

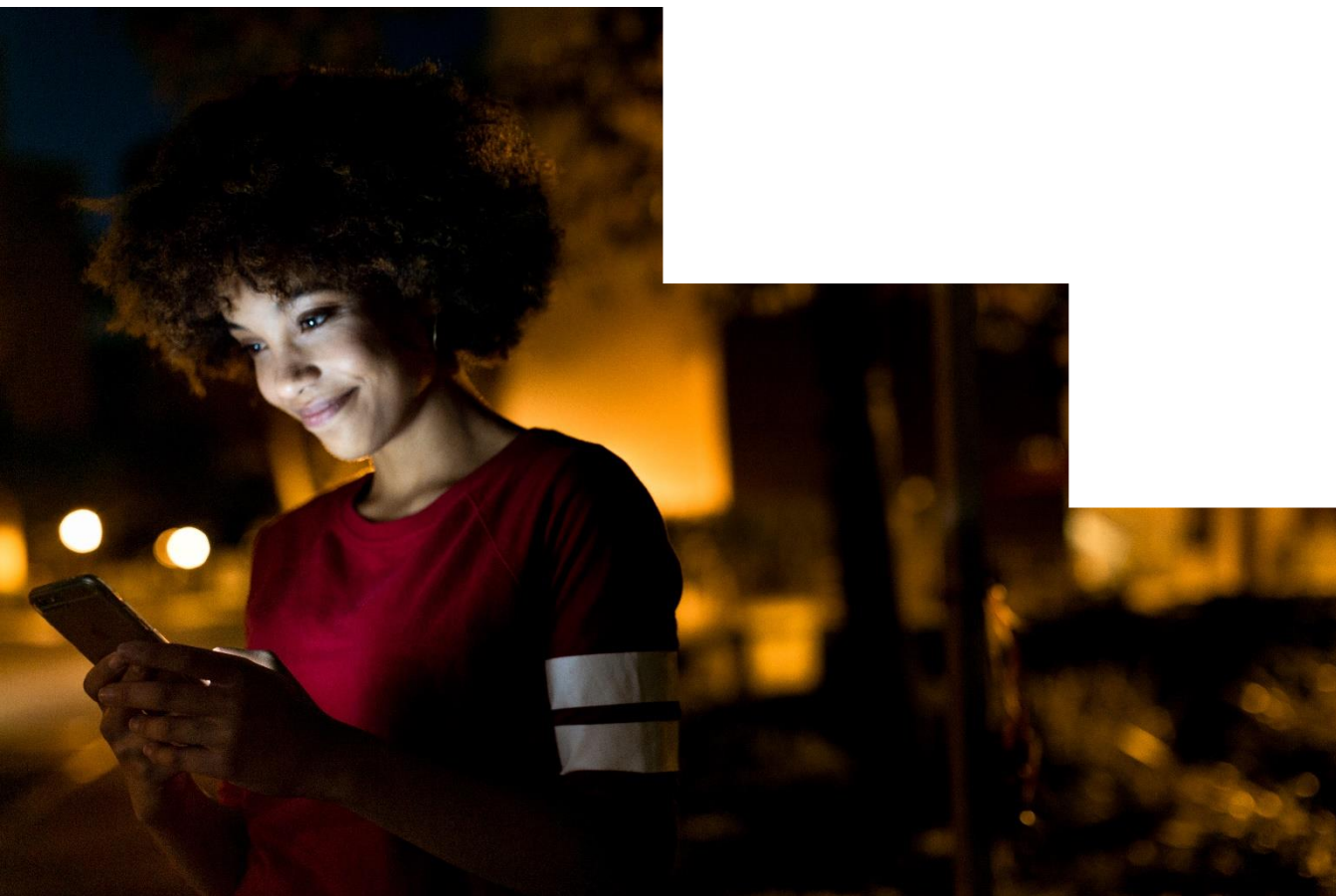


Robotic Process Automation in a Day

Lab 9 – Web automation using Power Automate
Desktop

90 mins

April 2021



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Lab Overview

You will complete the following tasks in this lab:

- **Exercise 1 – Build a Power Automate Desktop subflow to write notes into Microsoft Excel**
 - Create a process with fixed value variables.
 - Test and run this process.
- **Exercise 2 – Web automation using Power Automate Desktop**
 - Web data scraping and writing to Microsoft Excel.
 - Test and run this process.

Prerequisites

Please complete **lab 1.1, pre-requisite task 3: Start per user plan with attended RPA trial license** and **lab 1.3, installation of Power Automate Desktop**. To use Power Automate Desktop, a user must own either a **trial** or **paid** per user plan with attended RPA.

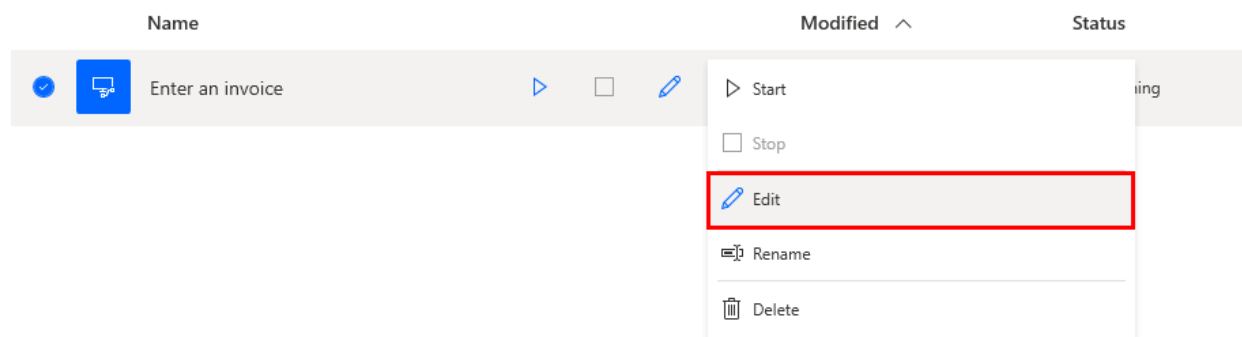
For the exercises, please complete **Lab 3**.

Exercise 1 - Build a Power Automate Desktop subflow to write notes into Microsoft Excel

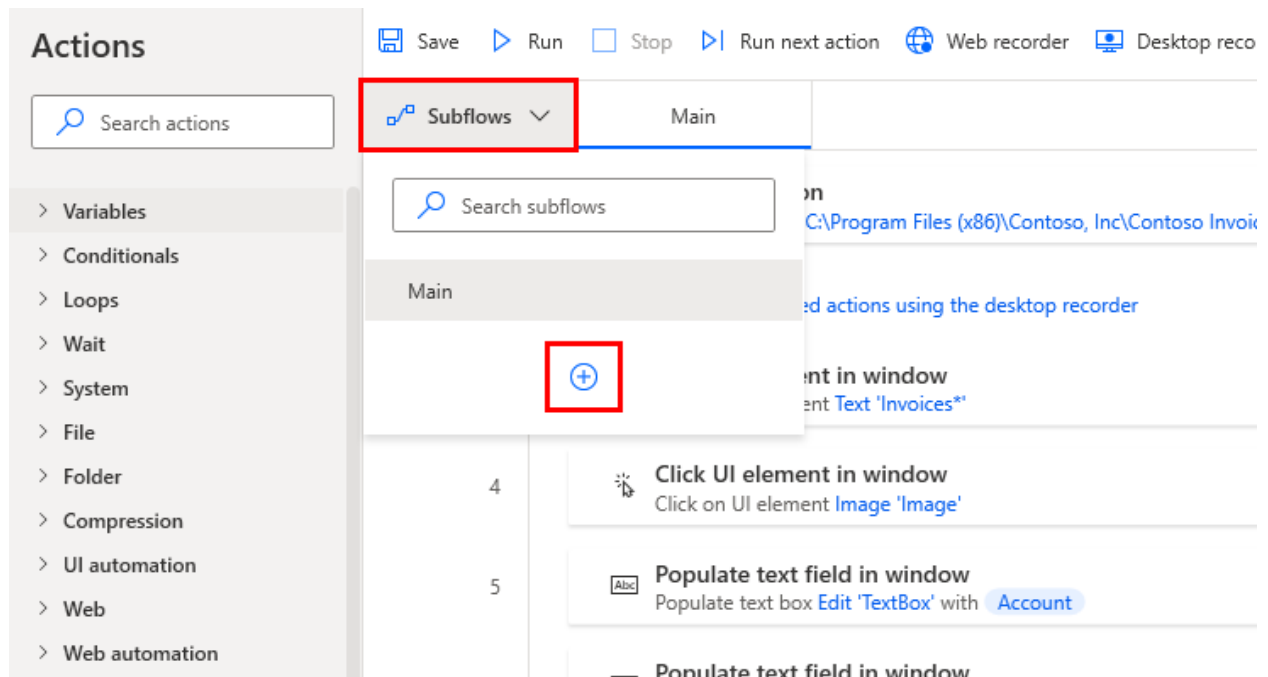
In this exercise we will create a process in Power Automate Desktop which will write the values of variables into Microsoft Excel.

