

## Lab 7. Document generation with the Word Connector

**Author:** Serge Luca aka "Doctor Flow"

**Learning objective:** create a Flow that will generate an invoice (in PDF) based on a Word template and based on data stored in an Excel document.

**Duration:** 30 minutes

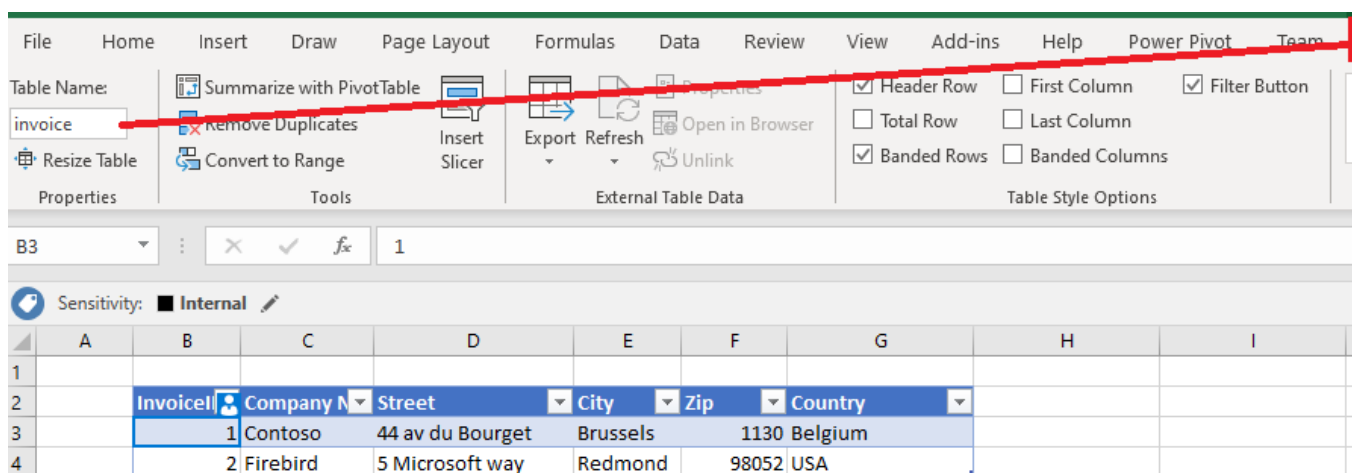
**Scenario:** Excel files containing invoice data are stored in OneDrive for Business. A Flow will read these data, it will parse the data, and it will generate an invoice based on a word document template. The invoice will be transformed into a PDF file.

**Prerequisites:** The Word Connector is a Premium connector. You need to test this lab with a trial premium subscription.

When using the Word Connector, the designer will ask you to start a premium trial.

### Tasks:

1. Upload the file **invoice.xlsx** provided by the trainer to the Documents folder of your OneDrive for Business
2. Look at this file: there are 2 tables:
  - a. The table **invoice** consists of the invoice headers
  - b. The table **invoicelines** consists of the invoice lines
3. Each table has a name that we will reference from our Flow; to find out the table name, open the file in Excel desktop, click the table and select the menu Design as illustrated in the next picture:



|   | A | B        | C         | D                | E        | F     | G       | H | I |
|---|---|----------|-----------|------------------|----------|-------|---------|---|---|
| 1 |   |          |           |                  |          |       |         |   |   |
| 2 |   | Invoice! | Company N | Street           | City     | Zip   | Country |   |   |
| 3 |   | 1        | Contoso   | 44 av du Bourget | Brussels | 1130  | Belgium |   |   |
| 4 |   | 2        | Firebird  | 5 Microsoft way  | Redmond  | 98052 | USA     |   |   |

4. Each invoice can have several lines.
5. Upload the file **Invoice Template start.docx** provided by the trainer into the Documents folder of your OneDrive for Business and take a look at this file:

(header)

