Introduction to RPA:

Robotic Process Automation (RPA) is an innovative technology that revolutionizes the way businesses automate their processes. It employs software robots or "bots" to perform repetitive, rule-based tasks, freeing up human employees to focus on more strategic and creative work.

At its core, RPA is all about automating routine and mundane tasks that follow a set of predefined rules. These tasks could involve data entry, form filling, report generation, or any other task that is predictable and can be executed by following a series of steps.

RPA bots, the digital workforce, interact with applications, systems, and data sources just like humans do. They navigate through user interfaces, click buttons, enter data into fields, copy and paste information, and read from or write to databases. The beauty of RPA lies in its non-invasive nature – it works on top of existing systems and applications without requiring complex integrations or modifications.

Implementing RPA is a highly scalable and flexible approach. Organizations can deploy multiple bots to handle different tasks simultaneously, thereby significantly increasing productivity. These bots can be easily replicated and deployed on-demand, allowing businesses to adapt swiftly to changing process requirements.

By leveraging RPA, companies can achieve substantial gains in productivity, efficiency, and accuracy. Automation eliminates human errors, ensures consistent performance, and accelerates processing times. With repetitive tasks automated, employees can redirect their efforts towards higher-value activities that require creativity, critical thinking, and problem-solving skills.

Furthermore, RPA can be integrated with cognitive technologies such as artificial intelligence (AI) and machine learning (ML). This integration enables bots to perform more sophisticated tasks, such as natural language processing, extracting information from unstructured sources like emails or documents, and making intelligent decisions based on data analysis.

The adoption of RPA is widespread across industries, including banking, insurance, healthcare, retail, and manufacturing. Organizations of all sizes are embracing this technology to streamline their operations, reduce costs, and enhance customer experiences. RPA has proven to be a game-changer, offering a rapid return on investment and paving the way for digital transformation.

In conclusion, RPA is a powerful technology that brings automation to the forefront of business processes. By deploying software robots to handle repetitive tasks, organizations can unlock a new level of productivity, accuracy, and efficiency. RPA serves as a catalyst for innovation and allows human employees to focus on tasks that require their unique skills and expertise.

Characteristics of RPA:

1. **Automation:** RPA focuses on automating routine and repetitive tasks that are rule-based and don't require complex decision-making. It can handle tasks such as data entry, data extraction, form filling, report generation, and more.
2. **Software robots**: RPA bots are software programs that can be configured to perform specific tasks. They can interact with various applications and systems through the user interface, just like a human user. Bots can be trained to follow predefined rules and workflows.
3. **User interface interaction**: RPA bots interact with applications and systems by emulating human actions such as clicking buttons, entering data into fields, copying and pasting information, and reading from/writing to databases. They can work with both web-based and desktop applications.
4. **Non-invasive technology:** RPA is a non-intrusive technology that sits on top of existing systems and applications. It does not require complex integrations or modifications to the underlying systems. RPA bots work at the user interface level, which makes them compatible with a wide range of software.
5. **Rules-based automation:** RPA bots follow predefined rules and instructions to perform tasks. These rules can be created by recording human actions or by designing workflows using visual process designers provided by RPA platforms. RPA can handle structured data and can make decisions based on if-then rules.
6. **Scalability and flexibility**: RPA allow organizations to scale automation rapidly by deploying multiple bots to handle different tasks simultaneously. Bots can be easily replicated and deployed on-demand. RPA is also flexible and can adapt to changes in business processes without the need for extensive coding.
7. **Enhanced productivity and accuracy:** By automating repetitive tasks, RPA frees up human employees from mundane work, allowing them to focus on more value-added activities. RPA bots work with high accuracy and consistency, minimizing errors and reducing the need for manual intervention.
8. **Integration with cognitive technologies**: RPA can be combined with other technologies such as artificial intelligence (AI) and machine learning (ML) to add cognitive capabilities to automation. This allows RPA bots to perform more complex tasks, such as natural language processing, data extraction from unstructured sources, and intelligent decision-making.

Introduction to UiPath:

UiPath is a leading Robotic Process Automation (RPA) software that enables businesses to automate their processes efficiently. It provides a user-friendly and intuitive platform for designing, deploying, and managing automation workflows.

UiPath Studio provides a comprehensive and user-friendly environment for designing and developing RPA solutions. Its intuitive layout, combined with the powerful features and capabilities, empowers users to build sophisticated automation workflows without extensive coding knowledge. With UiPath, businesses can automate their processes effectively and accelerate their digital transformation journey.

Let's delve into the tool's layout and explore its various panels:

1. **Ribbon:** At the top of the UiPath Studio interface, you'll find the Ribbon, which contains different tabs that group related functionalities. These tabs include Home, Design, Execute, Debug, and Publish, among others. Each tab offers a range of tools and options to support the automation development process.

2. **Activities Panel:** Located on the left side of the UiPath Studio, the Activities panel is where you access the extensive library of pre-built activities. Activities represent specific actions that the software robot can perform, such as opening applications, interacting with web elements, sending emails, or reading data from spreadsheets. You can simply drag and drop activities onto the workflow designer to build your automation process.

3. **Workflow Designer:** The central part of the UiPath Studio interface is occupied by the Workflow Designer. It provides a visual canvas where you construct your automation workflows using a flowchart-based model. You can arrange activities, define the flow of execution, and connect different elements to create a step-by-step process. The Workflow Designer offers a clear and structured representation of your automation logic.

4. **Properties Panel:** Situated on the right side of the UiPath Studio, the Properties panel displays the properties and parameters of the selected activity. Here, you can configure and fine-tune the behaviour of each activity by setting input values, specifying output variables, and adjusting other settings. The Properties panel allows you to customize the behaviour of activities to align with your automation requirements.

5. **Variables Panel:** The Variables panel, usually docked below the Workflow Designer, is where you define and manage variables within your automation project. Variables store data that can be used throughout the workflow. You can create variables of different types, such as text, numbers, dates, or arrays, and utilize them to store temporary values, perform calculations, or pass information between activities.

6. **Output Panel:** The Output panel is positioned at the bottom of the UiPath Studio interface. It provides real-time feedback and information during the execution of your automation. It displays messages, warnings, and error details, allowing you to monitor the progress and troubleshoot any issues that arise. The Output panel is a helpful tool for debugging and ensuring the smooth functioning of your automation workflows.