1. In **Power Automate Desktop**, Edit **Enter an invoice** flow you created by clicking ... icon and select **Edit**.

Flows

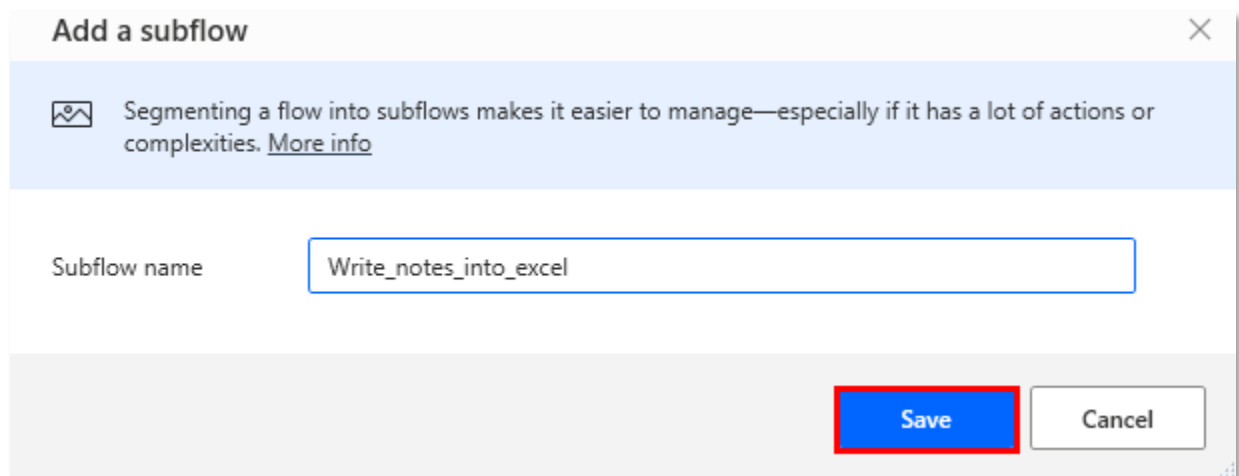


2. Click **Subflows** >  to create a subflow for Enter an invoice.

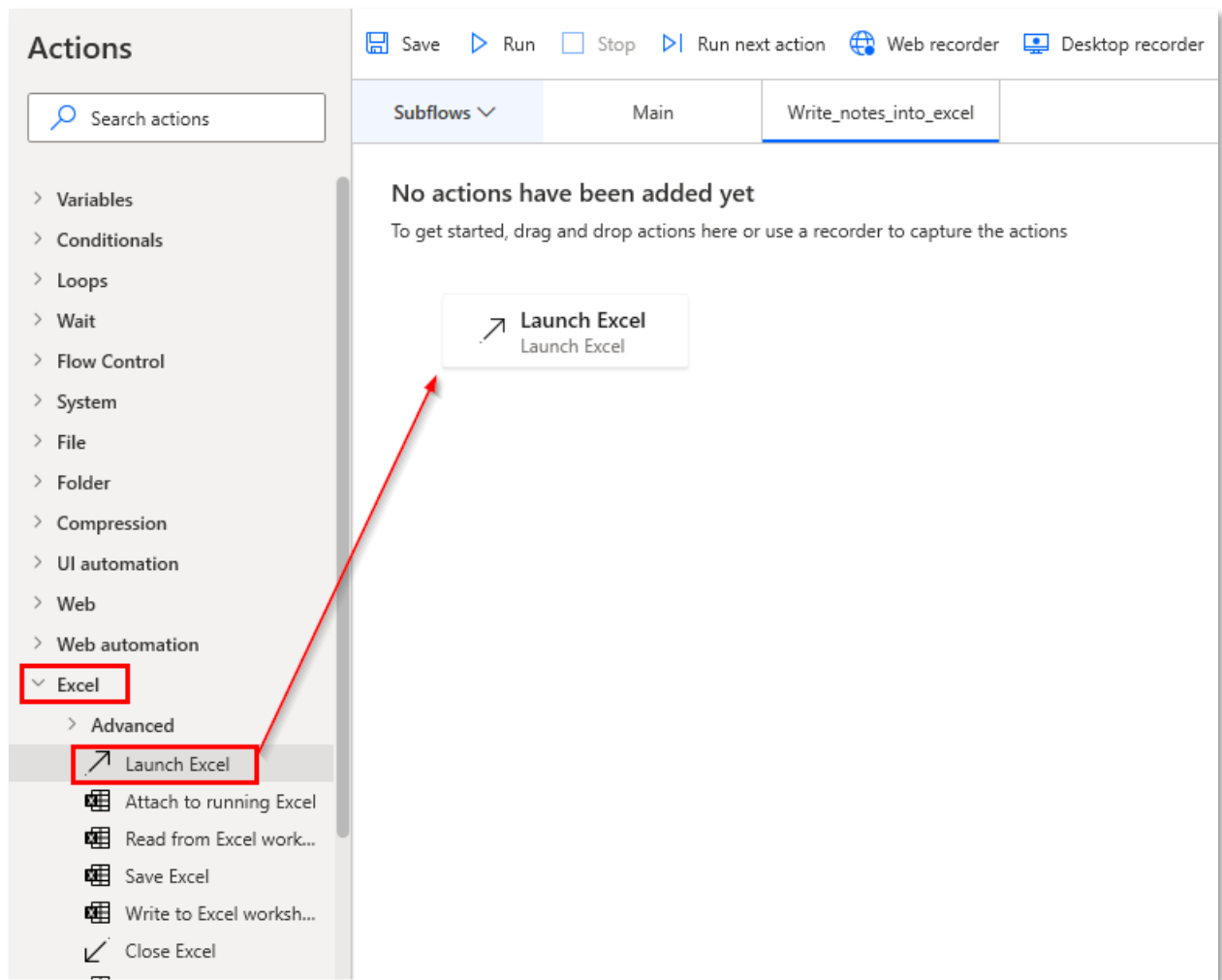


3. Name it **Write_notes_into_excel**. Click **Save**.

Note: Subflow name can't have spaces



4. Add the **Launch Excel Action** from the **Excel** folder.



5. Set Launch Excel to and open the following document and click on the **Select File** icon.

Launch Excel

✕

🔗 Launches a new Excel instance or opens an Excel document [More info](#)

Select parameters

Launch Excel:

and open the following document

⌵

①

Document path:

📄

{x}

①

Make instance visible:

☒

①

Password:

⚠️

🔒

⌵

①

Open as ReadOnly:

☐

①

> Advanced

> Variables produced

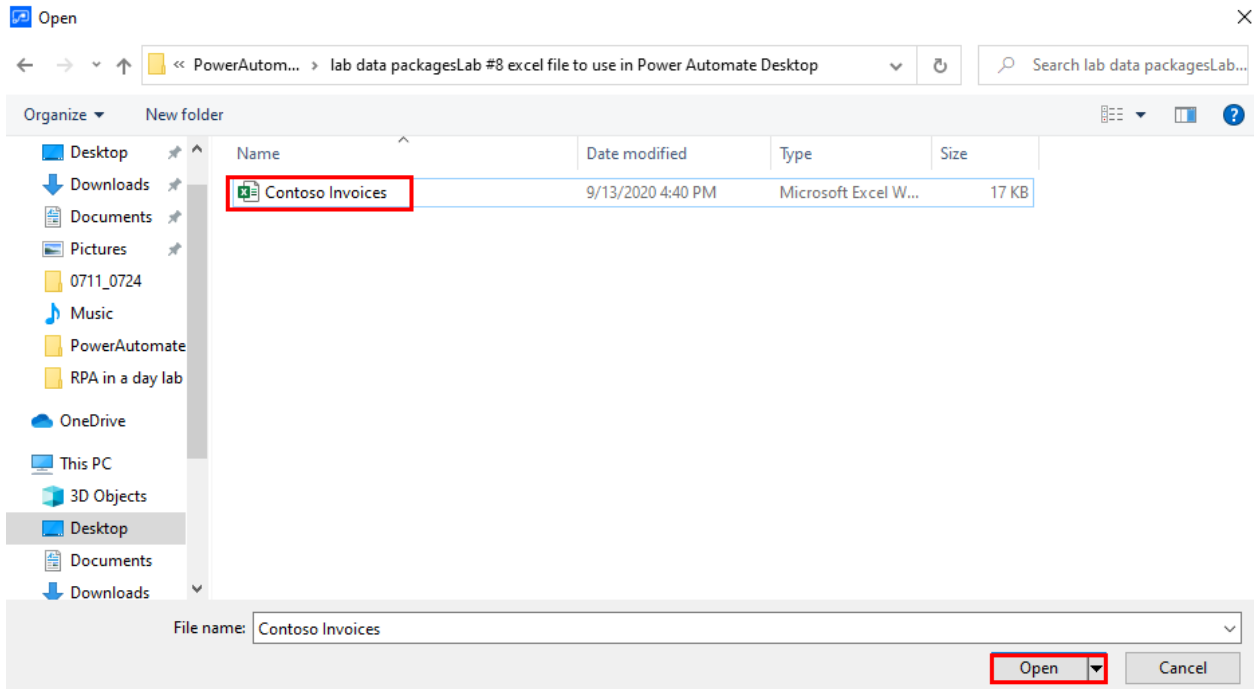
ExcelInstance

🛡️ On error

Save

Cancel

6. Save the file **Contoso Invoices.xlsx** that you can find inside **lab data packages/Lab #9 excel file to use in Power Automate Desktop** folder to the folder of your choice, then browse for it in this dialog, select it and click **Open**.



7. **Information Only** – Our spreadsheet does not contain a password. However, if our spreadsheet did, we could provide a **password** in this field. Then click **Save**.

Launch Excel [X]

Launches a new Excel instance or opens an Excel document [More info](#)

Select parameters

Launch Excel: and open the following document [v] ⓘ

Document path: C:\Users\... \Downloads\Contoso Invoices.xlsx [icon] {x} ⓘ

Make instance visible: [toggle on] ⓘ

Password: ⓘ [lock icon] [password field] [eye icon] ⓘ

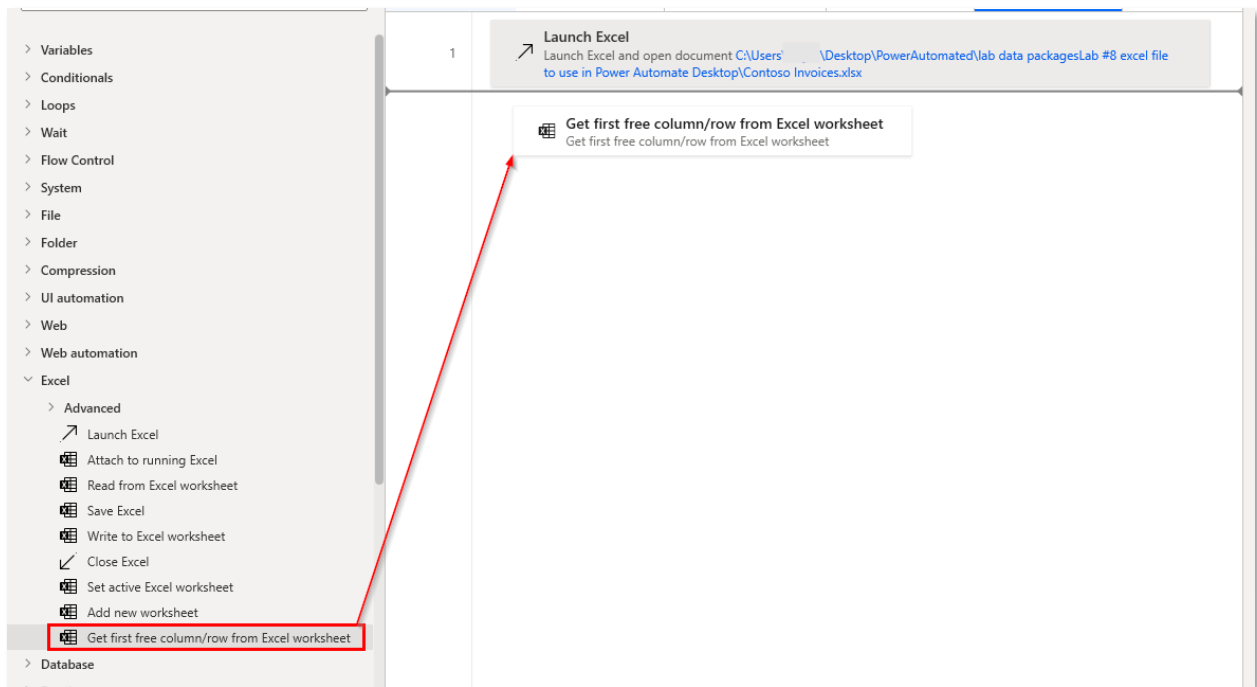
Open as ReadOnly: [toggle off] ⓘ

> Advanced

> Variables produced **ExcelInstance**

[On error] [Save] [Cancel]

