Official (Open)

Microsoft

PowerApps – PowerAutomate and Cloud Flows

https://github.com/alanchow85/RPA

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PowerApps – Robotic Process Automation

Intro to RPA & Setup Outlook

Email Automation

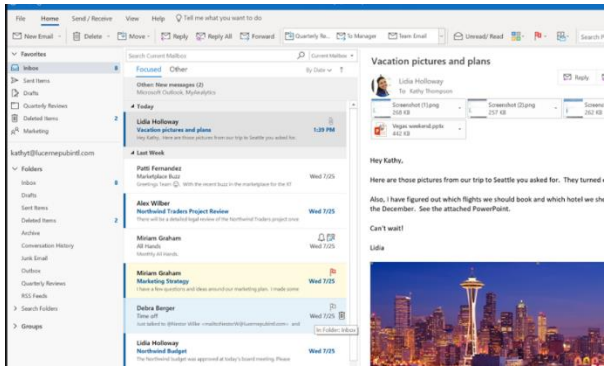
Split-Filter-Extract data

Calibrate SharePoint

Access FormSG excel rows and Automate data entry

Email Notification to next user to respond and update SharePoint

A LOT OF REPEATED WORK



Run a Robot to help you do them all

Official (Open)

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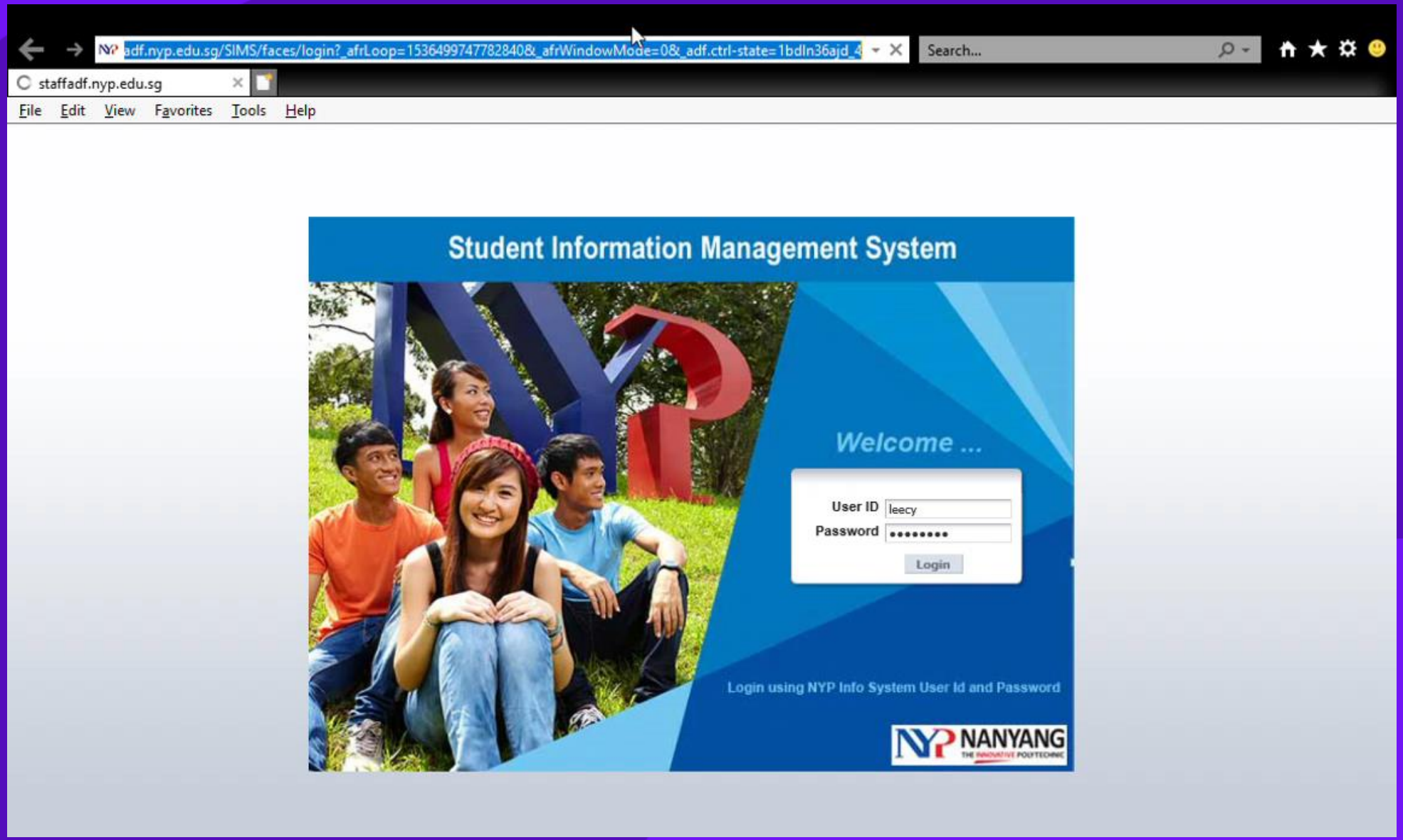

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Understanding Sequence

What does creating a sequence mean?

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What are the steps in making peanut butter and jelly?

Official (Open)

Did it work?

- Did he/she do what the dad intended for him/her to do?
- What parts of the instructions were clear?
- What parts weren't?
- How could you improve the instructions?

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Important vocabulary

- How does “thinking like a computer” compare with “thinking like a human”?

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Important vocabulary

- **Action**: A specific step for the Flow to perform.
- **Sequence**: The order in which the actions are given.

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PowerApps – Getting Started

Go to:

https://make.powerautomate.com

Username:

e.g ➔ Alan_chow@nyp.edu.sg

Password :

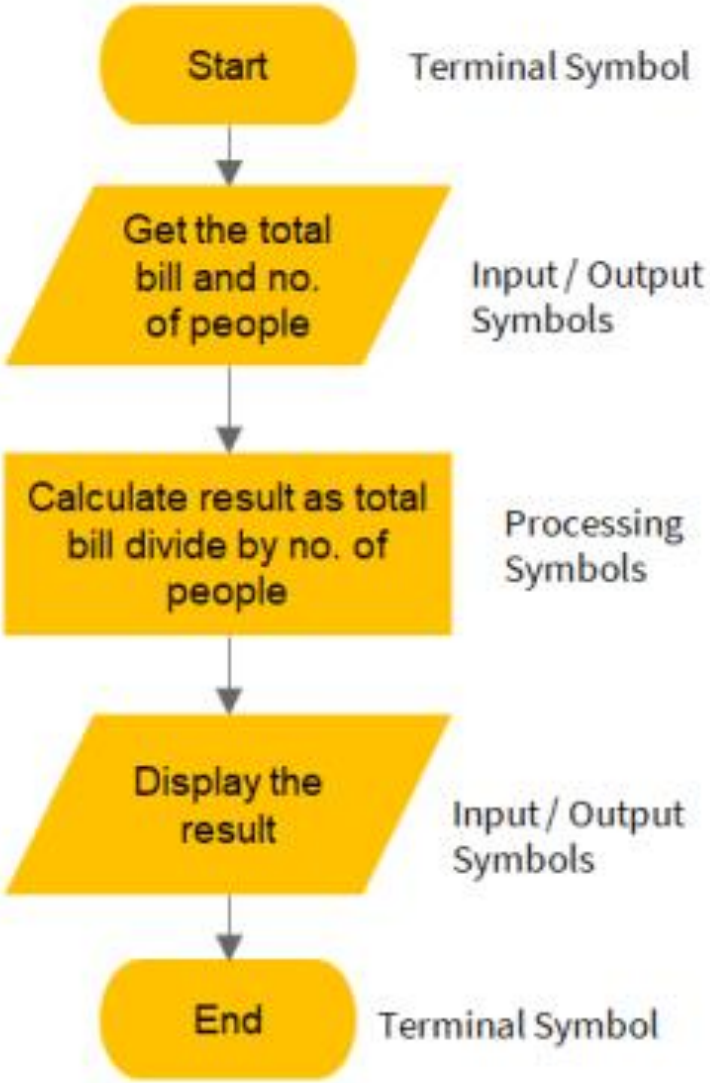
The password for our NYP Microsoft account or email

Power Automate

Design a Program Sequence: Pseudocode and Flowchart

For the "Split the Bill" example, the pseudocode is written as follows:

1. Get the total bill amount.
2. Get the number of people to share the bill
3. Divide the total bill amount by the number of people
4. Display the result of the calculation



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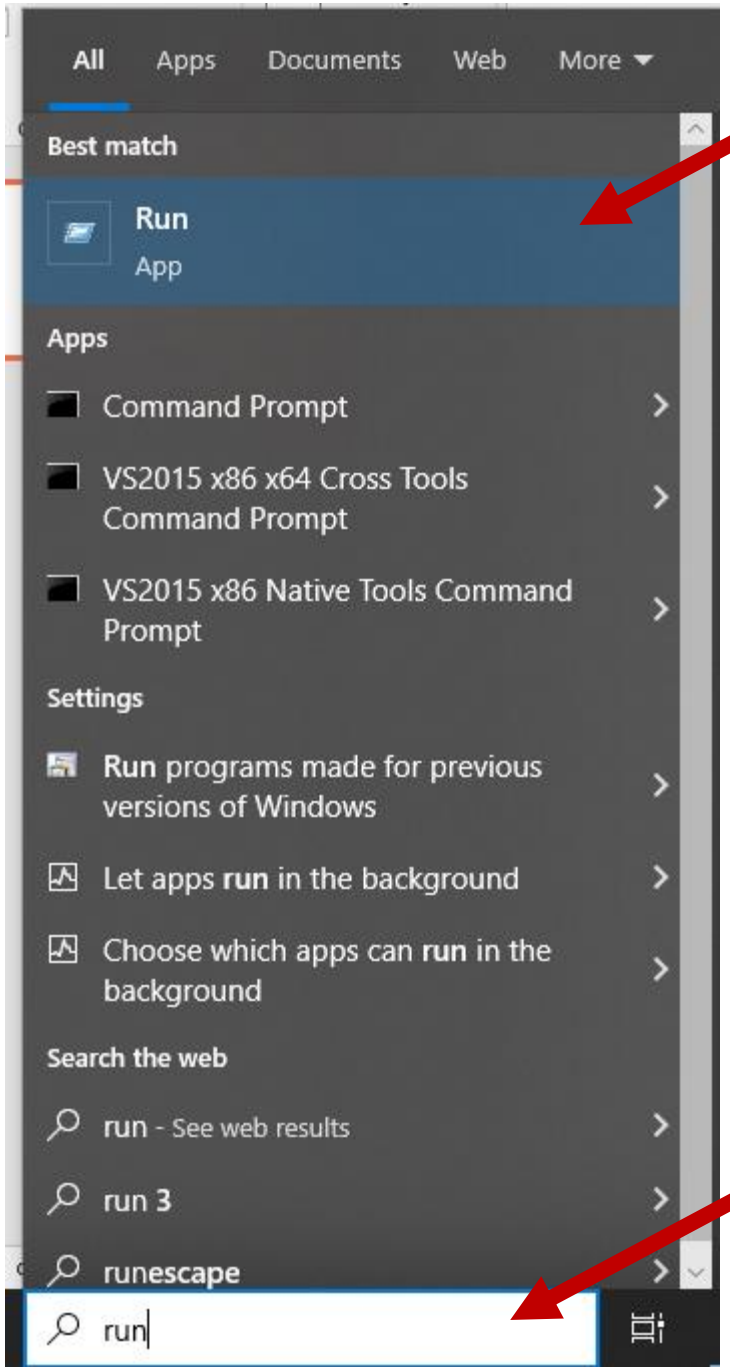

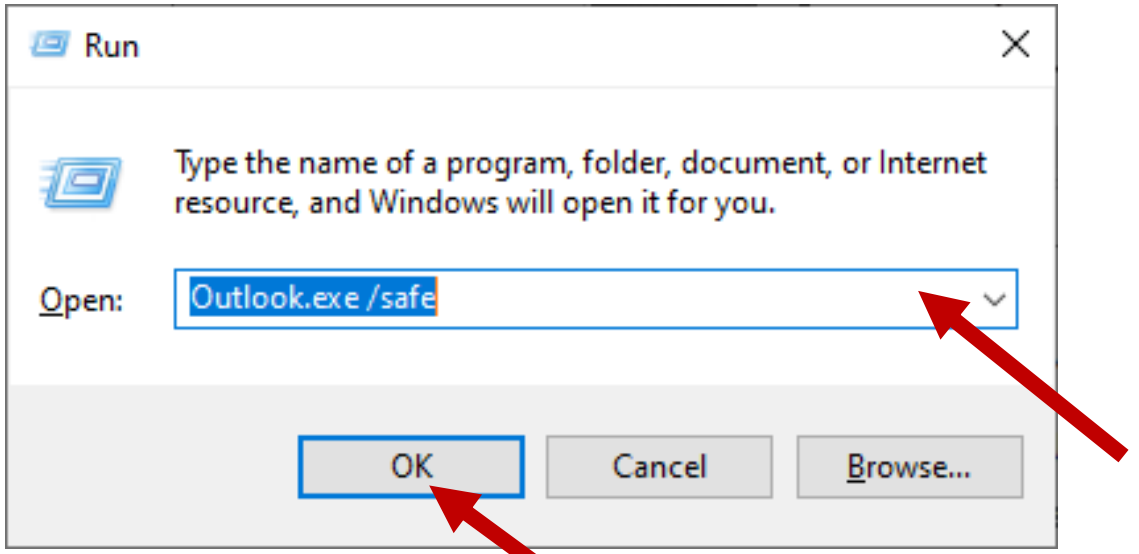

To setup Outlook, first run Outlook in safe mode.

Open **Run → Type Command as below:**
Outlook.exe /safe

Take note of the space between the “exe” and “/safe”

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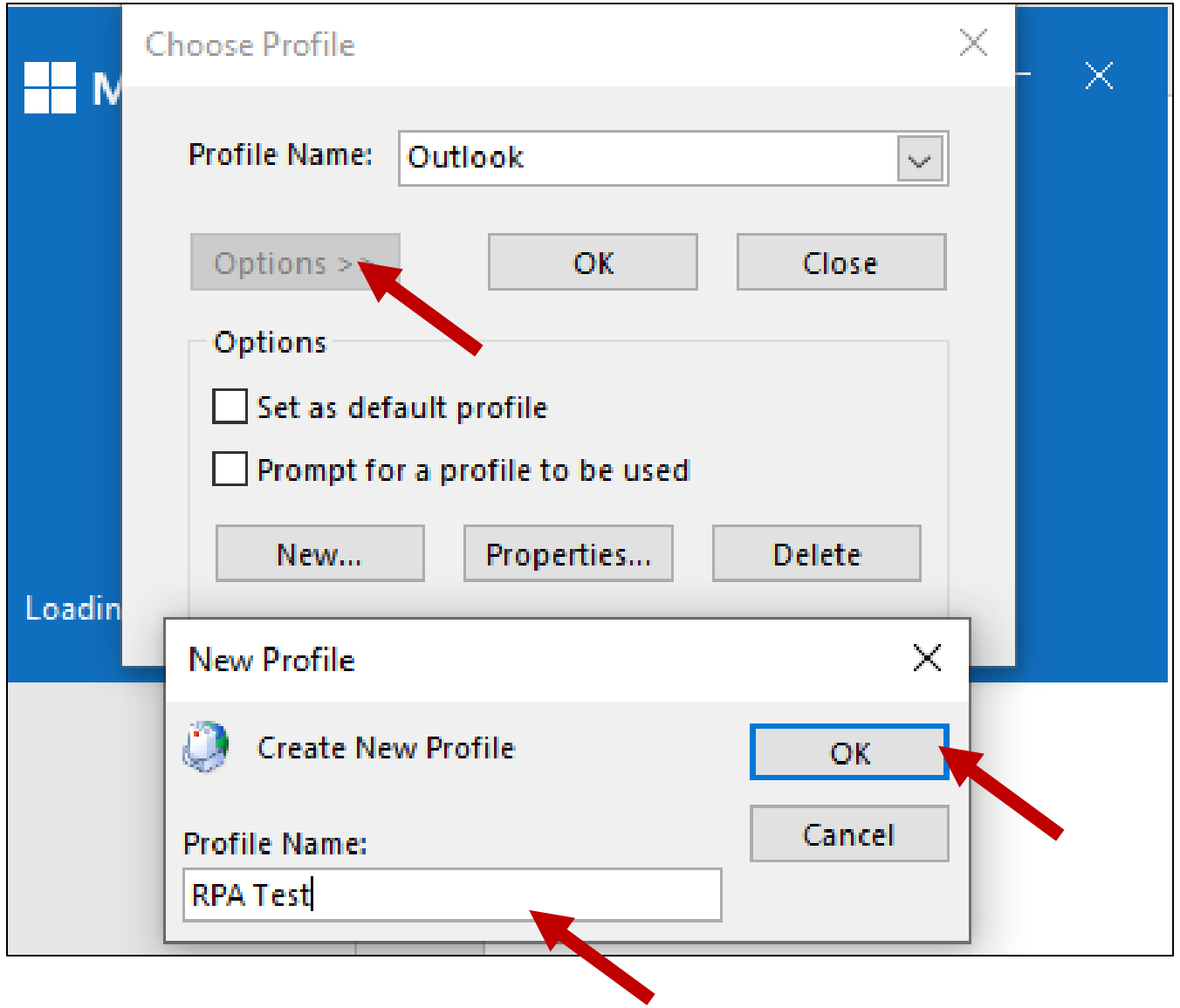
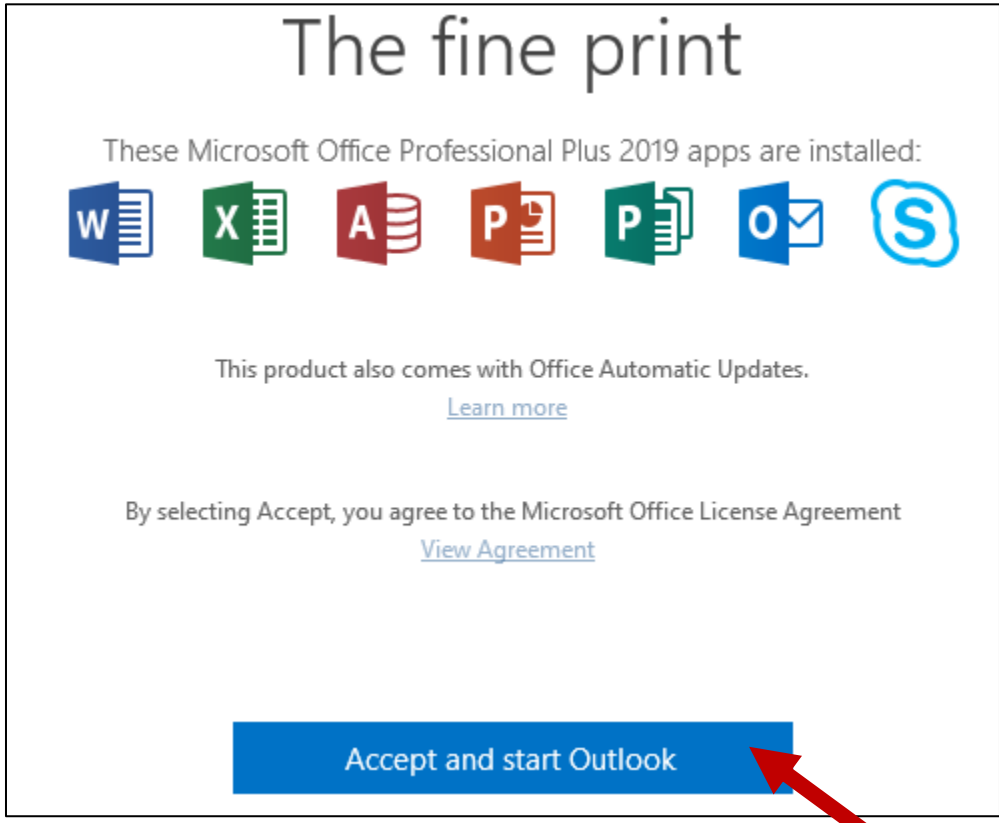
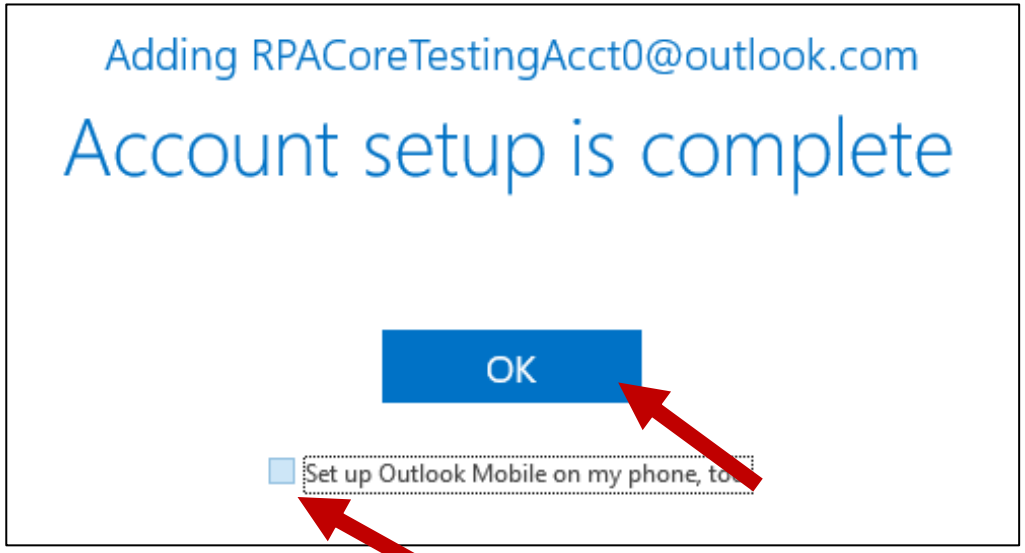


Create a new profile by:

Click Options → New…→
Type Profile Name to be RPA Test
→ OK

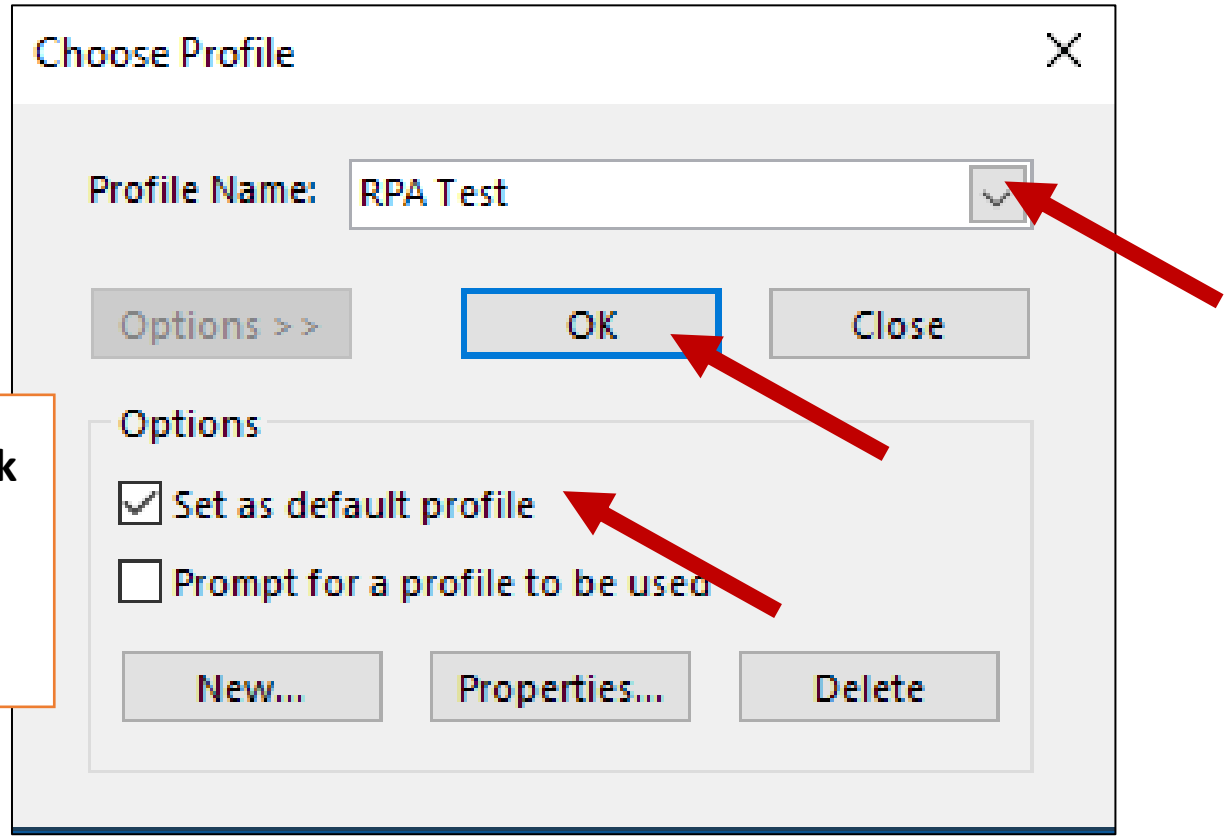


Official (Open)



Uncheck Set Up mobile

In email screen, type in your email and click login.
In the password panel, enter your outlook email Password.