7. **Project Panel:** The Project panel, typically located on the left side of the UiPath Studio, offers an overview of your automation project's structure. It displays the files, folders, and dependencies associated with your project. From the Project panel, you can navigate between different files, manage project settings, and access important resources like libraries, assets, and queues.

Termwork 1

Problem statement:

Build a workflow that prints "Hello World" in a message box.

Introduction:

The objective is to know how the UiPath Studio works so for that every beginner starts with a simple workflow and that is printing “Hello, world!”

In this termwork we learn how to print “Hello, World!” using UiPath Studio by following the steps given below:

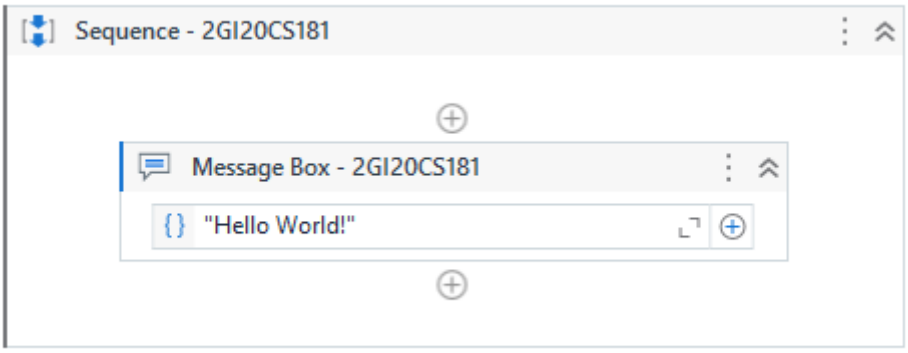
1. Open UiPath Studio and create a new project.
2. Drag and drop the "Sequence" activity onto the workflow canvas. This activity is used to create a sequence of actions.
3. Within the Sequence activity, drag and drop the "Message Box" activity. This activity displays a message box with a specified message.
4. In the properties panel of the Message Box activity, enter "Hello World" as the value for the "Text" property. This is the message that will be displayed in the message box.
5. Save the workflow and run the project.

List of activities used in this workflow:

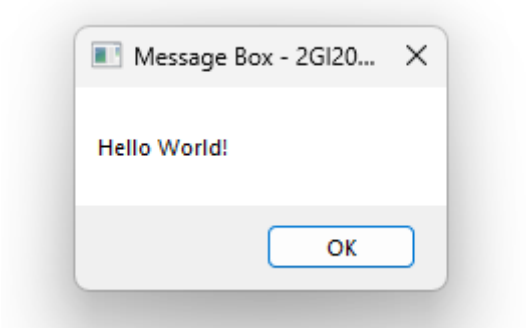
- **Sequence:** Creates a sequence of actions.
- **Message Box:** Displays a message box with a specified message.

By using these activities, you can create a simple workflow in UiPath Studio that will display the "Hello World" message in a message box when executed.

Workflow Design:



Output:



Conclusion:

In the above topic, we have learned how to build a workflow in UiPath Studio that prints "Hello World" in a message box. By using the Sequence activity to create a sequence of actions and the Message Box activity to display the message, we were able to accomplish this task.

The outcome of the term work is a functional workflow that can be executed in UiPath Studio. When the workflow is run, it will display a message box with the text "Hello World" as the message.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 2:

Problem Statement:

Build a workflow that swaps the values of two variables using a third variable.

Introduction:

Swapping the values of two variables using a third variable is a common programming task that involves exchanging the values stored in two variables without losing any data. This operation can be implemented using various programming languages and automation tools, such as UiPath Studio.

Variable swapping is achieved by temporarily storing the value of one variable in a third variable, assigning the value of the second variable to the first variable, and finally assigning the value stored in the third variable to the second variable. This process ensures that the values of both variables are interchanged accurately.

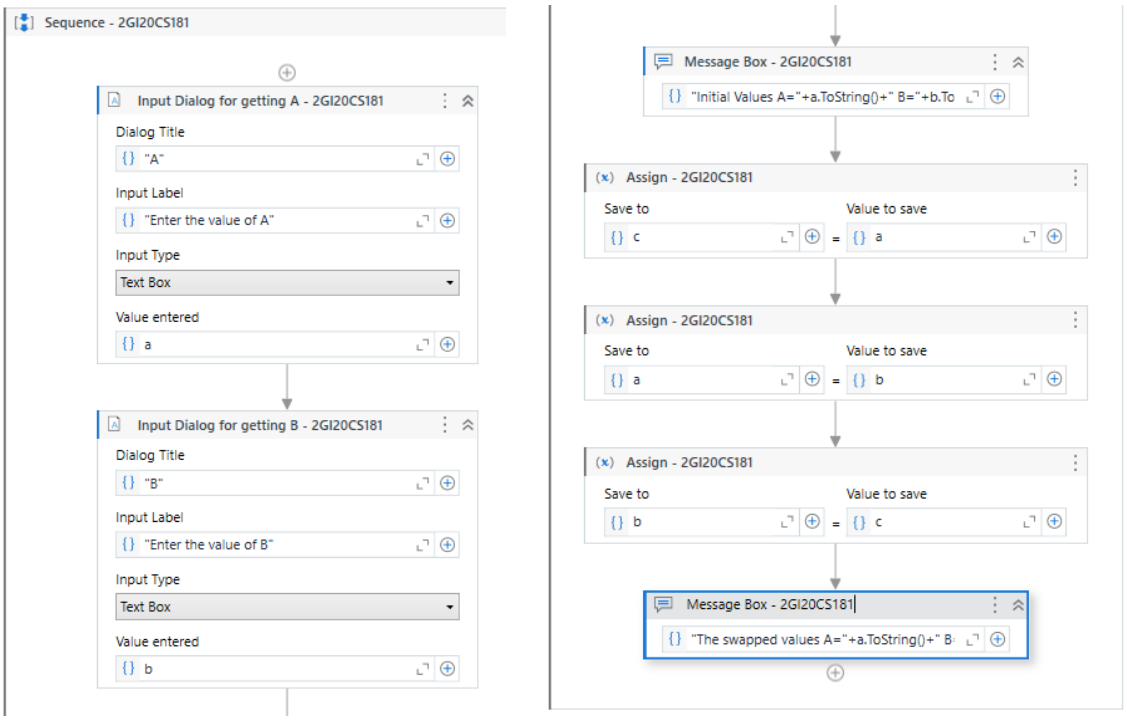
To develop a workflow in UiPath Studio to swap the values of two variables using a third variable, we can utilize the following activities:

1. **Sequence:** Creates a sequence of actions.
2. **Assign:** This activity is used to assign values to variables. In this case, we assign the initial values of the two variables to be swapped.
3. **Input Dialog:** Lets a user to enter a number or any type assigned to it

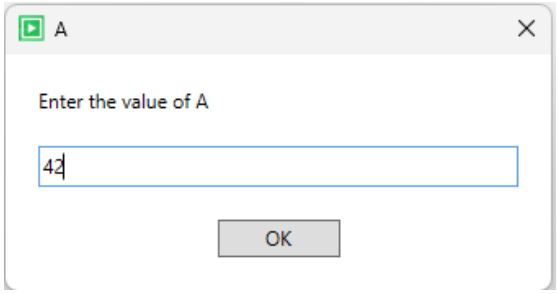
In this termwork we learn how to swap 2 numbers using UiPath Studio by following the steps given below:

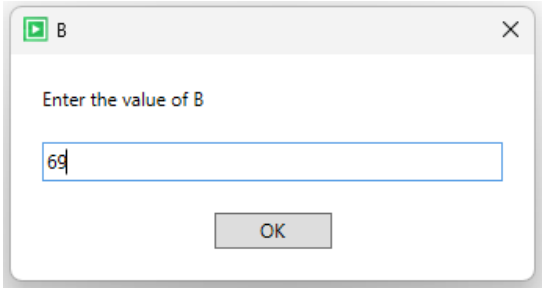
1. Ask for the input for 2 numbers
2. Assign the values you want to swap to "Variable1" and "Variable2."
3. Assign the value of "Variable1" to "Temp_Variable" to temporarily store its value.
4. Assign the value of "Variable2" to "Variable1."
5. Assign the value of "Temp_Variable" to "Variable2."

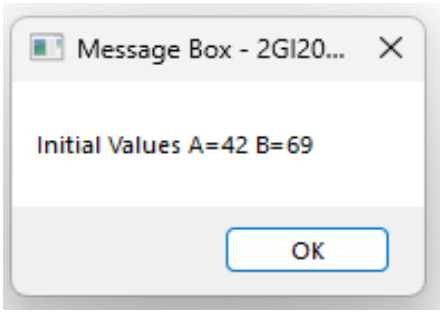
Workflow Design:

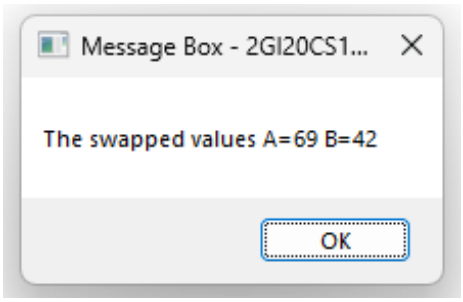


Output:









Conclusion:

By following the workflow outlined above, we successfully swapped the values of two variables using a third variable in UiPath Studio. This approach helps us ensure that the original values are not lost during the swapping process. It demonstrates the basic usage of variables and the assign activity in UiPath. This workflow can be further extended and incorporated into larger automation processes, where variables need to be manipulated or swapped dynamically.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 3:

Problem statement:

Build a workflow that uses different Input Methods to input data in a Notepad.

i. Typeinto
ii. SimulateClick
iii. SendWindowMessages methods.

Introduction:

In UiPath Studio, you can create workflows that automate various tasks, including data input in applications such as Notepad. This can be achieved using different input methods, such as TypeInto, SimulateClick, and SendWindowMessages.

To develop a workflow for inputting data in Notepad, we can follow these steps:

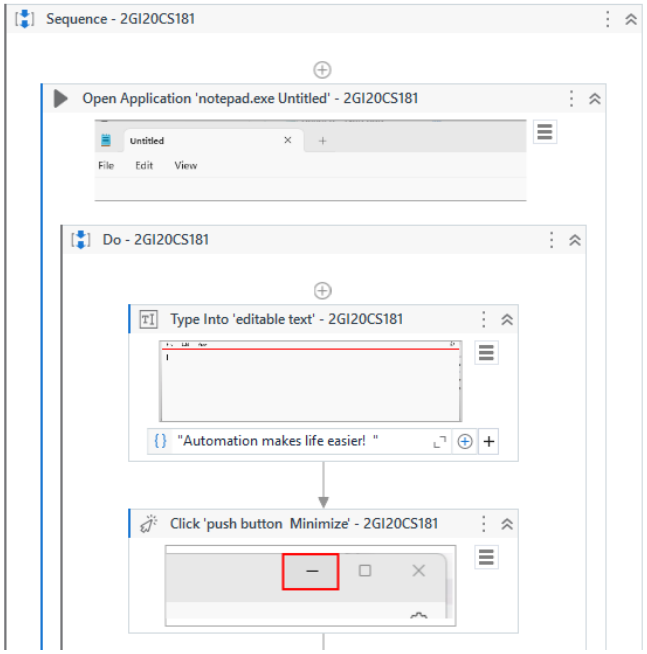
1. Open UiPath Studio and create a new project.
2. Drag and drop the necessary activities from the Activities pane to the workflow designer canvas.
3. Configure the activities by setting their properties to suit the requirements of the task.
4. Use the TypeInto activity to simulate keyboard input and enter data into Notepad. This activity can handle both simple and complex text inputs.
5. If the application does not respond well to TypeInto, you can use the SimulateClick activity to simulate mouse clicks and interact with specific elements in the application, such as buttons or text fields.
6. In cases where both TypeInto and SimulateClick are not suitable, the SendWindowMessages activity can be used. It sends native window messages directly to the application, bypassing the need for UI interaction.
7. Continue adding activities as necessary to complete the workflow, including activities for saving, closing, or performing additional operations on the Notepad file.