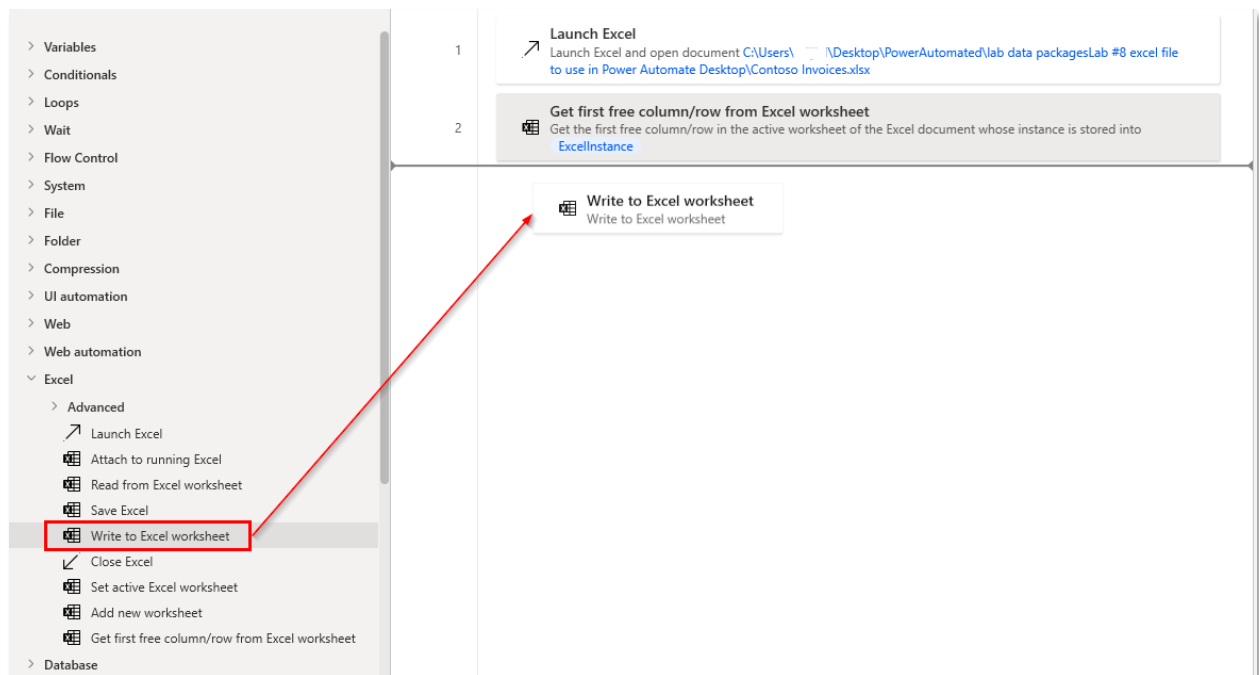
8. Add the **Get First Free Column/Row from Excel Worksheet** action from the **Excel** folder.



9. In the Action Properties, we will use the default settings for this action. Click **Save** to add it to the design surface. This action will retrieve the number of the first free row and the first free column and store them into variables.

The screenshot shows the 'Get first free column/row from Excel worksheet' dialog box. It has a title bar with a close button. Below the title is a description: 'Retrieves the first free column and/or row of the active worksheet. This is useful for adding new data into a worksheet that already has data in it [More info](#)'. Under 'Select parameters', there is a dropdown for 'Excel instance' set to '%ExcelInstance%'. Below that, under 'Variables produced', there are two buttons: 'FirstFreeColumn' and 'FirstFreeRow'. At the bottom, there is a checkbox for 'On error' and two buttons: 'Save' (highlighted with a red rectangle) and 'Cancel'.

10. Add the **Write to Excel Worksheet** action from the **Excel** folder.



11. In the Action Properties, in **Value to write**, open the **Available Variables** by clicking on the {x} icon, double click **InvoiceID**.

2

3

Write to Excel worksheet [X]

Writes a value into a cell or a range of cells of an Excel instance [More info](#)

Select parameters

Excel instance: %ExcellInstance% [v] ⓘ

Value to write: [] {x} ⓘ

Input / output variables 4

Name	Type
> Account	Text value
> Amount	Text value
> Contact	Text value
> InvoiceID	Text value

Flow variables 5

Name	Type
AppProcessId	Numeric value
> AttributeValue	Text value
> ExcellInstance	Excel instance

Select variable

12. Enter **A** and in field **Column**, then in **Row**, click on the corresponding {x} icon, and select %FirstFreeRow%. Click **Save**

Write to Excel worksheet

Writes a value into a cell or a range of cells of an Excel instance [More info](#)

Select parameters

Excel instance:

%ExcelInstance%

⌵

①

Value to write:

%InvoiceID%

{x}

①

Write mode:

On specified cell

⌵

①

Column:

A

{x}


①

Row:

%FirstFreeRow%

{x}

①

 On error

Save

Cancel

13. Repeat the three previous steps, writing values of variables to cells as the table below.
For all Columns, Row must be set to %FirstFreeRow%.

Value to Write	Column	Row
%Account%	B	%FirstFreeRow%
%Contact%	C	%FirstFreeRow%
%Amount%	D	%FirstFreeRow%







14. When all the steps above have been completed, your subflow for writing notes into Excel should look like this:

The screenshot shows the 'Write_notes_into_excel' subflow in Power Automate. It contains the following steps:

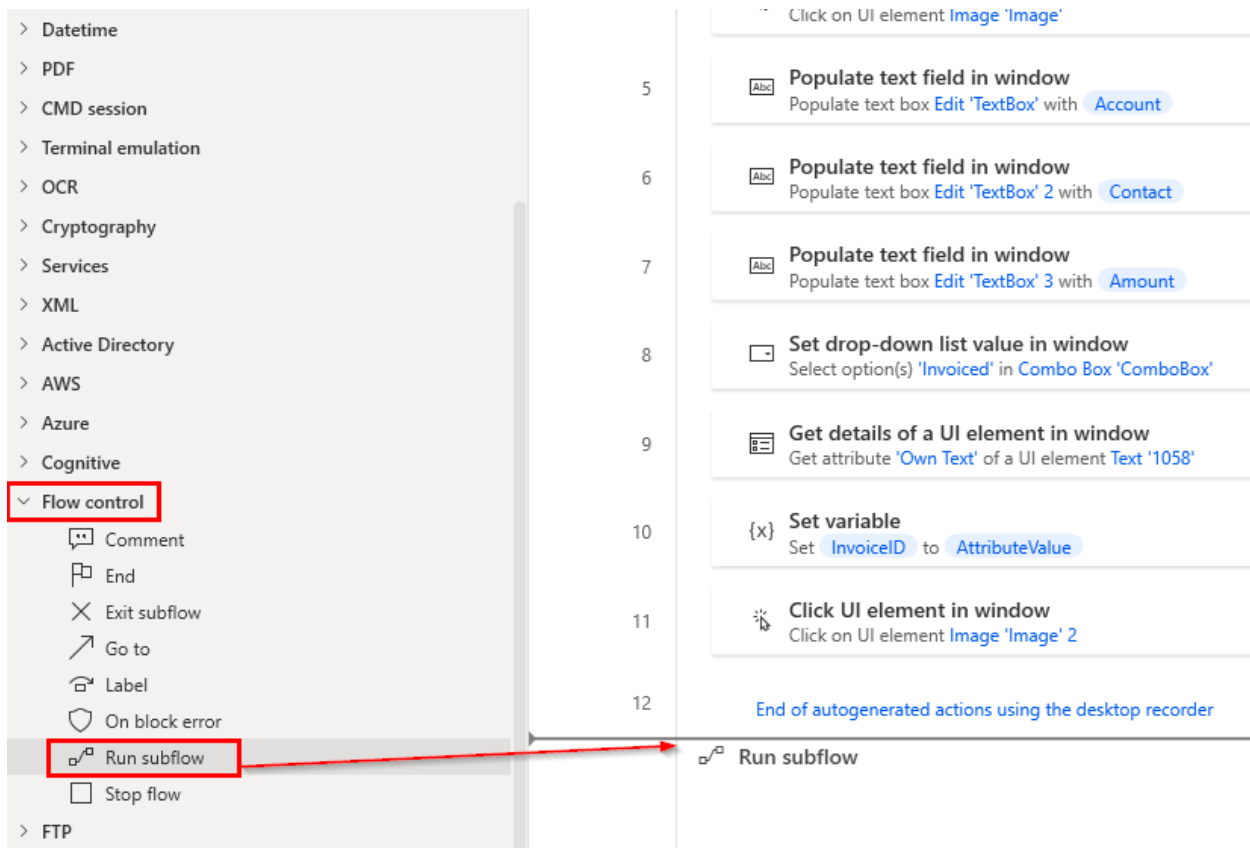
- Launch Excel**: Launch Excel and open document C:\Users\... \Desktop\PowerAutomated\lab data packagesLab #8 excel file to use in Power Automate Desktop\Contoso Invoices.xlsx
- Get first free column/row from Excel worksheet**: Get the first free column/row in the active worksheet of the Excel document whose instance is stored into `ExcelInstance`
- Write to Excel worksheet**: Write the value `InvoiceID` into cell in column `A` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
- Write to Excel worksheet**: Write the value `Account` into cell in column `B` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
- Write to Excel worksheet**: Write the value `Contact` into cell in column `C` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
- Write to Excel worksheet**: Write the value `Amount` into cell in column `D` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`