Select RPA Test as profile→ check Set as Default Prompt → Ok.

Outlook set up is complete.

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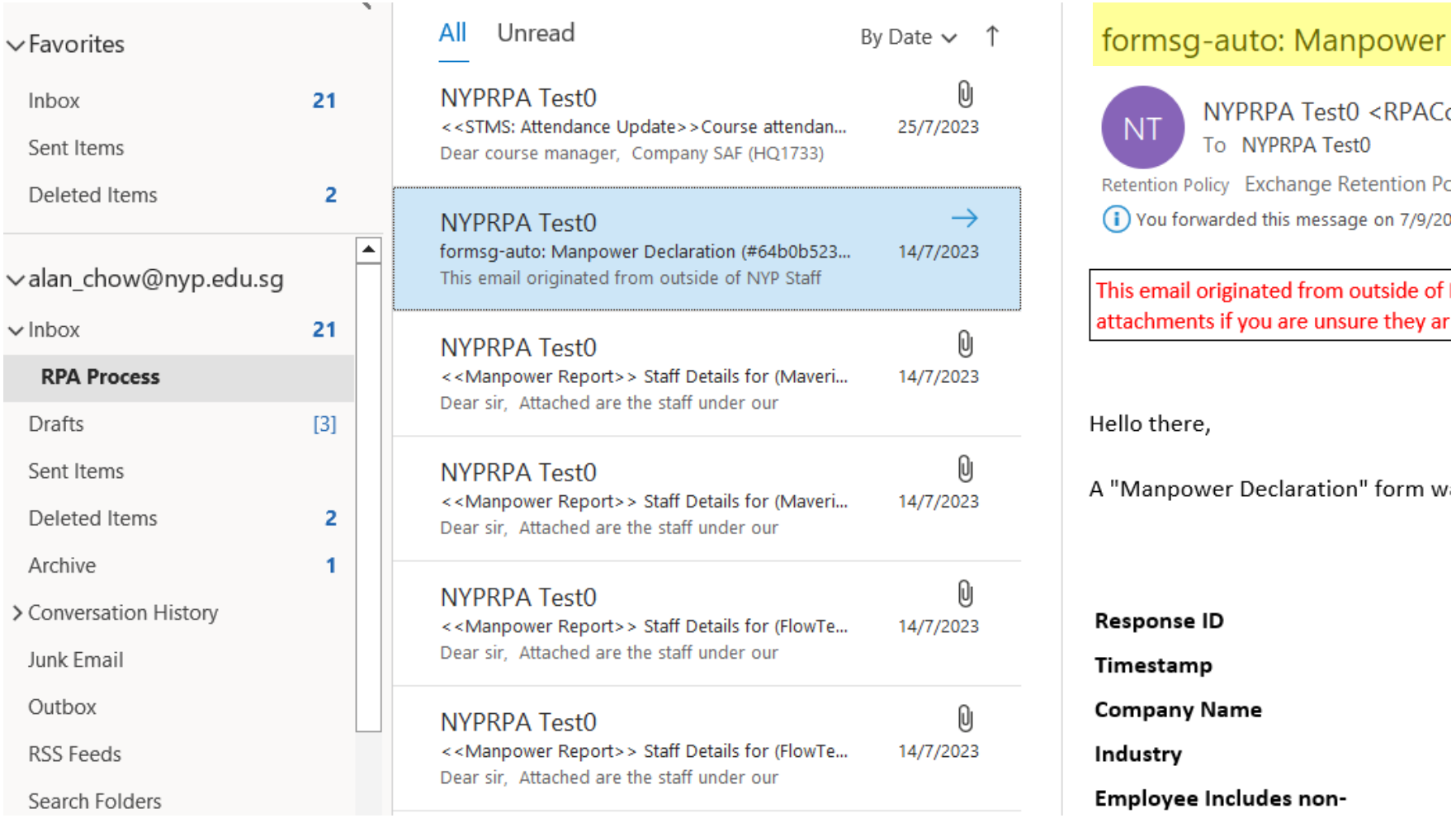

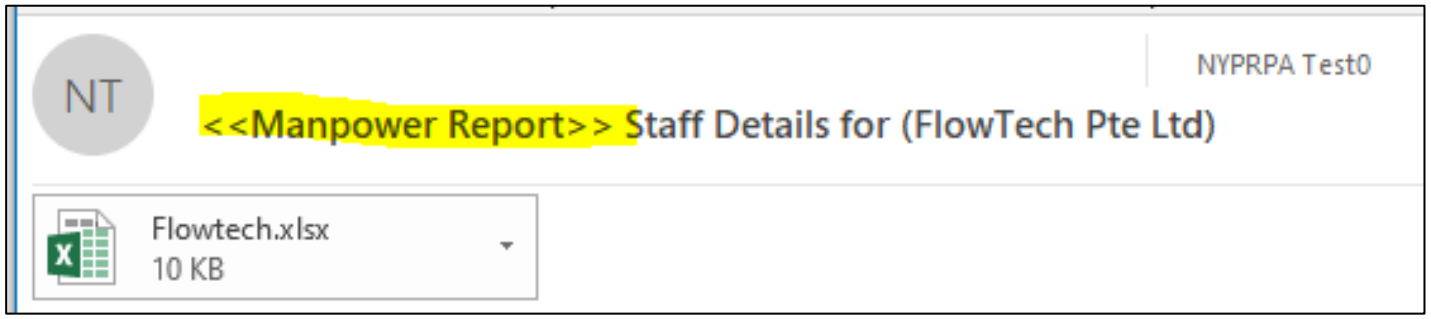

Drag in the sample email files into **outlook inbox.**

These are for the Desktop automation. 2 of the emails are Manpower Reports.

Each report has a specific subject and an attachment.

For these types of automation, it is important to involve stakeholders and ensure that they are adhering to certain data format, example:

Formsg-auto
<<Manpower Report>>

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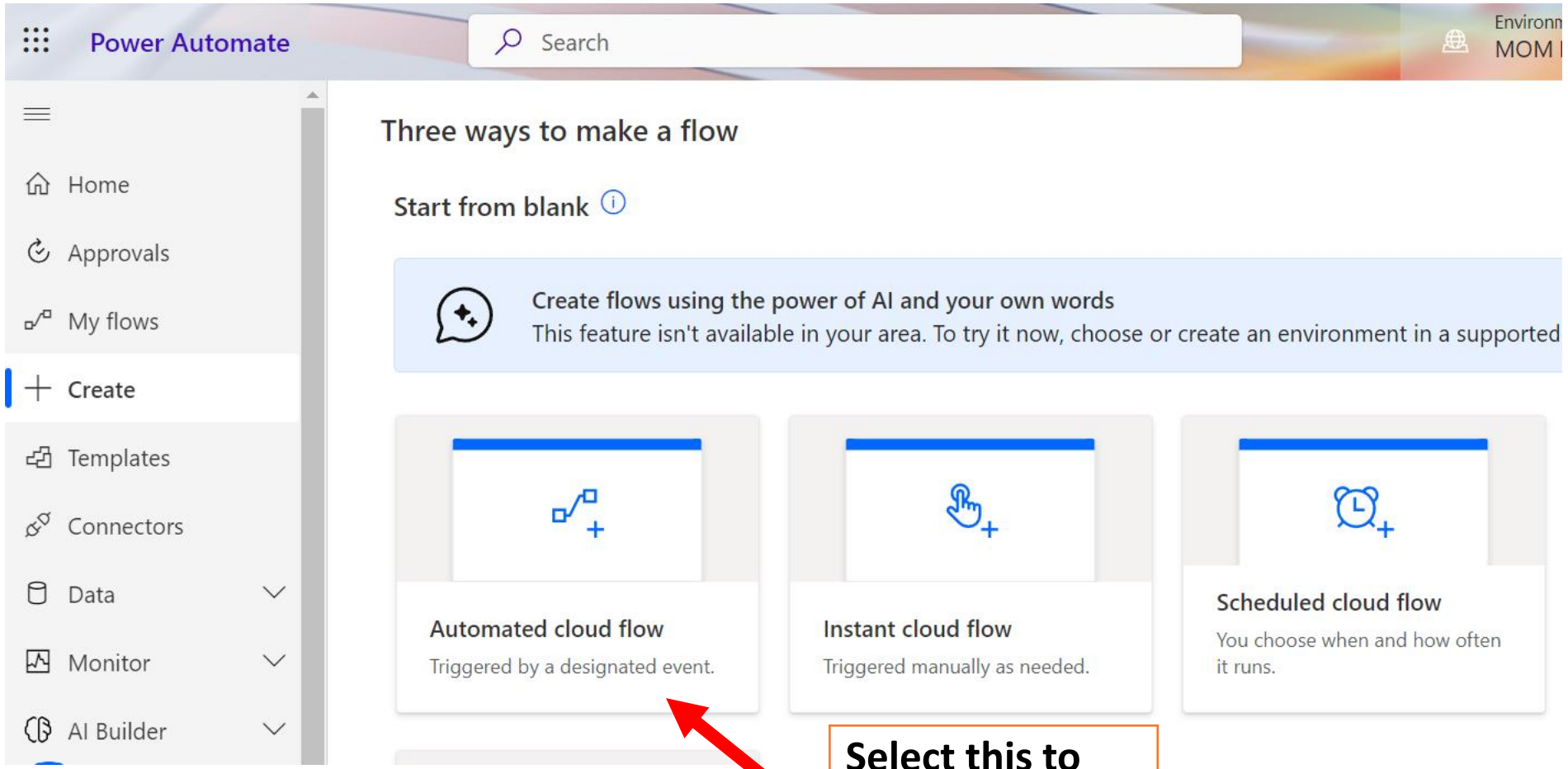

Select this to create a flow that is triggered by events.

Trigger actions are important → when an event happens, you want the flow to automatically react accordingly.

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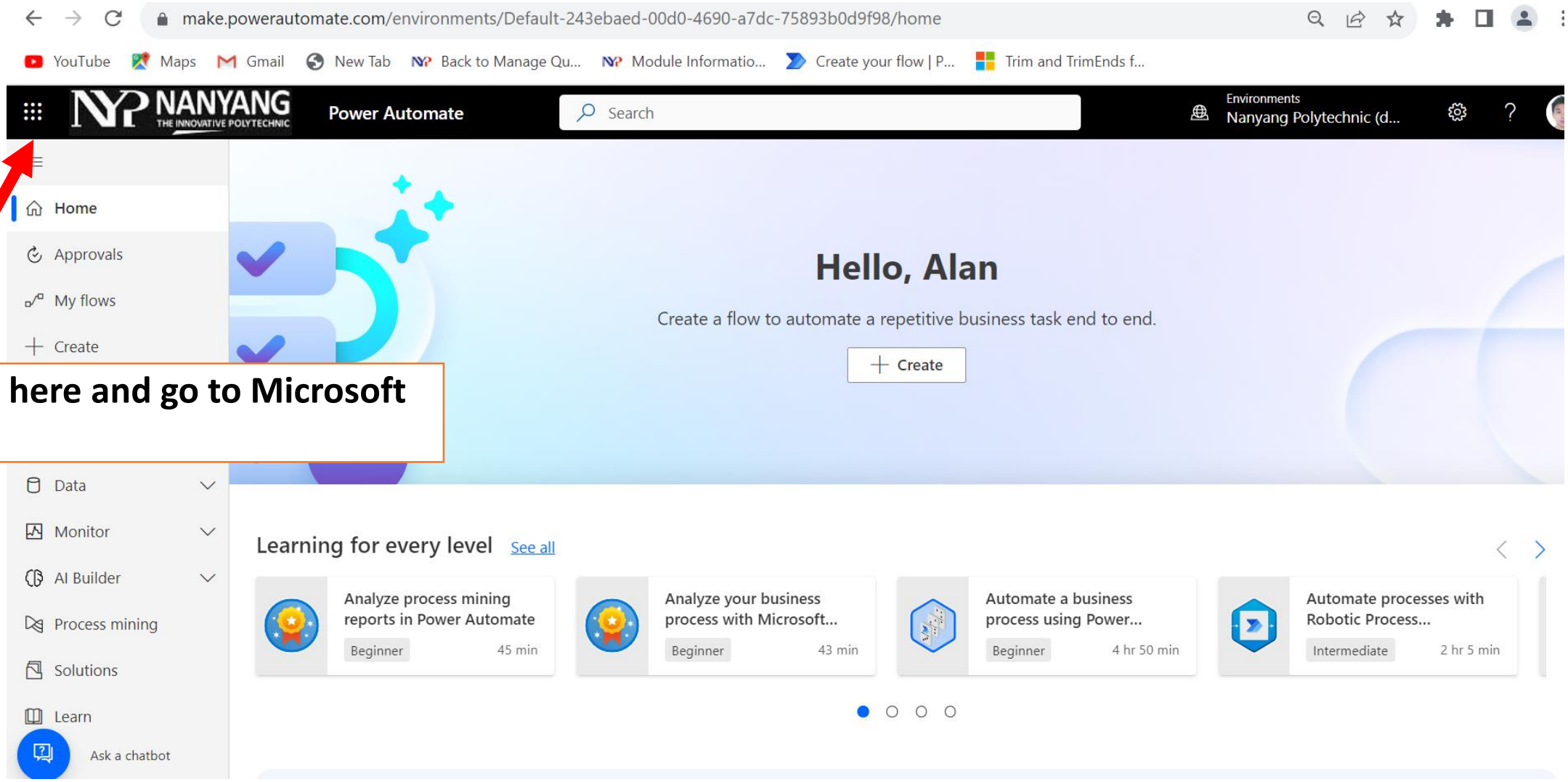
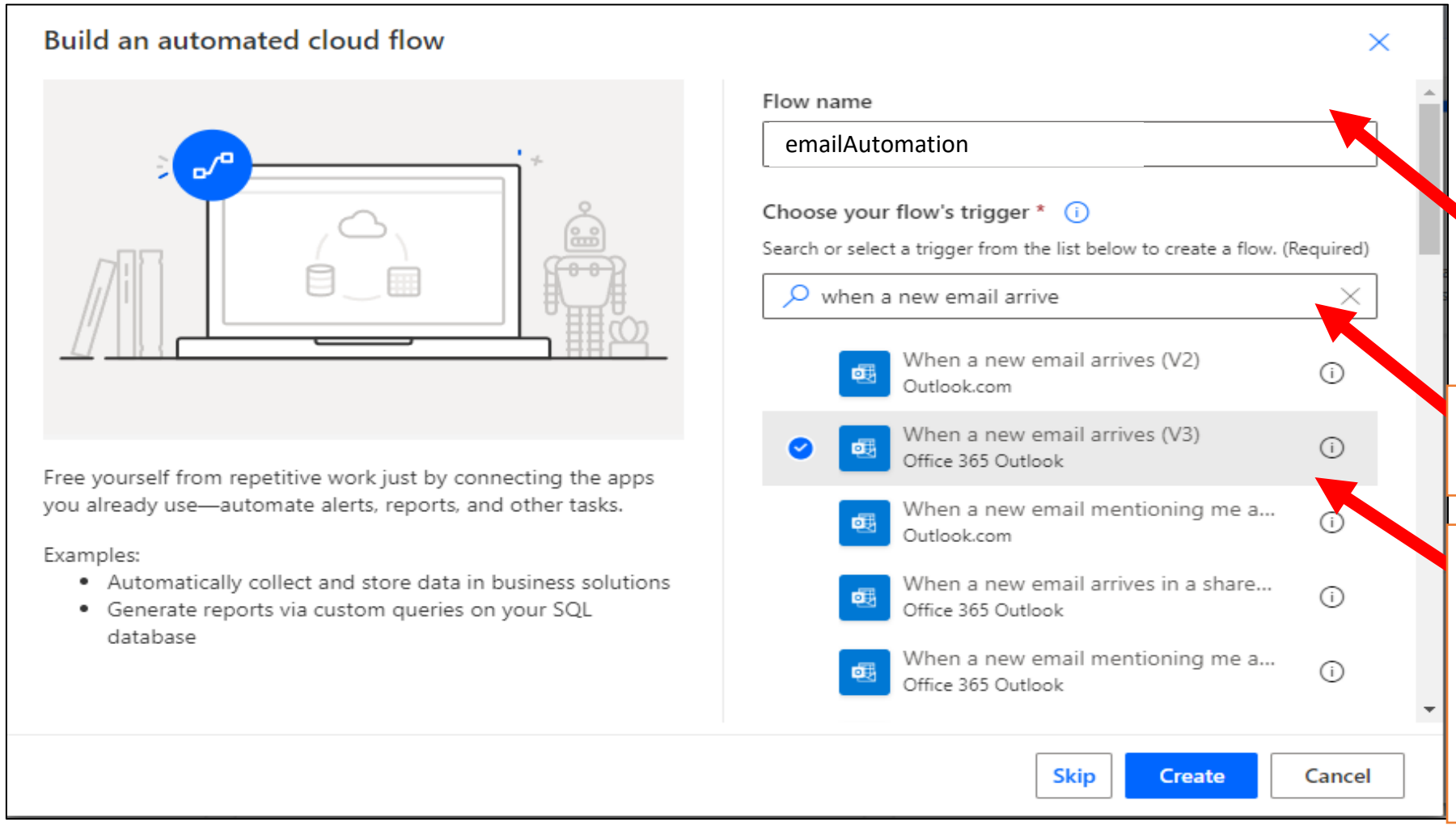


Click here and go to Microsoft 365

https://make.powerautomate.com/

Official (Open)

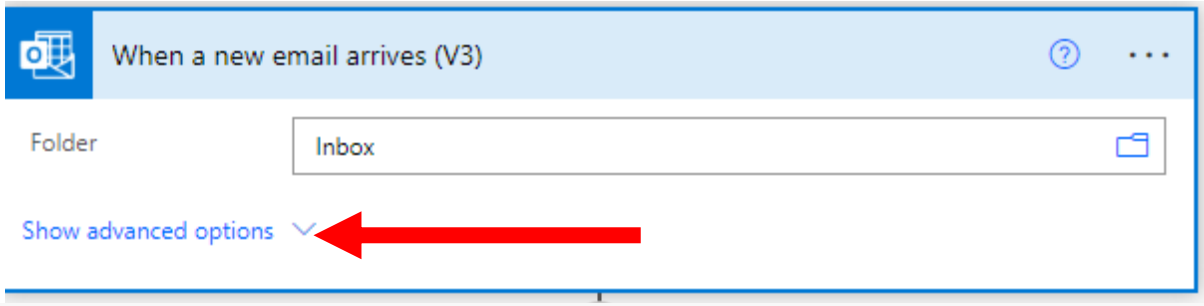


emailAutomation

Search for [When a new email Arrive(V3)]

Selects When a new email arrives (V3)--> Create.
When a new Email arrives, it will trigger this workflow.

