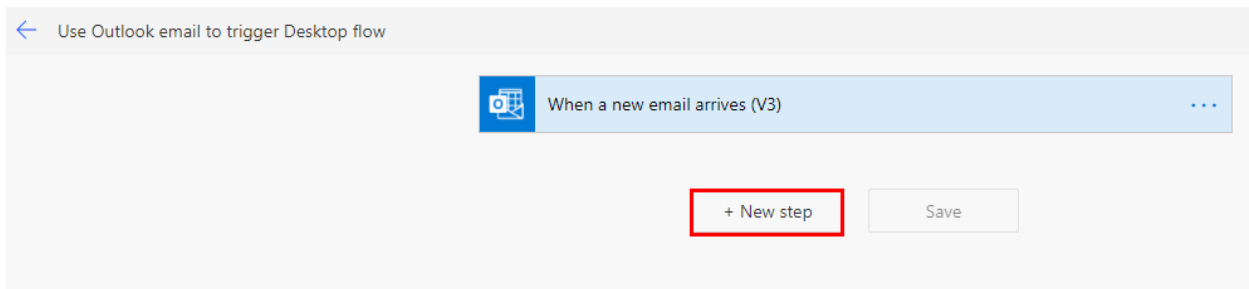
Per-user plan

[Edit](#)

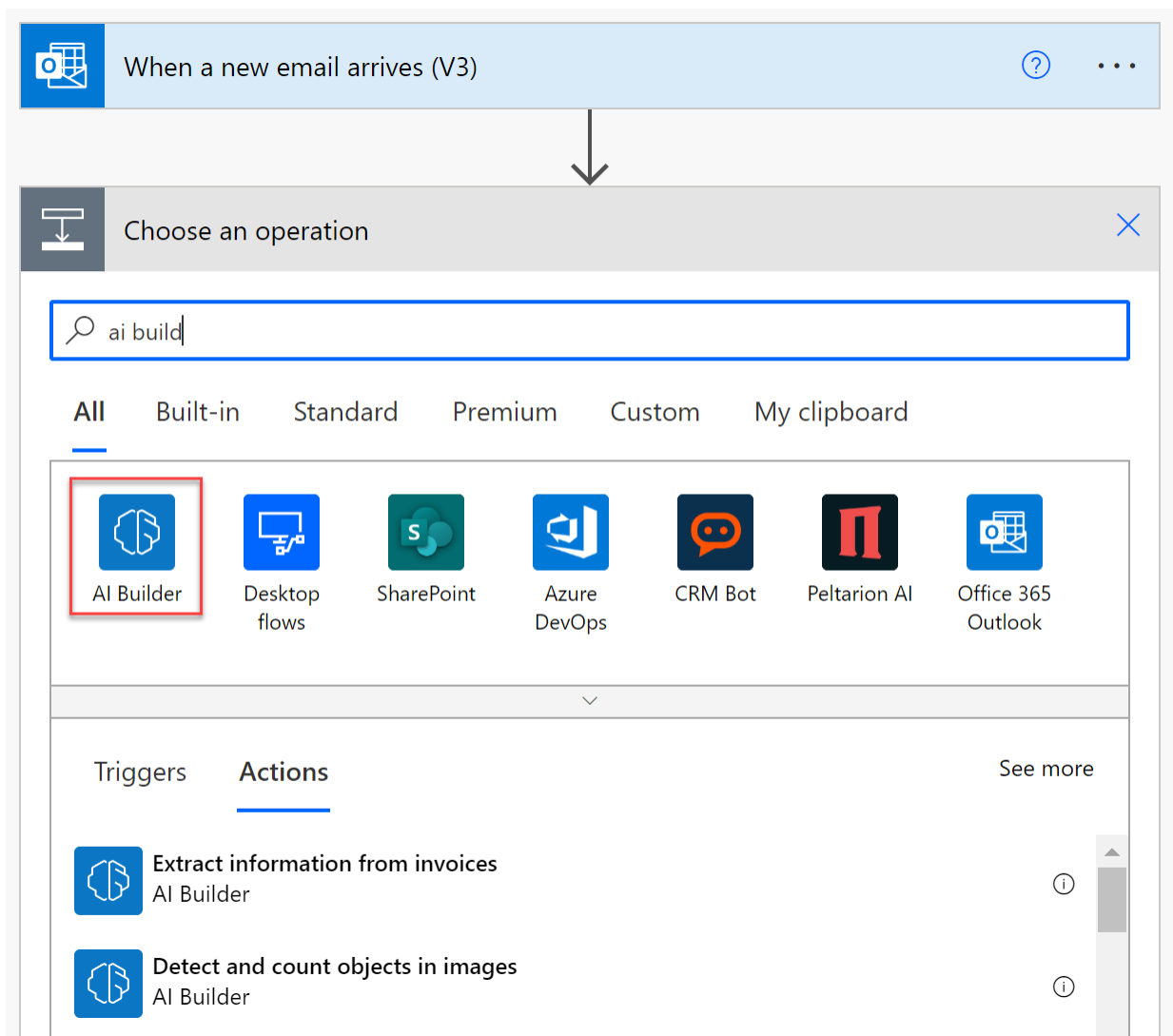
30. Delete **Run a flow built with Power Automate Desktop** step by clicking ... > **Delete**