15. Click the **Save** button and then go back to your Main flow by clicking **Main**.

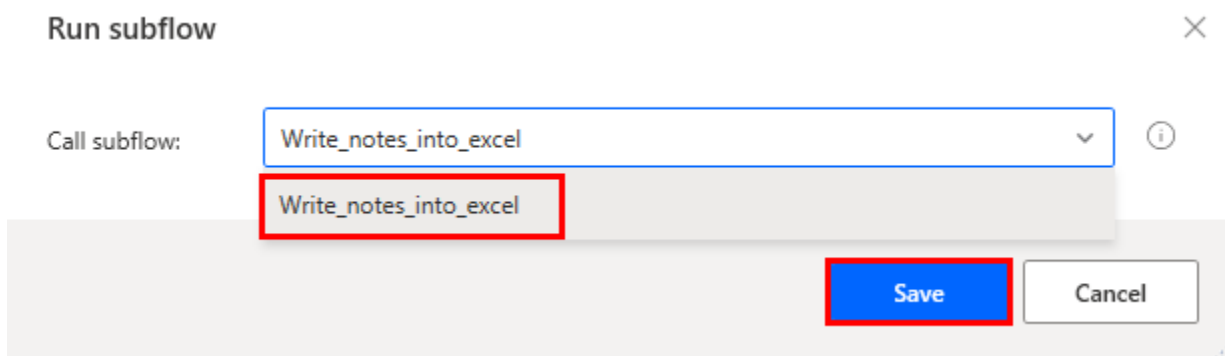
Subflows ▾ **Main** Write_notes_into_excel

1	 Launch Excel Launch Excel and open document C:\Users\... \Desktop\PowerAutomated\lab data packagesLab #8 excel file to use in Power Automate Desktop\Contoso Invoices.xlsx
2	 Get first free column/row from Excel worksheet Get the first free column/row in the active worksheet of the Excel document whose instance is stored into ExcelInstance
3	 Write to Excel worksheet Write the value InvoiceID into cell in column A and row FirstFreeColumn of the Excel instance ExcelInstance
4	 Write to Excel worksheet Write the value Account into cell in column B and row FirstFreeColumn of the Excel instance ExcelInstance
5	 Write to Excel worksheet Write the value Contact into cell in column C and row FirstFreeColumn of the Excel instance ExcelInstance
6	 Write to Excel worksheet Write the value Amount into cell in column D and row FirstFreeColumn of the Excel instance ExcelInstance

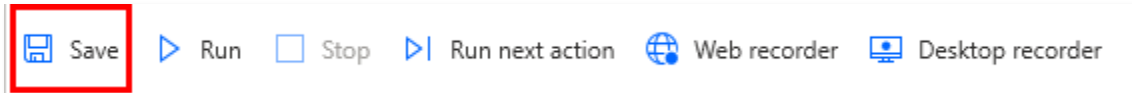
16. Add the **Run subflow** action from **Flow Control** folder under **Step 12**.



17. Call **Write_notes_into_excel** subflow you just created. Then click **Save**.



18. Click on the **Save** button to save the flow.



19. You can now run your flow by clicking **Run**.



20. Check the Excel file. The following entry should have been added:

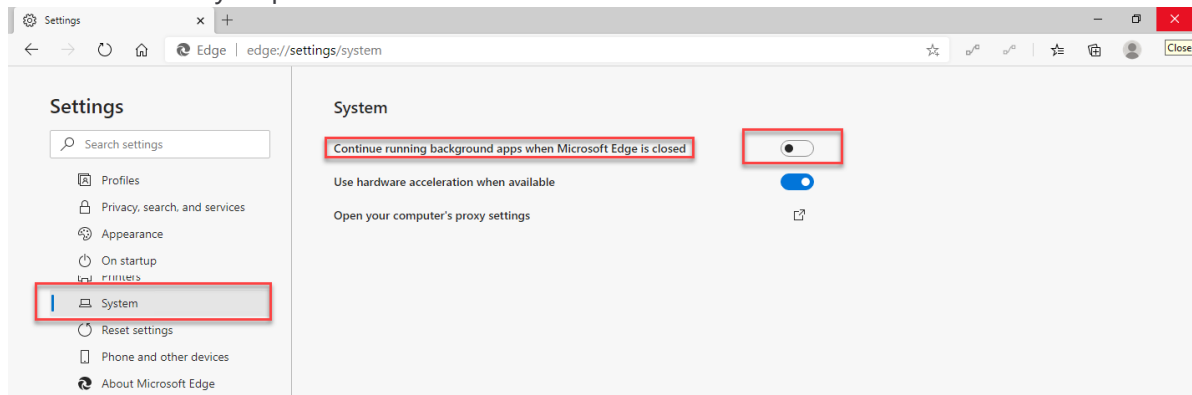
1026	WingTip Toys	b.friday@wingtiptoy.com	\$500.00
------	--------------	-------------------------	----------

Note: You may see a different invoice ID here.

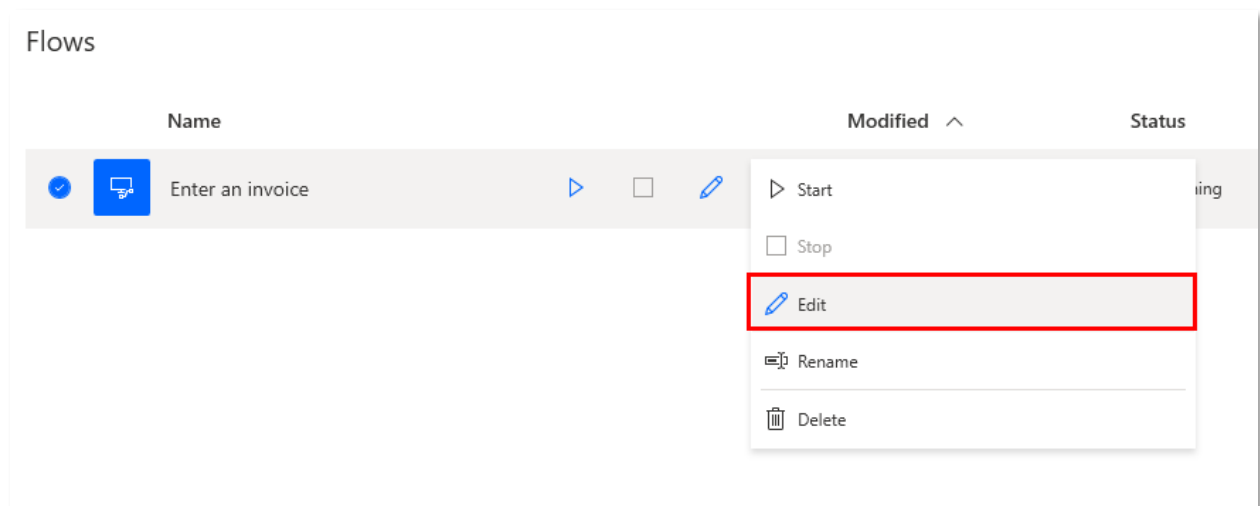
Exercise 2 - Advanced Power Automate Desktop features introduction

In this exercise, the amount previously extracted from the Contoso Invoicing app will be converted into another currency and the value will be added to the Excel document.

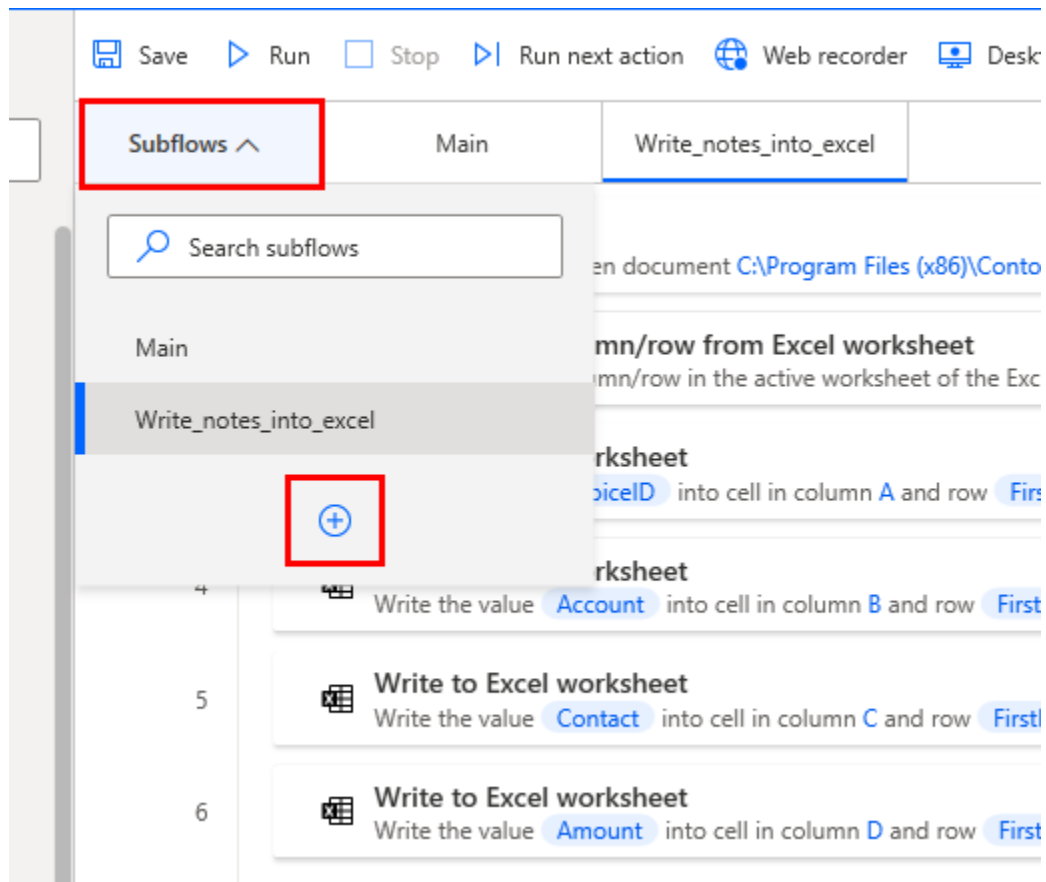
1. Open **Microsoft Edge** (Chromium), go to **Settings** then **System** and uncheck **Continue running background apps when Microsoft Edge is closed**. Close all browser tabs and sessions before you proceed.