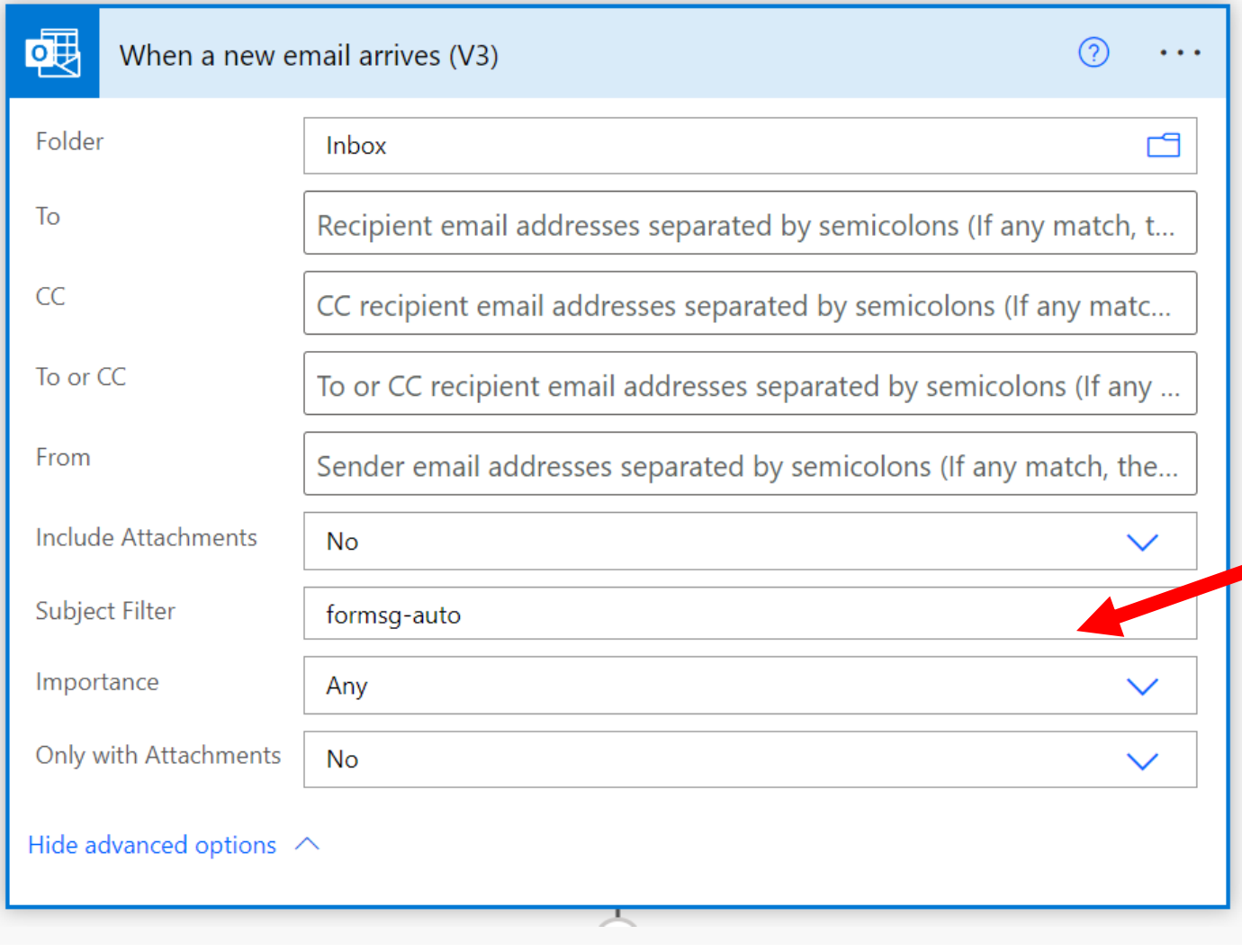
Official (Open)



Check the Trigger: When a new email arrives (V3)

This means that when an email arrives to Inbox, this flow will trigger.

QUESTION: Do we want to trigger for EVERY email?



Click on Show Advance options.

Here you can see a lot of conditional triggers for emails such as **From, Subject filter etc.**

Adding filters allows us to only trigger when email subject matches <<formsg-auto>>

Then Click on +New step

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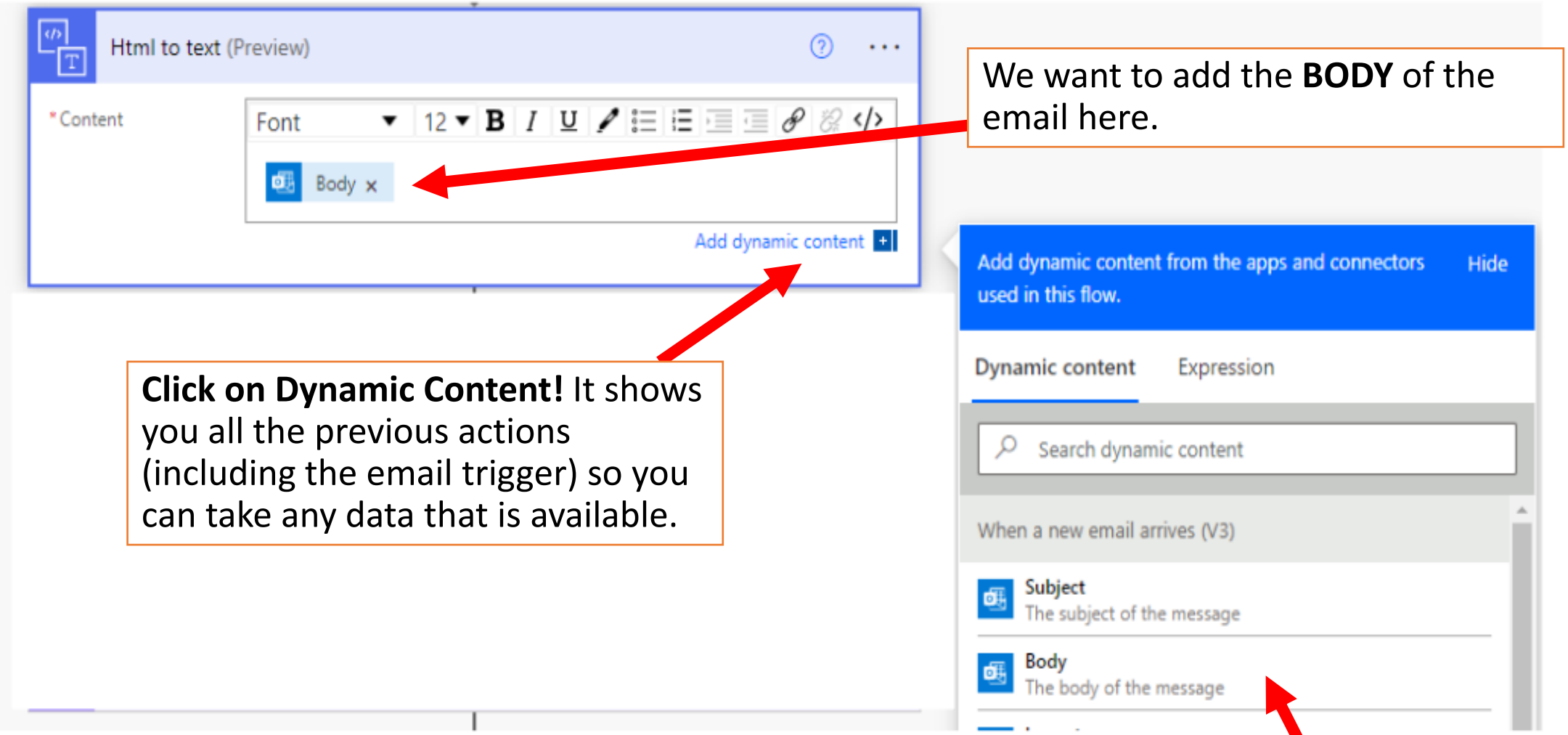

We want to add the **BODY** of the email here.

Click on Dynamic Content! It shows you all the previous actions (including the email trigger) so you can take any data that is available.

Look for "When a new email arrives" → Body!
It means you are taking the email body from the email trigger and adding as dynamic content.

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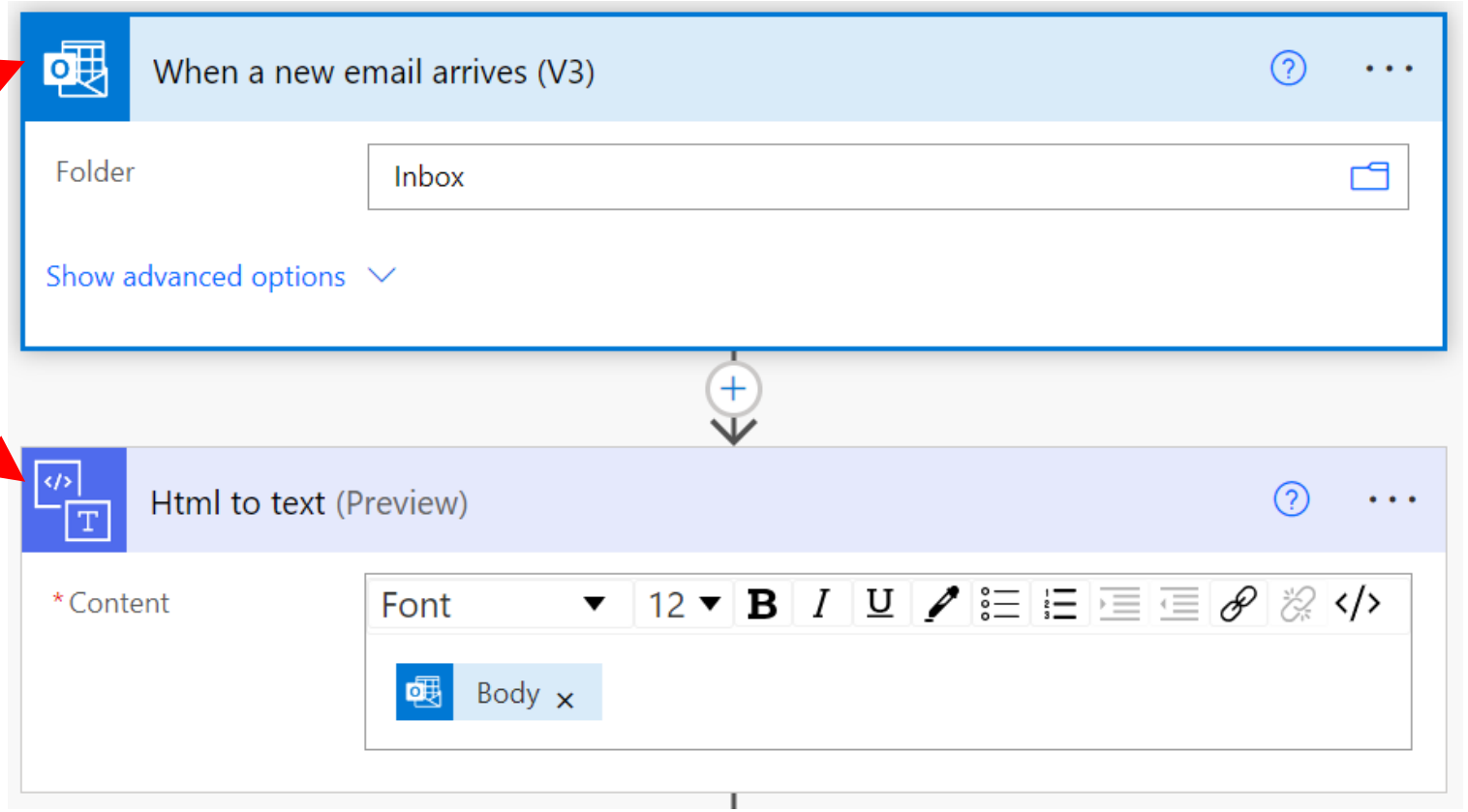
Progress Check!



We now have access to entire email body text. However, we still need to:

- Spilt the text line by line
- Filter out the empty lines
- Extract the email details

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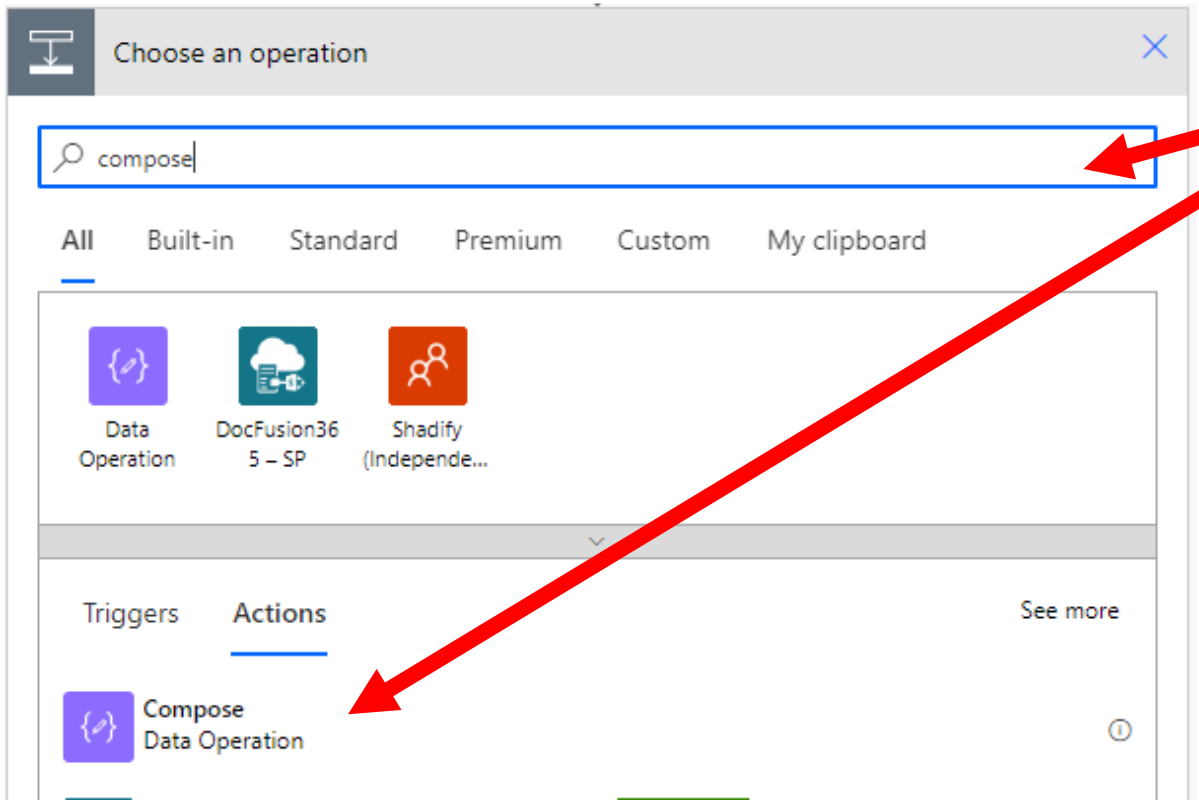
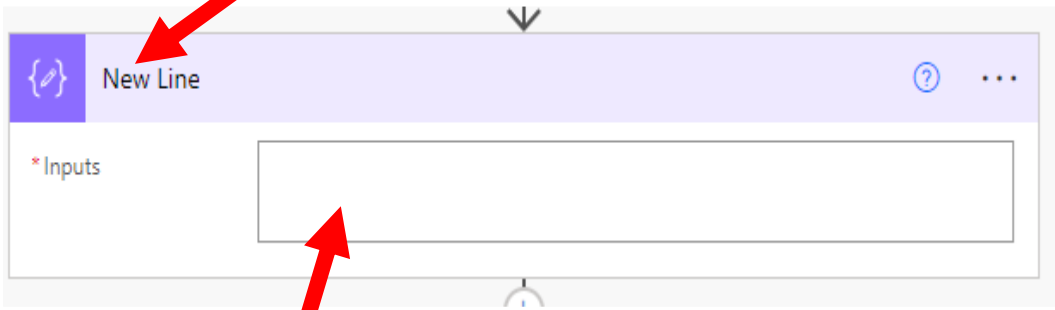
Spilt the text line by line → Filter out the empty lines → Extract the email details



Let's add a COMPOSE action to create an empty line first.

Rename this to New Line



Click on the Inputs, and click enter, for new line

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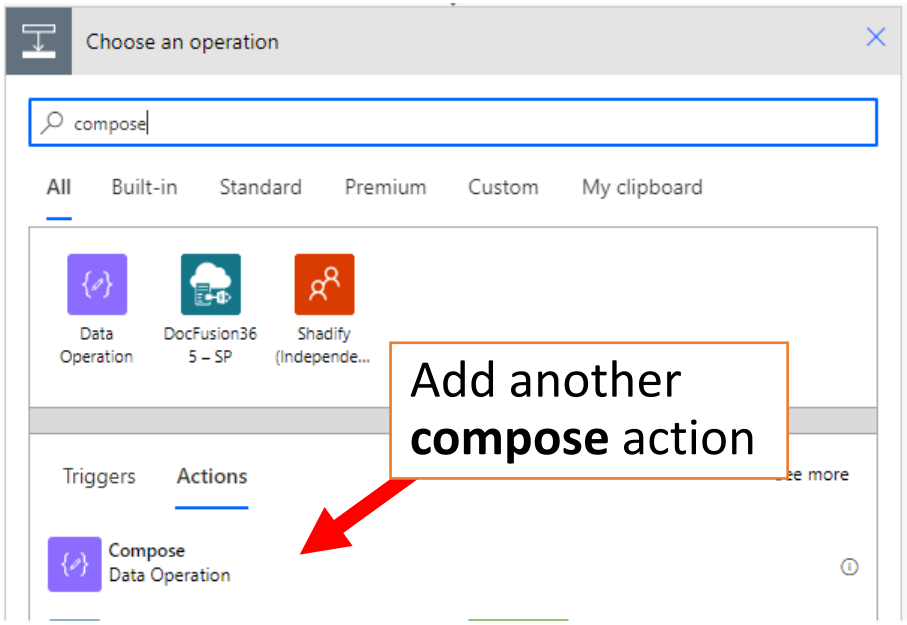
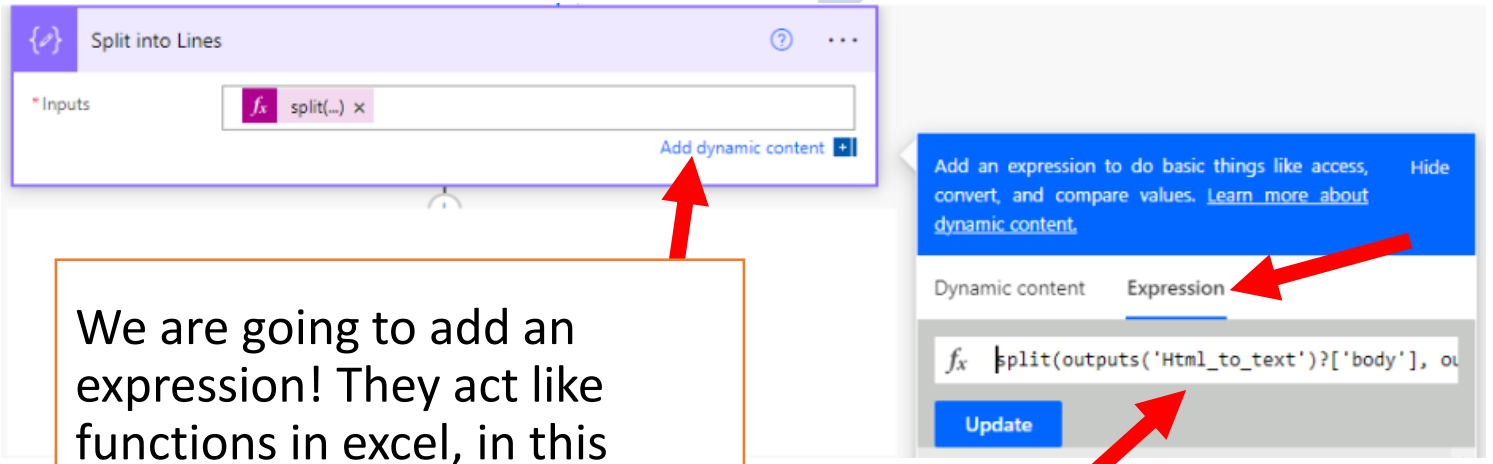
Spilt the text line by line → Filter out the empty lines → Extract the email details



Add another **compose** action



We are going to add an expression! They act like functions in excel, in this case, to spilt the email body text by line. **Click on dynamic content→ Expression**

Rename to **Spilt into Lines**

```
split(outputs('Html_to_text')?['body'], outputs('New_Line'))
```

This expression will spilt the email into multiple lines. Now we will filter out the **EMPTY** lines.