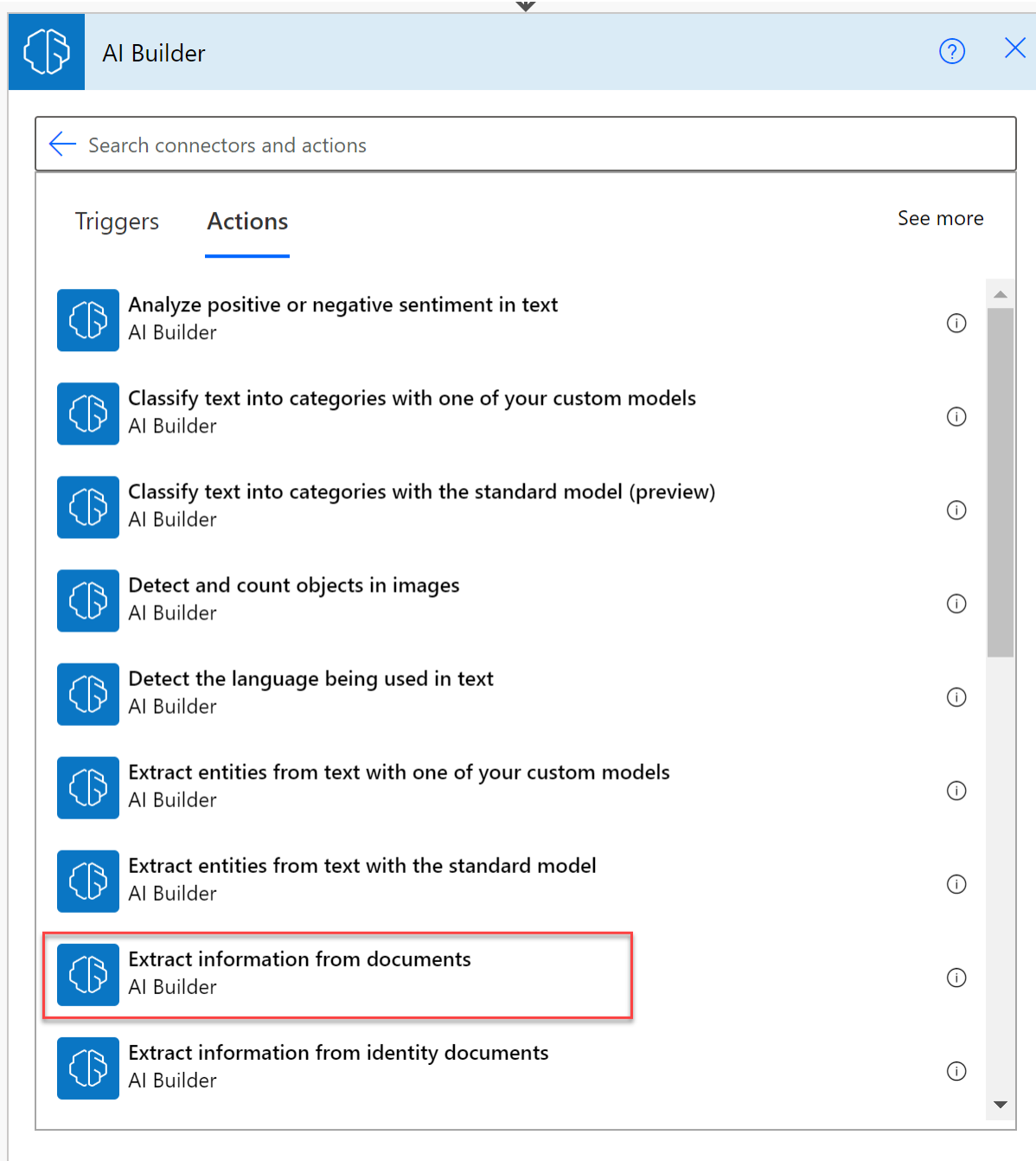
31. Add a new step.