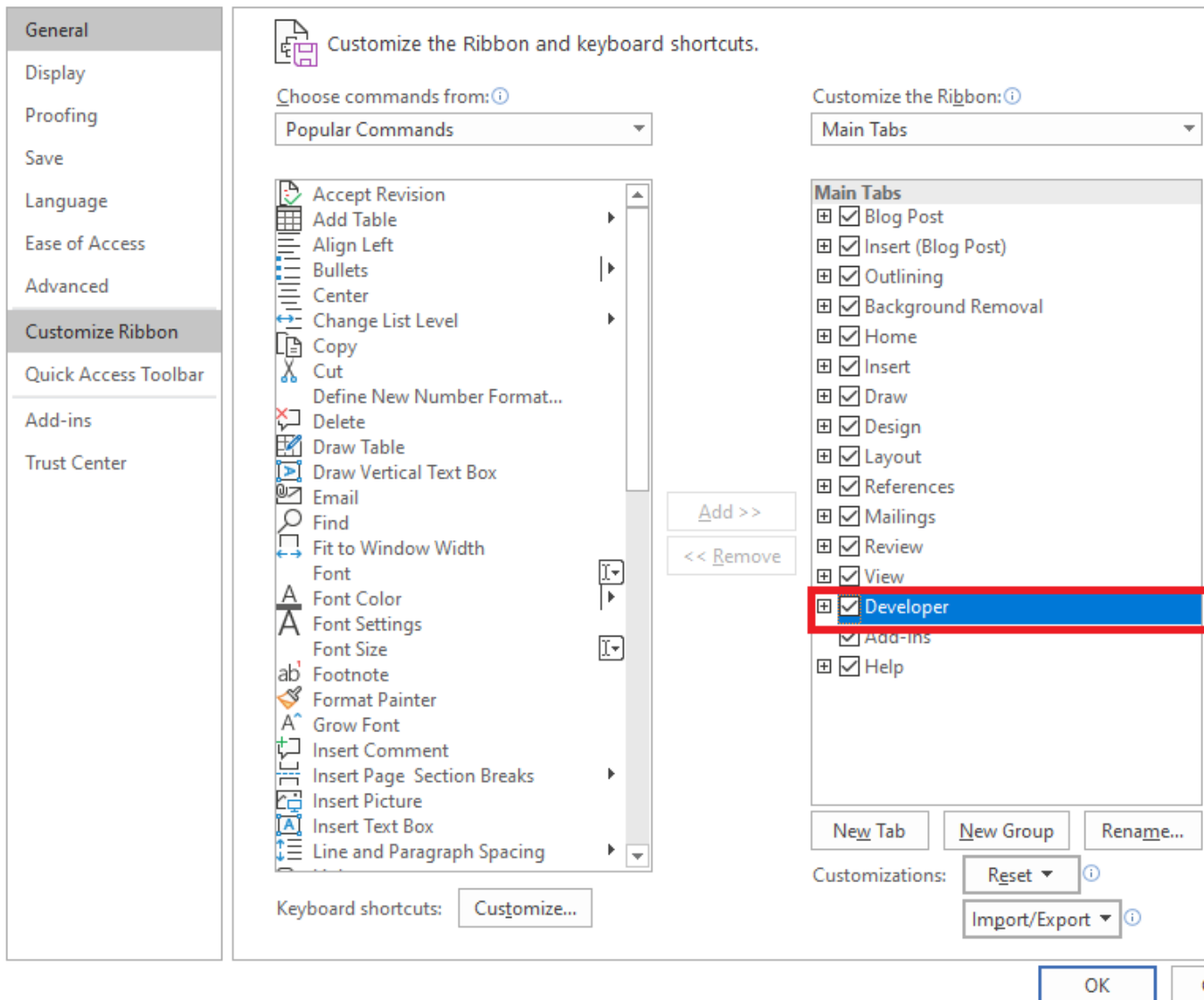
|   |          |  |
|---|----------|--|
| Doctor Flow<br>133 av <u>Dieweg</u><br>1180<br>Uccle<br><u>Belgique</u> | INVOICE  |  |
| BILL TO<br>Name<br>Company Name<br>Street address<br>City, Postal Code  | INVOICE# |  |

| Description | Amount |
|-------------|--------|
|             |        |

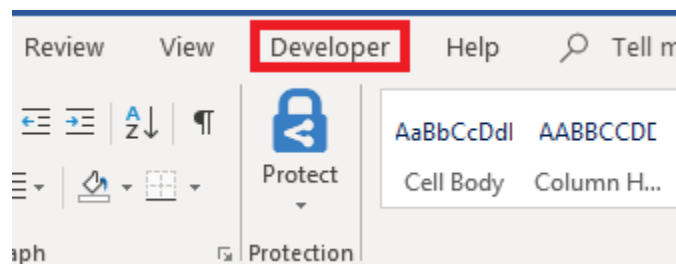
(lines)

The section "header" and "lines" are 2 different tables. The lines section is a table with one row for the header and one row for the data.

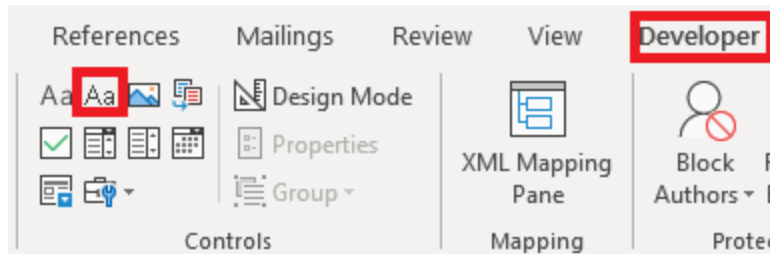
- Go to the Word options, select Customize Ribbon, select **Developer**, and click OK.