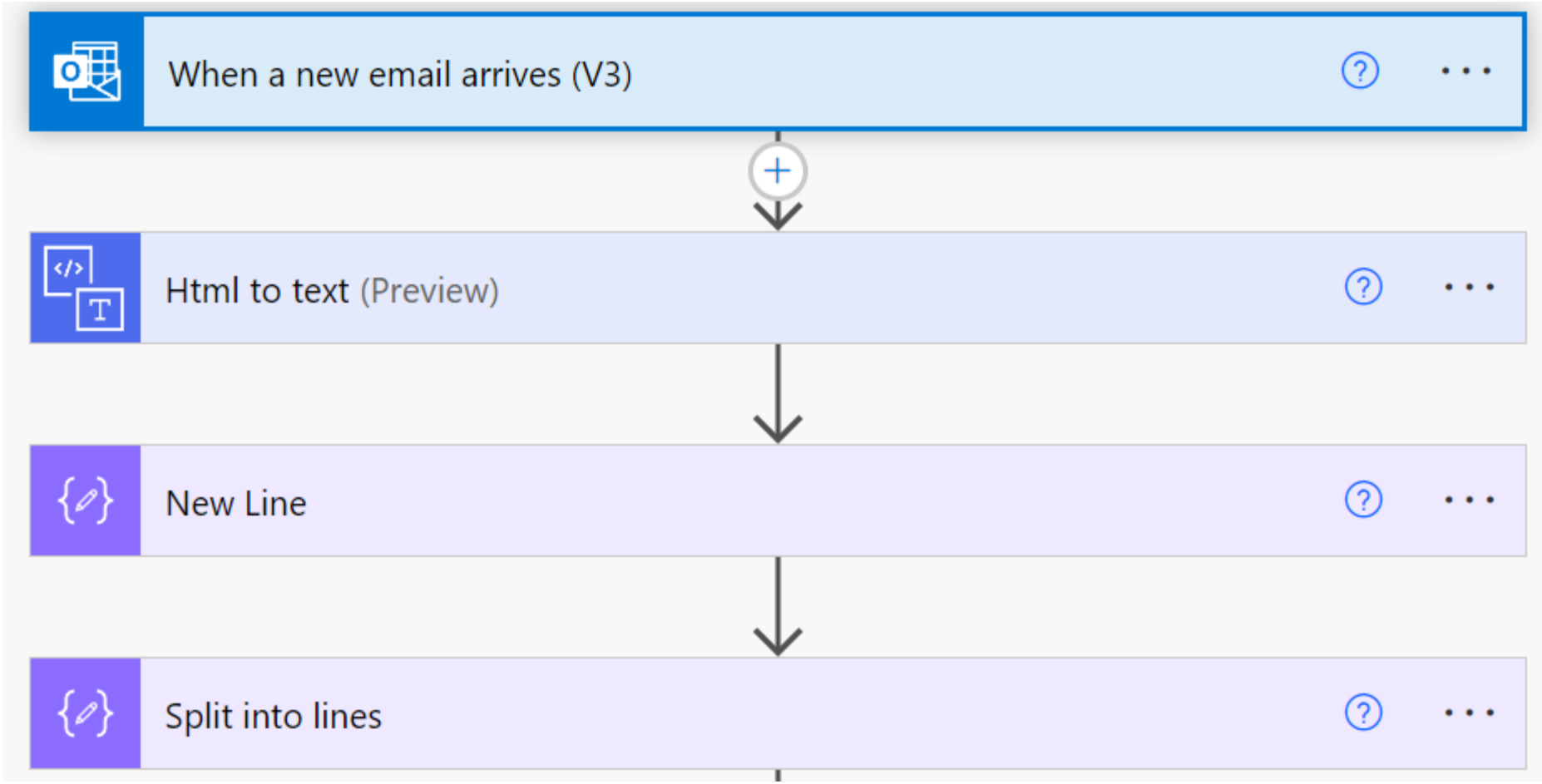
Official (Open)

Spilt the text line by line → Filter out the empty lines → Extract the email details

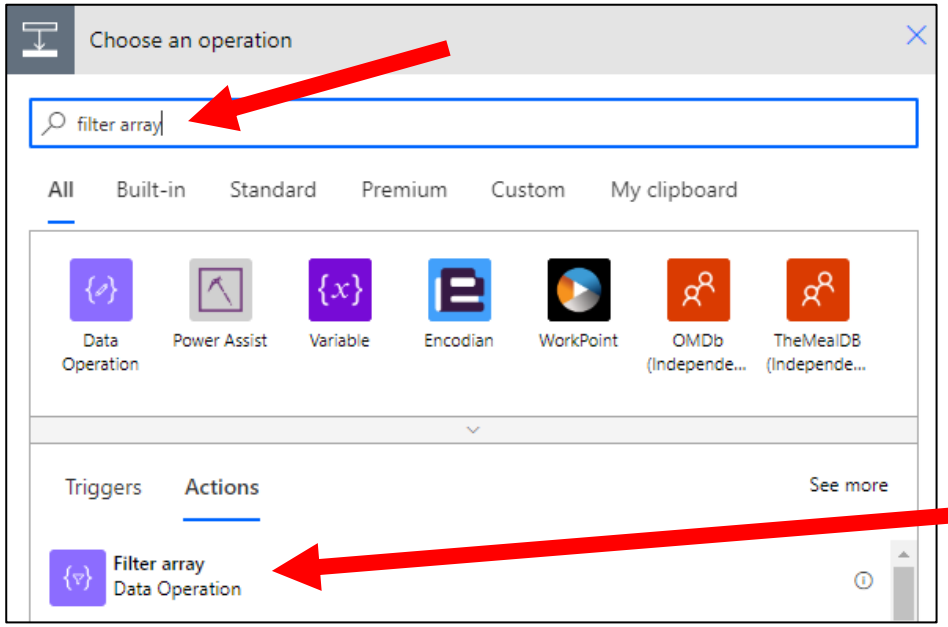
Progress Check!

We now have to filter out the empty lines.

Removing empty lines allows us to better spilt our data from the email.

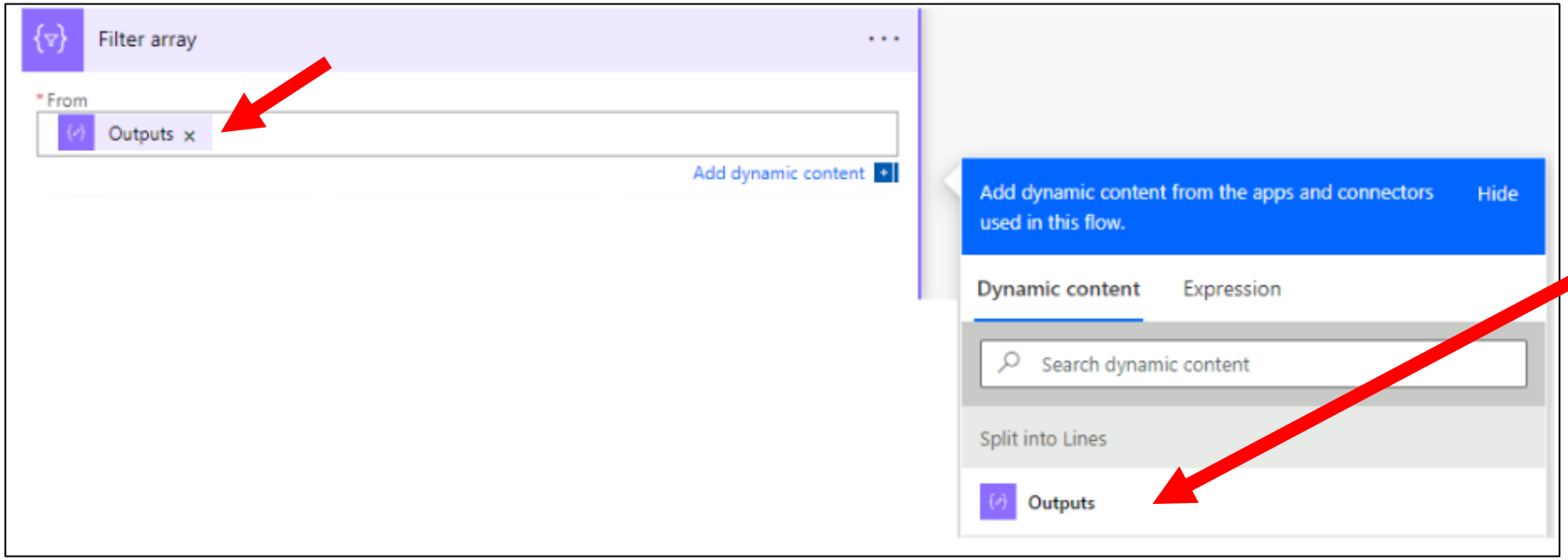


Official (Open)



Spilt the text line by line → **Filter out the empty lines** → **Extract the email details**

Add the Filter array action. It will use a formula to remove all the lines that are empty.



Add the Outputs from the "Split the Lines" action.

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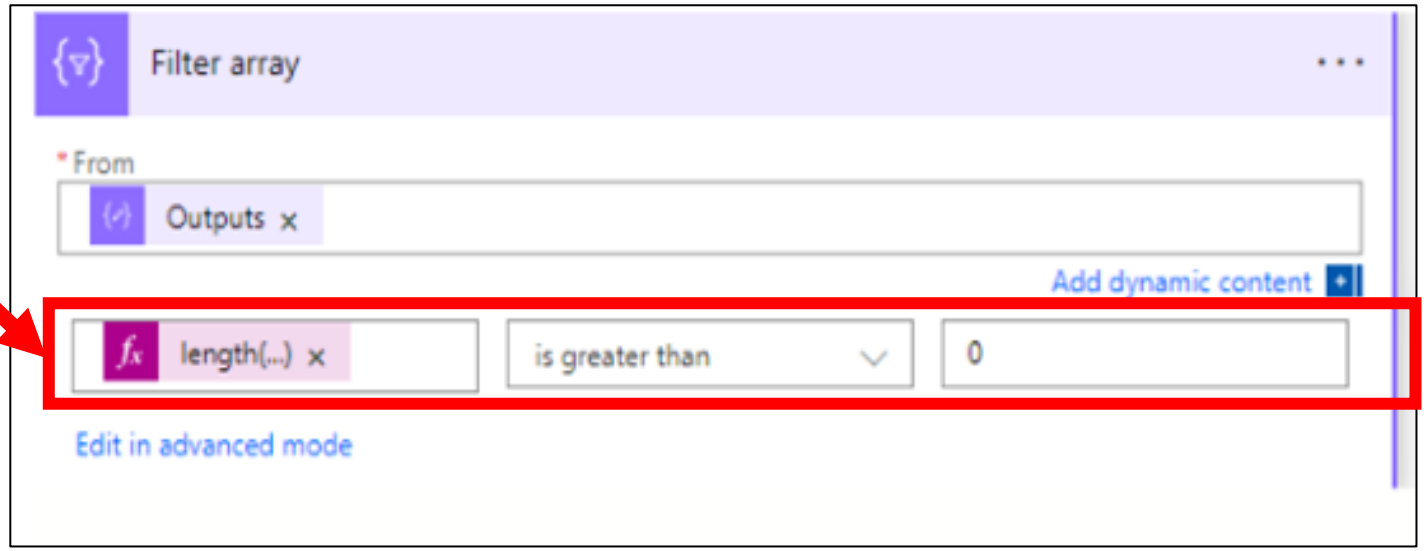
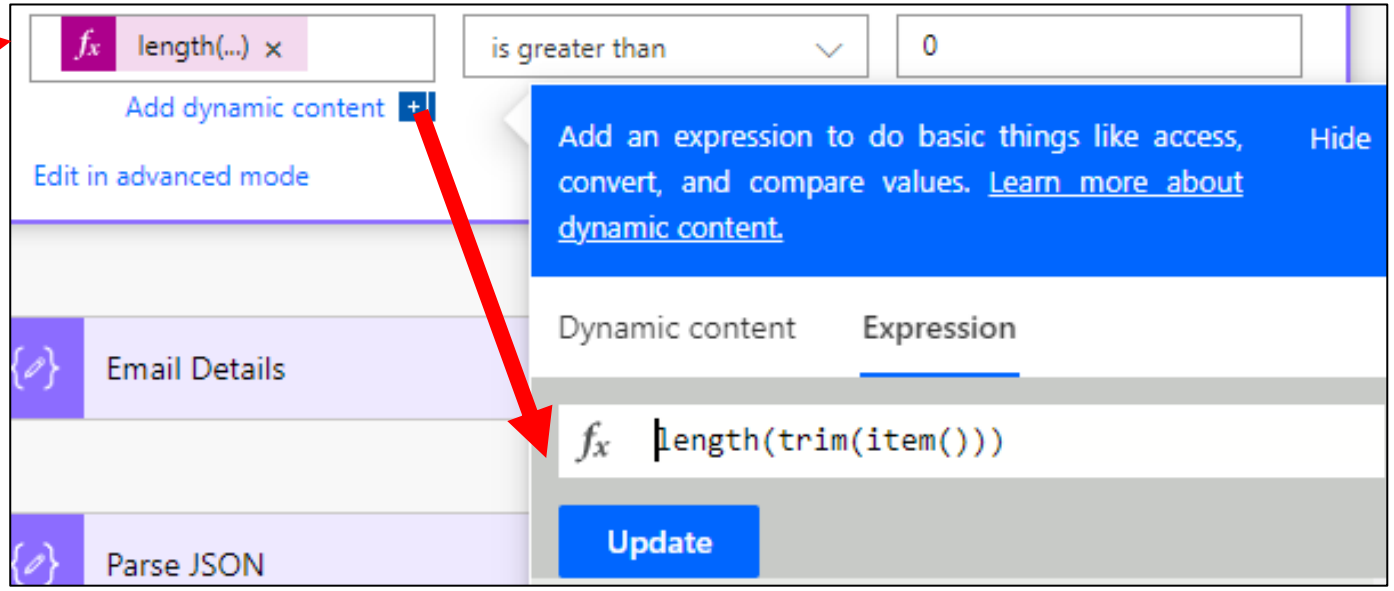
Update the condition in the Filter array action.

If length of the line of text is more than 0, then remain. Else Remove.



Add the expression for length of line of text here using dynamic content→ Expression.

```
Length(trim(item()))
```



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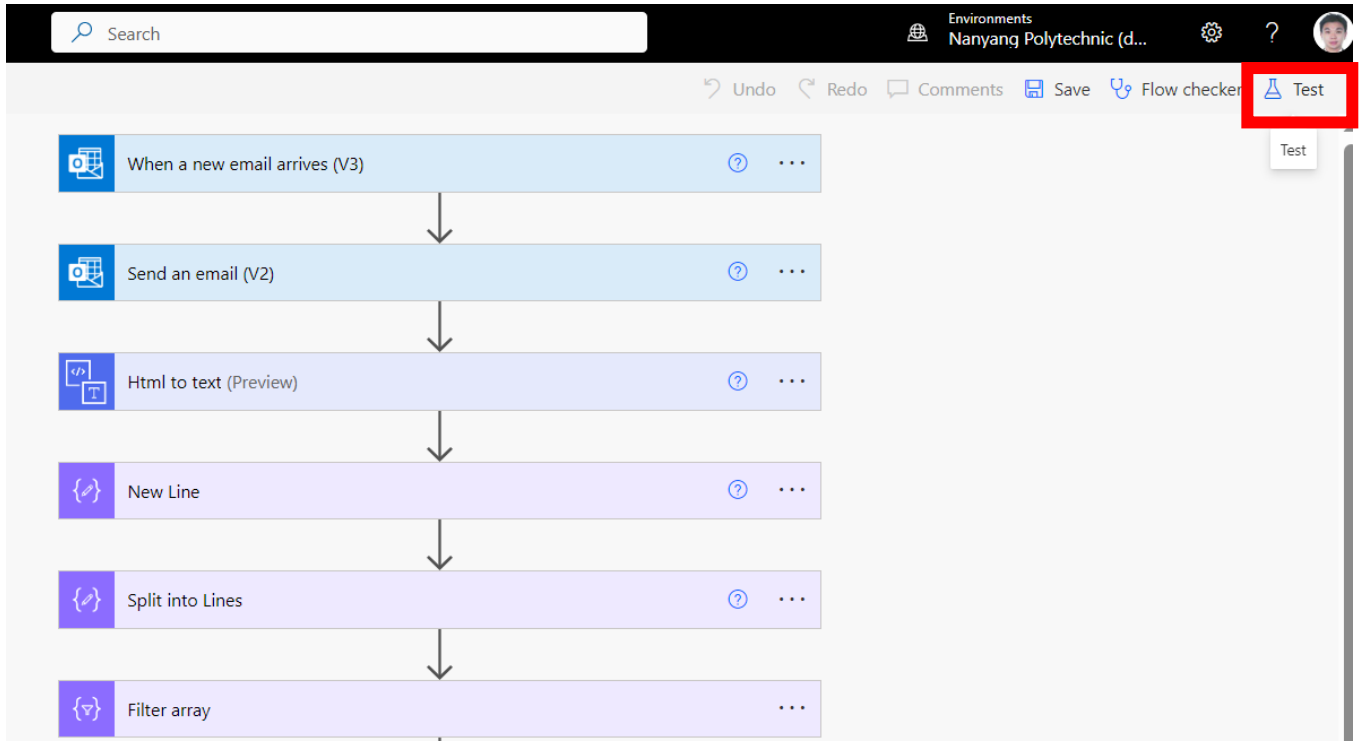
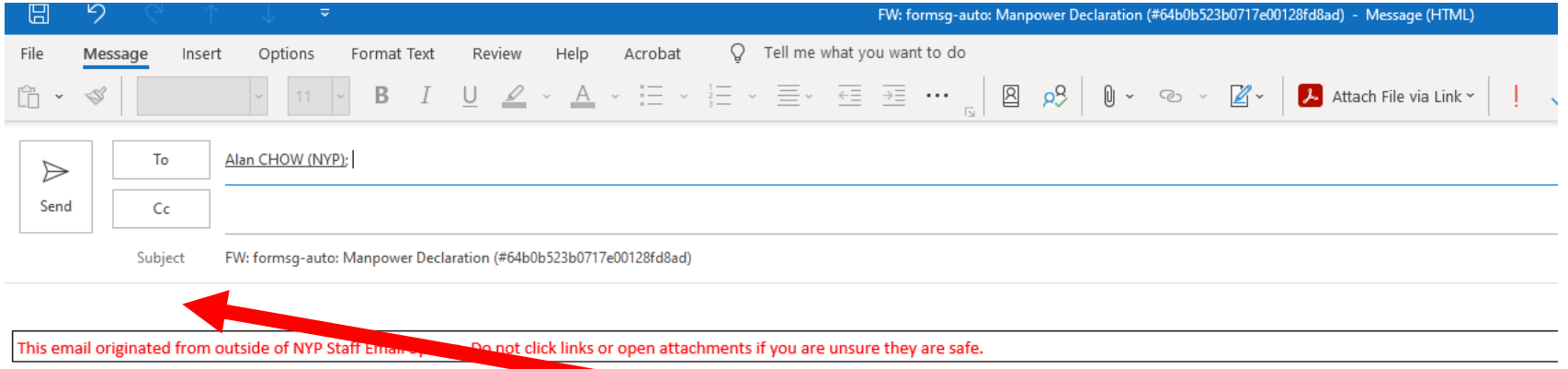
Spilt the text line by line | Filter out the empty lines | Extract the email details



- Click on the “test” run
- Select Manual
- Go to your outlook and paste the email with “formsg-auto” in the header into the inbox

Spilt the text line by line → Filter out the empty lines → Extract the email details



- forward the email to yourself but **remove all other lines** above the red words to simulate a “real” email from FormSG
- Then click send

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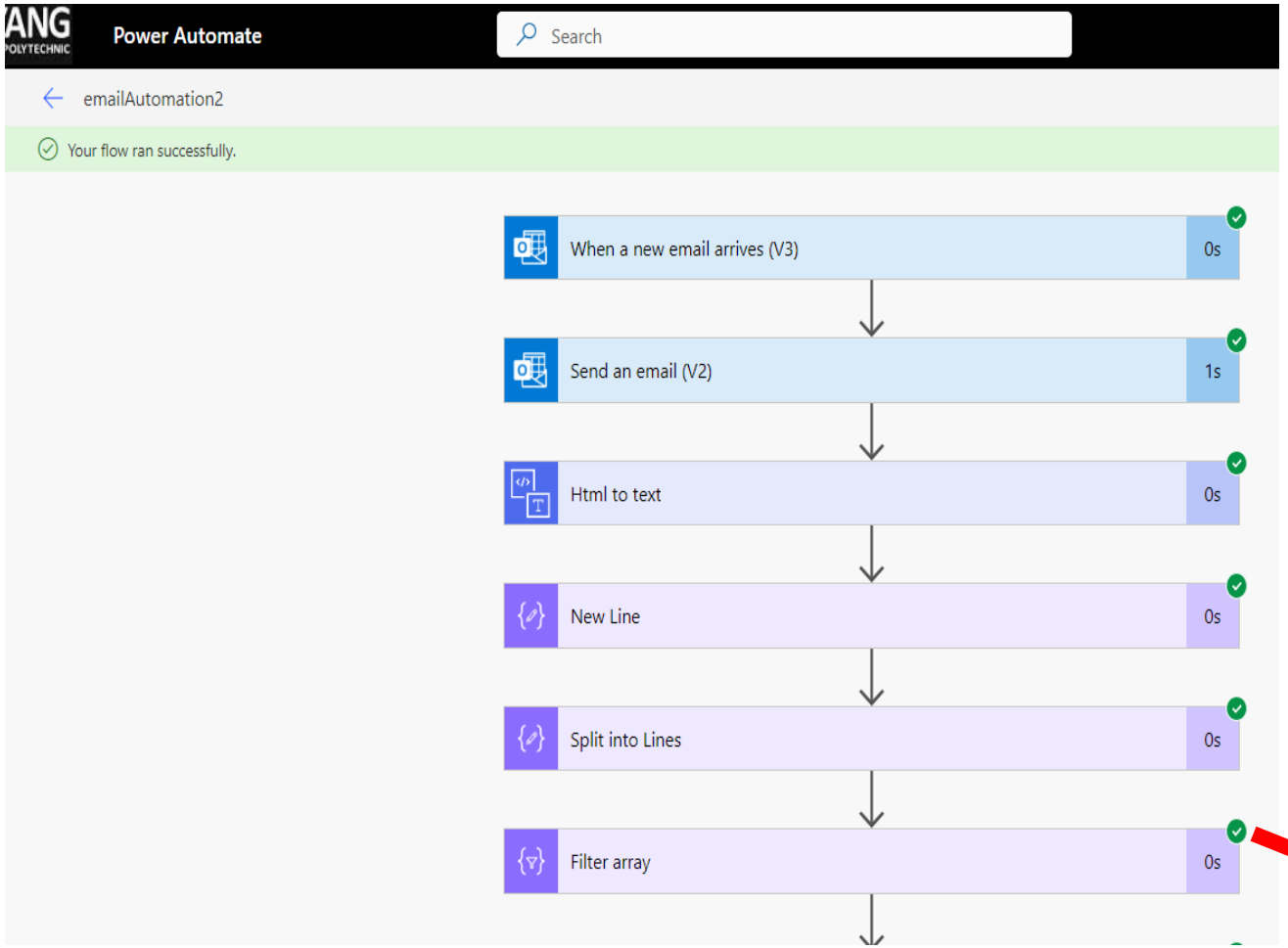
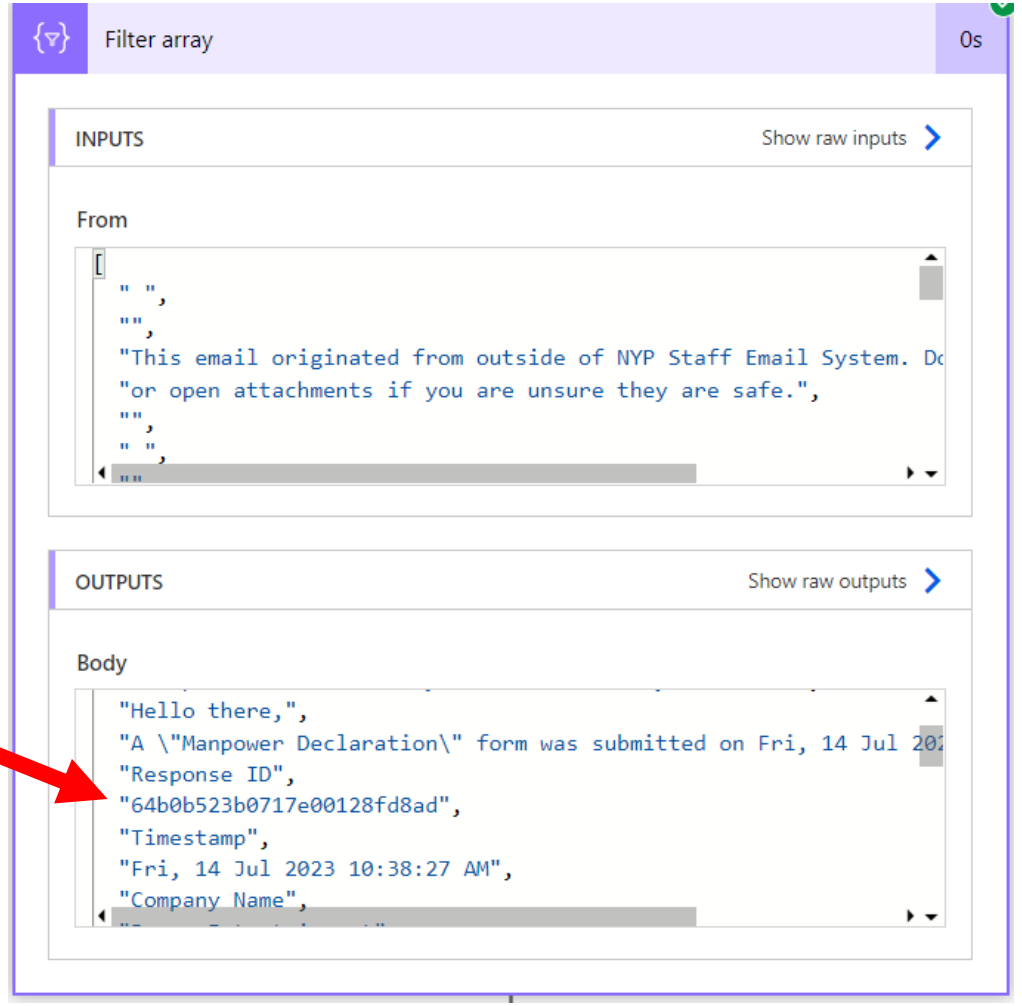
Spilt the text line by line | Filter out the empty lines | Extract the email details

