

**AIM :** : Part 1: Automate the task of extracting the data from an Excel File according to some condition and storing the extracted data in another File.

Part 2: Automate the task of extracting the data from multiple PDF documents and storing the data into a CSV file.

**OBJECTIVES :**

1. To create a bot that can extract data from pdf and write into excel file

**TOOLS USED :** Automation Anywhere

**Problem Statement :**

1. Automate the excel task of generating a bell curve of a course.
2. 1)Design a bot to automate the task of encrypting the PDF document.  
2)Design a bot to extract the text from single PDF and store it in excel sheet.  
3)Design a bot to extract the text from minimum 3 PDF's and store it in a single excel sheet.

**Controls used :**

**1. Excel Advanced : Open**

Excel Advanced package contains the actions related to automate the repetitive tasks in Excel spreadsheets. Open action is used to open the given excel spreadsheet.

**2. Prompt : For Value**

Prompt : For Value is used to take the input from user to convert the total value into specific percentage.

**3. Loop**

Loop package is used to access the each cell present in the excel spreadsheet.

**4. Number : To string**

Number : To string is used to convert the number into string format.

**5. Excel Advanced : Set cell Formula**

Excel Advanced : Set cell formula is used to set the formula in the active cell in excel spreadsheet.

**6. Excel Advanced : Set cell**

Excel Advanced : Set cell is used to set the value in the active cell in excel spreadsheet.

**7. Number : Increment**

Number : Increment is used to increment the number value by 1.

**8. If**

If action is used to check the string condition. If condition matches then only next actions will run.

### 9. Excel Advanced : Get single cell

Excel Advanced : Get single cell is used to retrieve the value from single cell in excel spreadsheet.

### 10. Number : assign

Number : assign is used to assign the value from one variable to another variable

### 11. PDF: Encrypt Document

This action is use to add an encryption to the PDF file by giving a password and encryption level. The action will create a new pdf file after encryption which will contain the password mentioned while automating.

### 12. PDF: Extract Field

This action is use to extract data from pdf and store it in the dictionary variable. We can select a custom region of the pdf which will get read and store in the dictionary variable.

### 13. Excel advanced: Open

It is use to open the mentioned excel sheet by creating new session.

### 14. Excel advanced: Close

It is use to close the mentioned excel sheet by closing the created session.

### 15. Excel advanced: Set Cell

It is use to set a Particular Cell from the excel sheet by using row and column number of the excel. We can store any kind of variable data in the cells. Here we store dictionary data in the sheet.

### 16. PDF: Extract Field

This action is use to extract data from pdf and store it in the dictionary variable. We can select a custom region of the pdf which will get read and store in the dictionary variable

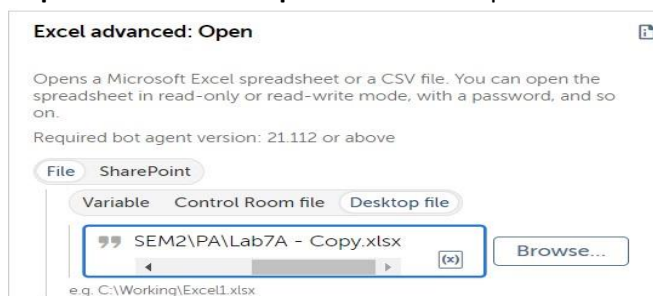
## Solution:

### 7A.

#### Steps to create and execute bot to achieve above task:

**Step 1:** Create a new bot by clicking on Home page of Automation Anywhere, Click on Create bot option. Give the bot name and click on "Create and edit".

**Step 2:** Add an **Excel: Open** control and open the file containing all the data of marks



**Step 3:** Create a variable **rowcount1** and using **Number: Assign** add value 5 to it

**Number: Assign**

Enables you to assign a specified number or result of an expression to a user-defined number variable

Required bot agent version: 20.18 or above

Select the source number variable/ value

# 5

(x)

Specify value to assign to number

Select the destination number variable

# rowcount1

(x)

**Step 4:** Similarly create 2 more variable rowcount2,3 and assign them 5

**Step 5:** Add a **loop** control to loop through all the cells of a column in excel

**Loop**

Runs a sequence of actions for a specific number of times or until a condition is met.

Required bot agent version: 20.11 or above

Label (optional)



Loop Type

☒ Iterator

Iterator

Excel advanced

For each row in worksheet

Iterator for each row in Excel. Output(s) will be assigned to a record variable

Loop through

Specific rows

From row

# 5

(x)

e.g. 1

to row

# 73

(x)

e.g. 10

Read option

☒ Read visible text in cell

e.g. 50% will be read as 50%

☐ Read cell value

e.g. 50% will be read as 50

**Step 6:** Add **excel: set cell formula** control and add the following details

**Excel advanced: Set cell formula**

Sets a formula in the active cell or a specific cell in a Microsoft Excel spreadsheet or a CSV file.

Required bot agent version: 21.112 or above

Set cell formula for

☐ Active cell

☒ Specific cell

G\$rowcount1.Number:toString\$

(x)

e.g. A5 or B10

Enter formula for specific cell

=sum(C\$rowcount1.Number:toString\$:F\$rowcount1.Number:toString\$)

(x)

**Step 7: Do the above steps 2 more times with these details****Excel advanced: Set cell formula**

Sets a formula in the active cell or a specific cell in a Microsoft Excel spreadsheet or a CSV file.