32. Select AI Builder.



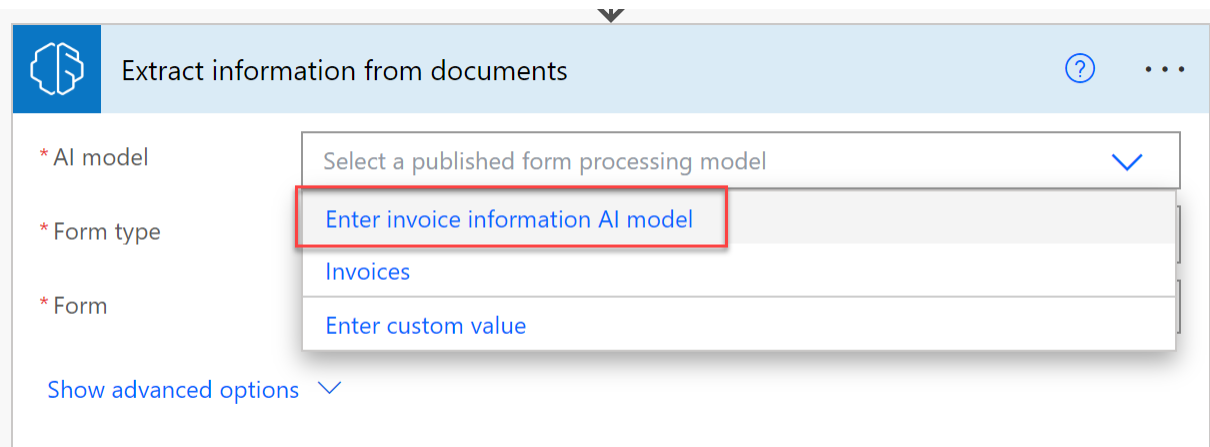
33. Search for **Extract** using the search bar. Select **Extract information from documents**.



Note: You can as well use the pre-built "Extract information from invoices" model, that is suitable for most of the invoices' layouts. For this lab however, we would like to show you how to use a custom model.