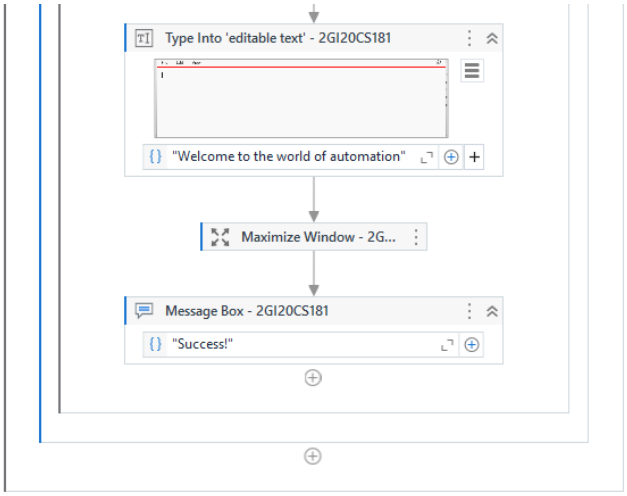
List of Activities:

To develop the workflow, you can use the following activities in UiPath Studio:

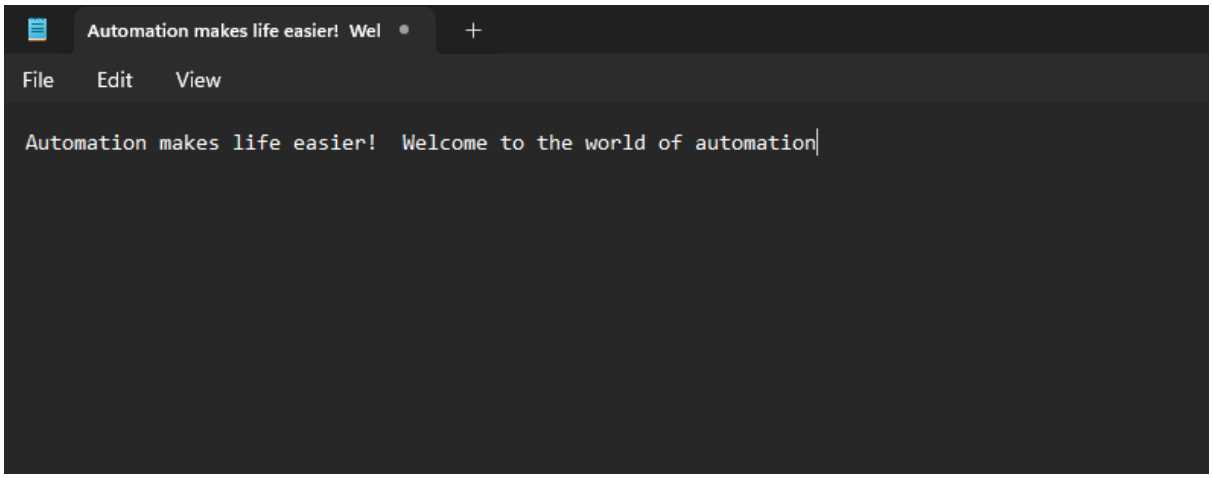
- **Open Application:** Opens the Notepad application.
- **TypeInto:** Enters text into the Notepad window.
- **SimulateClick:** Simulates mouse clicks on specific elements.
- **SendWindowMessages:** Sends window messages to interact with the application.

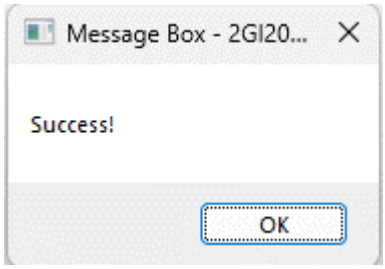
Workflow Design:





Output:





Conclusion:

By developing a workflow in UiPath Studio using input methods like TypeInto, SimulateClick, and SendWindowMessages, you can automate the process of entering data in Notepad. UiPath Studio provides a user-friendly interface and a wide range of activities to accomplish this task efficiently. This workflow automation can significantly improve productivity by reducing manual data entry efforts and minimizing errors. Additionally, the process can be customized and scaled to handle complex scenarios or integrate with other applications, enhancing overall efficiency in various business domains.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 4:

Problem statement:

Build a workflow that fills the form on RPAChallenge.com website with organized data from an excel file

Introduction:

Robotic Process Automation (RPA) is revolutionizing the way businesses streamline their repetitive tasks. One such task is form filling, which can be automated using RPA tools like UiPath Studio. In this scenario, we will explore how to build a workflow using UiPath Studio to extract organized data from an Excel file and populate an online form on the RPAChallenge.com website.

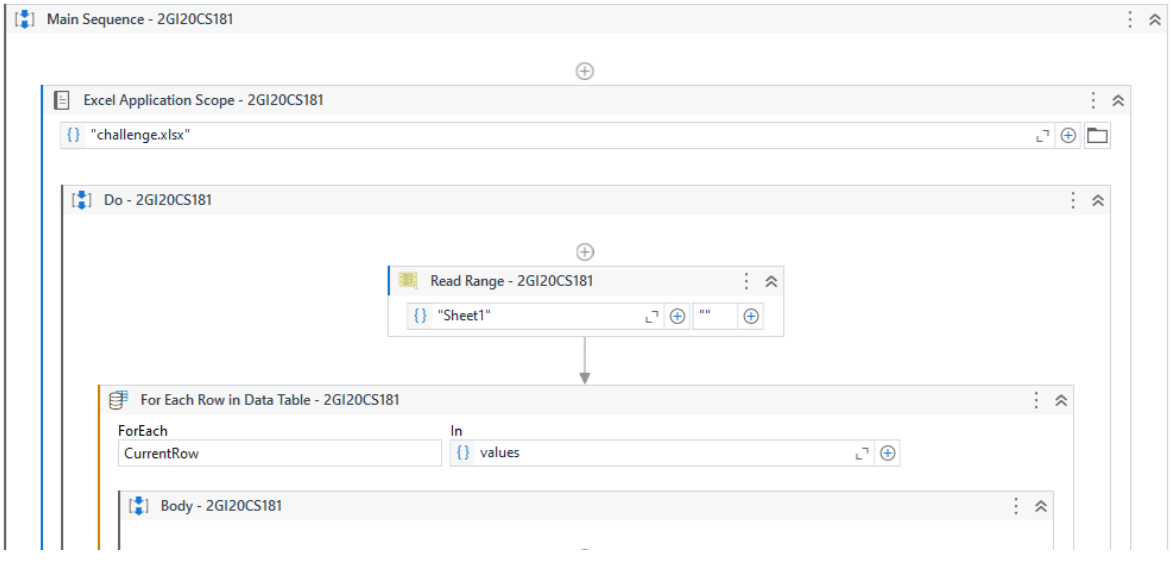
To automate the form filling process, we will follow these steps:

1. Read the Excel file: Use the "Excel Application Scope" activity to read the Excel file containing the organized data. Then, use the "Read Range" activity to extract the data into a DataTable variable.
2. Open the RPAChallenge.com website: Use the "Open Browser" activity to navigate to the RPAChallenge.com website.
3. Extract form fields: Use the appropriate activities, such as "Get Text" or "Get Attribute," to extract the form field elements from the website. Identify the selectors for each field to interact with them.
4. Iterate through the DataTable: Use a "For Each Row" activity to loop through each row in the DataTable.
5. Fill the form: Within the loop, use the extracted form field elements and the "Type Into" activity to populate the form fields with the data from the DataTable.
6. Submit the form: Use the "Click" activity on the submit button to submit the form.