Required bot agent version: 21.112 or above

Set cell formula for

☐ Active cell

☒ Specific cell

Enter formula for specific cell

e.g. A5 or B10

Enter formula for specific cell

Enter formula for specific cell

**Excel advanced: Set cell formula**

Sets a formula in the active cell or a specific cell in a Microsoft Excel spreadsheet or a CSV file.

Required bot agent version: 21.112 or above

Set cell formula for

☐ Active cell

☒ Specific cell

Enter formula for specific cell

e.g. A5 or B10

Enter formula for specific cell

Enter formula for specific cell

**Step 8: Increment all the 3 variable by 1****Number: Increment**

Increments (increases by set intervals) a number by a user-specified value

Required bot agent version: 20.18 or above

Enter number

Enter number

Enter increment value

Enter increment value

Increments number by value (e.g. 1)

Assign the output to variable

Assign the output to variable

**Number: Increment**

Increments (increases by set intervals) a number by a user-specified value

Required bot agent version: 20.18 or above

Enter number

Enter number

Enter increment value

Enter increment value

Increments number by value (e.g. 1)

Assign the output to variable

Assign the output to variable

**Number: Increment**

Increments (increases by set intervals) a number by a user-specified value

Required bot agent version: 20.18 or above

Enter number

Enter number

Enter increment value

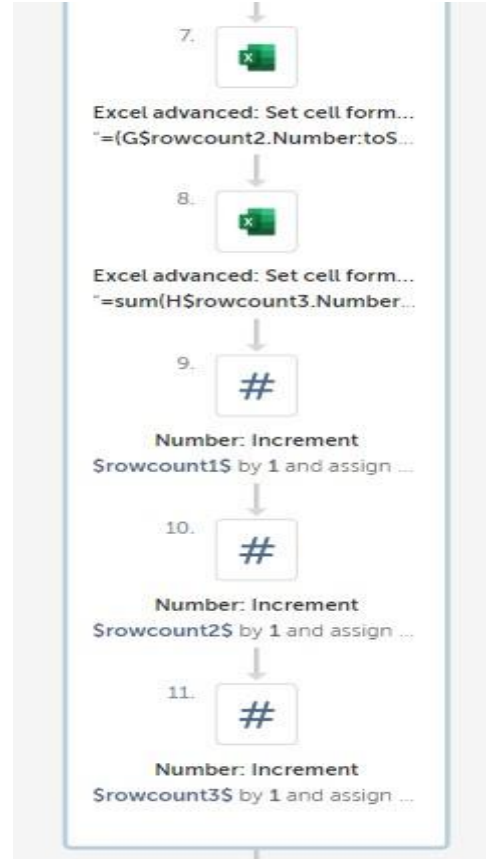
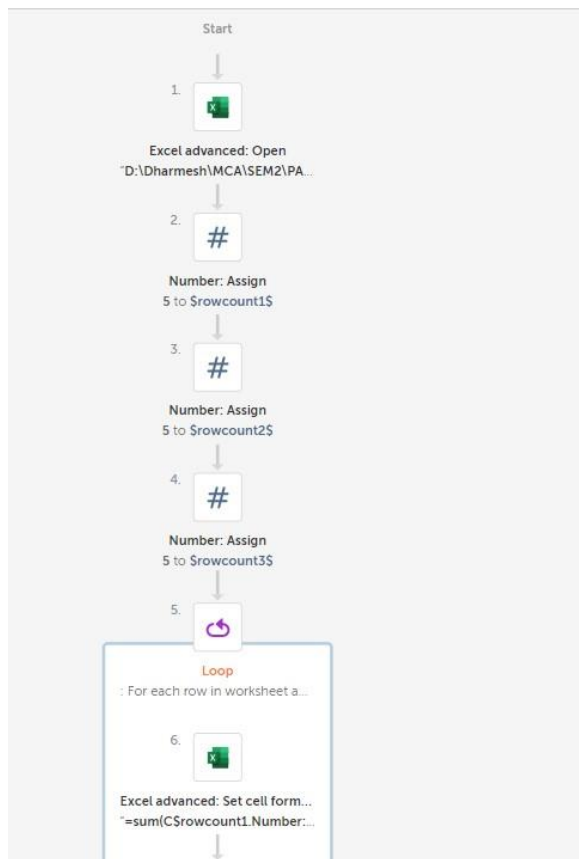
Enter increment value

Increments number by value (e.g. 1)