34. Use the following values:

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



Extract information from documents

* AI model Select a published form processing model

* Form type Enter invoice information AI model

* Form Invoices

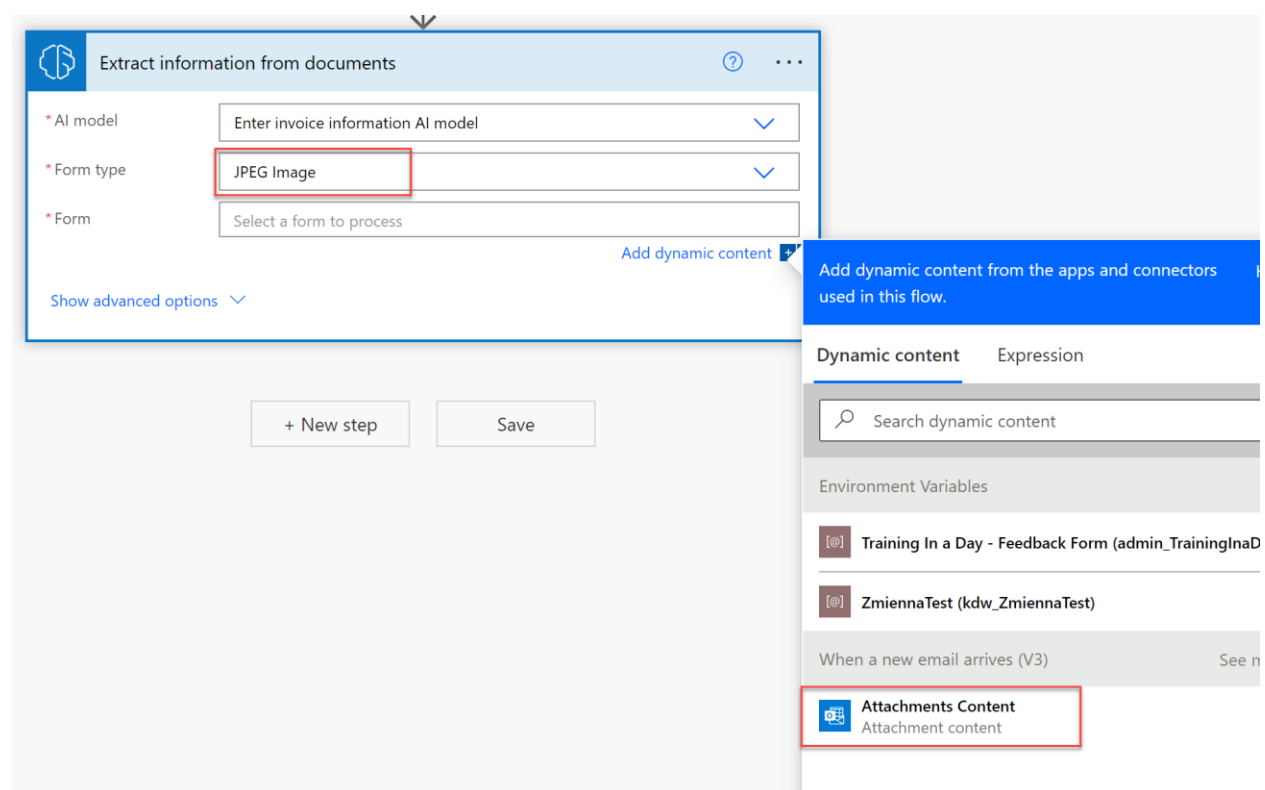
Enter custom value

Show advanced options

35. In the Form type field, choose JPEG Image

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

Note: Click See more if you don't see **Attachments Content** from Dynamic content



Extract information from documents

* AI model Enter invoice information AI model

* Form type JPEG Image

* Form Select a form to process

Add dynamic content

Show advanced options

+ New step Save

Dynamic content Expression

Search dynamic content

Environment Variables

Training In a Day - Feedback Form (admin_TrainingInaD)

ZmiennaTest (kdw_ZmiennaTest)