This will display the **Developer** tab in Word:



7. You will customize the word template, next to each field of the template, we will add a **Word plain text content** control, and we will use the properties button to name them accordingly.



8. Add a control next to the following fields: **Company Name**, **Street address**, **City** (add 2 controls here, one for the city, one for the zip code) and one next to **invoice#**; with the properties button, name the controls **company**, **street**, **zip**, **invoiceid** as illustrated below:

|   |                 |   |
|---|-----------------|---|
| <p>Doctor Flow<br/>133 av <u>Dieweg</u><br/>1180<br/>Uccle<br/><u>Belgique</u></p>  | <p>INVOICE</p>  |   |
| <p><b>BILL TO</b></p> <p>Company Name: <input type="text" value="company"/> Click or tap here to enter text. )</p> <p>Street address: <input type="text" value="street"/> Click or tap here to enter text. )</p> <p>City: <input type="text" value="city"/> Click or tap here to enter text. ) ,</p> <p><input type="text" value="zip"/> Click or tap here to enter text. )</p> | <p>INVOICE#</p> | <p><input type="text" value="invoiceid"/> Click or tap here to enter text. <input type="text" value="invoiceid"/></p> |

9. You will focus now on the invoice lines; select the second row of the table (the one with the empty data, not the row with the header); select the whole row (including the 2 columns) and add a **Repeating Section Content Control**:

References Mailings Review View **Developer** Help Design Layout Tell me what you want to do

Aa Aa Design Mode

Properties

Group

Controls XML Mapping Pane Mapping Protect Document Template Templates

**Repeating Section Content Control**  
Insert a content control that contains other controls and repeats the contents of the control as needed.

|   |                 |   |
|---|-----------------|---|
| <p><u>Doctor Flow</u><br/>133 av <u>Dieweg</u><br/>1180<br/>Uccle<br/><u>Belgique</u></p>   | <p>INVOICE</p>  |   |
| <p><u>BILL TO</u></p> <p>Company Name: Click or tap here to enter text.<br/>Street address: Click or tap here to enter text.<br/>City: Click or tap here to enter text., Click or tap here to enter text.</p> | <p>INVOICE#</p> | <p>Click or tap here to enter text.</p> |





| Description | Amount |
|-------------|--------|
|             |        |


10. In this repeating section, content control, add 2 Plain text content controls and named them **Product** and **Amount**:

|  |  |                 |  |
|--|--|-----------------|--|
| <b>Doctor Flow</b><br>133 av <u>Dieweg</u><br>1180<br>Uccle<br><u>Belgique</u>   |  | <b>INVOICE</b>  |  |
| <b>BILL TO</b><br>Company Name: <input type="text" value="company"/> (Click or tap here to enter text.)<br>Street address: <input type="text" value="street"/> (Click or tap here to enter text.)<br>City: <input type="text" value="city"/> (Click or tap here to enter text.) ,<br><input type="text" value="zip"/> (Click or tap here to enter text.) |  | <b>INVOICE#</b> | <input type="text" value="invoiceid"/> (Click or tap here to enter text.) <input type="text" value="invoiceid"/> |

| Description   | Amount  |
|---|---|
| <input type="text" value="lineitems"/> <input type="text" value="Product"/> (Click or tap here to enter text.) <input type="text" value="Product"/> | <input type="text" value="Amount"/> (Click or tap here to enter text.) <input type="text" value="Amount"/> <input type="text" value="lineitems"/> |

11. Just after the repeating section add a **Picture content control** that will display the manager signature. Name this control **managersignature**.
12. Eventually, the template should look like this:

|  |                 |  |
|--|-----------------|--|
| <b>Doctor Flow</b><br>133 av <u>Dieweg</u><br>1180<br>Uccle<br><u>Belgique</u>   | <b>INVOICE</b>  |  |
| <b>BILL TO</b><br>Company Name: <input type="text" value="company"/> Click or tap here to enter text. <br>Street address: <input type="text" value="street"/> Click or tap here to enter text. <br>City: <input type="text" value="city"/> Click or tap here to enter text.  ,<br><input type="text" value="zip"/> Click or tap here to enter text.  | <b>INVOICE#</b> | <input type="text" value="invoiceid"/> Click or tap here to enter text. <input type="text" value="invoiceid"/> |

| Description   | Amount  |
|---|---|
| <input type="text" value="lineitems"/> <input type="text" value="Product"/> Click or tap here to enter text. <input type="text" value="Product"/>   | <input type="text" value="Amount"/> Click or tap here to enter text. <input type="text" value="Amount"/> <input type="text" value="lineitems"/> |
| <div> <div>managersignature </div> <div> <div></div> <div>managersignature</div> <div>managersignature</div> </div> </div> |   |