Assign the output to variable

Assign the output to variable

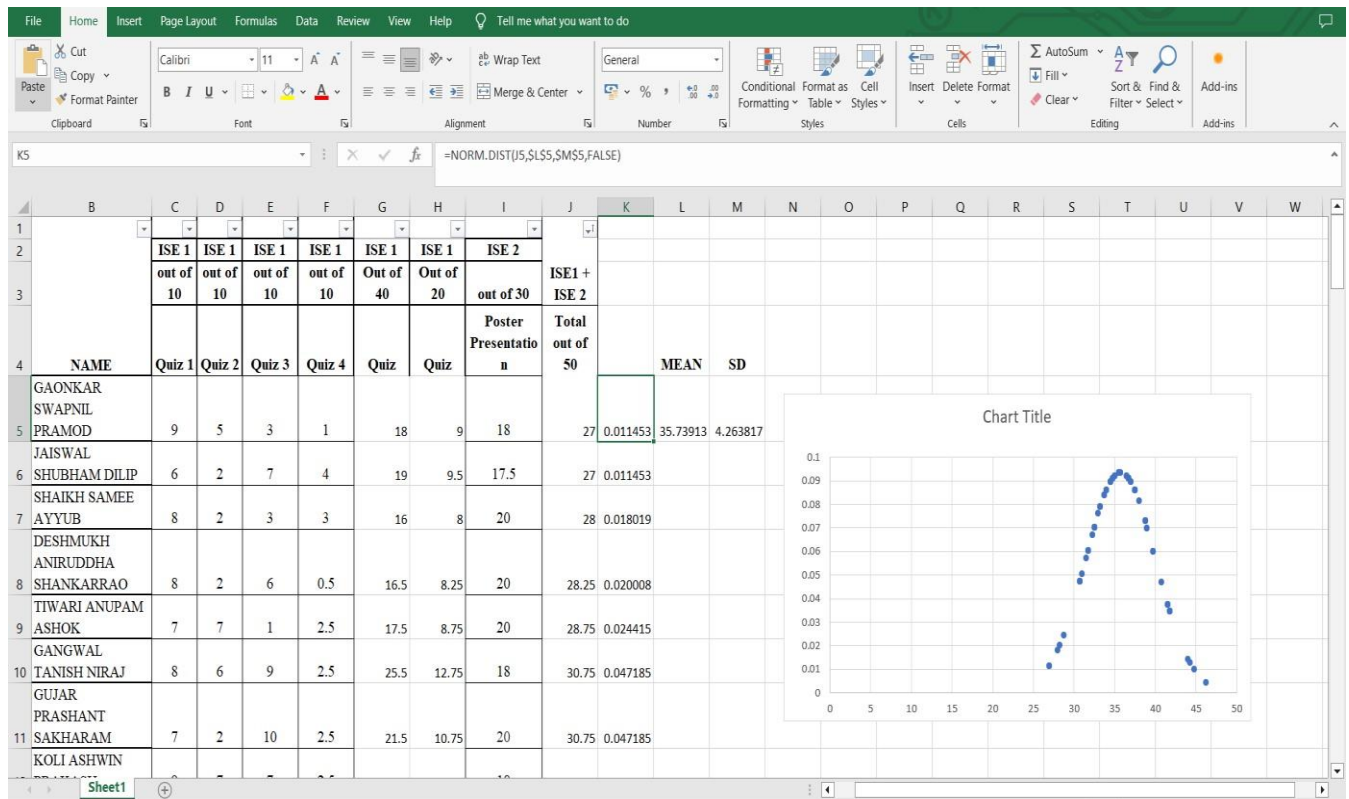
**Step 9: This is how the final flow looks like**



Run the bot

Microsoft Excel interface showing a student performance table. The table has columns for UCID, NAME, Quiz 1, Quiz 2, Quiz 3, Quiz 4, Quiz, Quiz, Poster Presentation, and Total out of 50. The data is as follows:

UCID	NAME	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz	Quiz	Poster Presentation	Total out of 50
2020510001	AGARWAL SURBHI MUKESH KUMAR	7.5	7	10	4			22.5	
2020510002	BAGUL JAKISHAN BABULAL	8	7	10	5			20	
2020510003	BALKI SHIVAM SANJEEV	6.5	2	10	5			20	
2020510004	BAMBLE AKASH ASHOK	7.5	6	10	3			20	
2020510005	BARASKAR SAHIL ANIL	9	6	10	3.5			22.5	
2020510006	BELLWANI MOHIT RAVINDER	8	8	10	7			25	
2020510007	BHAT GEETA VISHWANATH BISWAS	9	8	10	6			25	



7B.

1) Design a bot to automate the task of encrypting the PDF document.

Steps to create and execute bot to achieve above task:

**Step 1:** Create a new bot by clicking on Home page of Automation Anywhere, Click on Create bot option. Give the bot name and click on "Create and edit".

**Step 2:** Add a **PDF: Encrypt document** control and add the source file, password to be encrypted and the destination location

### PDF: Encrypt document



Encrypts a PDF file

Required bot agent version: 20.11 or above

#### PDF path

Variable Control Room file Desktop file

rs\smart\Desktop\Grey Knights



Browse...

Required extension: ".pdf"

User password (optional)

Credential Variable Insecure string

Encryption level

☐ RC4 40-bit

☒ RC4 128-bit

☐ AES 128-bit

Save encrypted PDF as

rs\smart\Desktop\Grey Knights (x) Browse...

Required extension: ".pdf"

☐ Overwrite files with the same name

**Step 3:** Add a File: Open control to open the newly created encrypted file.

**File: Open** ⓘ

Opens an existing file.

Required bot agent version: 20.11 or above

File

Specific path Regex

rs\smart\Desktop\Grey Knights (x) Browse...

e.g. C:\MyDoc\MyFile.doc

**Step 4:** Add a **Simulate Keystrokes** control to type the encryption key and use Enter to open the file.

## Simulate keystrokes

Required bot agent version: 21.200 or above

Select window

Browser Application Variable

\$Window1\$ (x)

Window title

e Syllabus1.pdf - Personal - Microsoft Edge

☒ Case sensitive

Window application path

C:\Program Files (x86)\Microsoft\Edge\Application\msed

☐ Resize window

May improve bot accuracy

## Keystrokes

☒ Enter keystrokes here or use the on-screen keyboard

” mca123 [NUM-ENTER] (x)