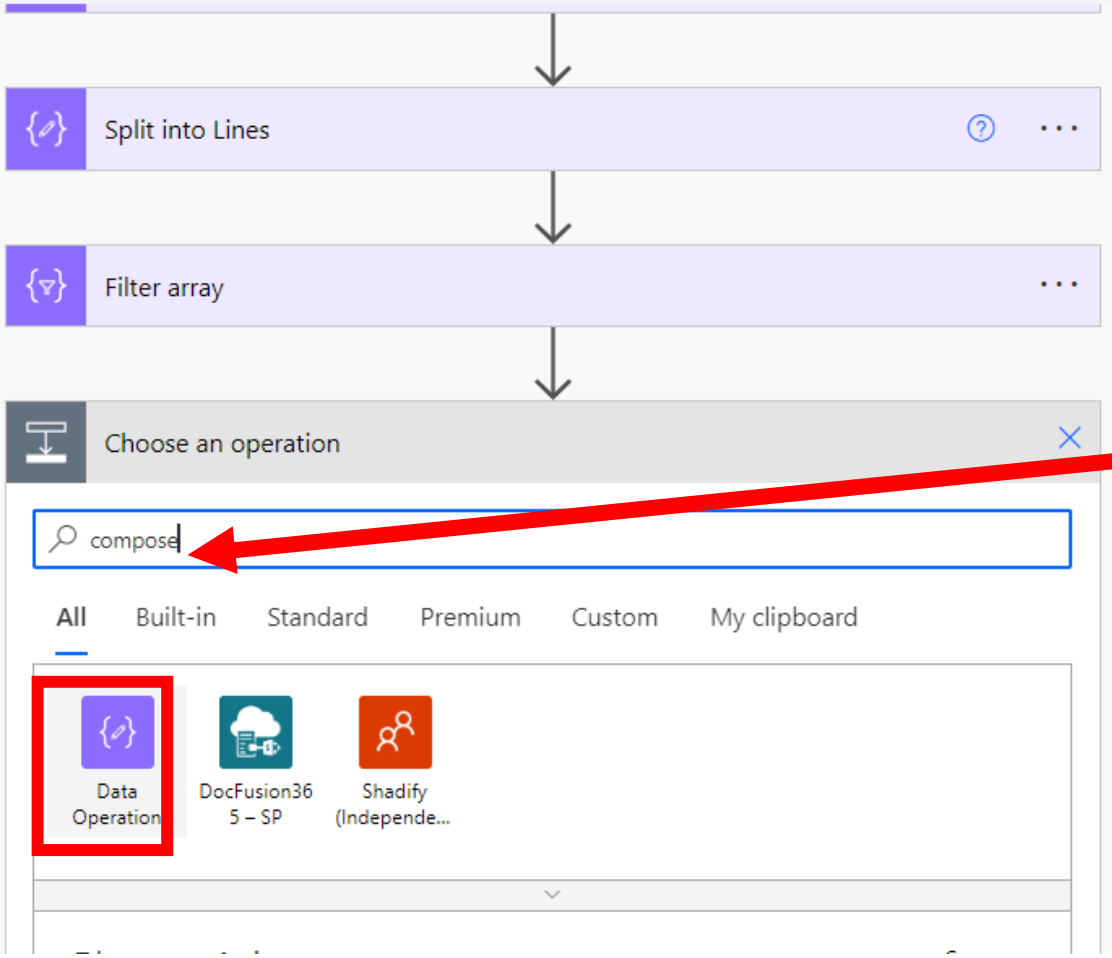




- Check the outputs and ensure flow run smoothly and filter the data

Official (Open)

Spilt the text line by line → Filter out the empty lines → **Extract the email details**



Add a new step and search for the word, “compose”.

Select Data operation and rename it to ID details

We will create a function to extract the ID details

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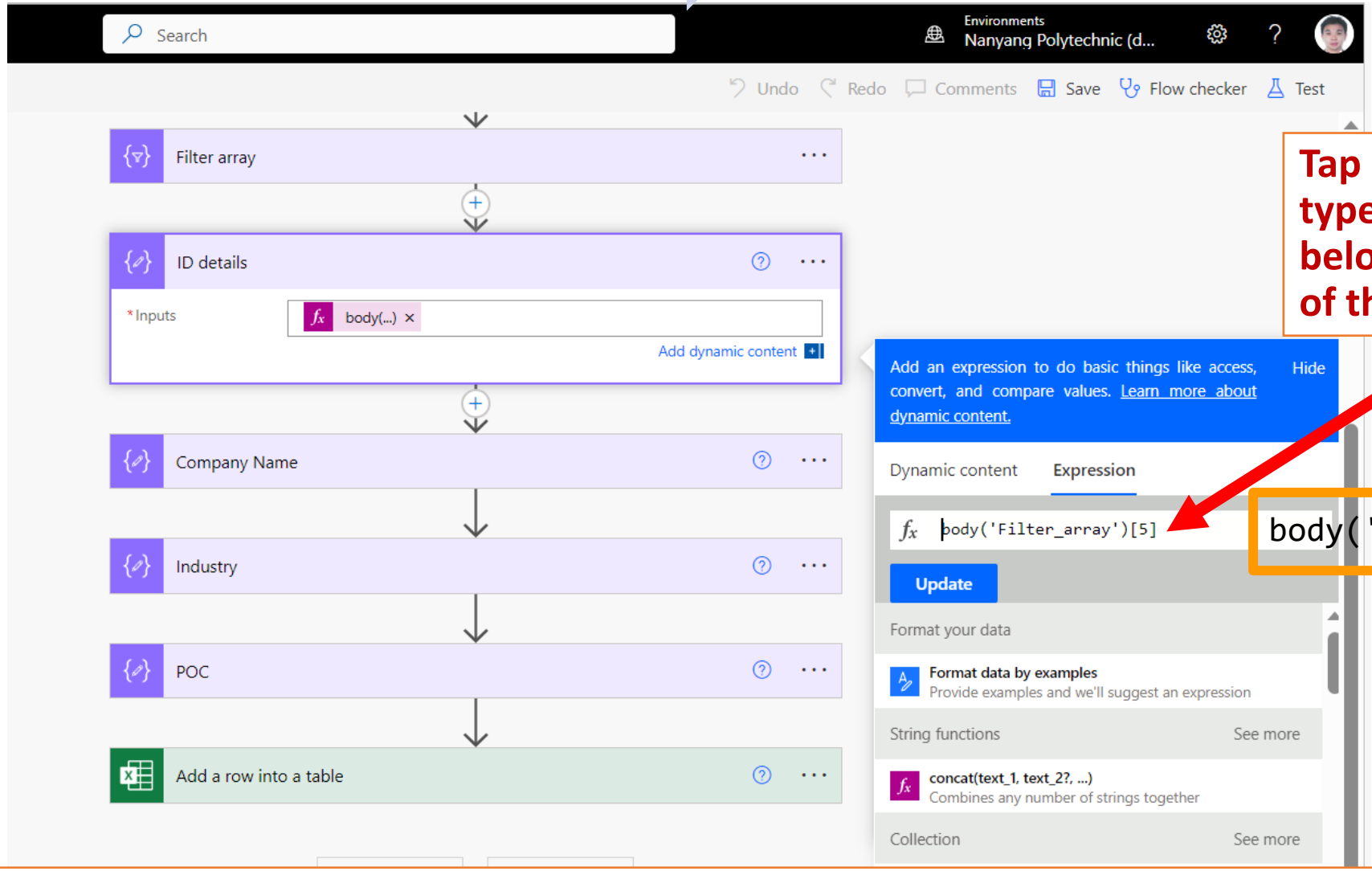
Spilt the text line by line | Filter out the empty lines | **Extract the email details**



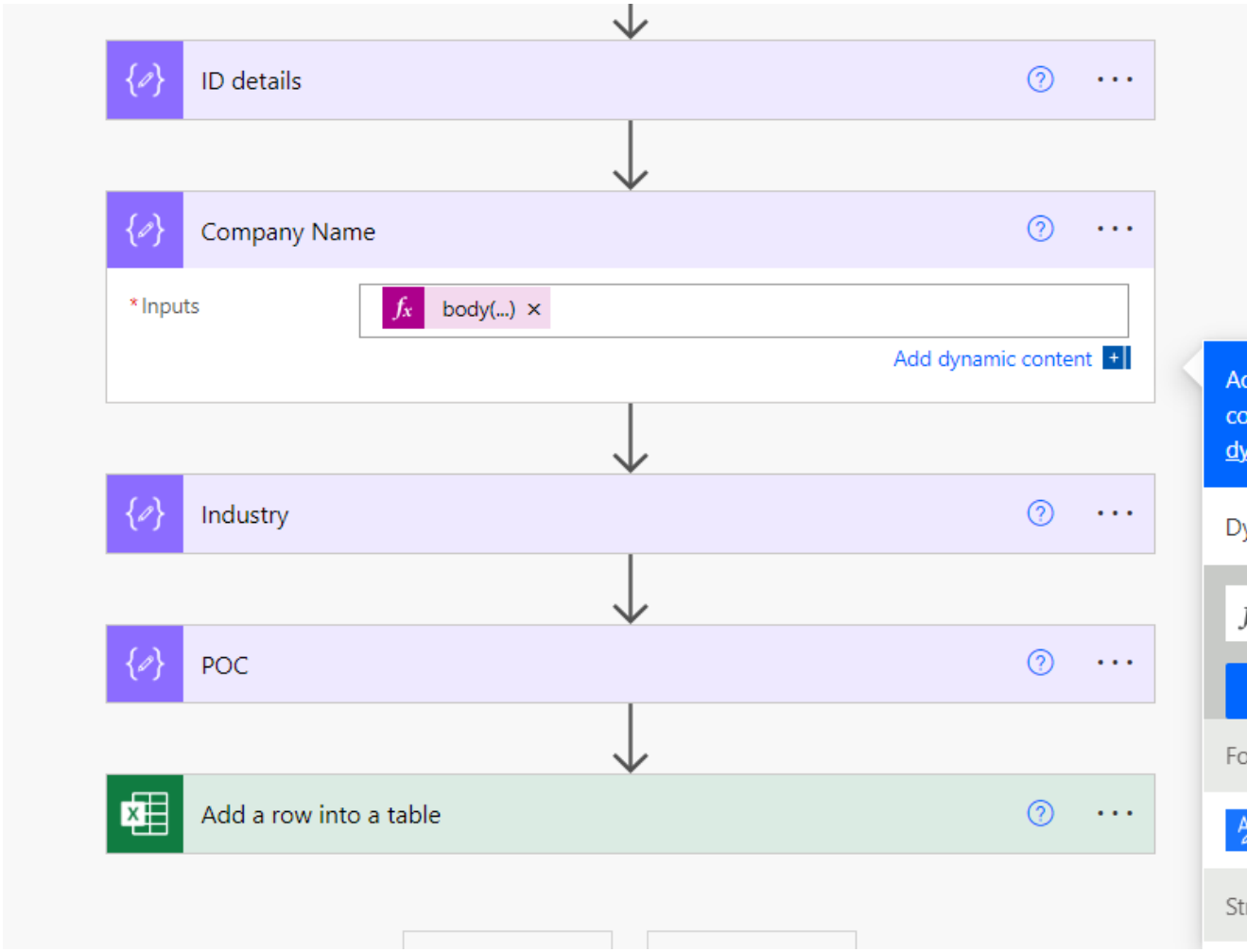
Tap on the inputs and type in the expression below to extract the ID of this particular FormSG

```
body('Filter_array')[5]
```

Note: If there is a space of the naming convention, do add the "_"
When there are my lines of text, in front, we will need to change the number from 5 to a bigger number to index correctly

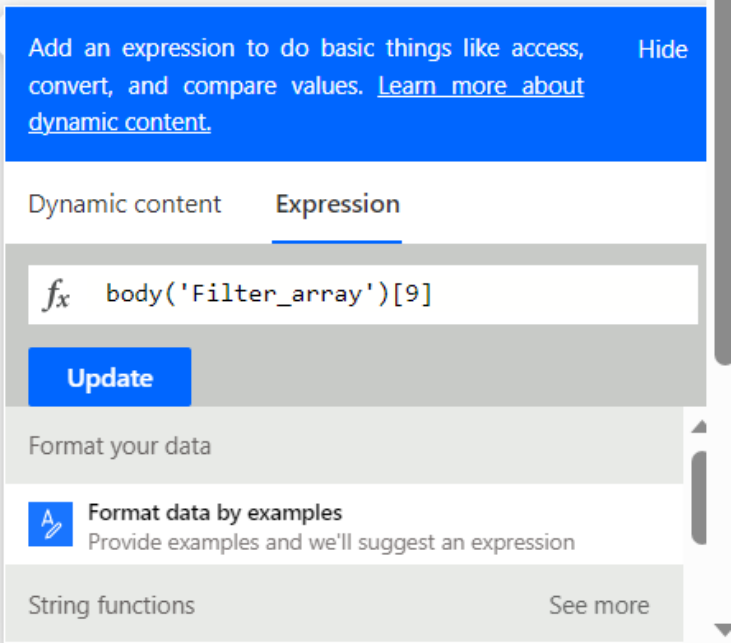
Official (Open)

Spilt the text line by line | Filter out the empty lines | **Extract the email details**



Do the same to extract the Company Name but change the array number to 9

```
body('Filter_array')[9]
```



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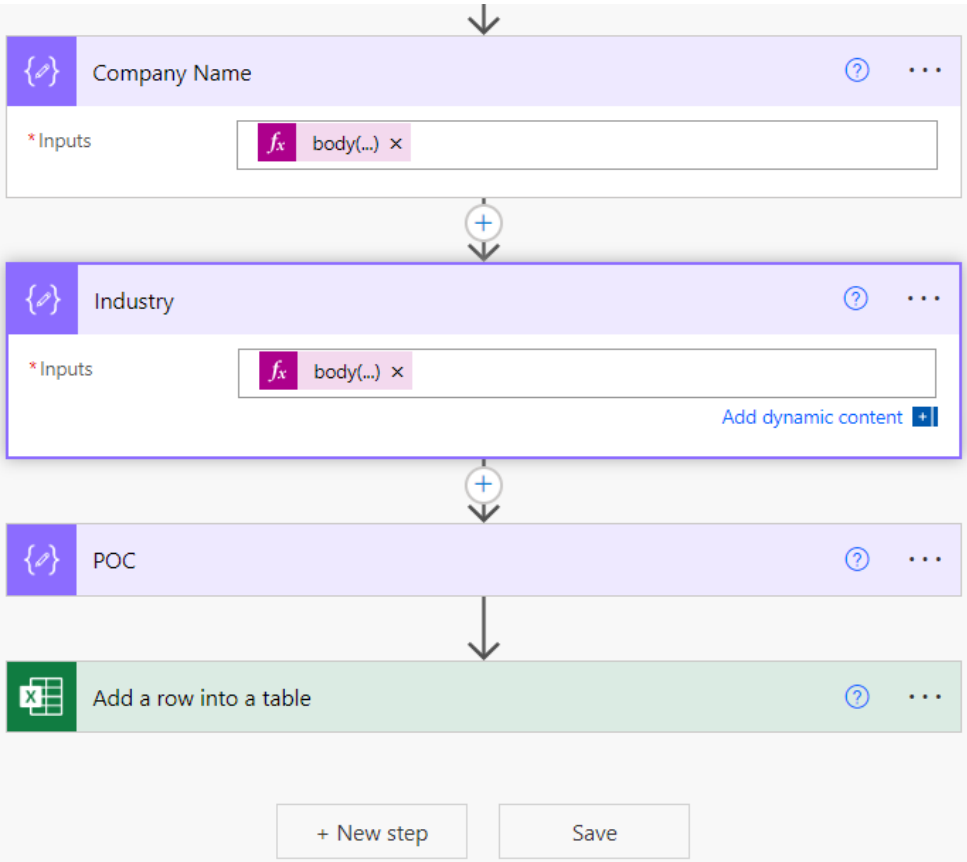
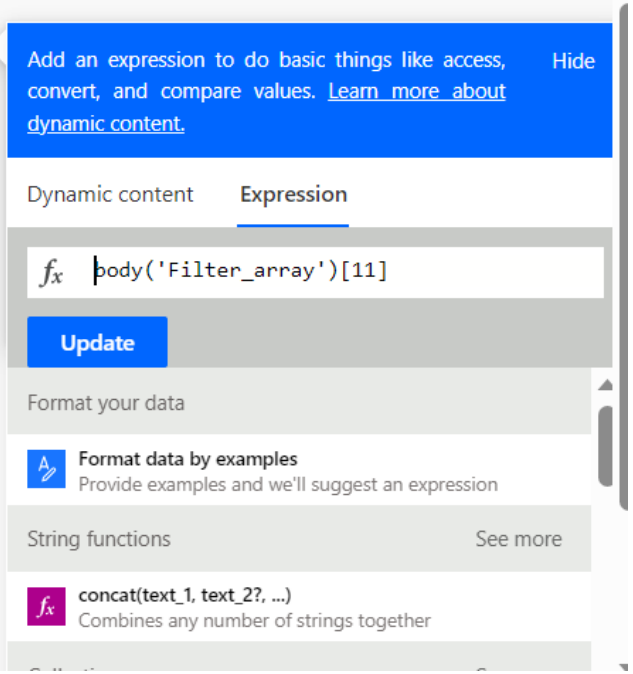
Spilt the text line by line | Filter out the empty lines | **Extract the email details**

Do the same to extract the Industry but change the array number to 11

```
body('Filter_array')[11]
```





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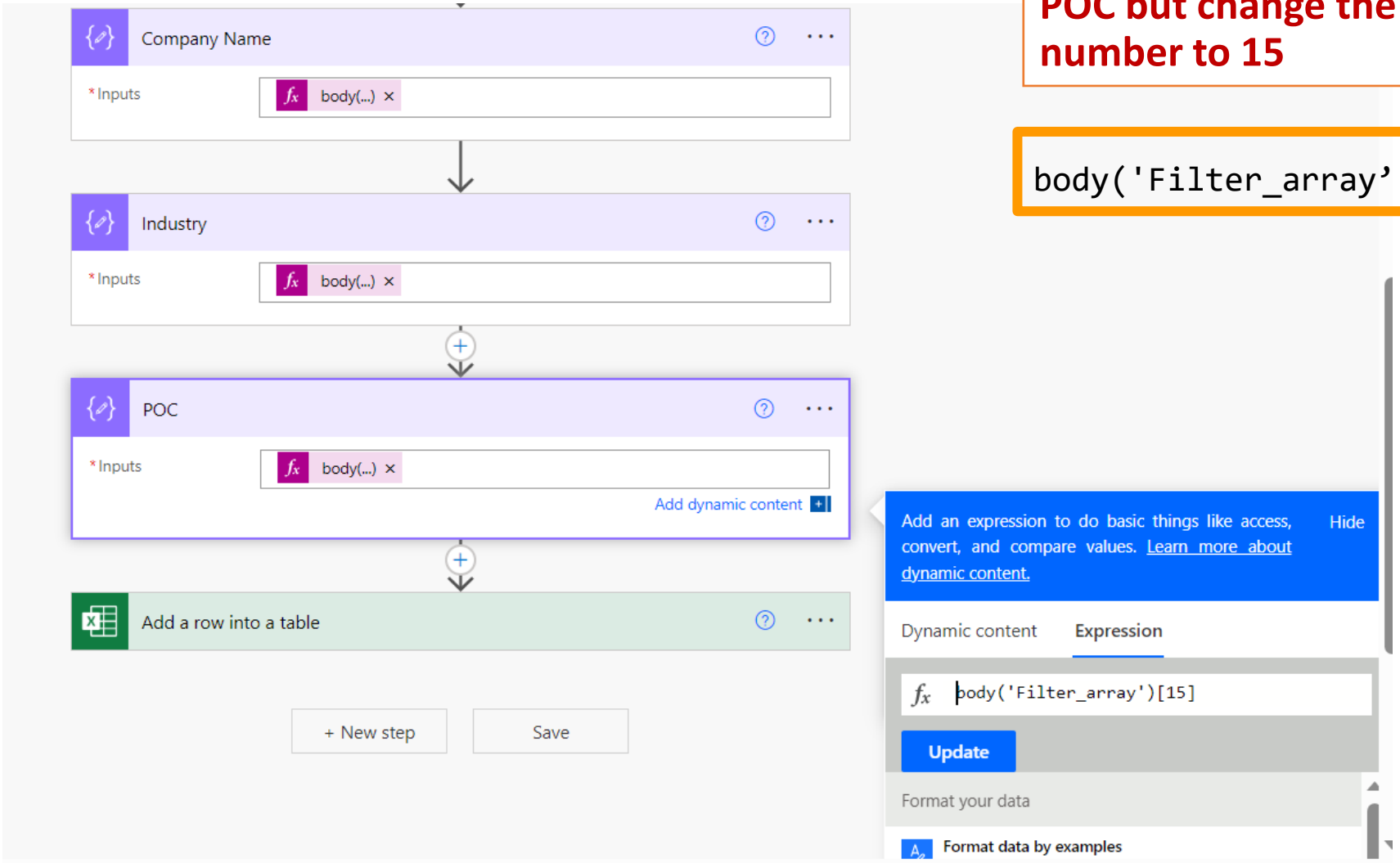
Spilt the text line by line | Filter out the empty lines | **Extract the email details**