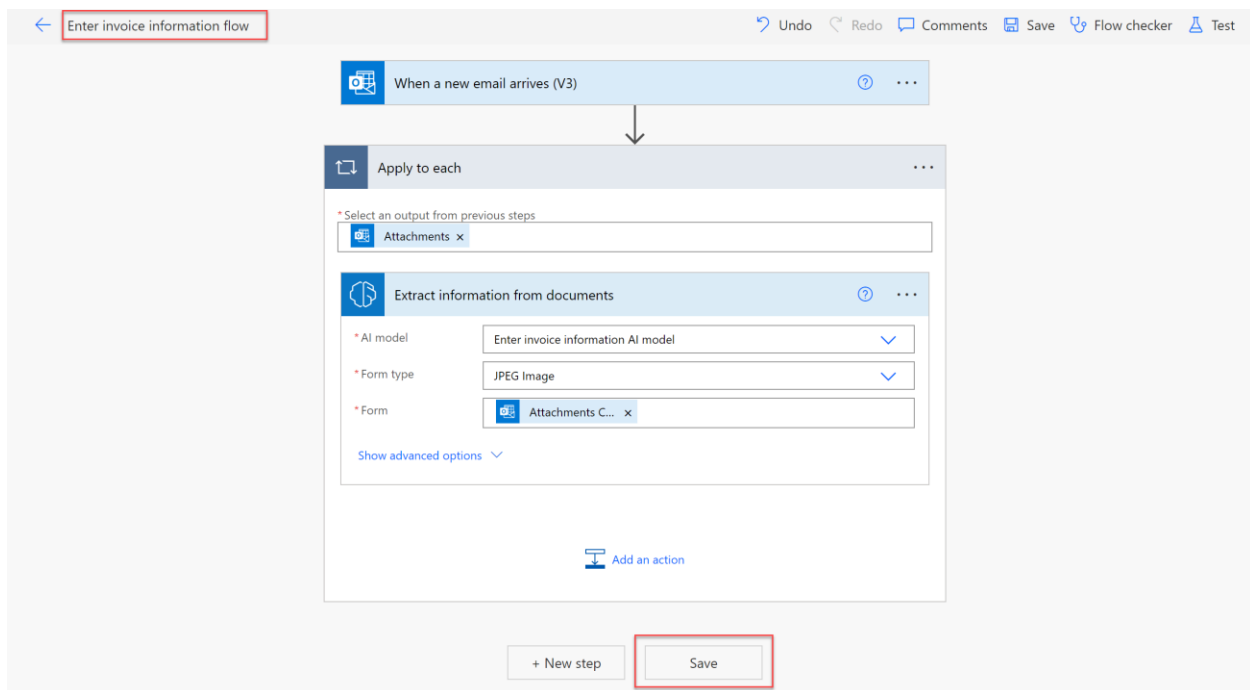
When a new email arrives (V3) See n

Attachments Content Attachment content

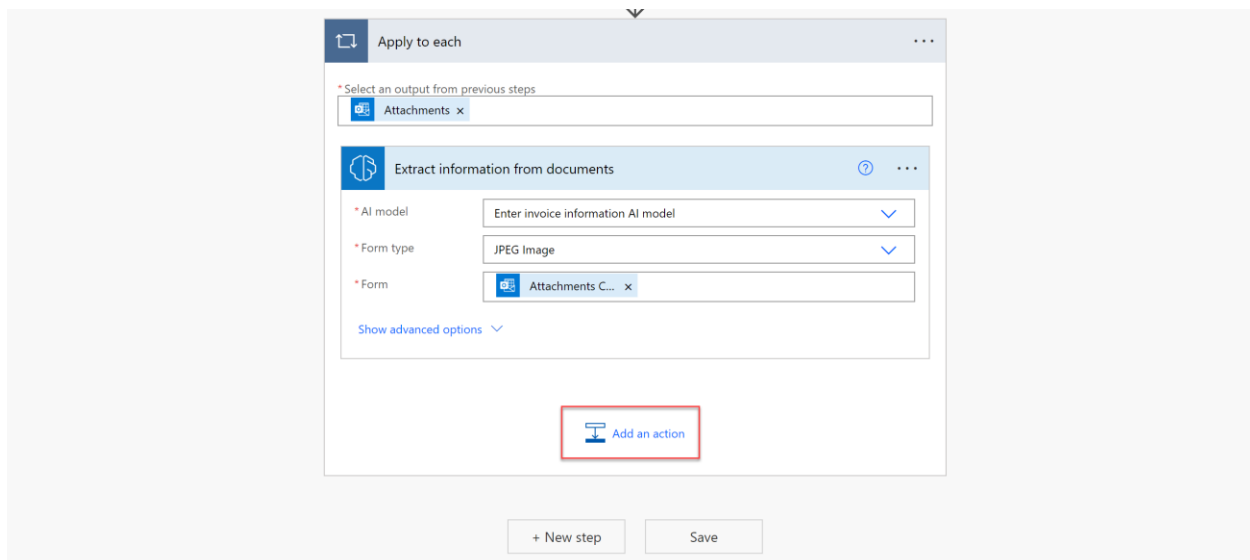
Note: After you populated the **Form** action field with the **Attachments Content** array, you will notice that an **Apply to each** loop has automatically added to the flow designer around the AI Builder action. This occurs since the **Attachments content** array could technically include more than one attachment so the Apply to each will make sure each of the attachment file is processed separately by the AI model. For the purpose of this lab, we will only send in a single attachment.