☐ Select a credential

Credential Variable

Required

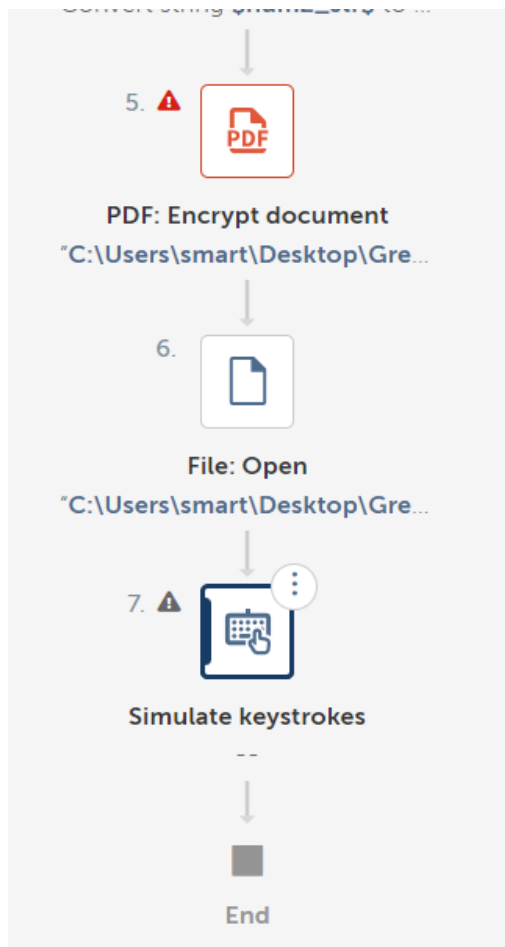
Pick...

Delay between each keystroke in ms (optional)

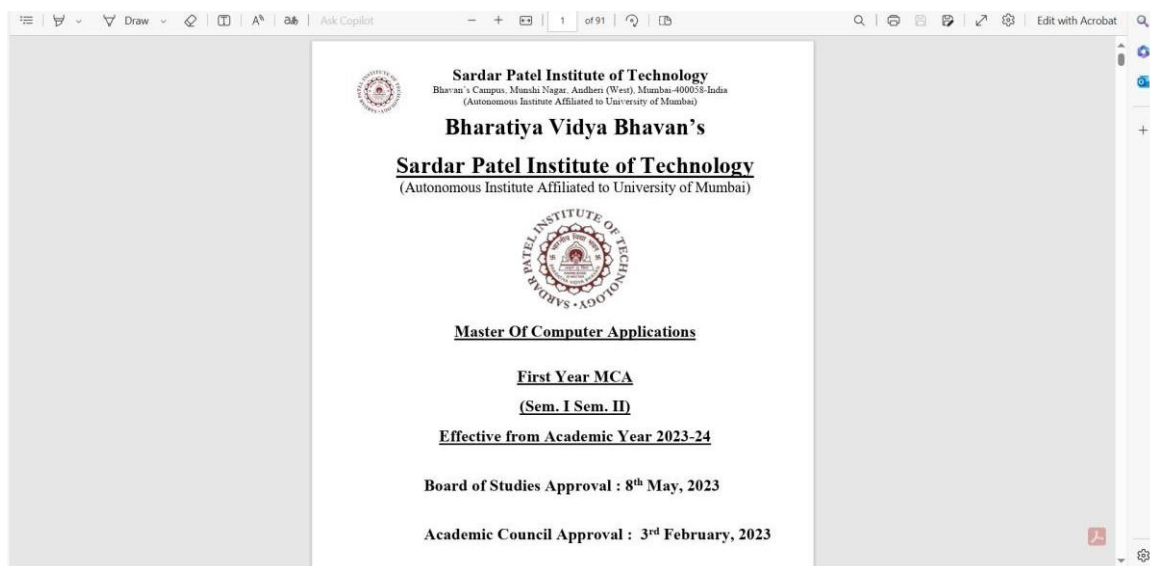
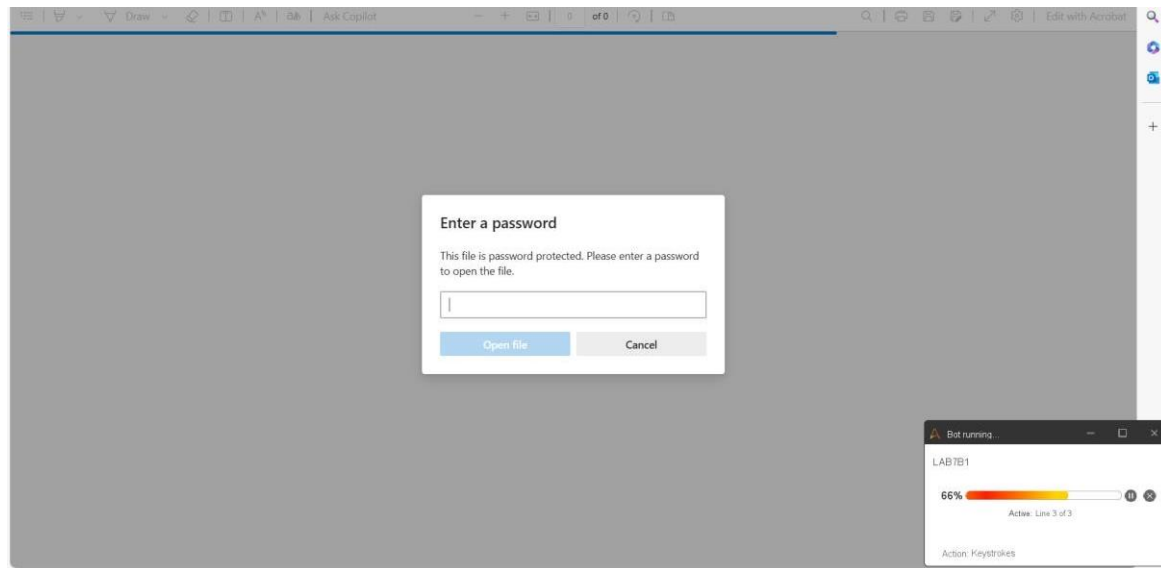
# 10 (x)

A value greater than 2 is recommended.