13. Rename the file to **Invoice template.docx**
14. Let's create Flow that starts from a button.
15. Add an **Excel for Business** action, rename it as (Find Invoices) and retrieve the **invoice table** of your **invoice.xlsx** documents:

Manually trigger a flow

Find Invoices

**Location \***  
OneDrive for Business

**Document Library \***  
OneDrive

\* File /Flow Workshop/Invoice.xlsx

**Table \***  
invoice

Show advanced options

16. For each invoice, you will find the corresponding invoice lines: add the **Apply to each** action where you will add another Excel for Business action (rename it **Find InvoiceLines**) that will retrieve the invoicelines table:

Apply to each Invoice

Select an output from previous steps \*

value

Find InvoiceLines

**Location \***  
OneDrive for Business

**Document Library \***  
OneDrive

\* File /Flow Workshop/Invoice.xlsx


**Table \***  
invoicelines

Show advanced options






In the Excel for business action

17. You need to filter the retrieved lines. Click the **Show advanced options** and in the **Filter Query** field, type **Invoice eq ''**


 Apply to each Invoice ...

Select an output from previous steps \*


 value 

 Find InvoiceLines i ...


**Location \***

OneDrive for Business 


**Document Library \***

OneDrive 



\* File

/Flow Workshop/Invoice.xlsx 

**Table \***

invoicelines 

**Filter Query**

Invoice eq ''  

**Order By**

An ODATA orderBy query for specifying the order of entries.

**Top Count**

Total number of entries to retrieve (default = all).

**Skip Count**

The number of entries to skip (default = 0).

**Select Query**

Comma-separated list of columns to retrieve (first 500 by default).

[Hide advanced options](#) ^

18. Move the cursor between the '' and in the expression panel, type **item()?['InvoiceID']** then click ok:

Expression

List of functions ✕

Search content from previous steps

Get file content using path

File content  
Sample data not available

Find Invoices

InvoiceID  
Sample data not available

Invoice eq

Add an expression

Order By

An ODATA orderBy query for specifying the order of entries.

Top Count

Total number of entries to retrieve (default = all).

Skip Count

The number of entries to skip (default = 0).

Select Query

Comma-separated list of columns to retrieve (first 500 by default).

Hide advanced options

^

Expression

List of functions 

items('Apply\_to\_each\_Invoice')?['InvoiceID']



Search content from previous steps



Get file content using path



File content  
Sample data not available



Find Invoices



InvoiceID  
Sample data not available



Invoice eq

Add an expression

#### Order By

An ODATA orderBy query for specifying the order of entries.

#### Top Count

Total number of entries to retrieve (default = all).

#### Skip Count

The number of entries to skip (default = 0).

#### Select Query

Comma-separated list of columns to retrieve (first 500 by default).

Hide advanced options 



Apply to each Invoice



Select an output from previous steps \*

value X



Find InvoiceLines



Location \*

OneDrive for Business



Document Library \*

OneDrive



\* File

/Flow Workshop/Invoice.xlsx



Table \*

invoicelines



Filter Query



Invoice eq 'fx items(...)' X

Order By

An ODATA orderBy query for specifying the order of entries.

Top Count

Total number of entries to retrieve (default = all).

Skip Count

The number of entries to skip (default = 0).

Select Query

Comma-separated list of columns to retrieve (first 500 by default).

[Hide advanced options](#) ^

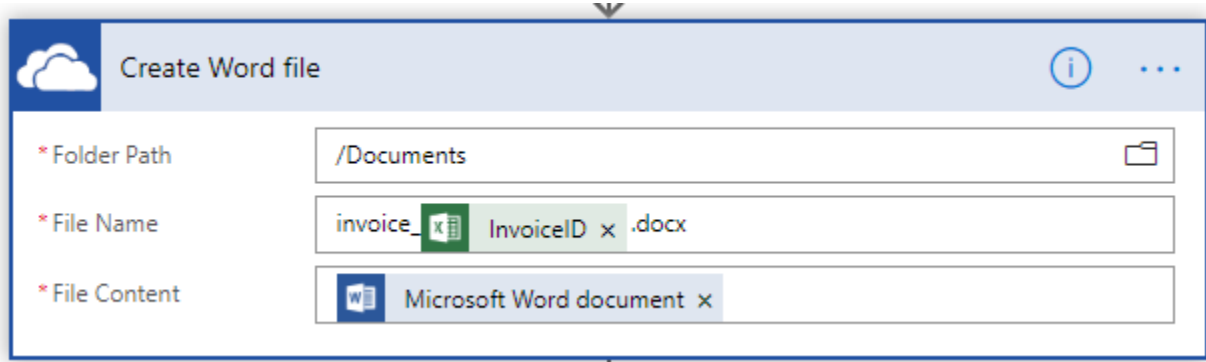
19. Add an action **Populate a Microsoft Word template**, and you will notice that the Word content controls show up as fields in this connector; fill in the field with the Excel values:

The screenshot shows a flow connector titled 'Apply to each Invoice'. Below the connector header, there is a section 'Select an output from previous steps \*' with a dropdown menu showing 'value'. Below this, there is a green action box labeled 'Find InvoiceLines'. An arrow points down to a blue action box labeled 'Populate a Microsoft Word template'. This action box contains several fields for mapping data from the previous step to a Word template:

- Location \***: A dropdown menu showing 'OneDrive for Business'.
- Document Library \***: A dropdown menu showing 'OneDrive'.
- \* File**: A text field showing '/Flow Workshop/Invoice Template.docx'.
- managersignature**: A text field with a formula icon and 'fx'.
- Invoiceid**: A text field with a dropdown menu showing 'InvoiceID'.
- company**: A text field with a dropdown menu showing 'Company Name'.
- lineitems**: A text field with a table icon.
- street**: A text field with a dropdown menu showing 'Street'.
- city**: A text field with a dropdown menu showing 'City'.
- zip**: A text field with a dropdown menu showing 'Zip'.

20. You still have to generate a file in OneDrive for Business with the content of the previous action output content: add a **OneDrive for Business Create file** action and rename it Create Word file.

21. Fill in the File Content from with the output of the previous action and dynamically generate the file name:



**Create Word file**

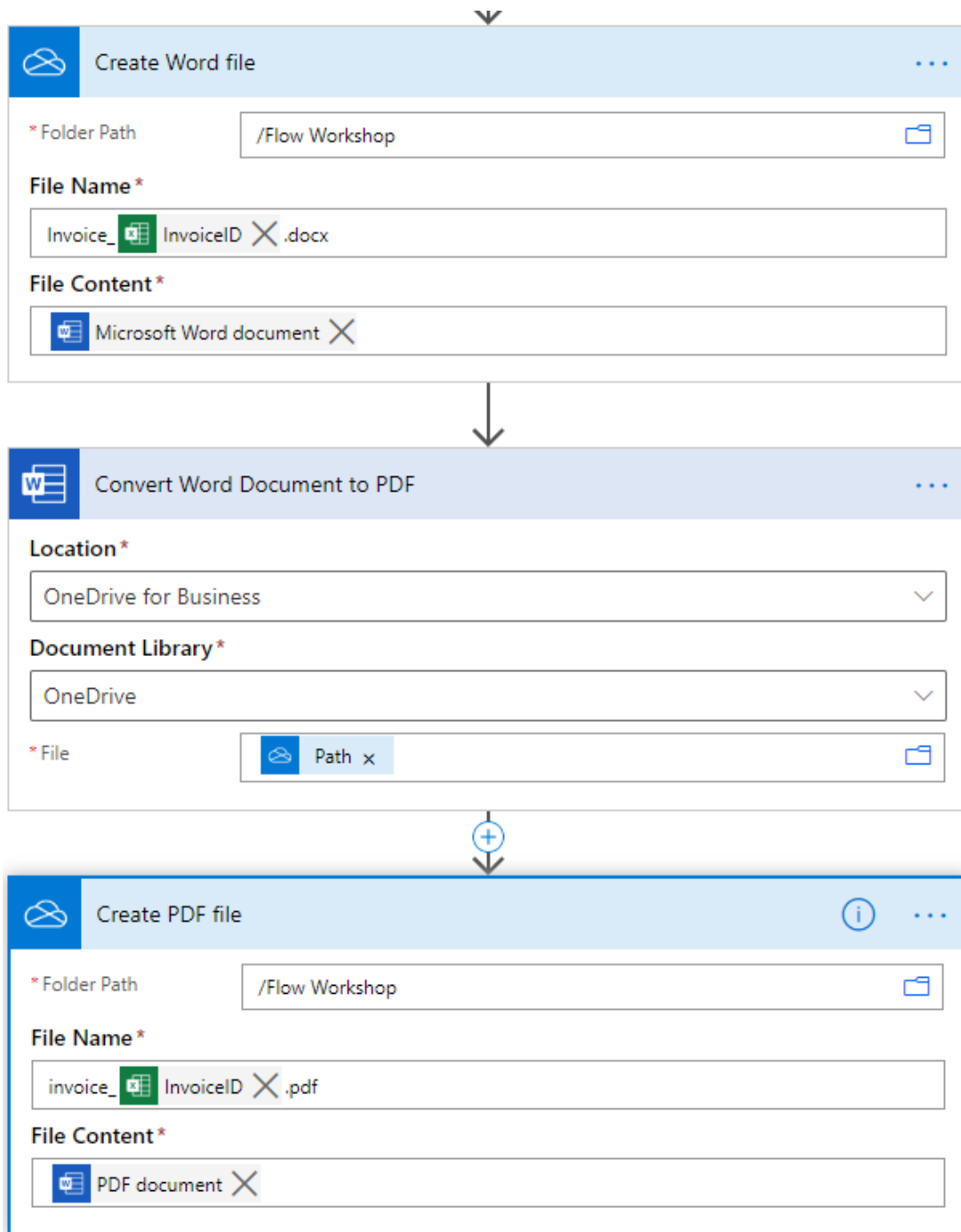
\* Folder Path: /Documents

\* File Name: invoice\_<K> InvoiceID x.docx

\* File Content: Microsoft Word document x

22. Add an action Convert Word Document to PDF and grab the path of the generated file

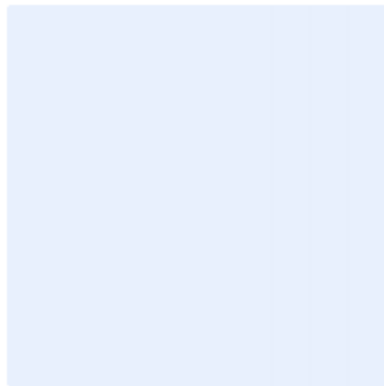
23. Add a **OneDrive for Business Create file action** to create the pdf file and pass the body of the previous action. The next 2 actions should look like this:



24. Run the Flow and check the generated PDF files. The first file should look like this:

|  |                 |          |
|--|-----------------|----------|
| <b>Doctor Flow</b><br>133 av Dieweg<br>1180<br>Uccle<br>Belgique                                     | <b>INVOICE</b>  |          |
| <b>BILL TO</b><br>Company Name: Contoso<br>Street address: 44 av du Bourget<br>City: Brussels , 1130 | <b>INVOICE#</b> | <b>1</b> |

| Description                      | Amount                           |
|----------------------------------|----------------------------------|
| Click or tap here to enter text. | Click or tap here to enter text. |



25. You will now update the Flow to implement the line items. Edit the Flow and define an array variable called **invoiceLines** and initialize it as an empty array:



Manually trigger a flow

Initialize variable invoiceLines

Name\*

invoiceLines

Type\*

Array

Value

[]

26. Add a Set variable action at the start of Apply to each to clean-up this variable again:

Apply to each Invoice

Select an output from previous steps\*

value

Set variable invoiceLines to empty

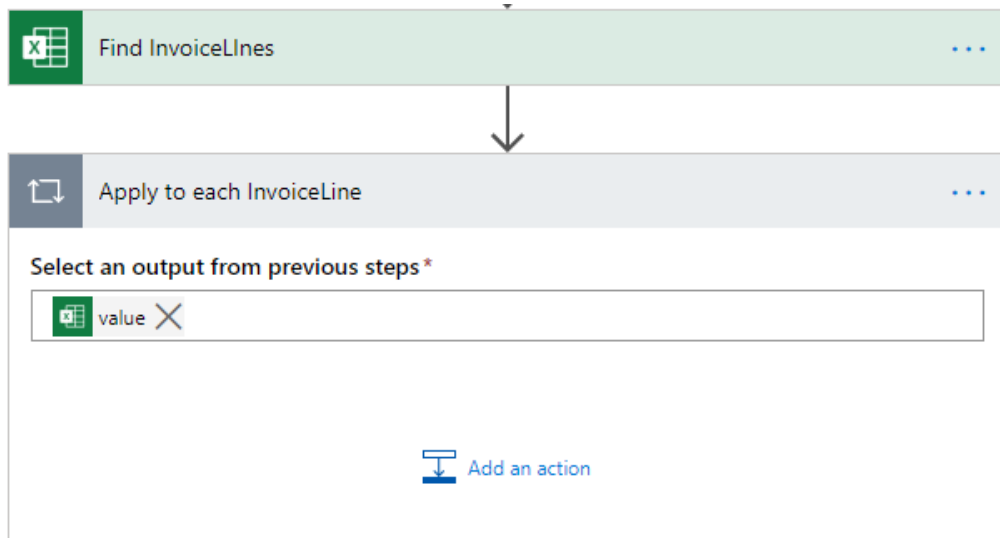
Name

invoiceLines

Value\*

[]

27. After the Find **InvoiceLines** action, **add an Apply to each Invoice** to go through every invoice lines:




28. In this Apply to each, you will create a JSON array containing the **lineitems** information; add an **Append to array variable** action:

The screenshot shows the configuration for the 'Append to array variable invoiceLines' action. The 'Name' field is set to 'invoiceLines'. The 'Value' field contains a JSON object: 

```
{
  "Product": Product,
  "Amount": Amount
}
```

. The 'Product' and 'Amount' fields are dropdown menus with 'X' icons next to them.