The screenshot displays a Microsoft Power Automate flow designer interface. At the top, a trigger step 'When a new email arrives (V3)' is shown. An arrow points down to a loop step 'Apply to each', which is highlighted with a red box. Below the 'Apply to each' step, a selection box shows 'Attachments' as the chosen output from previous steps. Inside the 'Apply to each' loop, there is an action step 'Extract information from documents', also highlighted with a red box. This action step has three configuration fields: 'AI model' set to 'Enter invoice information AI model', 'Form type' set to 'JPEG Image', and 'Form' set to 'Attachments C...'. A 'Show advanced options' link is visible below these fields. At the bottom of the flow designer, there are two buttons: '+ New step' and 'Save'.

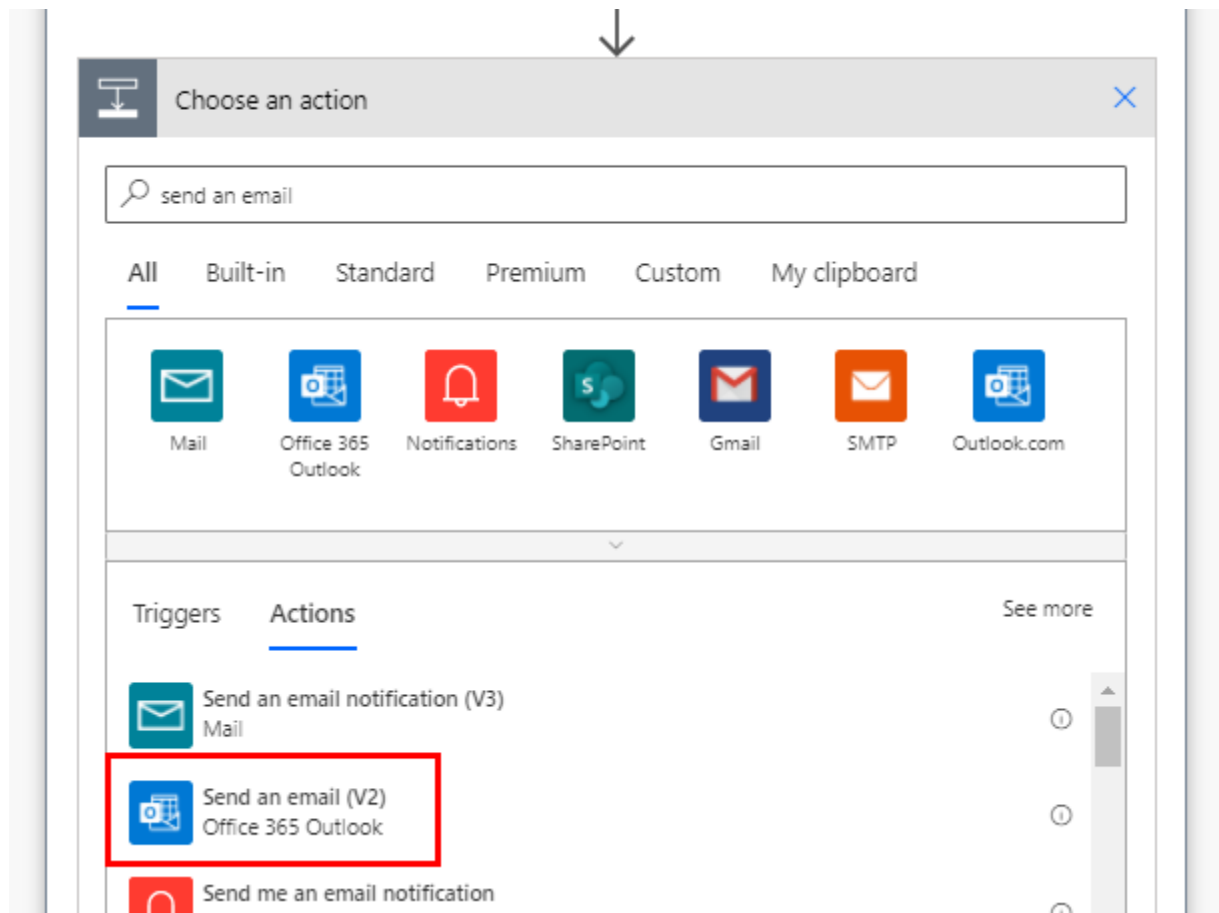
36. Now change the flow name to **Enter invoice information flow**. Then click **Save**.