## Final Flow:







2) Design a bot to extract the text from single PDF and store it in excel sheet.

**Steps to create and execute bot to achieve above task:**

**Step 1:** Create a new bot by clicking on Home page of Automation Anywhere, Click on Create bot option. Give the bot name and click on "Create and edit".

**Step 2:** Create a **PDF: Extract Field** control, select the pdf file and capture the region containing the text, store it in a key and dictionary pair.

**PDF: Extract field**

Extracts fields from a PDF and assigns it to variables

Required bot agent version: 21.31 or above

PDF path

Variable Control Room file Desktop file

C:\Users\smart\Desktop\Grey Knight.pdf

Browse...

Required extension: \*.pdf

File is protected

Yes No

**Step 3:** Add **Excel: Open** to open an excel file where you want to store the extracted data.

**Excel advanced: Open**

Opens a Microsoft Excel spreadsheet or a CSV file. You can open the spreadsheet in read-only or read-write mode, with a password, and so on.

Required bot agent version: 21.112 or above

File SharePoint

Variable Control Room file Desktop file

C:\Working\Excel1.xlsx

Browse...

☐ Sheet contains a header

☐ Specific sheet name

Required

e.g. Sheet1 or SHEET1

Open in

☐ Read-only mode

☒ Read-write mode

**Step 4:** Add **Excel: Set cell** control and set the value which we have extracted from pdf using dictionary key into the excel.

## Excel advanced: Set cell



Sets a value in the Active cell or Specific cell in a Microsoft Excel spreadsheet or a CSV file. You can also use this action to set a formula.

Required bot agent version: 21.112 or above

## Cell option

☒ Active cell

☐ Specific cell

” Required

e.g. A5 or B2:B10

## Cell value

” \$dict{7b1}\$

(x)