2. In **Power Automate Desktop**, Edit **Enter an invoice** flow you created by clicking ... icon and select **Edit**.

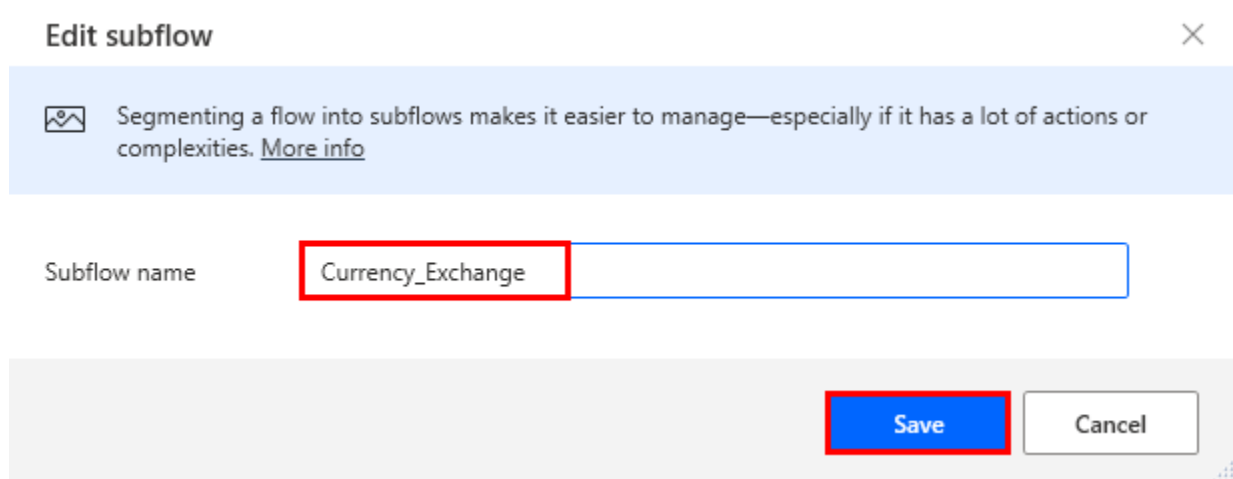


3. Click **Subflow** >  to create a the second subflow for Enter an invoice.



4. Call your Subflow **Currency_Exchange**. Click **Save**.

Note: Subflow name can't have spaces



5. Add the **Launch New Edge** Action from the **Web automation** folder into the workspace.

The screenshot displays the Power Automate 'Actions' pane on the left and the workspace on the right. In the 'Actions' pane, the 'Web automation' folder is expanded and highlighted with a red box. Within this folder, the 'Launch new Edge' action is also highlighted with a red box. A red arrow points from this action to a floating card in the workspace. The workspace header shows tabs for 'Subflows', 'Main', 'Write_notes_into_excel', and 'Currency_Exchange', with 'Currency_Exchange' being the active tab. The workspace area contains the text 'No actions have been added yet' and a prompt to drag and drop actions. The floating card for 'Launch new Edge' is shown with its icon and name.

Actions

Search actions

- > Variables
- > Conditionals
- > Loops
- > Wait
- > Flow Control
- > System
- > File
- > Folder
- > Compression
- > UI automation
- > Web
- ▼ **Web automation**
 - > Web data extraction
 - > Web form filling
 - Launch new Internet Explorer
 - Launch new Firefox
 - Launch new Chrome
 - Launch new Edge**
 - + Create new tab
 - Go to web page
 - Click link on web page
 - Click download link on web page
 - Run JavaScript function on web page
 - Hover mouse over element on web page
 - Close web browser

Save Run Stop Run next action Web recorder Desktop recorder

Subflows Main Write_notes_into_excel **Currency_Exchange**

No actions have been added yet
To get started, drag and drop actions here or use a recorder to capture the actions

Launch new Edge
Launch new Edge

6. In the Initial URL field enter: www.msn.com/en-us/money/tools/currencyconverter
Click Save.

Launch new Edge

Launch a new instance or attach to a running instance of Edge for automating web sites and web applications [More info](#)

Select parameters

Launch mode:

Launch new Instance

ⓘ

Initial URL:

www.msn.com/en-us/money/tools/currencyconverter

{x}

ⓘ

Window state:

Normal

ⓘ

> Advanced

> Variables produced [Browser](#)

On error

Save

Cancel

7. Open an Edge web browser and navigate to www.msn.com/en-us/money/tools/currencyconverter

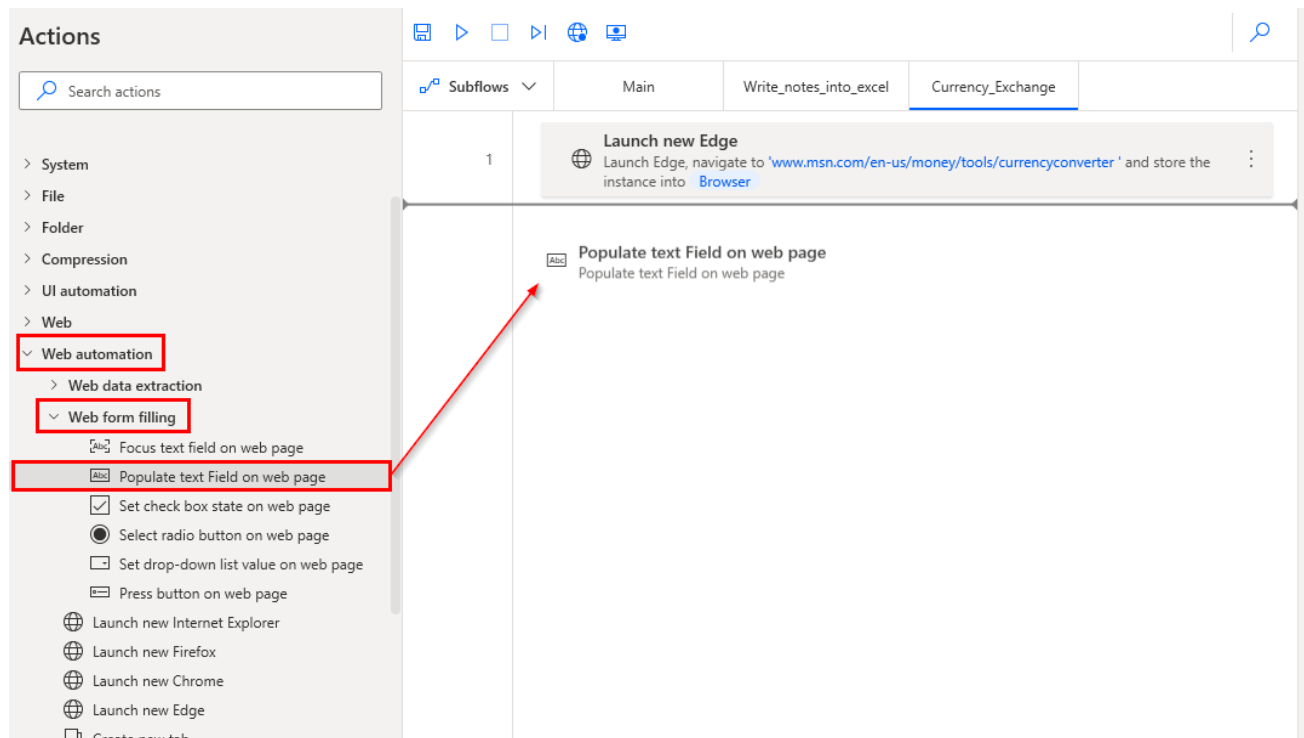
The screenshot shows the MSN Currency Converter interface. The browser address bar displays the URL <https://www.msn.com/en-us/money/tools/currencyconverter>. The MSN logo and 'money' link are visible, along with a search bar. Below the navigation menu, a row of popular searches includes AAPL (+1.20%), STZ (-1.00%), TSLA (+3.74%), and AMZN (-0.09%).

The main section is titled 'Currency Converter' and displays the conversion: 1 USD = 0.8245 EUR and 1 EUR = 1.2129 USD. The left panel shows the 'United States Dollar' (USD) with a value of \$ 1.00. The right panel shows the 'Euro' (EUR) with a value of € 0.82. A green double-headed arrow indicates the conversion. Below the main display, there are tabs for USD, GBP, EUR, and JPY. The 'USD' tab is selected, showing the 'Open' price at 0.8245 and a 'Change%' of +0.0971%. The 'EUR' tab is also visible, showing the 'Change' at +0.0008 and a '52 Week High' of 0.9400. A line chart on the right shows the USD / EUR exchange rate from February 2020 to July 2020.

Major Currencies	Price	Change	Change%
USD	0.8245	+0.0008	+0.0971%
EUR	0.82		
JPY			
CAD			

8. Select the **Populate text Field on web page** action from the **Web form filling** subfolder.

Note: When it is time to test populating a value into the currency conversion web page and you are finding that the value isn't being updated properly, ensure that '\$' is not being passed into the web page. It needs to be a numeric value being sent to the web page instead i.e. 2500.



9. The **Web Browser Instance** is already populated with the **%Browser%** instance.



10. Click on the **UI element** and then on **Add a new UI element** to be able to capture the element.

Populate text Field on web page ×

Alt Fill a text field in a web page with the specified text [More info](#)

Select parameters

Web browser instance:

%Browser%

ⓘ

UI element:

ⓘ

Text:

There are no UI elements to display

Add a new UI element


ⓘ

Emulate typing:

☒

ⓘ

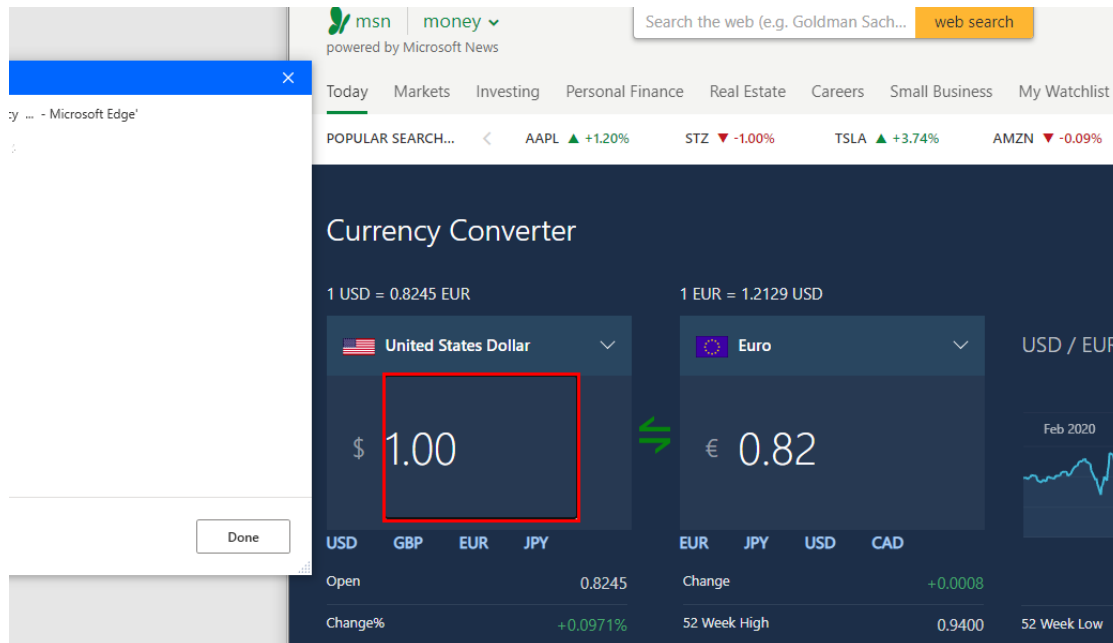
> Advanced

 On error

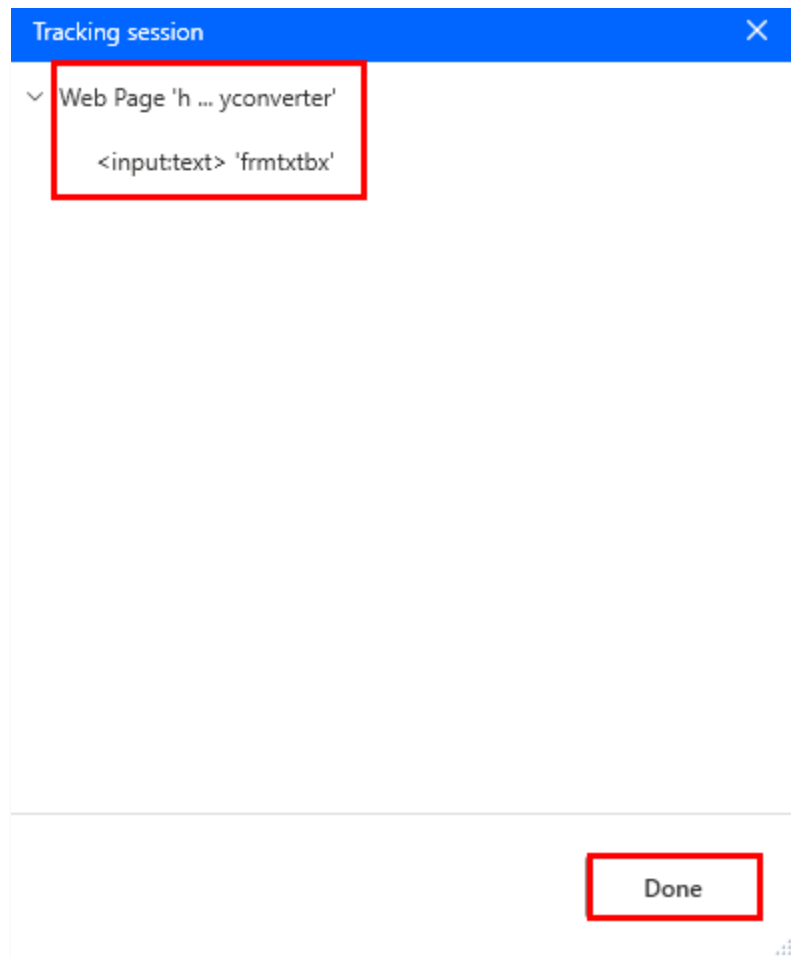
Save

Cancel

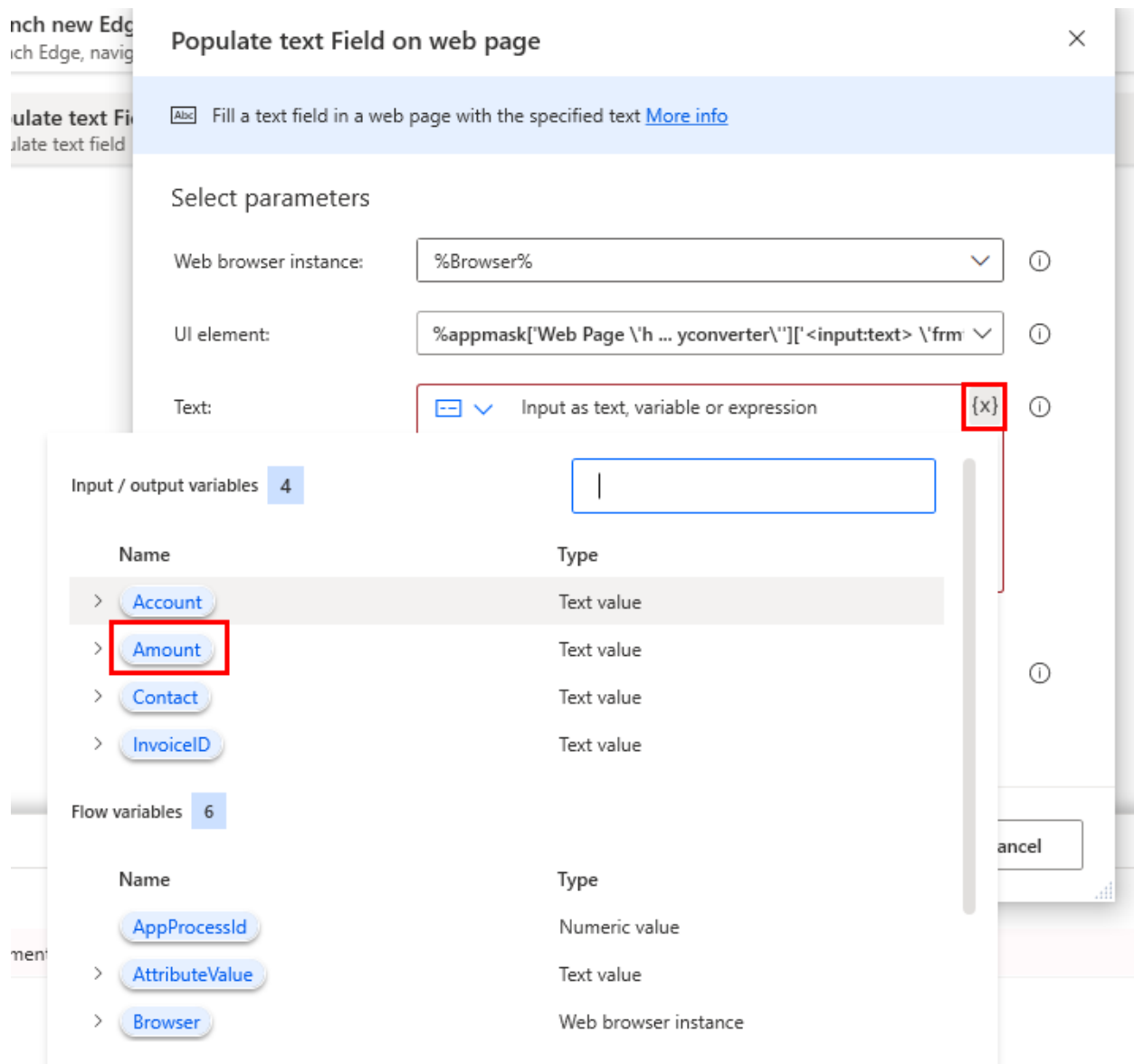
11. Having done this, a red rectangle appears in the browser while hovering the mouse over the elements. Move the mouse over the field containing the value, hold the **Left Control** on your keyboard and **Left-Click** to select the element.



12. Once you selected the element, you will see the value appeared in tracking session. Click Done.



13. Set %Amount% in the Text field by clicking {x} icon.



14. Click Save.

Populate text Field on web page

Fill a text field in a web page with the specified text [More info](#)

Select parameters

Web browser instance:

%Browser%

UI element:

%appmask['Web Page \'h ... yconverter\'] [<input:text> \'frm

Text:

Input as text, variable or expression {x}

%Amount%

Emulate typing:

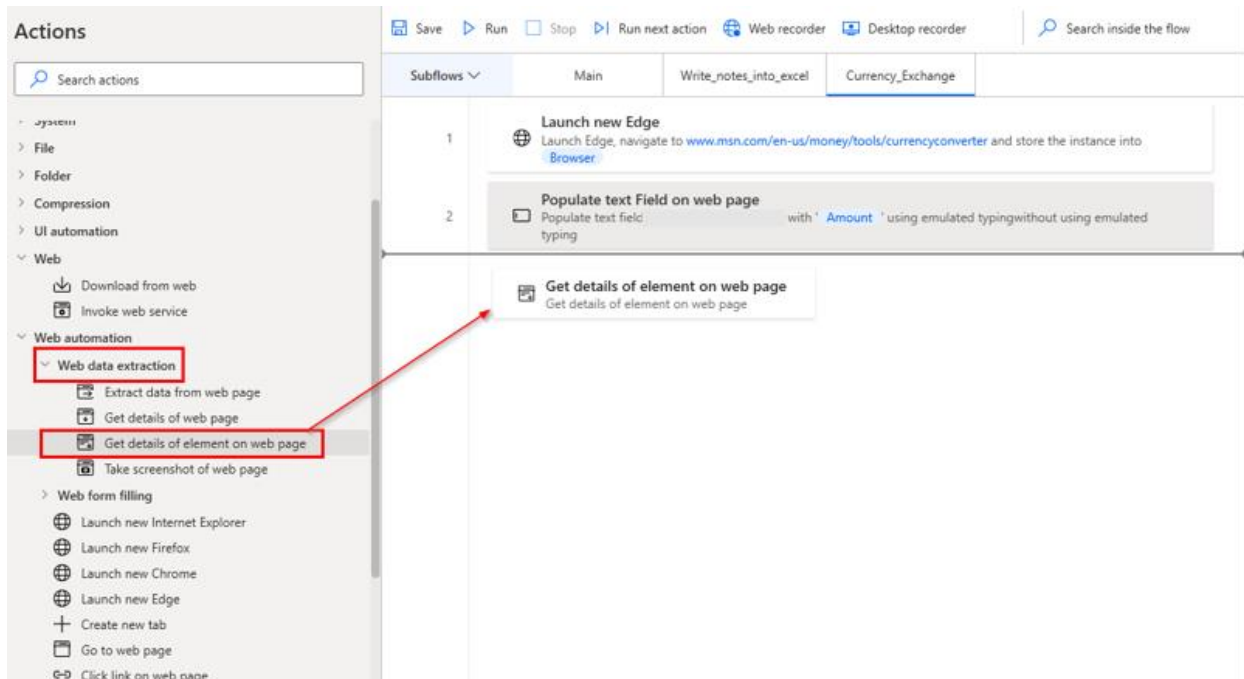
> Advanced

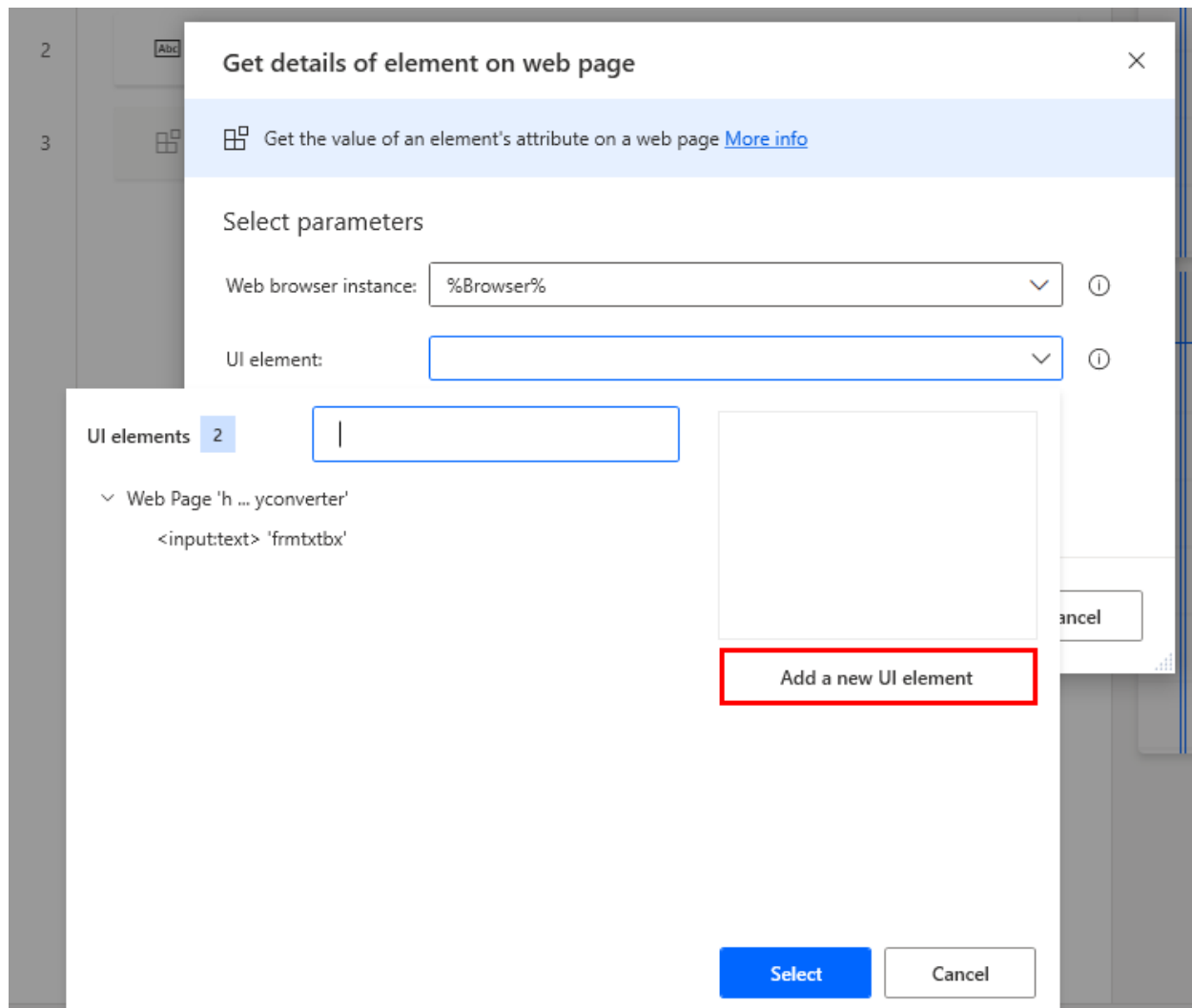
On error

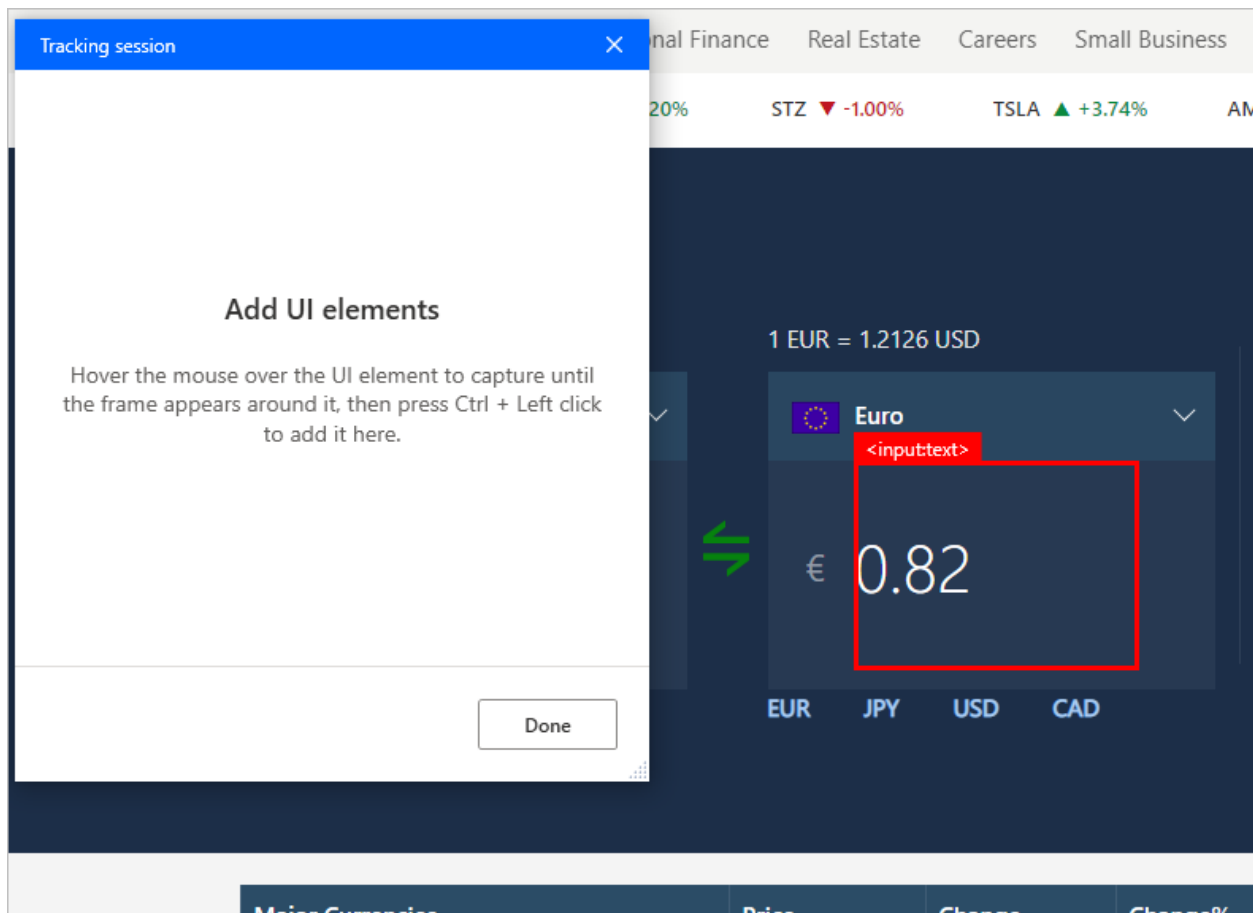
Save

Cancel

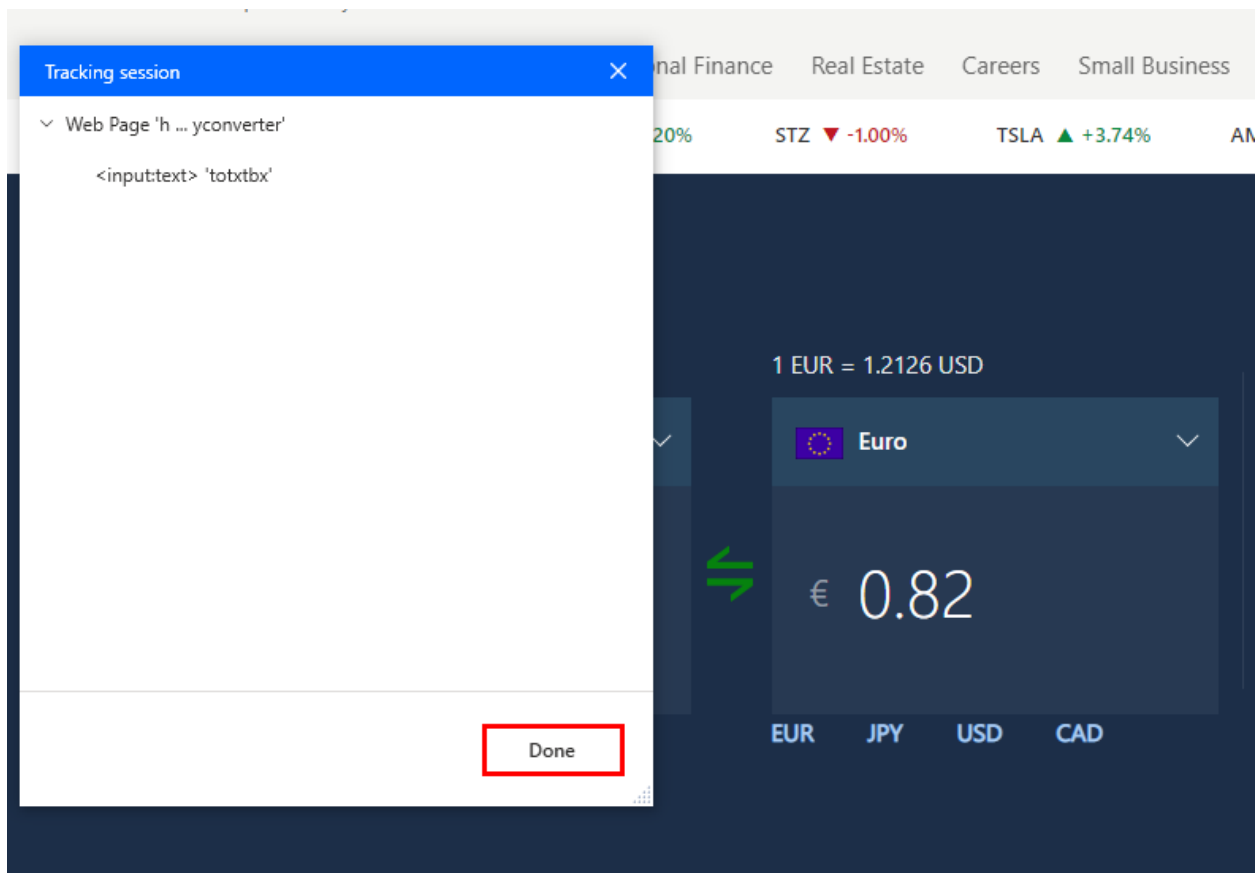
15. Use the **Get details of element on web page** action in the **Web data extraction** subfolder to select the **converted value (Euro)** with the same way described above.








16. Select **Done**.



17. Change the **Variables produced** from %AttributeValue2% to %ConvertedAmount% by clicking %AttributeValue2%. Once you're done, click **Save**.