Do the same to extract the POC but change the array number to 15

```
body('Filter_array')[15]
```



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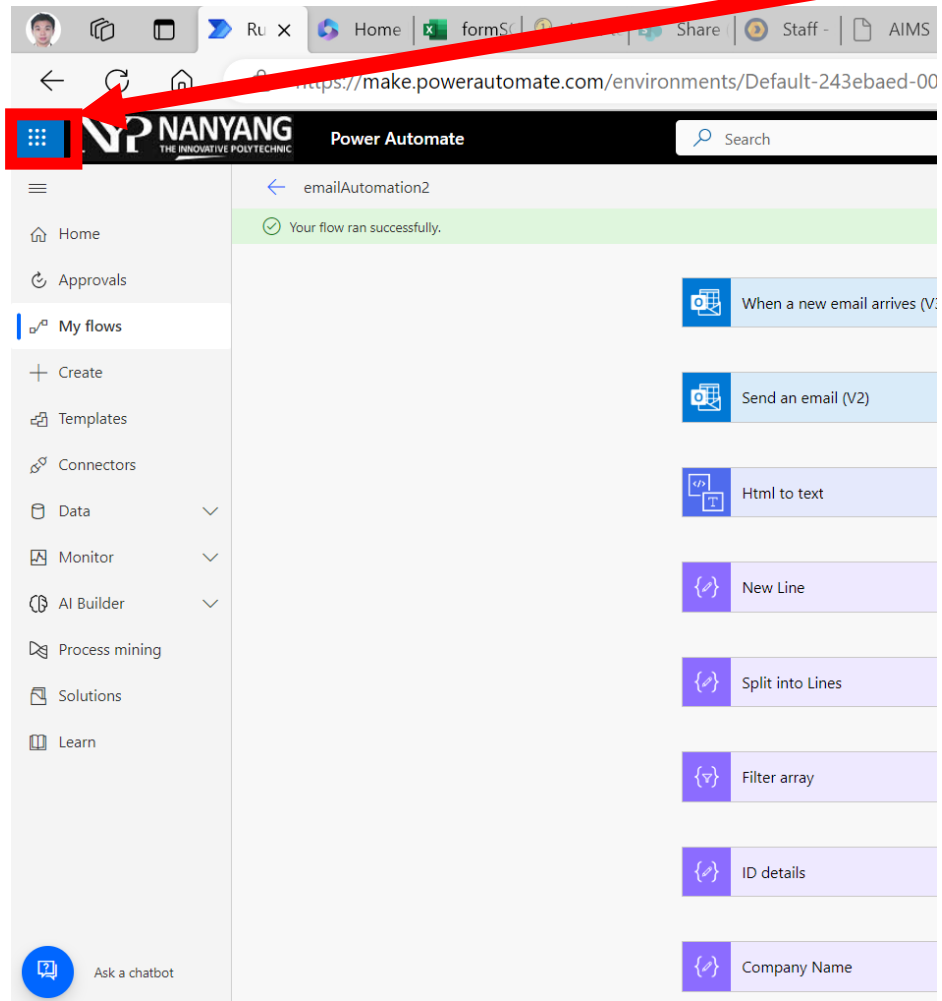
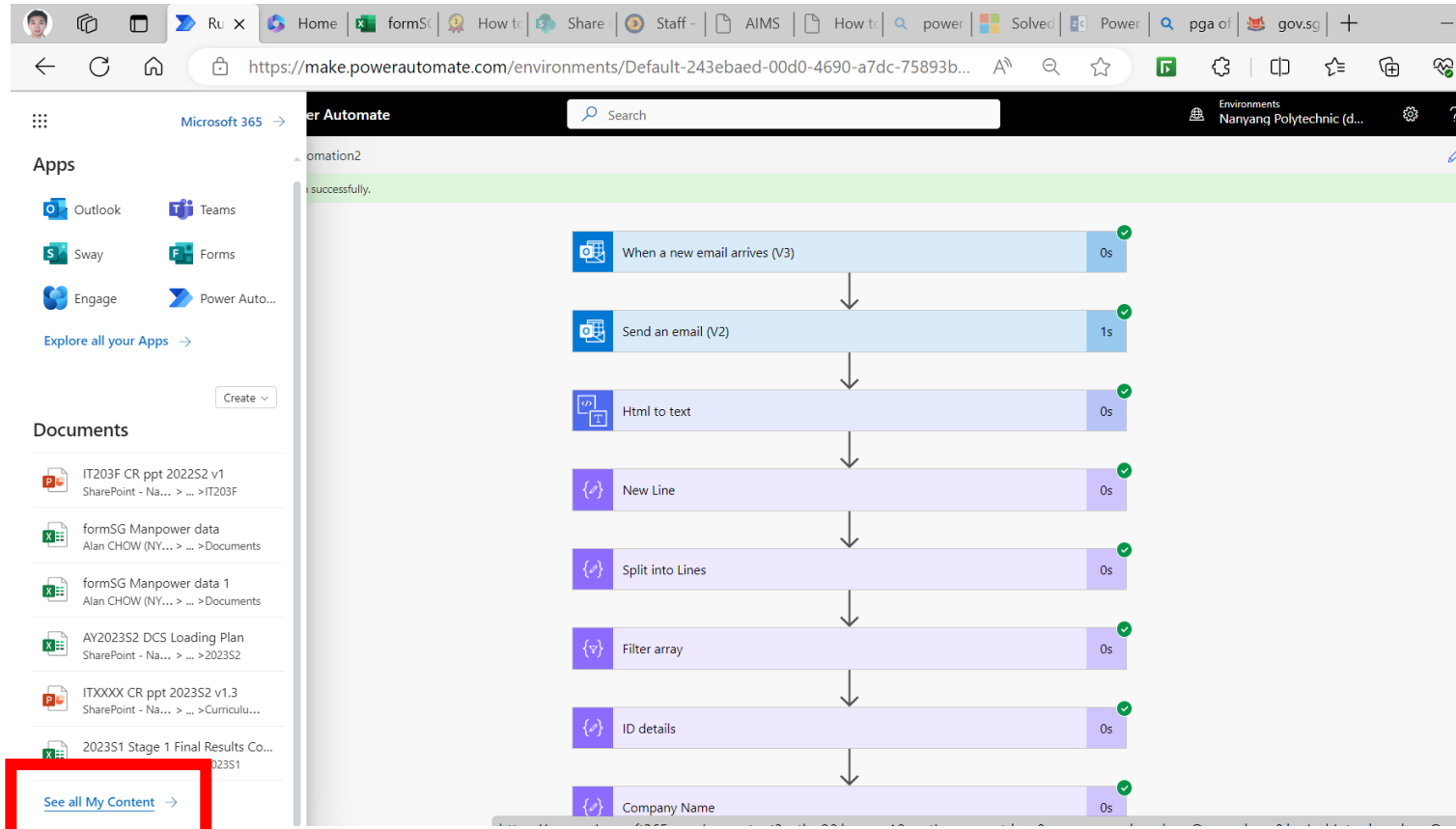
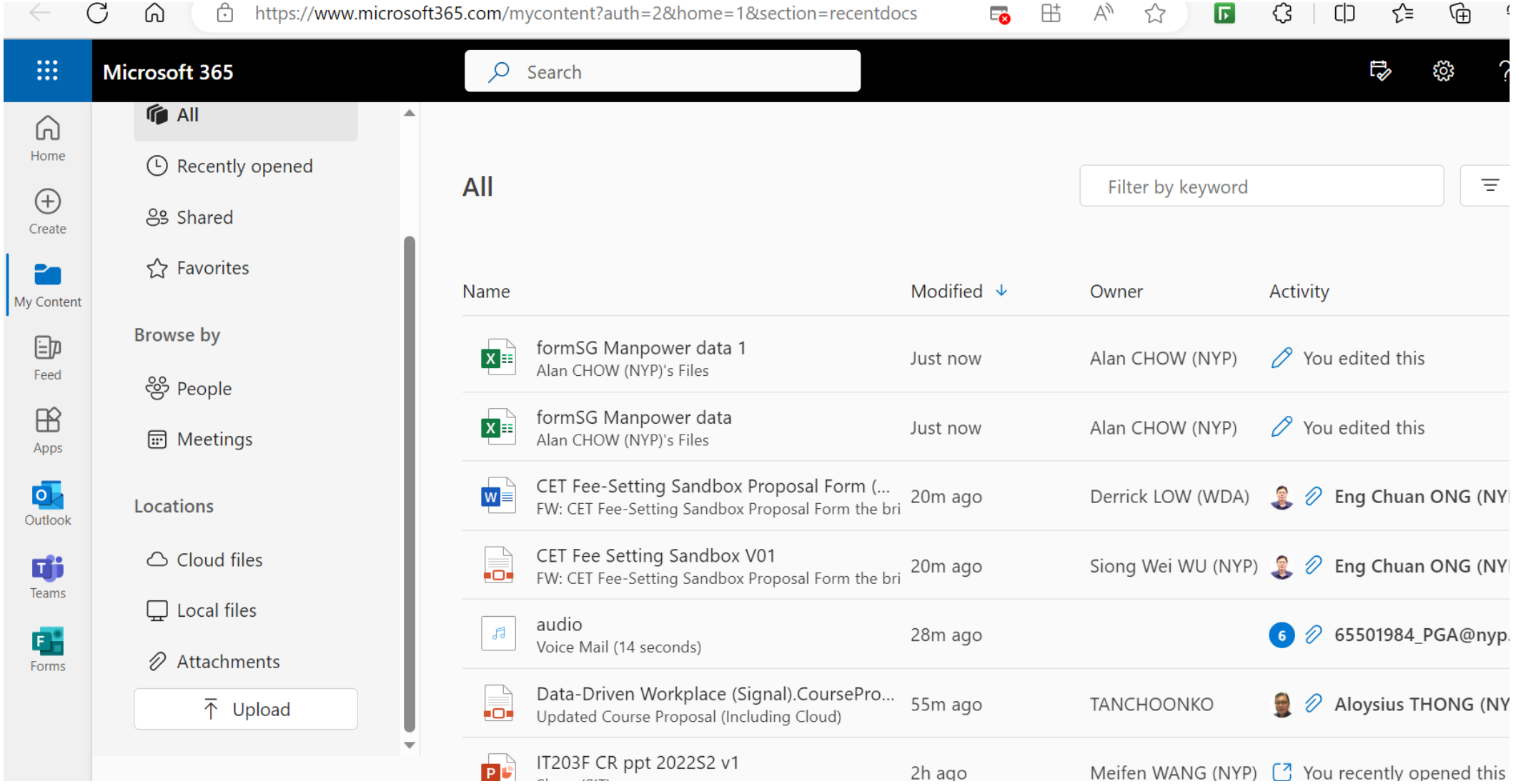
- Go to the SharePoint by clicking on the button





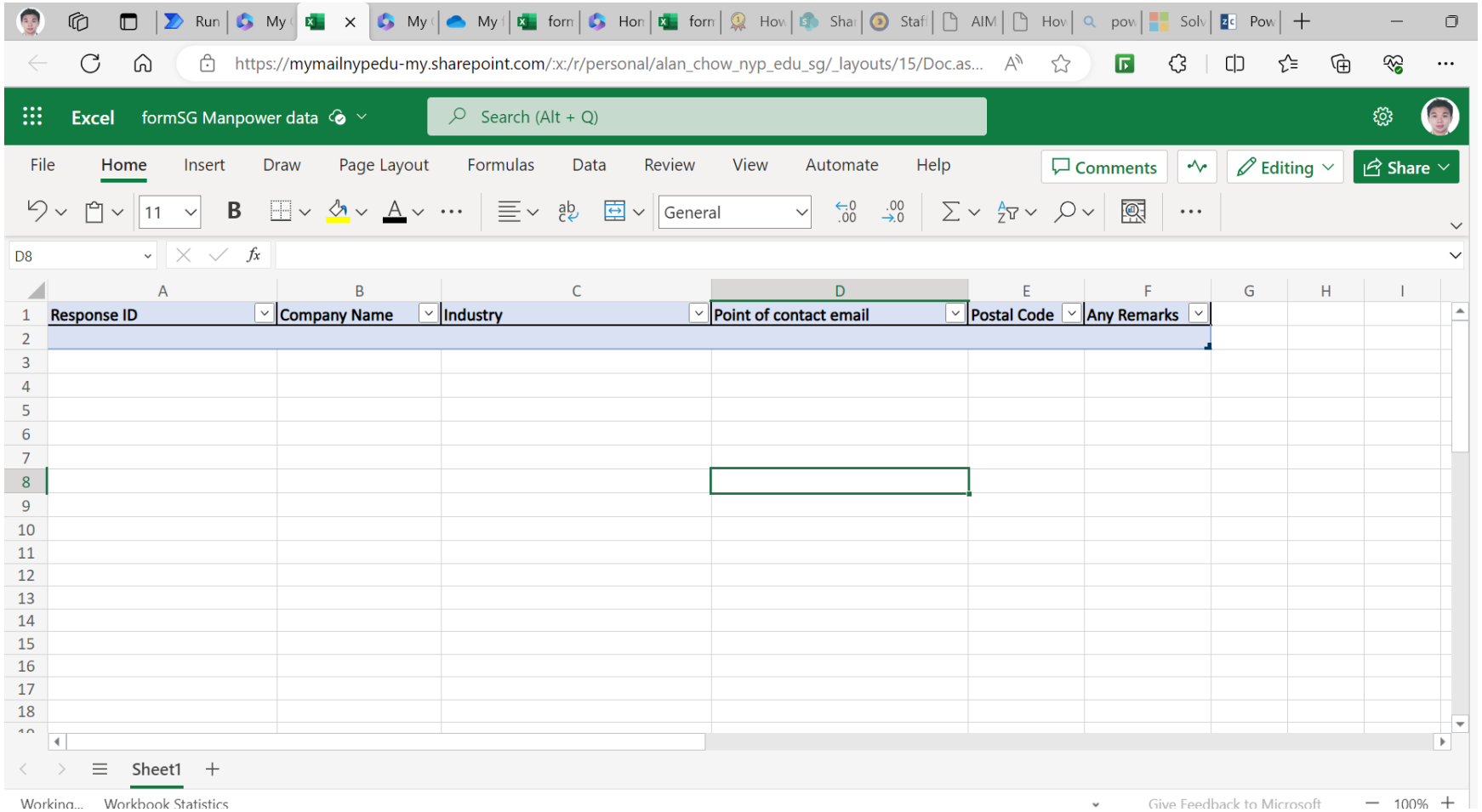
- Click see all My Contents

Official (Open)



- Click on upload and load the formSG Manpower data document

Official (Open)



- Click on the formSG manpower data excel, and check if it can be viewed

Official (Open)

PowerApps – Robotic Process Automation

Intro to RPA & Setup Outlook

Email Automation

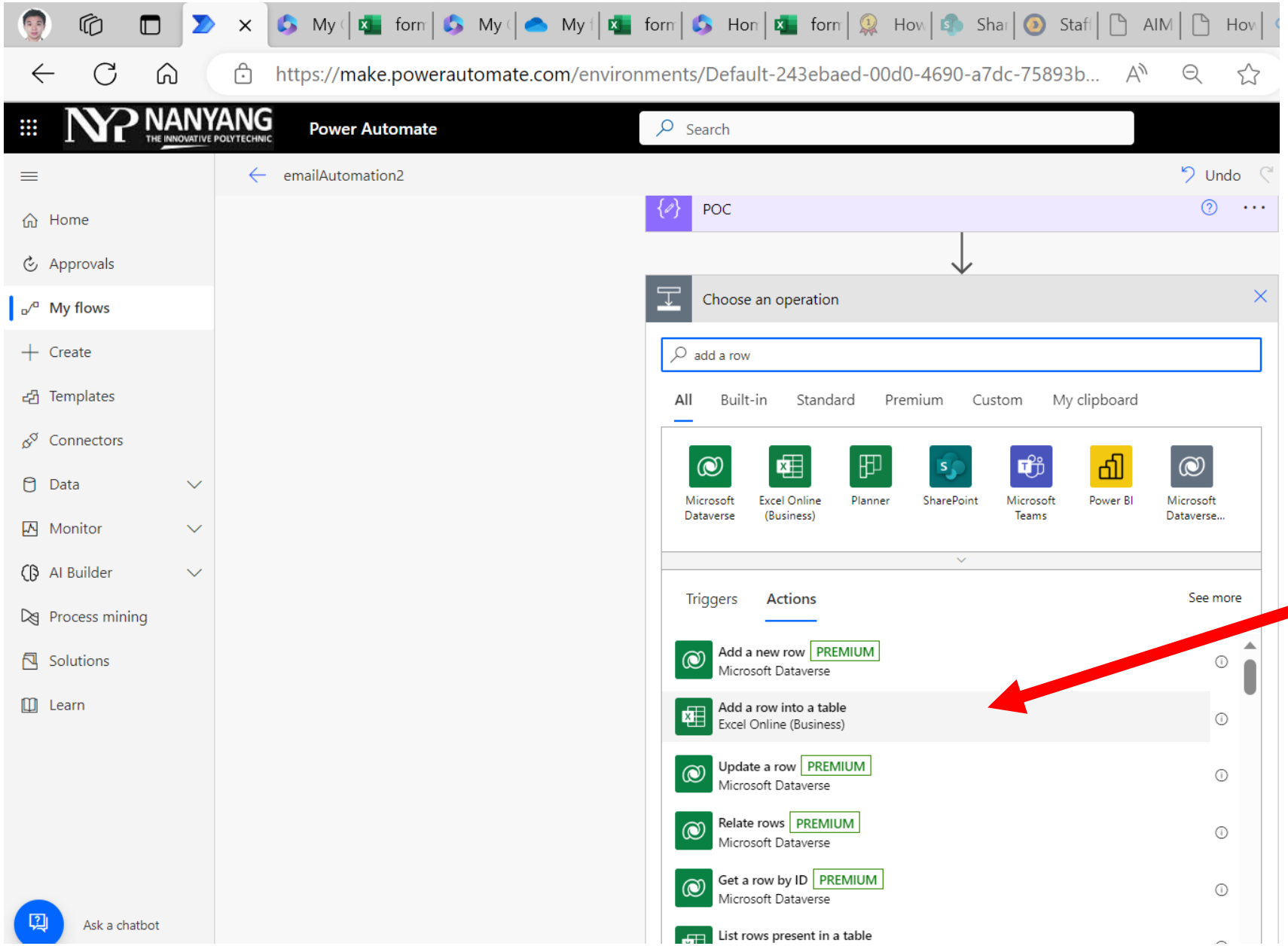
Split-Filter-Extract data

Calibrate SharePoint

Access FormSG excel rows and Automate data entry

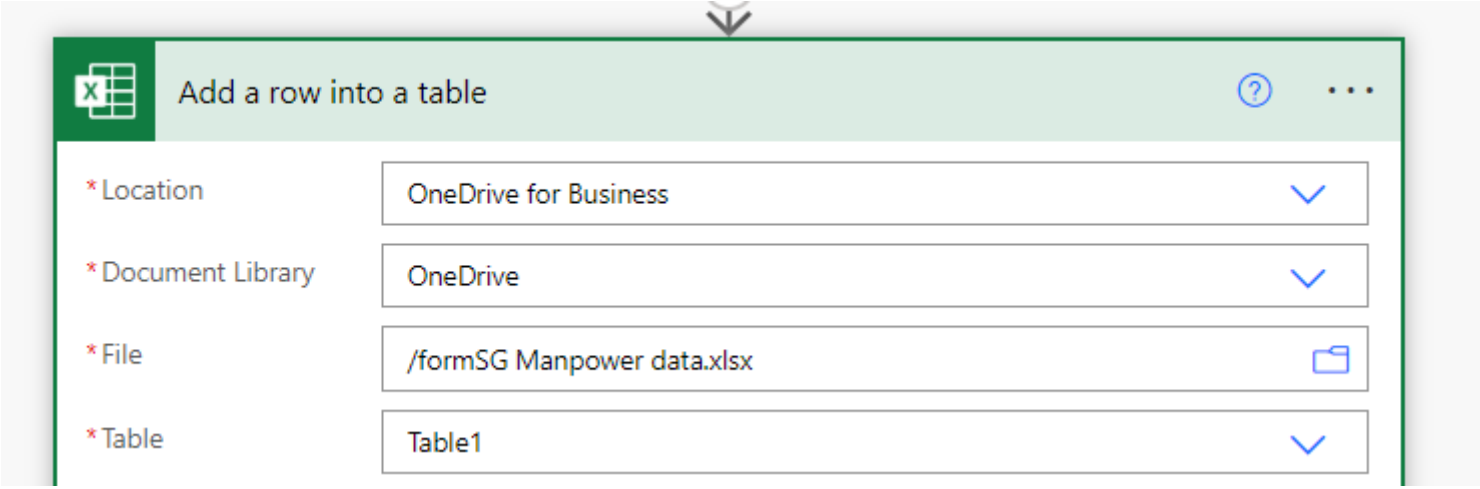
Email Notification to next user to respond and update SharePoint

Official (Open)



- Search for the operation “add a row” and click on

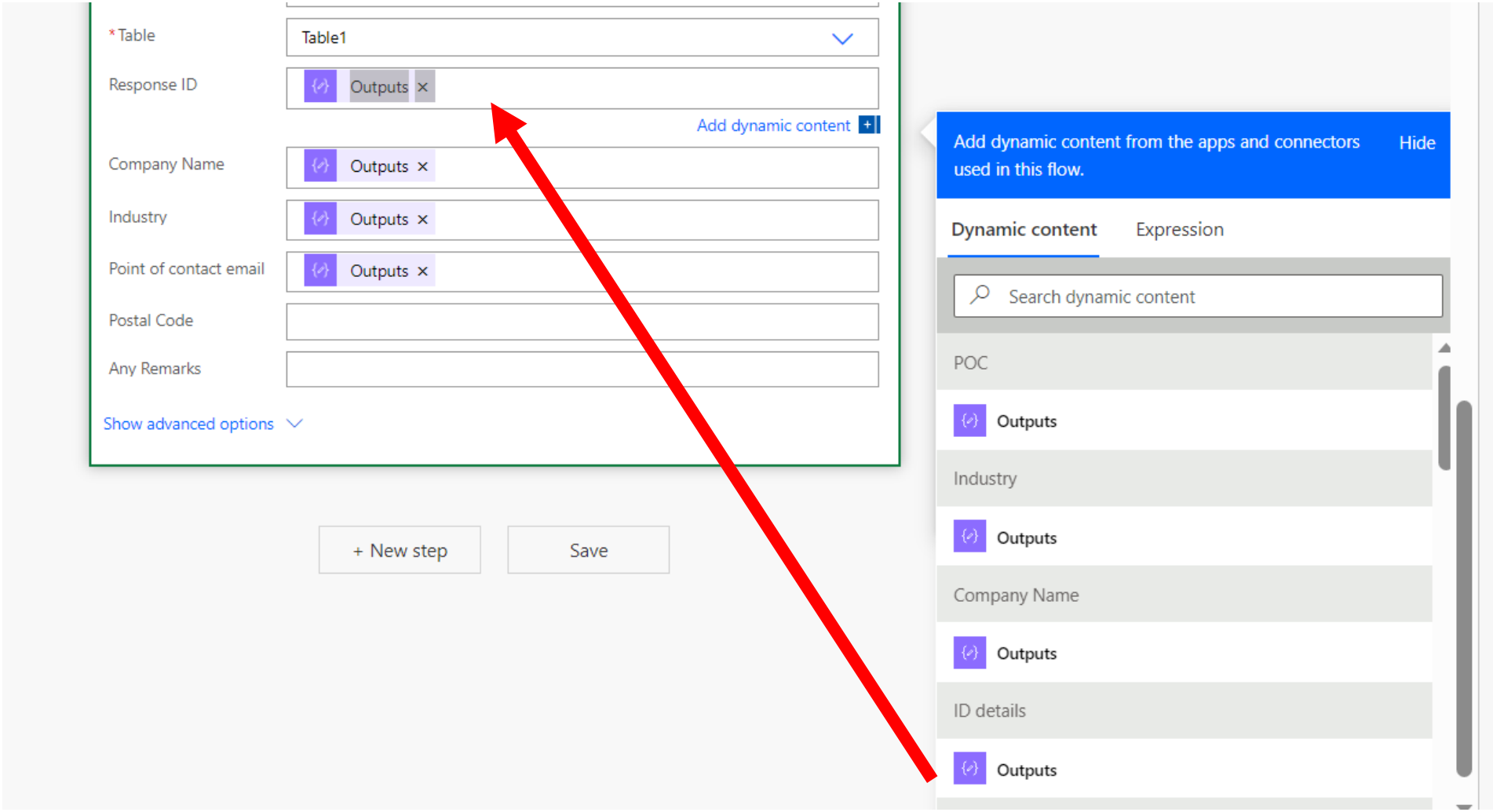
Official (Open)



- Select the fields as shown.