e.g. Original

## Session name

Session name

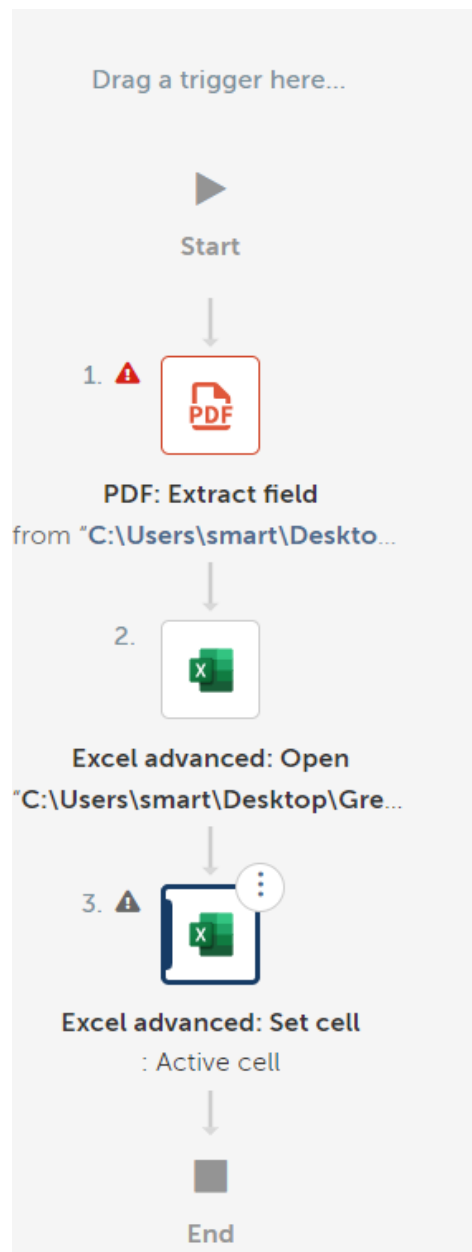
Variable

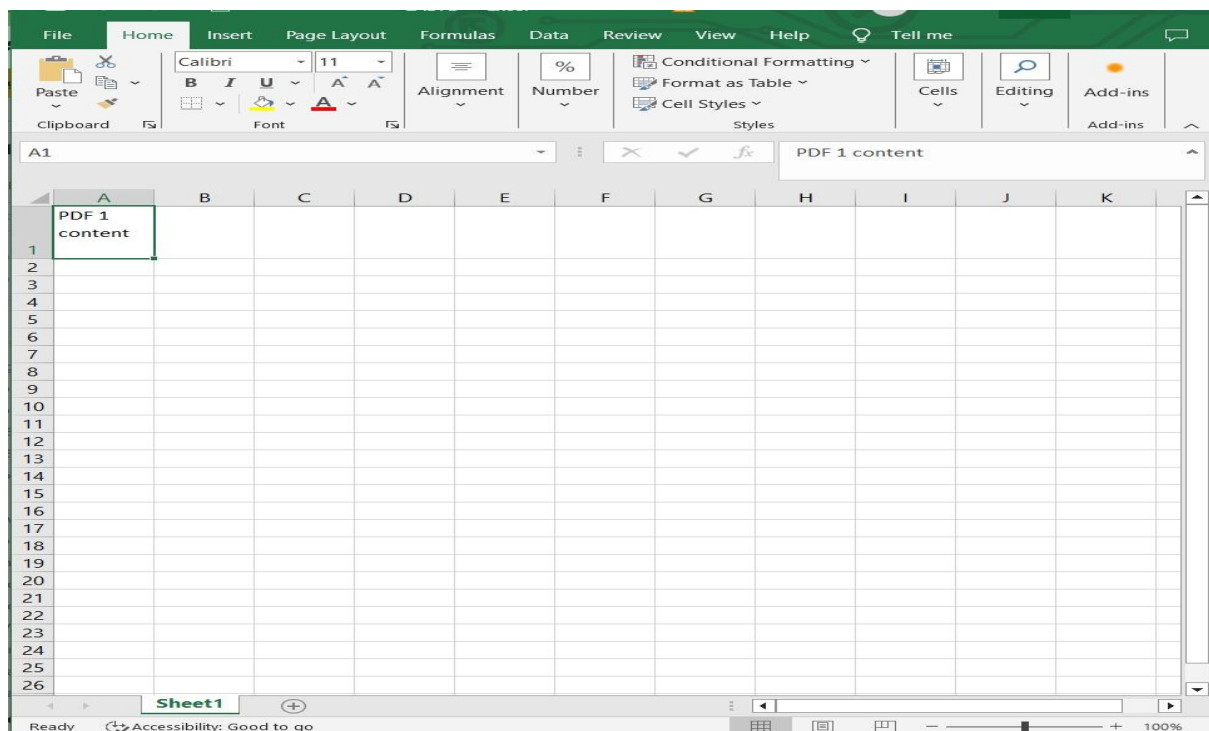
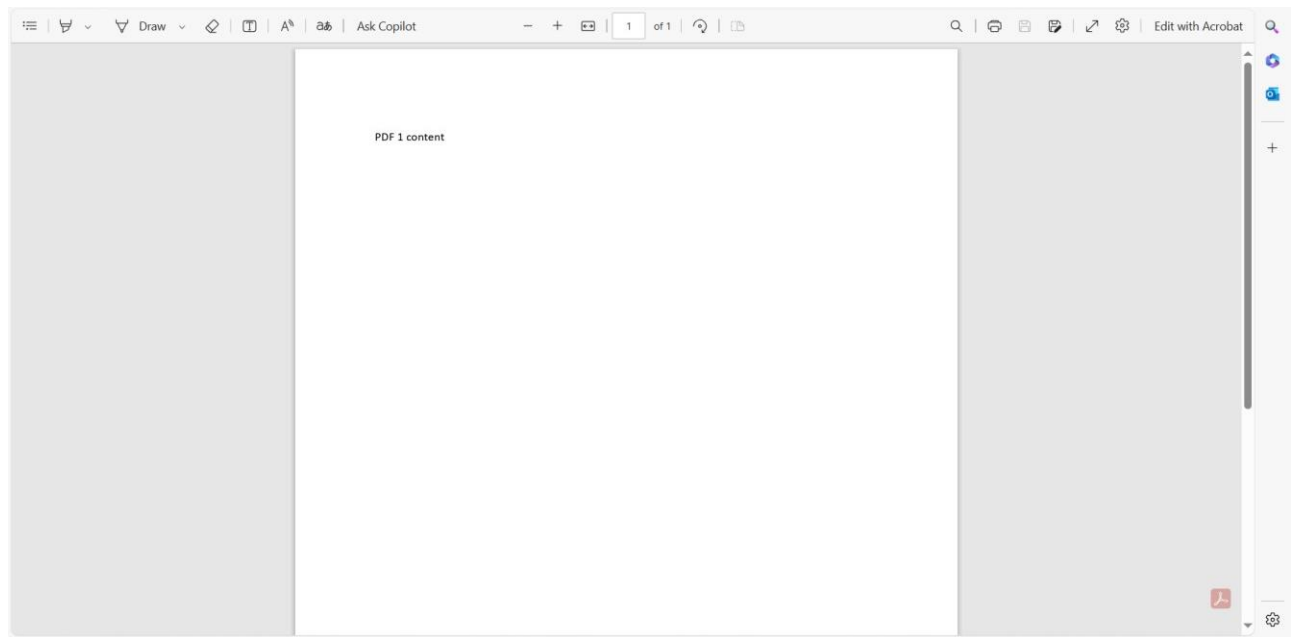
” Default

(x)

The name you gave the session when you opened it.

Final Flow:





3) Design a bot to extract the text from minimum 3 PDF's and store it in a single excel sheet.

Steps to create and execute bot to achieve above task:

**Step 1:** Create a new bot by clicking on Home page of Automation Anywhere, Click on Create bot option. Give the bot name and click on "Create and edit".

**Step 2:** Create 3 different **PDF: Extract field** controls and save the values to 3 different dictionaries and keys.

## PDF: Extract field

Extracts fields from a PDF and assigns it to variables

Required bot agent version: 21.31 or above

PDF path

Variable Control Room file Desktop file

” C:\Users\smart\Downloads\Wr

Browse...

Required extension: ".pdf"

File is protected

Yes No

Extract fields



## PDF: Extract field



Extracts fields from a PDF and assigns it to variables

Required bot agent version: 21.31 or above

PDF path

Variable Control Room file Desktop file

” C:\Users\smart\Downloads\Wr

Browse...

Required extension: ".pdf"

File is protected

Yes No

Extract fields

**Step 3: Add Excel: Open** to open an excel file where you want to store the extracted data.

## Excel advanced: Open



Opens a Microsoft Excel spreadsheet or a CSV file. You can open the spreadsheet in read-only or read-write mode, with a password, and so on.