Get details of element on web page



 Get the value of an element's attribute on a web page [More info](#)


Select parameters

Web browser instance: %Browser% 

UI element: %appmask['Web Page \'h ... yconverter\"][<input:text> \'totxtbx\'] 

> Advanced

Variables produced

{x}  The value of the web element's attribute

 On error

Save

Cancel



18. Go back **Write_notes_into_excel** subflow you created in exercise 1 by clicking **Write_notes_into_excel**.

Save Run Stop Run next action Web recorder Desktop recorder Search inside the flow

Subflows	Main	Write_notes_into_excel	Currency_Exchange
1	Launch Excel Launch Excel and open document C:\Users\... \Desktop\PowerAutomated\lab data packagesLab #8 excel file to use in Power Automate Desktop\Contoso Invoices.xlsx		
2	Get first free column/row from Excel worksheet Get the first free column/row in the active worksheet of the Excel document whose instance is stored into ExcelInstance		
3	Write to Excel worksheet Write the value InvoiceID into cell in column A and row FirstFreeColumn of the Excel instance ExcelInstance		
4	Write to Excel worksheet Write the value Account into cell in column B and row FirstFreeColumn of the Excel instance ExcelInstance		
5	Write to Excel worksheet Write the value Contact into cell in column C and row FirstFreeColumn of the Excel instance ExcelInstance		
6	Write to Excel worksheet Write the value Amount into cell in column D and row FirstFreeColumn of the Excel instance ExcelInstance		

19. Add the Write to Excel Worksheet action from the Excel folder under Step 6.

The screenshot displays the Power Automate desktop flow editor. On the left, the 'Actions' pane is open, showing a hierarchical list of actions. The 'Excel' folder is expanded, and the 'Write to Excel worksheet' action is highlighted with a red box. A red arrow points from this action to the flow canvas. The flow canvas shows a sequence of six steps:


1. **Launch Excel**: Launch Excel and open document `C:\Users\...\Desktop\PowerAutomated\lab data packages\Lab #8 excel file to use in Power Automate Desktop\Contoso Invoices.xlsx`
2. **Get first free column/row from Excel worksheet**: Get the first free column/row in the active worksheet of the Excel document whose instance is stored into `ExcelInstance`
3. **Write to Excel worksheet**: Write the value `InvoiceID` into cell in column `A` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
4. **Write to Excel worksheet**: Write the value `Account` into cell in column `B` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
5. **Write to Excel worksheet**: Write the value `Contact` into cell in column `C` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
6. **Write to Excel worksheet**: Write the value `Amount` into cell in column `D` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`

Below the flow canvas, a preview of the 'Write to Excel worksheet' action is shown, indicating it is the next step to be added.

20. Writing values of variables to cells as the information below.

- **Value to write:** %ConvertedAmount%
- **Column:** E
- **Row:** %FirstFreeRow%

Write to Excel worksheet

 Writes a value into a cell or a range of cells of an Excel instance [More info](#)

Select parameters

Excel instance:

%ExcelInstance%

ⓘ

Value to write:

%ConvertedAmount%

{x} ⓘ

Write mode:

On specified cell

⌵ ⓘ

Column:


E

{x} ⓘ

Row:

%FirstFreeRow%

{x} ⓘ

 On error

Save

Cancel

21. Click Save.

Write to Excel worksheet

Writes a value into a cell or a range of cells of an Excel instance [More info](#)

Select parameters

Excel instance:

%ExcelInstance%

ⓘ

Value to write:

%ConvertedAmount%

{x} ⓘ

Write mode:

On specified cell

⌵ ⓘ

Column:


E

{x} ⓘ

Row:

%FirstFreeRow%

{x} ⓘ

 On error

Save

Cancel

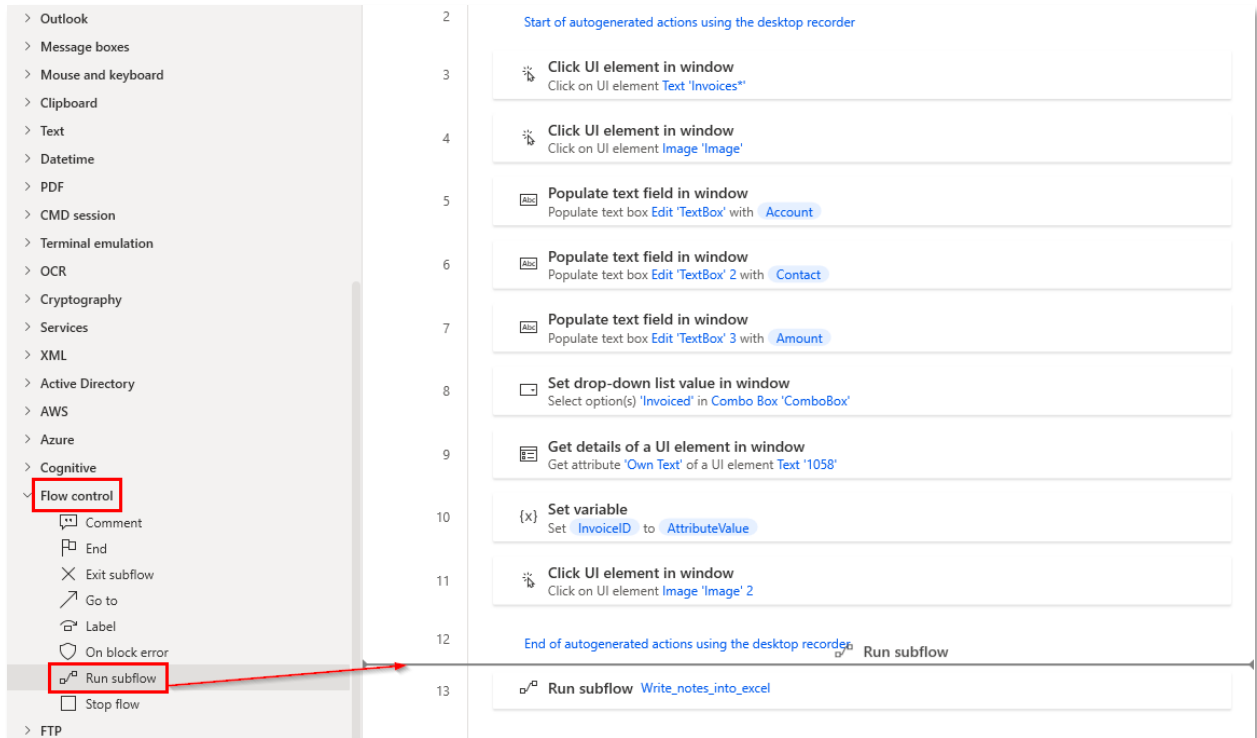
22. Go back to your Main flow by clicking **Main**.

The screenshot shows the Power Automate interface with the 'Main' subflow selected. The flow consists of the following steps:

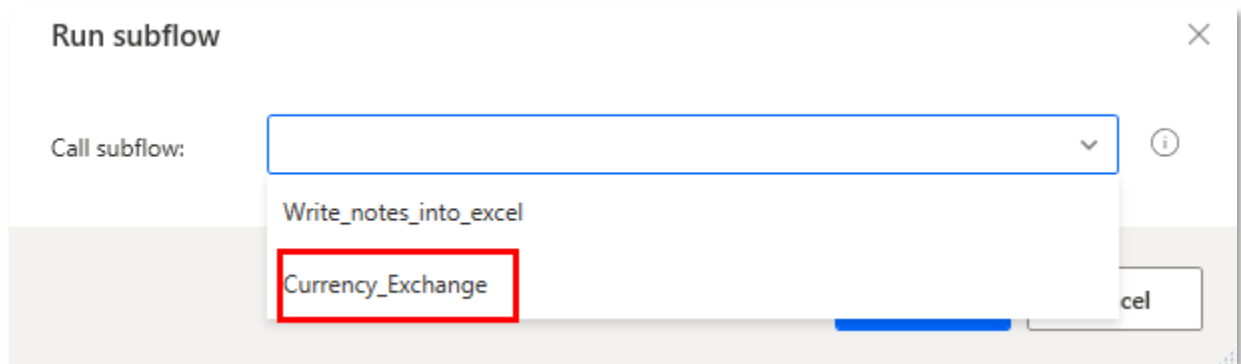
- Launch Excel**: Launch Excel and open document `C:\Users\... \Desktop\PowerAutomated\lab data packagesLab #8 excel file to use in Power Automate Desktop\Contoso Invoices.xlsx`
- Get first free column/row from Excel worksheet**: Get the first free column/row in the active worksheet of the Excel document whose instance is stored into `ExcelInstance`
- Write to Excel worksheet**: Write the value `InvoiceID` into cell in column `A` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
- Write to Excel worksheet**: Write the value `Account` into cell in column `B` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
- Write to Excel worksheet**: Write the value `Contact` into cell in column `C` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
- Write to Excel worksheet**: Write the value `Amount` into cell in column `D` and row `FirstFreeColumn` of the Excel instance `ExcelInstance`
- Write to Excel worksheet**: Write the value `ConvertedAmount` into cell in column `E` and row `FirstFreeRow` of the Excel instance `ExcelInstance`

23. Add the **Run subflow** action from **Flow Control** folder as **Step 12** of your process.

Note: this subflow should be called prior to the **Write_notes_to_excel** subflow call.



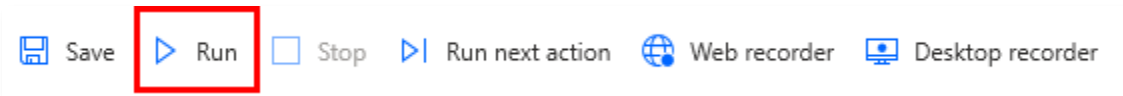
24. Call **Currency_Exchange** subflow you just created. Then click **Save**.



25. Click on the **Save** button to save the flow.



26. You can now run your flow by clicking **Run**.



27. After a while, an entry is added to the Excel file as in the previous exercise, with an additional cell containing the converted value:

1055	Tailspin Toys	p.gupta@tailspintoys.com	\$3,500.00	3,118.15
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Check your knowledge

Lab 9

5 mins

1. Which of the following can you use as your Subflow name?

- A. Currency exchange
- B. Currency Exchange
- C. Currency_exchange
- D. All of the above

Answer: C. Currency_exchange. Power Automate Desktop does not allow for spaces to be in the name of a Subflow.

2. When you try to capture a web element from a web page, after selecting the Populate text Field on web page action and clicking UI element dropdown, you need to select _____ to be able to capture the element.

- A. Add a new UI element
- B. Save
- C. Browser
- D. None of the above

Answer: A. Add a new UI element - You need to click this button to start capture elements

3. When you are populating text Field on web page, you need to hold the _____ and _____ to select the element.

- A. Left CTRL + Left-Click
- B. Left Tab + Left-Click
- C. Left CTRL + Right-Click
- D. Left Tab + Right-Click

Answer: A. Left CTRL + Left-Click

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