37. To verify the AI Builder model processing result, let us add another action to send ourselves a verification email to the sender acknowledging the invoice is received. We will add another action by clicking **Add an action** icon under the AI Builder action.



38. Search for action start with Send an email and choose **Send an email (V2)**



39. On the **To** field click on “Add dynamic content” and search for “From” . This will be the email address of the sender party.

The screenshot shows the 'Send an email (V2)' action in a Power Automate flow. The 'To' field is highlighted with a red box, and the 'Add dynamic content' button is also highlighted with a red box. The side panel on the right shows the 'Dynamic content' tab with a search bar containing 'from'. Below the search bar, the 'When a new email arrives (V3)' trigger is visible, and the 'From' dynamic content option is highlighted with a red box.

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

- Subject: "Thanks for sending the invoice"
- Body: "We received an invoice with those information" and "We will process and get back to your shortly" and together with the following variables values from Dynamics variables panel under AI Builder action

Send an email (V2)

* To: From x

* Subject: Thanks for sending the invoice

* Body:

Font 12 **B** *I* U [Icons]

We received an invoice with those information:

Total: [Icon] Total value x

Date: [Icon] Date value x

Contact: [Icon] Contact value x

Bill to: [Icon] Bill to value x

We will process and get back to your shortly.

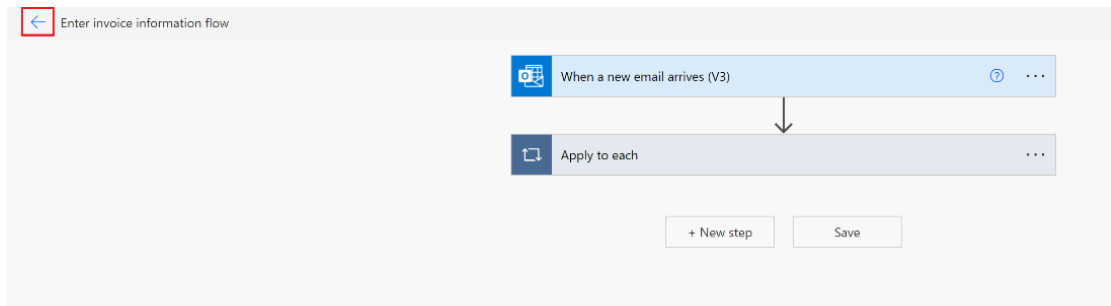
Thanks,
Contoso

[Show advanced options](#) ✓

41. Click **Save**.



42. Click **back** button before the flow name to the flow detail page



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

44. Compose a new email with the following settings:

- a. To: {email address of the user identity you are using in this lab}
- b. Subject: **New invoice**
- c. 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.