Required bot agent version: 21.112 or above

File SharePoint

Variable Control Room file Desktop file

” C:\Users\smart\Downloads

Browse...

e.g. C:\Working\Excel1.xlsx

☐ Sheet contains a header

**Step 4: Add 3 Excel: Set cell** controls and set the value which we have extracted from pdf using dictionary key into the excel. Use the unique key dictionary values for each cell.

Excel advanced: Set cell

Sets a value in the Active cell or Specific cell in a Microsoft Excel spreadsheet or a CSV file. You can also use this action to set a formula.

Required bot agent version: 21.112 or above

Cell option

Active cell

Specific cell

” A1

e.g. A5 or B2:B10

Cell value

” \$dict{7b1}\$

e.g. Original

Session name

Session name

Variable

” Default

The name you gave the session when you opened it.

Excel advanced: Set cell

Sets a value in the Active cell or Specific cell in a Microsoft Excel spreadsheet or a CSV file. You can also use this action to set a formula.

Required bot agent version: 21.112 or above

Cell option

Active cell

Specific cell

” A2

e.g. A5 or B2:B10

Cell value

” \$dict1{7b2}\$

e.g. Original

Session name

Session name

Variable

” Default

The name you gave the session when you opened it.

Excel advanced: Set cell

Sets a value in the Active cell or Specific cell in a Microsoft Excel spreadsheet or a CSV file. You can also use this action to set a formula.