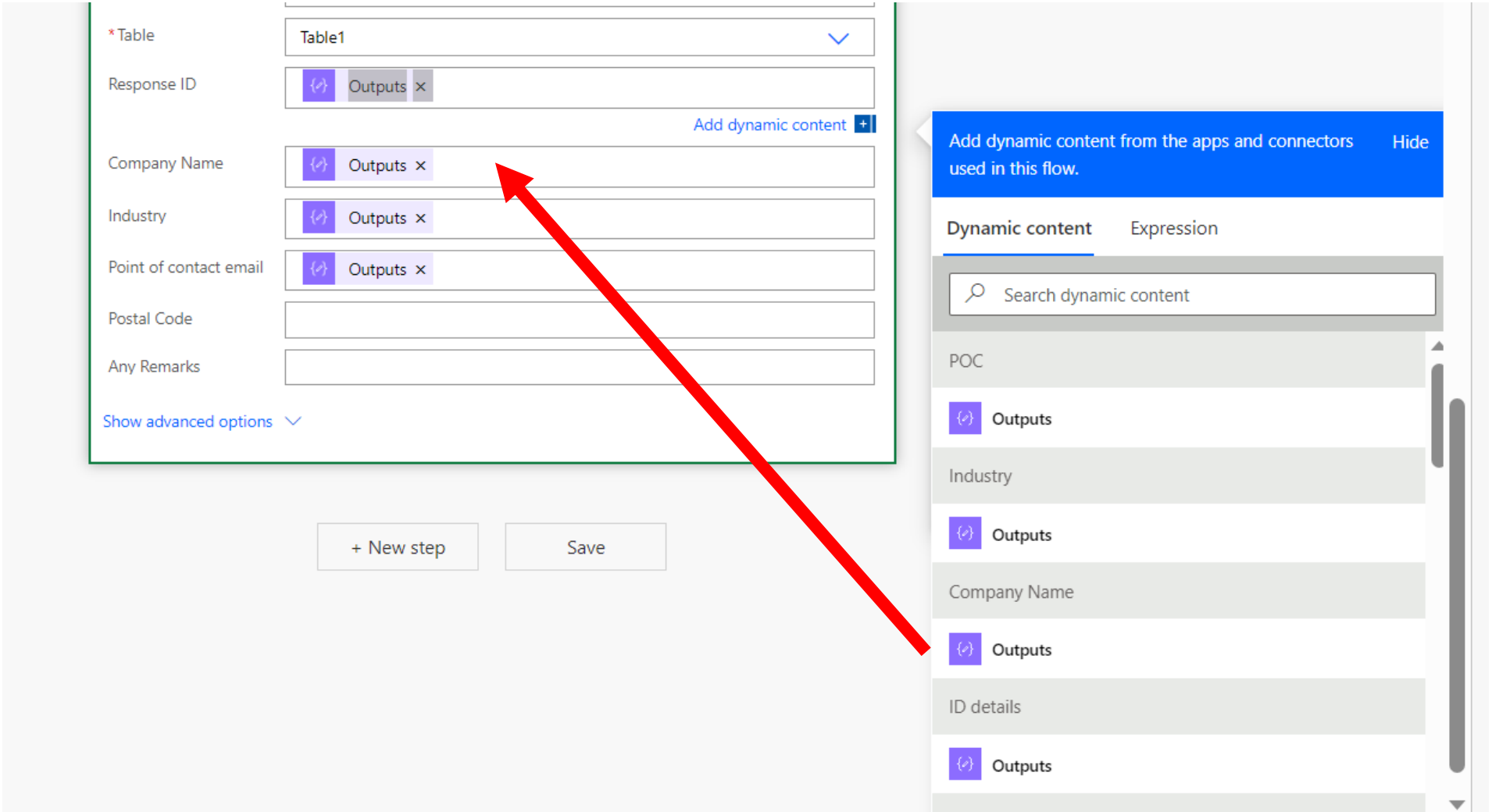
Official (Open)

- For the response ID, it is the first data field in the excel. Click on add dynamic content. Then select the “ID details” output



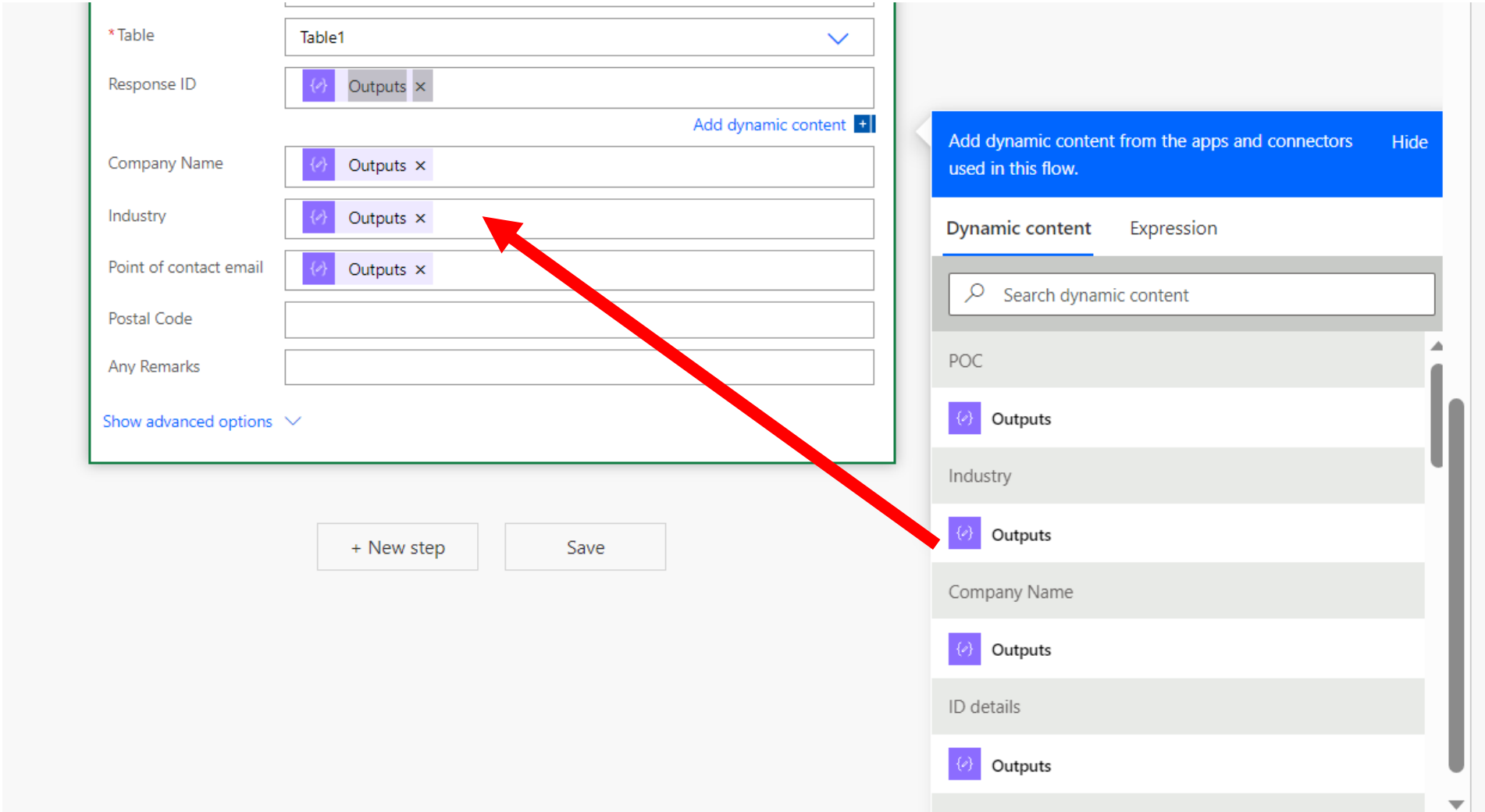
Official (Open)

- For the Company Name, it is the second data field in the excel. Click on add dynamic content. Then select the “Company Name output”



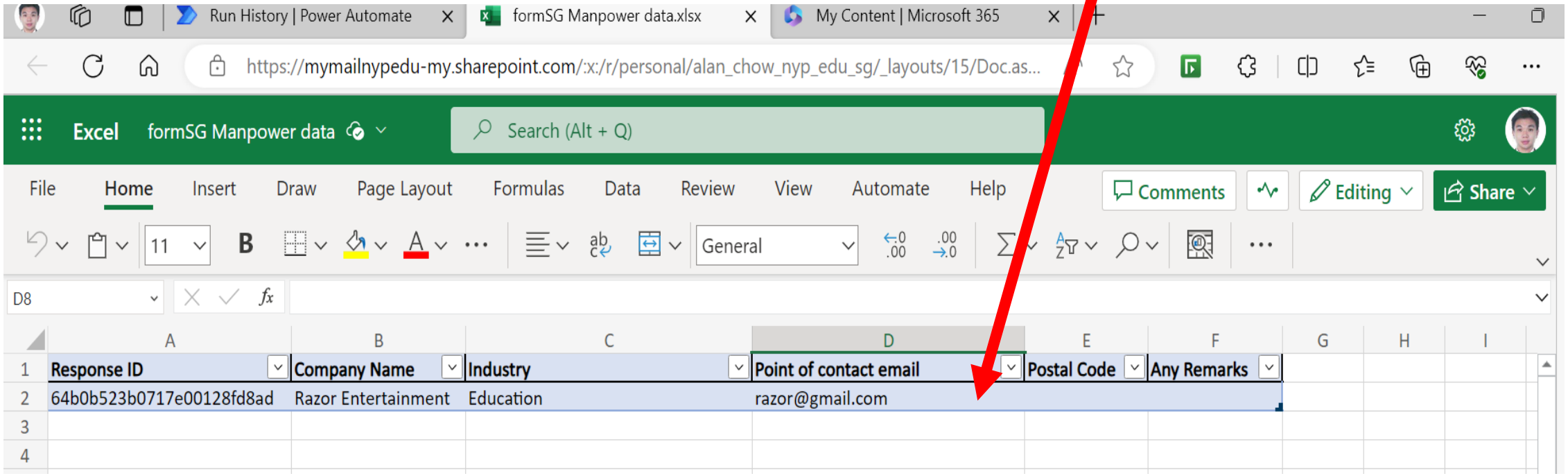
Official (Open)

- Do the same for both the Industry and Point of contact email.



Official (Open)

- Once done, test out the flow and check if the data is automatically entered into your excel.



So if you have 100 of such emails, RPA will still automatically enter all with 100 entries ☺

Official (Open)

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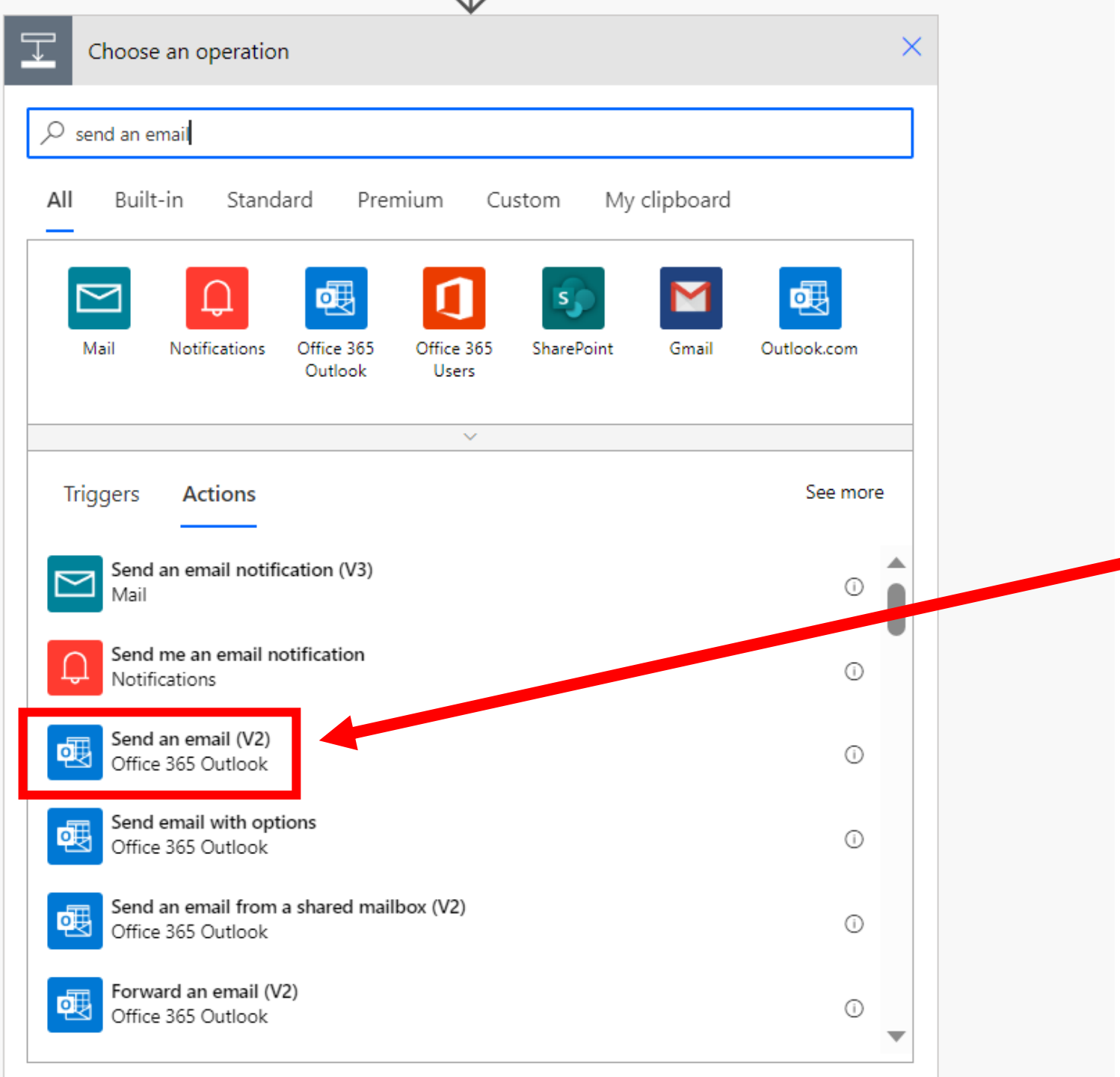
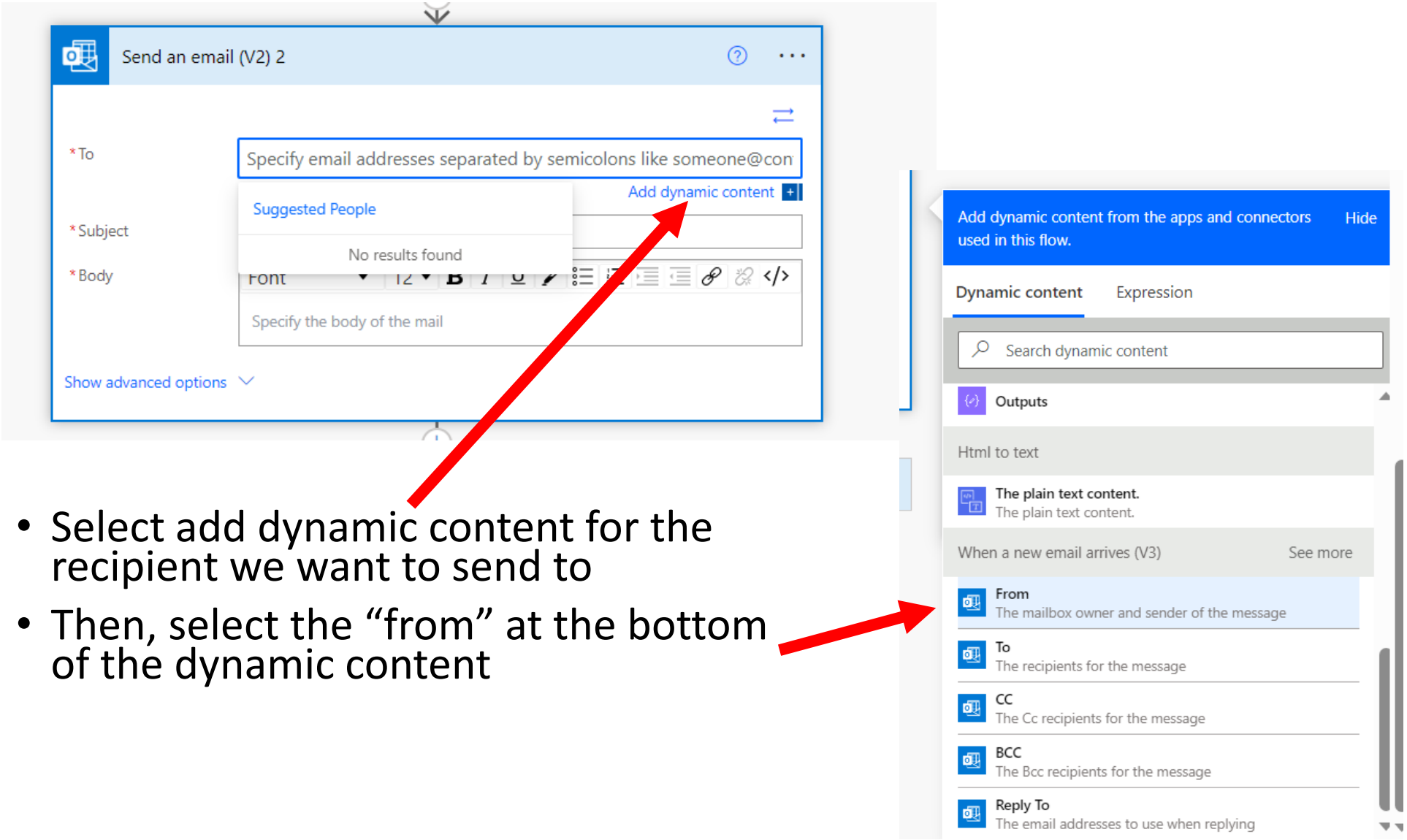
Official (Open)