45. Send the email and now the flow should be triggered to run automatically.

46. Now go back the flow detail page in the original tab. Notice a new run has been kicked off. Note, you might have to click refresh button a few times to see the new run history.

Flows > Enter invoice information flow

Details [Edit](#)

Flow Enter invoice information flow	Status On
Owner test user 1	Created Oct 10, 02:34 PM
	Modified Oct 10, 03:26 PM
	Type Automated
	Plan Per-user plan

28-day run history [All runs](#)

Start	Duration	Status
Oct 10, 03:30 PM (0 sec ago)	59 ms	Running
Oct 10, 03:26 PM (3 min ago)	00:00:12	Succeeded
Oct 10, 02:55 PM (34 min ago)	00:00:32	Succeeded

47. Click to open this run details. It will show whether your flow ran successfully.

✓ Your flow ran successfully.

When a new email arrives (V3) 0s

↓

Apply to each 5s

48. You can also click the title to expand the Apply to each action and AI Builder action to view the output from the Predict action. It should contain the data parsed from the file. That output will be able to be consumed by the following actions. We will cover that in next lab #7.

← Enter invoice information flow • Ran at 8/29/2022 1:56:49 PM

✓ Your flow ran successfully.

The screenshot displays a Power Automate flow run interface. At the top, a status bar indicates the flow is 'Enter invoice information flow' and was 'Ran at 8/29/2022 1:56:49 PM'. Below this, a green banner confirms 'Your flow ran successfully.' The main area shows a sequence of actions: 'When a new email arrives (V3)' (0s), 'Apply to each' (18s), and 'Extract information from documents' (17s). The 'Apply to each' action is expanded, showing a list of 1 item. The 'Extract information from documents' action is also expanded, displaying its inputs and outputs. The inputs include 'AI model' (Enter invoice information AI model), 'Form type' (image/jpeg), and 'Form' (a long alphanumeric string). The outputs section shows a 'body' property with a JSON object containing '@odata.context', 'response2', and '@odata.type'.

When a new email arrives (V3) 0s

Apply to each 18s

< Previous < Previous failed Show 1 of 1 Next failed > Next >

Extract information from documents 17s

INPUTS Show raw inputs >

AI model
Enter invoice information AI model

Form type
image/jpeg

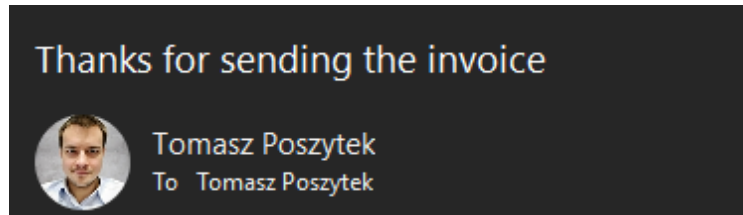
Form
/9j/4AAQSkZJRgABAQEAAeAB4AAD/4RDuRXhpZgAATU0AKgAAAAgABAE7AAIAAAAMAA...

OUTPUTS Show raw outputs >

body

```
{
  "@odata.context": "https://poszutest.crm4.dynamics.com/api/data/A...",
  "response2": {
    "@odata.type": "#Microsoft.Dynamics.CRM.expando",
    ...
  }
}
```

49. You should now also have received an acknowledgment email with the AI Builder process results against the jpg invoice file.



We received an invoice with those information:

Total: \$6,743.12

Date: Mar 15, 2019

Contact: adixon@litware.com

Bill to: Litware Inc.

We will process and get back to your shortly.

Thanks,
Contoso

Check your knowledge

Lab 6

7 mins

1. After uploading our sample documents in AI Builder, we can click the _____ button to teach the model to process our future documents.

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

Answer: B. Train

2. How do we tag our document?

- 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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