29. You will now update the **Populate a Microsoft Word template** action with this array. Select this action and click on the **Switch to input entire array** button:



Populate a Microsoft Word template

...

**Location \***  

OneDrive for Business

**Document Library \***  


OneDrive

\* File

/Flow Workshop/Invoice Template.docx


**managersignature**

**Invoiceid**  

 InvoiceID


X

**company**  


 Company Name

X

lineitems




**street**  

 Street


X

**city**  

 City

X

**zip**  

 Zip

X

30. Store your array in this area:

Populate a Microsoft Word template

**Location\***  
OneDrive for Business

**Document Library\***  
OneDrive

\* File /Flow Workshop/Invoice Template.docx

**managersignature**

**Invoiceid**  
InvoiceID

**company**  
Company Name

**lineitems**  
invoiceLines

**street**  
Street

**city**  
City

**zip**  
Zip

Add dynamic content used in this flow.

Dynamic content

Search dynamic content

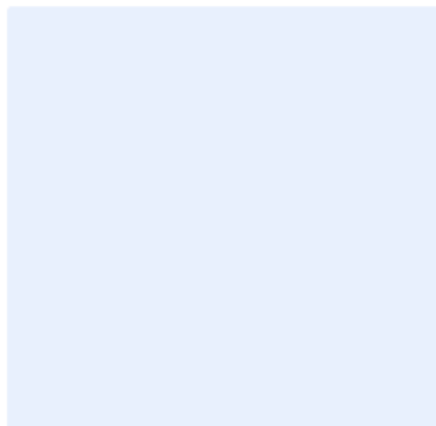
Variables

invoiceLines

31. Run the Flow and check the generated documents. You should now see the invoice line items:

|  |                 |          |
|--|-----------------|----------|
| <b>Doctor Flow</b><br>133 av Dieweg<br>1180<br>Uccle<br>Belgique                                     | <b>INVOICE</b>  |          |
| <b>BILL TO</b><br>Company Name: Contoso<br>Street address: 44 av du Bourget<br>City: Brussels , 1130 | <b>INVOICE#</b> | <b>1</b> |

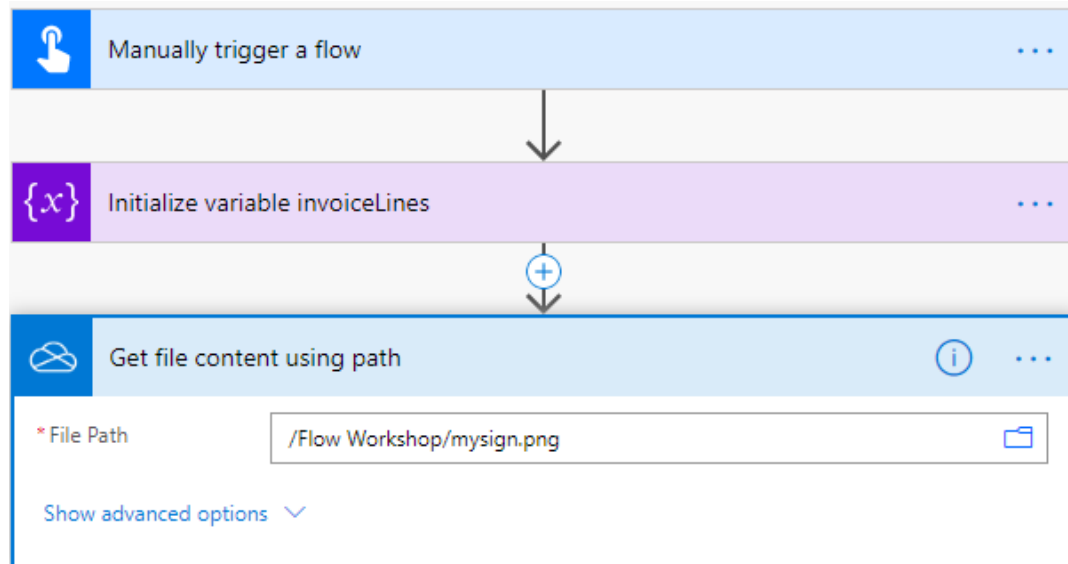
| Description                 | Amount |
|-----------------------------|--------|
| Internal training PowerApps | 5      |
| Internal training Flow      | 4      |