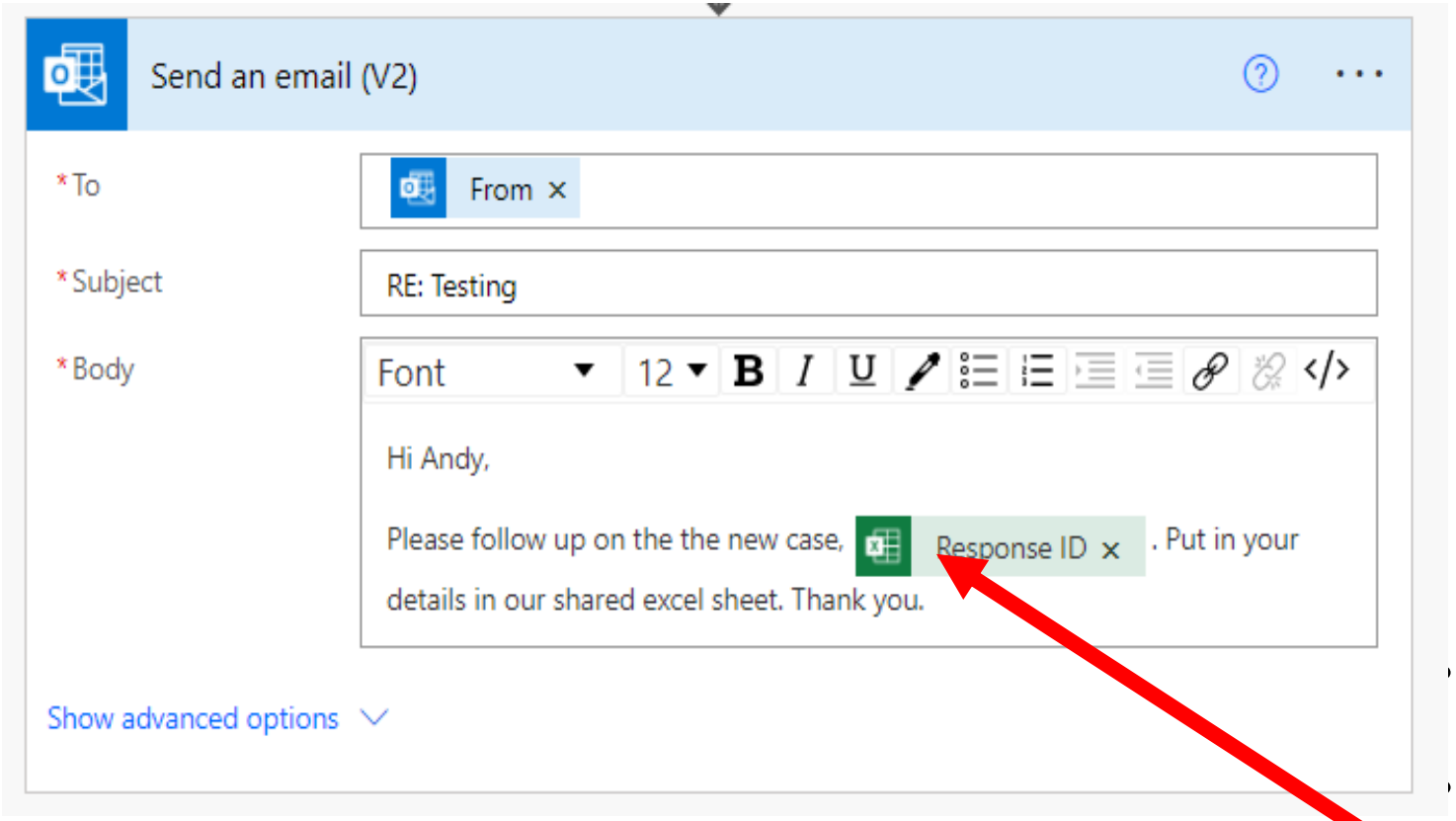
- Add a new step and search for “send an email”
- Then click on “send an email (v2)”

Official (Open)

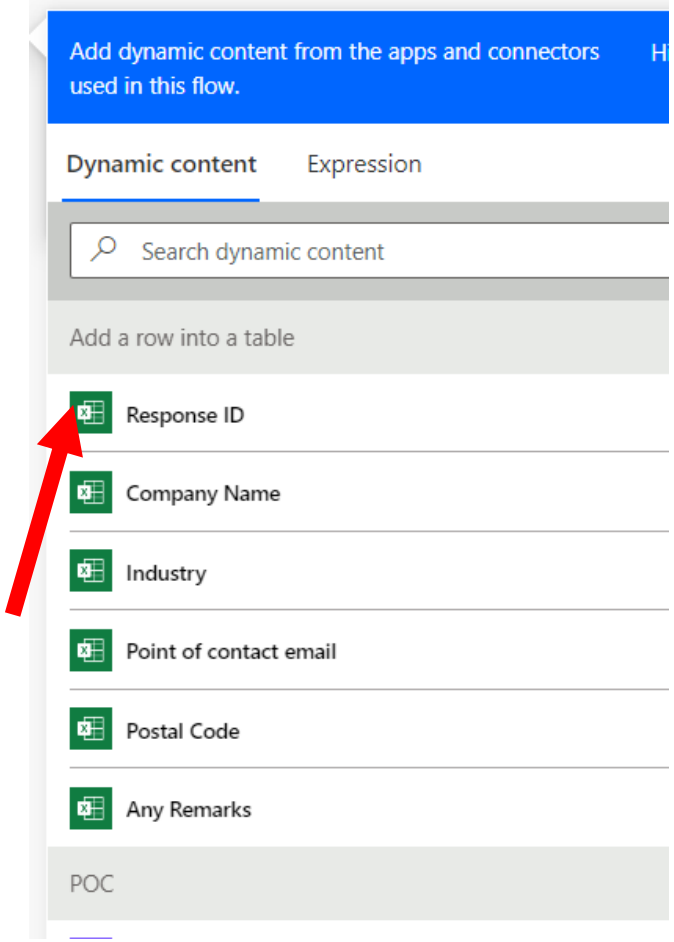


- Select add dynamic content for the recipient we want to send to
- Then, select the “from” at the bottom of the dynamic content

Official (Open)



- Key in similar details as shown
- You may select more dynamic content to meet your business needs

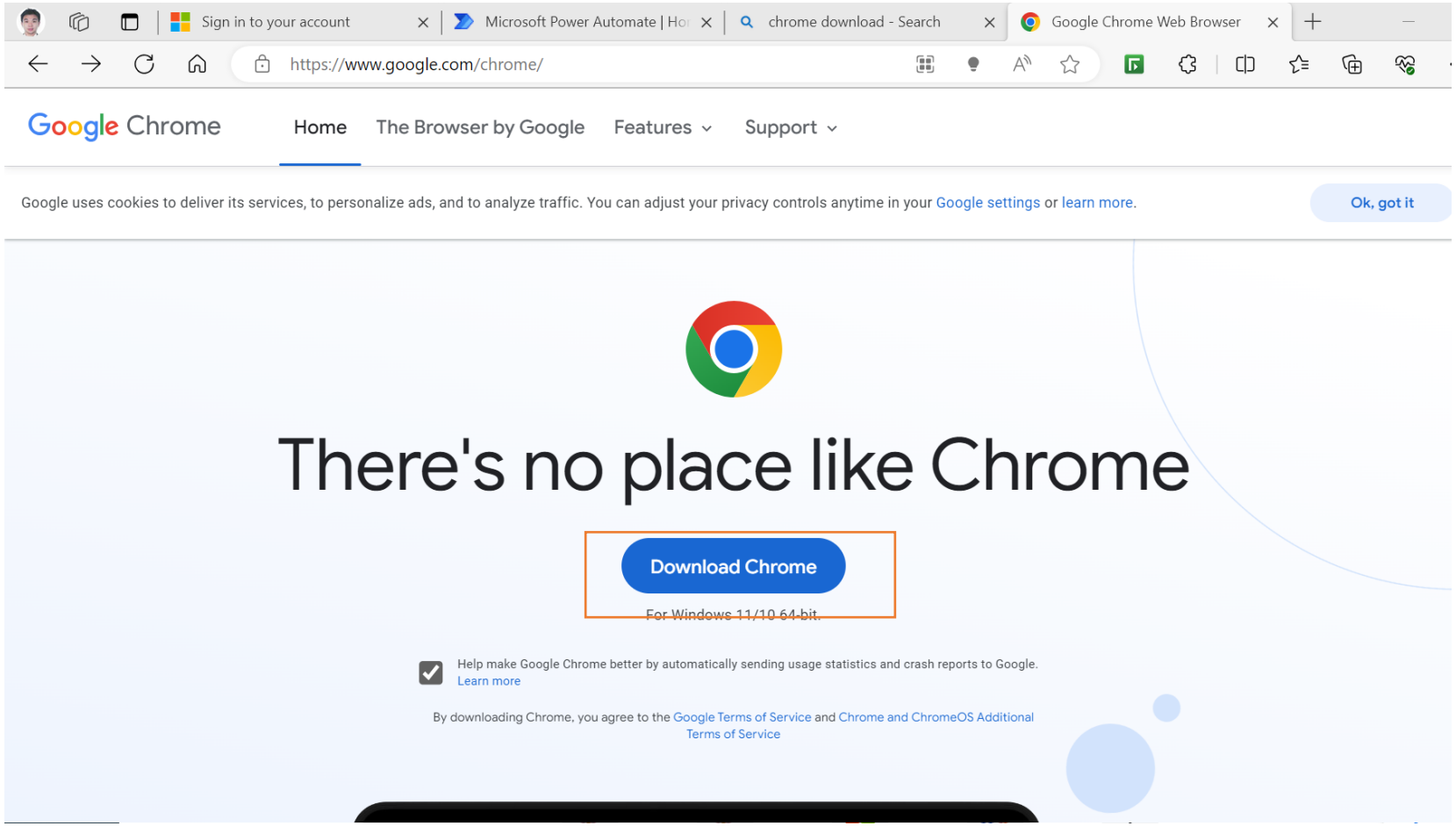


Official (Open)

Supplementary Slides

Steps to install Chrome Power Automate extension

Official (Open)



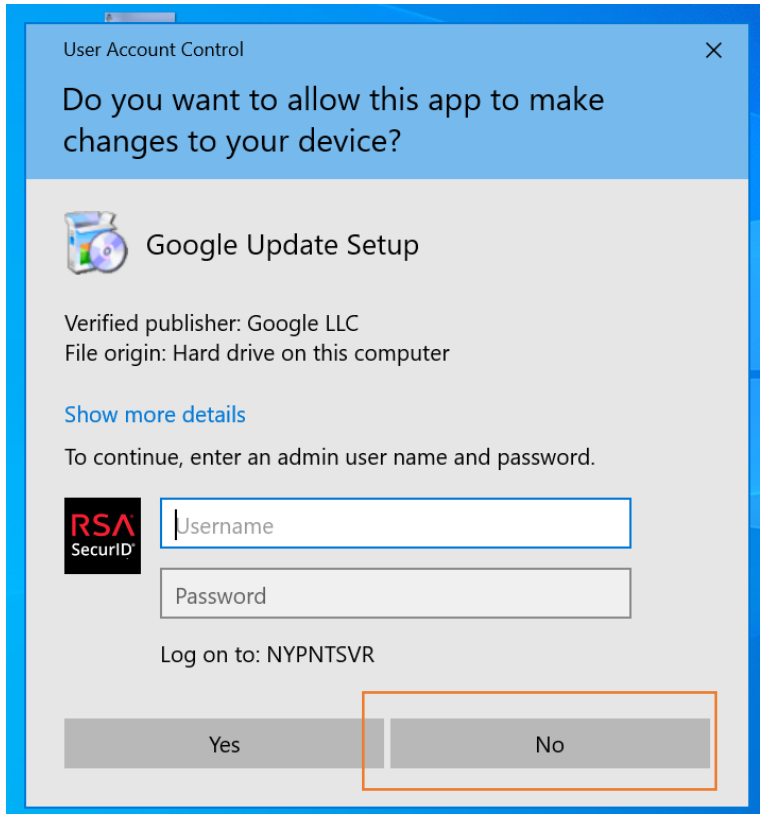
1) **Go to** https://www.google.com/chrome/

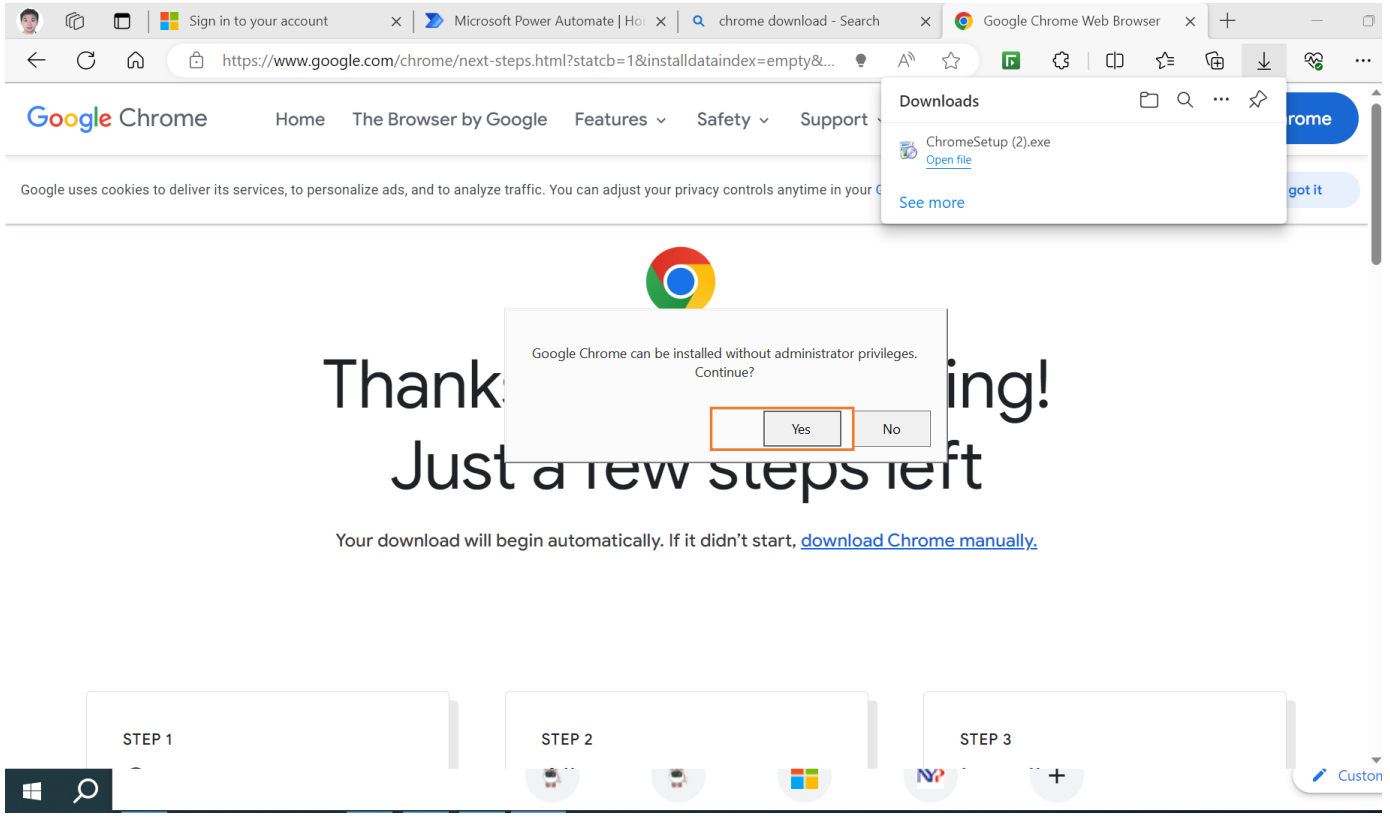
2) Click on the Download Chrome

Official (Open)

3) Click on “No” when the user account control pop out

4) Install without administrator privilege



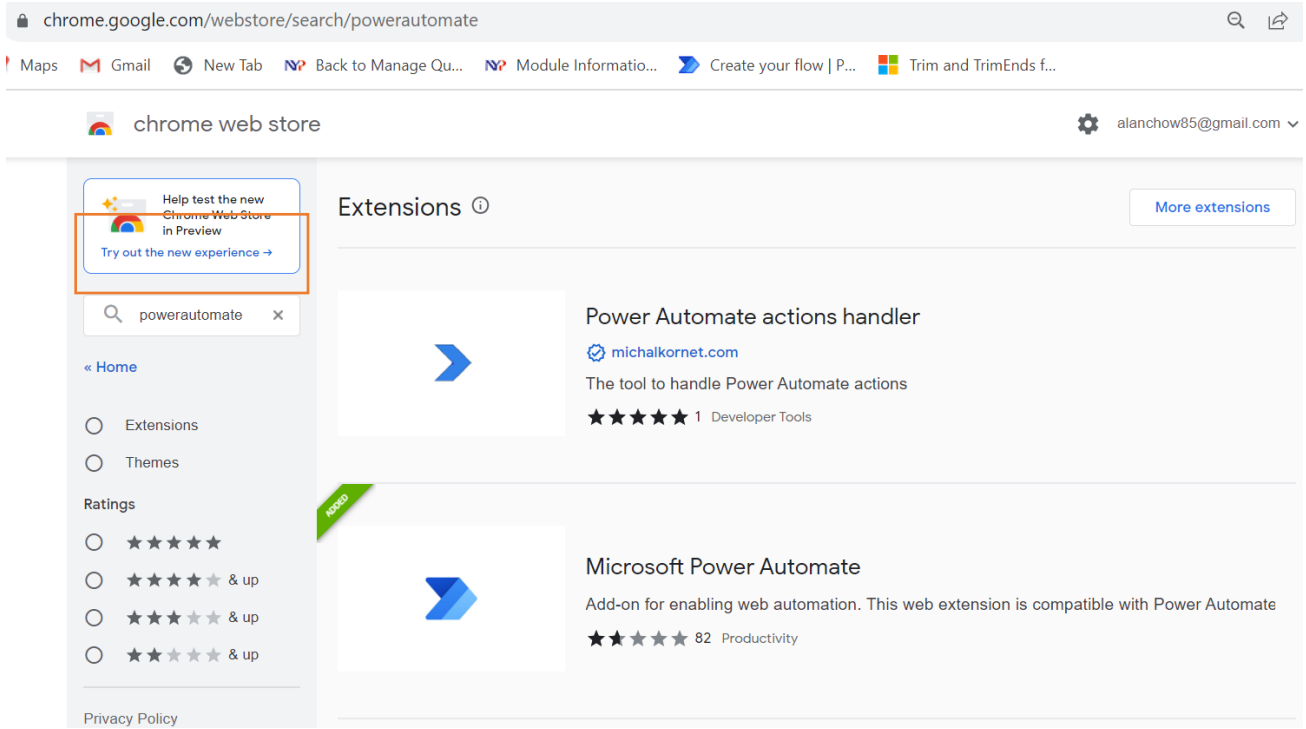


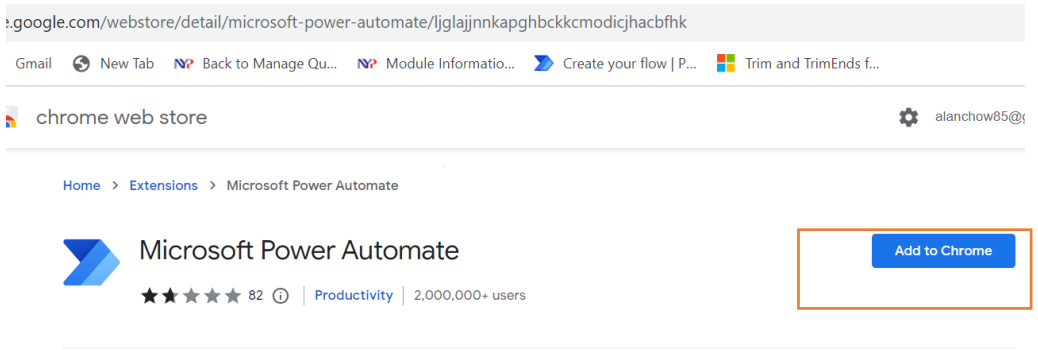
Official (Open)

5) Go to https://chrome.google.com/webstore/search

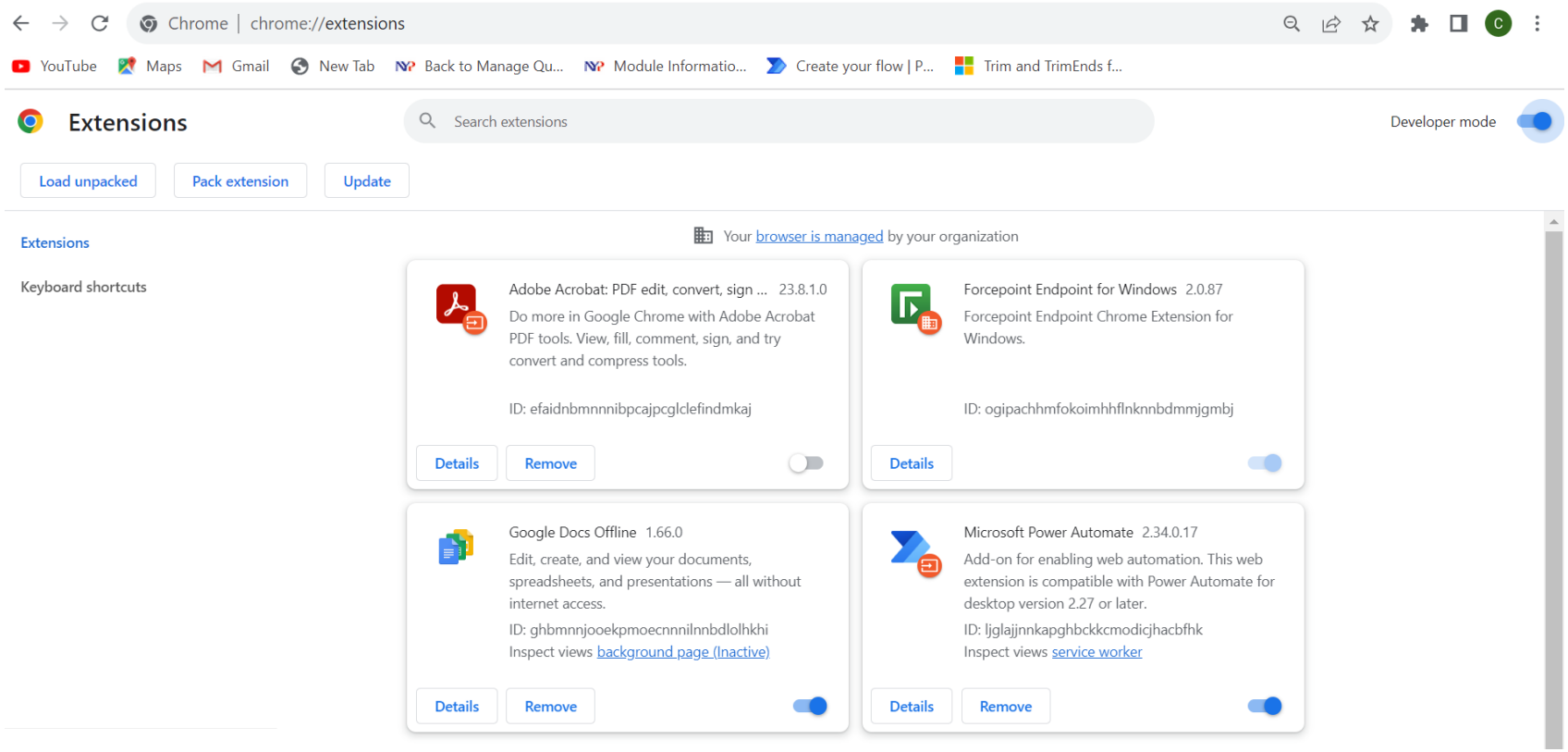
6) And search for **powerautomate**

7) Then click on add to Chrome





Official (Open)



8) Go into the Chrome browser and type **chrome://extensions**

to check if the extension is installed