Required bot agent version: 21.112 or above

Cell option

Active cell

Specific cell

” A3

e.g. A5 or B2:B10

Cell value

” \$dict2{7b3}\$

e.g. Original

Session name

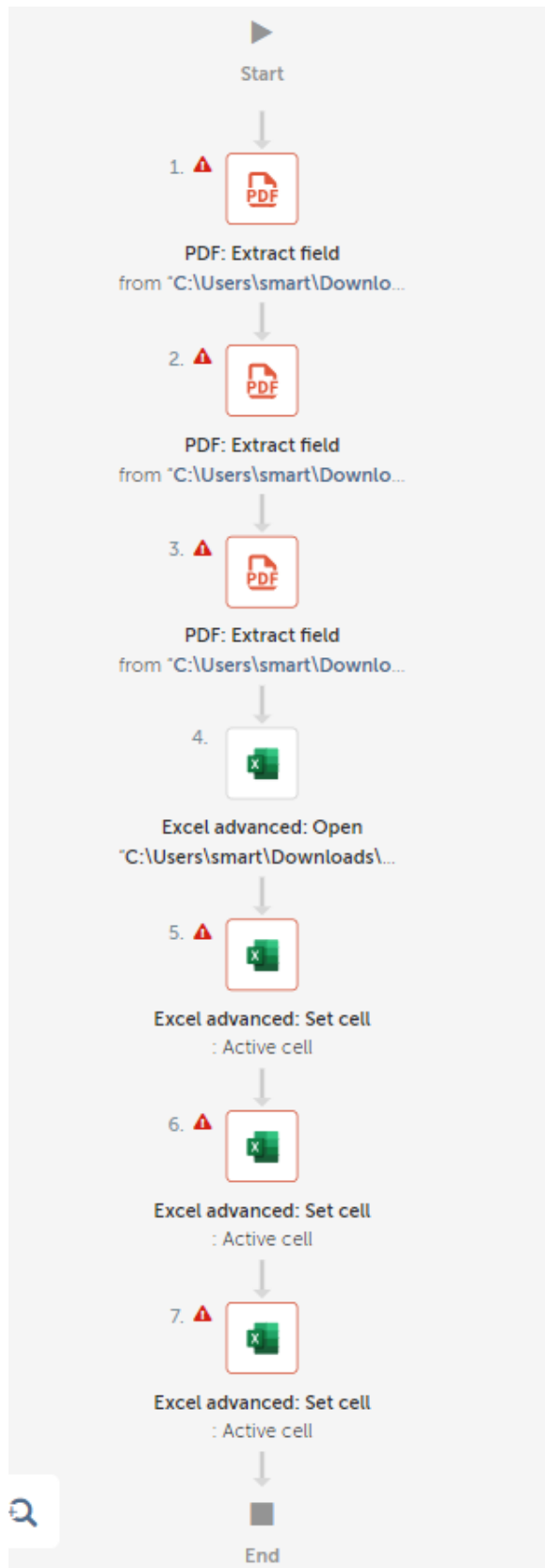
Session name

Variable

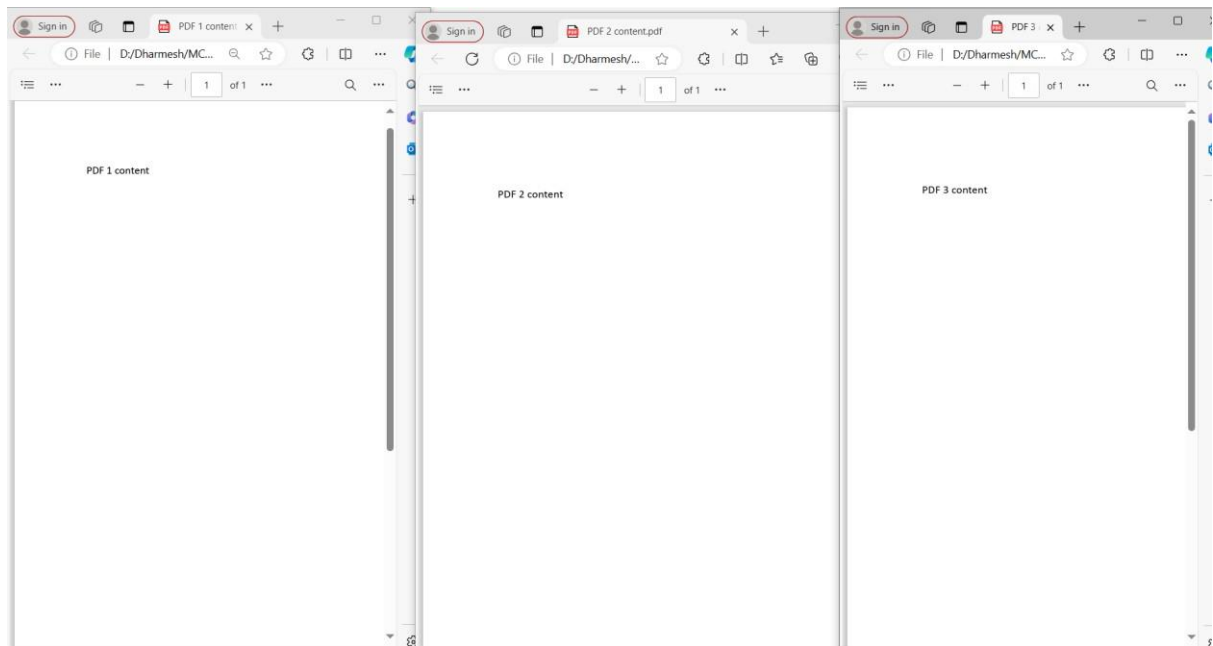
” Default

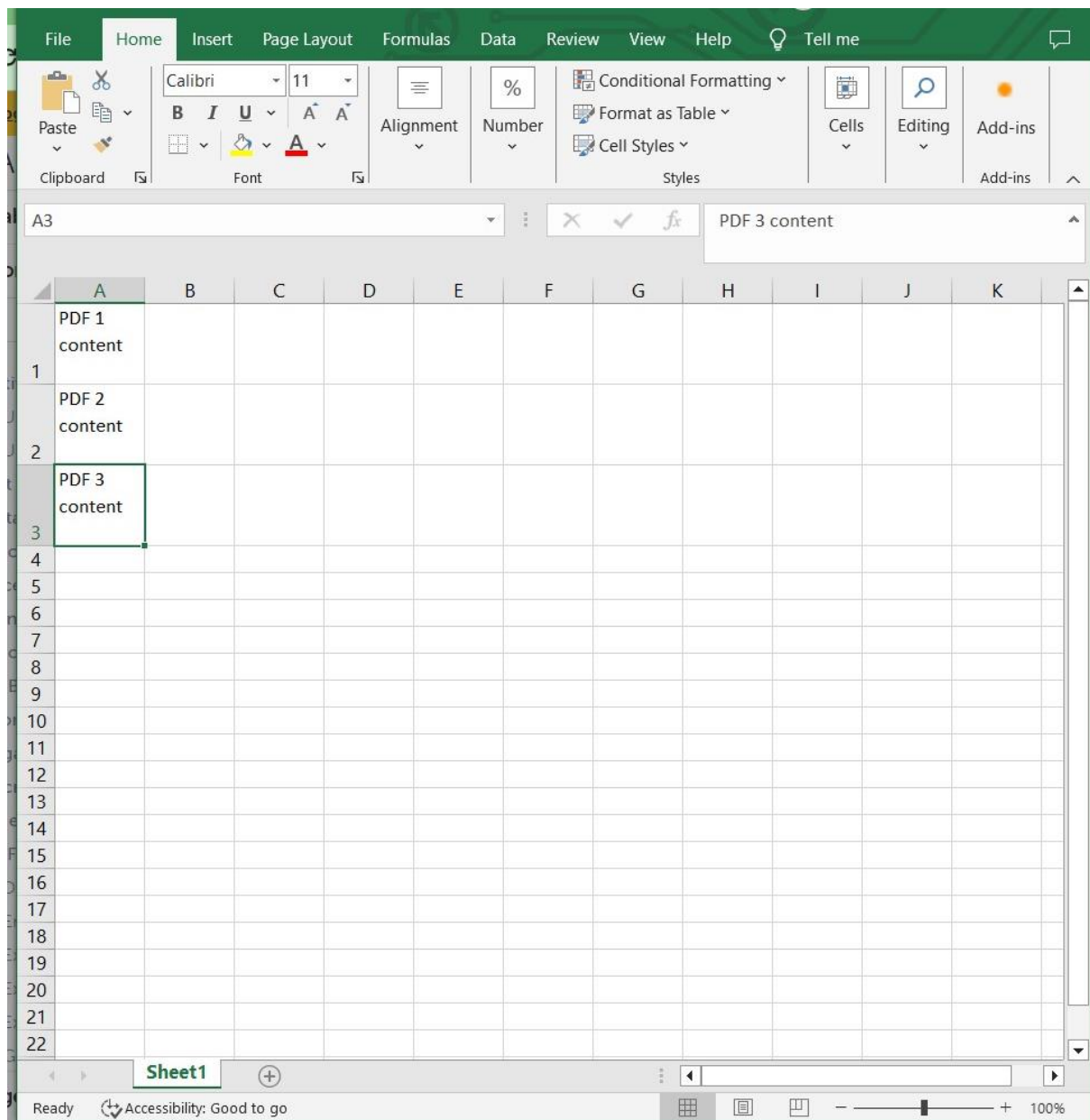
The name you gave the session when you opened it.

Final flow:







**Observation:**

From this experiment, I have learnt how to open an excel file and write content into it using a loop. I have also learnt how to extract data from pdf files and store them into excel files.