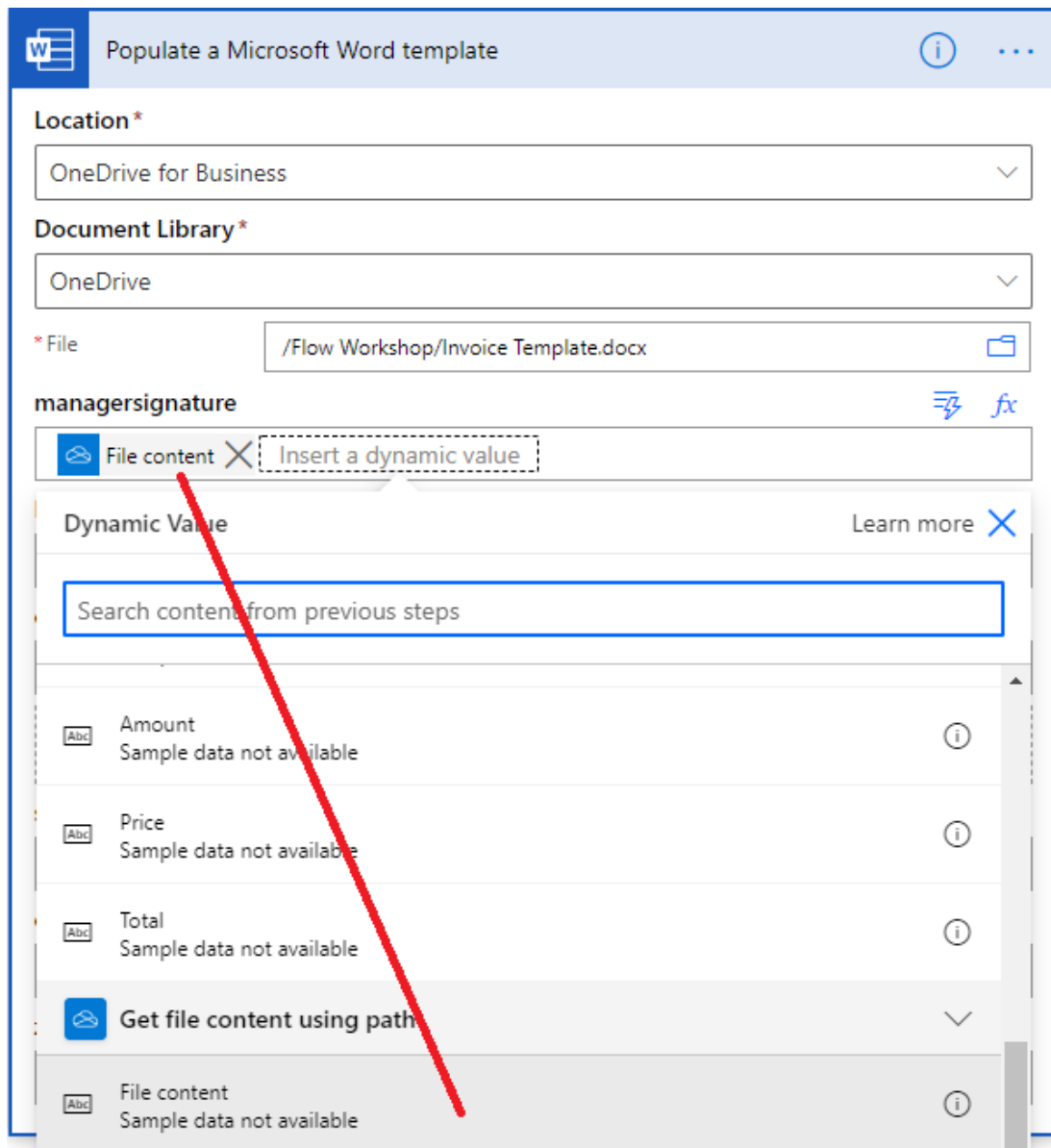
32. We will now display the signature portion of the document. Create a jpeg file with your name and signature, and upload it the Documents folder of your OneDrive for business. For instance, our signature looks like this:

Dr Flow

33. In the beginning section of the Flow, add a **OneDrive for business** action **Get file content using path** and pass your signature file path:



34. Edit the existing action **Populate a Microsoft Word template** action and in the **managersignature** field, pass your signature content:



35. Test your Flow and check one the generated document, the signature should now be visible:

|   |                 |   |
|---|-----------------|---|
| <b>Doctor Flow</b><br>133 av Dieweg<br>1180<br>Uccle<br>Belgique                                    | <b>INVOICE</b>  |   |
| <b>BILL TO</b><br>Company Name: Contoso<br>Street address:44 av du Bourget<br>City: Brussels , 1130 | <b>INVOICE#</b> | 1 |

| Description                 | Amount |
|-----------------------------|--------|
| Internal training PowerApps | 5      |
| Internal training Flow      | 4      |