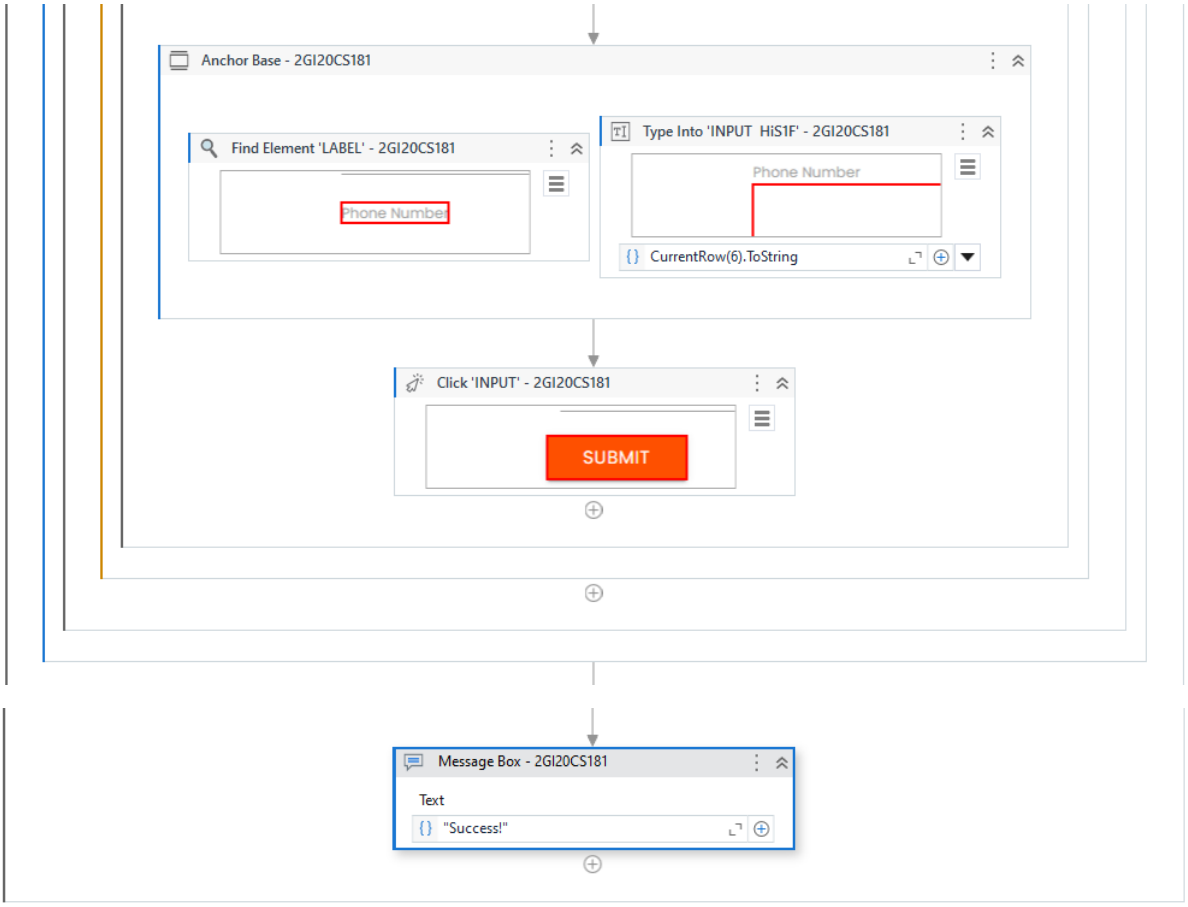
List of Activities:

1. Excel Application Scope: Extract the relevant information and store it in variables or data tables.
2. **Open Browser**: to launch the RPAChallenge.com website.
3. **Find Element:** to locate the input fields on the form using selectors. Set the appropriate attributes to uniquely identify each field.
4. **Type Into:** to enter the data extracted from the Excel file into the respective form fields. Map the variables or data tables to the appropriate fields.

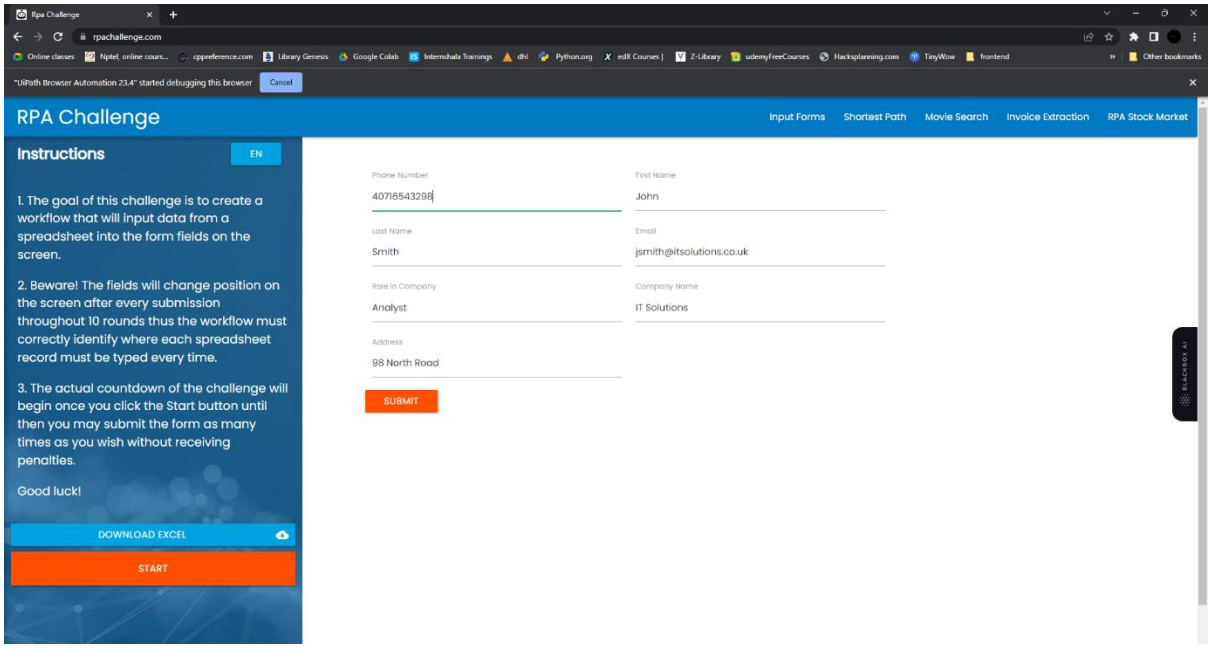
Workflow design:

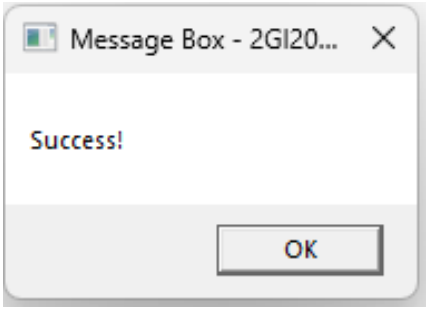



Anchor Base - 2GI20CS181
Find Element 'LABEL' - 2GI20CS181
First Name
Type Into 'INPUT HiS1F' - 2GI20CS181
First Name
CurrentRow(0).ToString
Anchor Base - 2GI20CS181
Find Element 'LABEL' - 2GI20CS181
Last Name
Type Into 'INPUT HiS1F' - 2GI20CS181
Last Name
CurrentRow(1).ToString
Anchor Base - 2GI20CS181
Find Element 'LABEL' - 2GI20CS181
Company Name
Type Into 'INPUT HiS1F' - 2GI20CS181
Company Name
CurrentRow(2).ToString
Anchor Base - 2GI20CS181
Find Element 'LABEL' - 2GI20CS181
Role in Company
Type Into 'INPUT HiS1F' - 2GI20CS181
Role in Company
CurrentRow(3).ToString
Anchor Base - 2GI20CS181
Find Element 'LABEL' - 2GI20CS181
Address
Type Into 'INPUT HiS1F' - 2GI20CS181
Address
CurrentRow(4).ToString
Anchor Base - 2GI20CS181
Find Element 'LABEL' - 2GI20CS181
Email
Type Into 'INPUT HiS1F' - 2GI20CS181
Email
CurrentRow(5).ToString


Anchor Base - 2GI20CS181
Find Element 'LABEL' - 2GI20CS181
Phone Number
Type Into 'INPUT HiS1F' - 2GI20CS181
Phone Number
CurrentRow(6).ToString
Click 'INPUT' - 2GI20CS181
SUBMIT
Message Box - 2GI20CS181
Text
"Success!"

Output:


RPA Challenge
Input Forms
Shortest Path
Movie Search
Invoice Extraction
RPA Stock Market
Instructions
EN
1. The goal of this challenge is to create a workflow that will input data from a spreadsheet into the form fields on the screen.
2. Beware! The fields will change position on the screen after every submission throughout 10 rounds thus the workflow must correctly identify where each spreadsheet record must be typed every time.
3. The actual countdown of the challenge will begin once you click the Start button until then you may submit the form as many times as you wish without receiving penalties.
Good luck!
DOWNLOAD EXCEL
START
Phone Number
40716543298
First Name
John
Last Name
Smith
Email
jsmith@itsolutions.co.uk
Role in Company
Analyst
Company Name
IT Solutions
Address
98 North Road
SUBMIT


Message Box - 2GI20...
Success!
OK

Conclusion:

In this term work, we learned about the concept of RPA and how it can be used to automate form filling processes. By using UiPath Studio, we developed a workflow that extracts organized data from an Excel file and fills out a form on the RPAChallenge.com website. We utilized various activities such as reading Excel files, interacting with web elements, and iterating through DataTables to achieve our goal.

Through this exercise, we gained hands-on experience in designing and implementing an RPA workflow using UiPath Studio. We learned how to extract data from different sources, interact with web applications, and automate repetitive tasks effectively.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 5:

Problem statement:

Termwork 5a: Build a workflow using Switch activity that asks users' their eye colour and displays their personality in a message box.

Termwork 5b: Build a workflow using While loop that tells the User if the input is a prime number or not.

Introduction:

For Termwork 5a:

In UiPath Studio, the Switch activity is used to execute different actions based on multiple possible values of a variable. It acts as a decision-making tool and allows for branching the workflow based on various conditions. In the given scenario, the workflow will prompt the user to enter their eye color and display their personality traits based on the input.

To develop this workflow in UiPath Studio, the following steps can be followed:

1. Drag and drop a Switch activity onto the design canvas.
2. Create a variable to store the user's eye colour input.
3. Prompt the user to enter their eye colour using an Input Dialog activity and store the result in the variable.
4. Connect the variable to the Switch activity by setting it as the Expression.
5. Add cases to the Switch activity for each possible eye colour value.
6. For each case, use a Message Box activity to display the corresponding personality traits based on the eye colour.
7. Include a default case in the Switch activity to handle unexpected or invalid input.

List of activities to be used:

1. **Input Dialog:** Used to prompt the user to enter their eye colour.
2. **Switch**: Helps in branching the workflow based on the eye colour input.
3. **Message Box**: Displays the personality traits associated with the user's eye colour.
4. **Variables:** Used to store and manipulate the eye colour input.

For Termwork 5b:

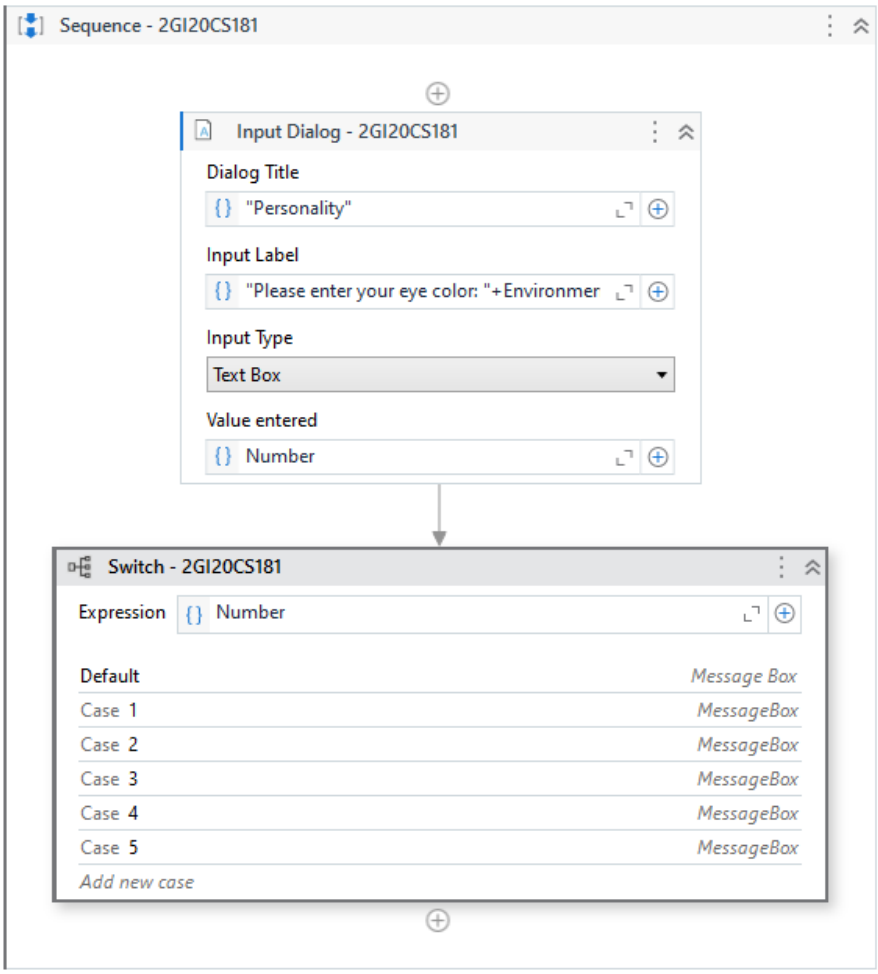
A prime number is a positive integer greater than 1 that has no positive divisors other than 1 and itself. In this task, we will build a workflow using a While loop to determine whether a given number is a prime number or not.
To determine if a number is prime, we can follow a simple approach. We start by checking if the number is divisible by any integer from 2 to the square root of the number. If it is divisible by any number within this range, it is not a prime number. Otherwise, it is a prime number.

To develop the prime number checker workflow in UiPath Studio, we can use the following activities:

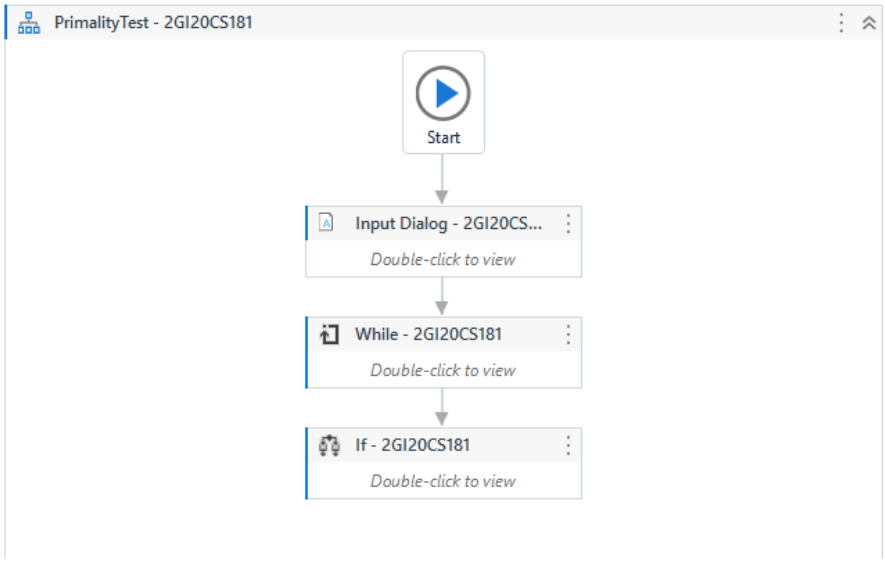
1. **Initialize Variables:** Set variables to store the input number, divisor, and a flag indicating whether the number is prime.
2. **Input Dialog:** Prompt the user to enter a number and store the value in the input variable.
3. **Assign:** Initialize the divisor variable to 2 and the prime flag variable to true.
4. **While Loop:** Set the condition for the loop to continue while the divisor is less than or equal to the square root of the input number.
5. **If Activity**: Check if the input number is divisible by the current divisor. If it is, set the prime flag to false and exit the loop.
6. **Assign:** Increment the divisor by 1.
7. **End While:** End the loop.
8. **If Activity:** Check the prime flag. If it is true, display a message stating that the input number is a prime number. Otherwise, display a message indicating that it is not a prime number.

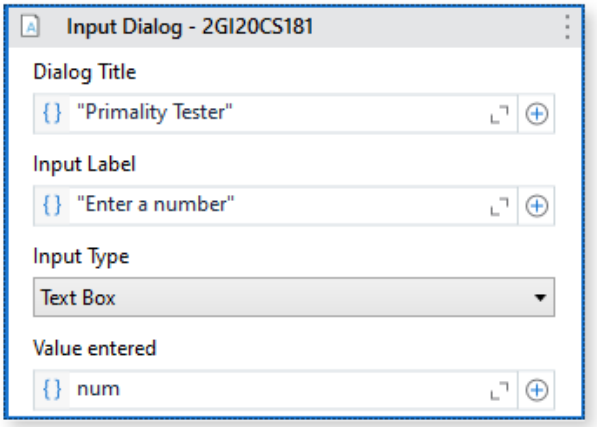
Workflow Designs:

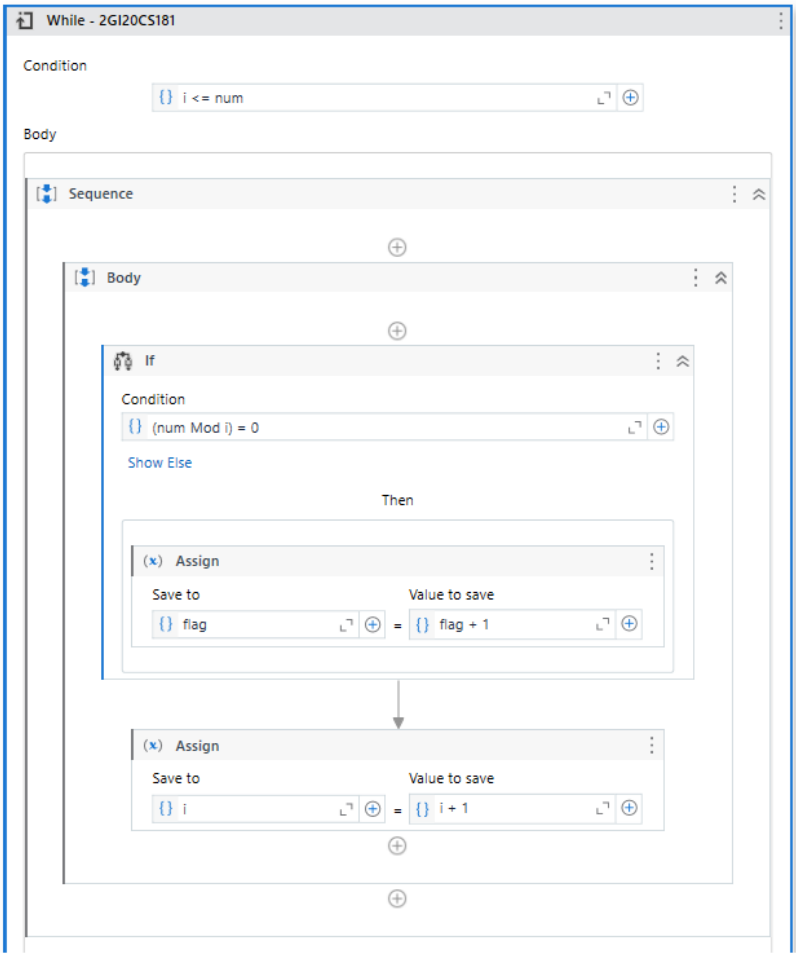
For Termwork 5a:

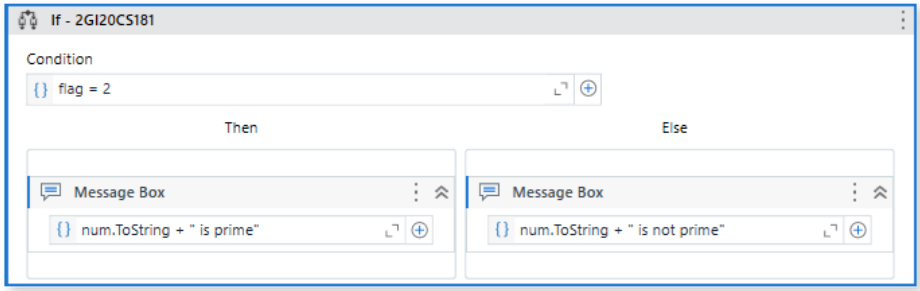


For Termwork 5b:



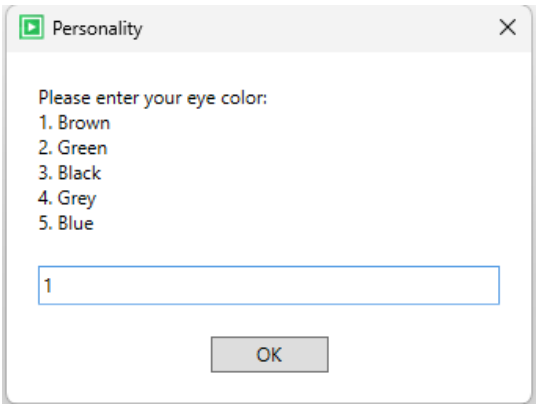


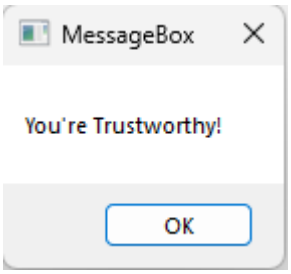


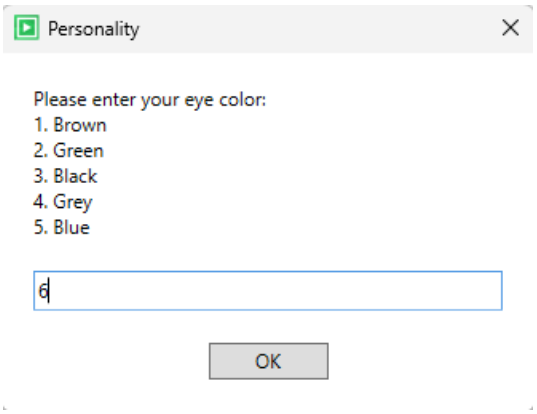


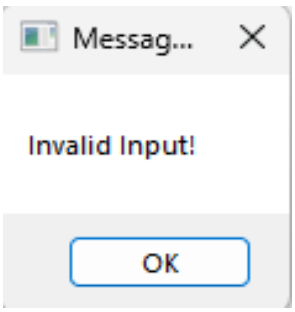
Outputs:

For Termwork 5a:









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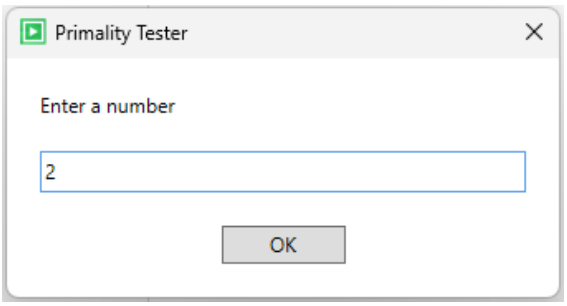
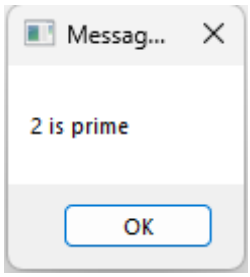
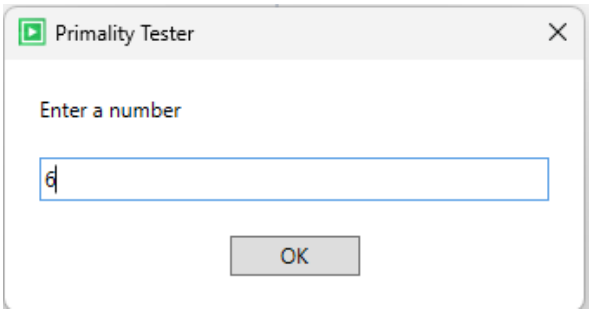
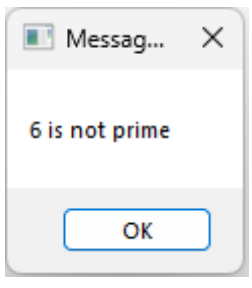








Conclusions:

For Termwork 5a:

Through this workflow using the Switch activity in UiPath Studio, we have learned how to handle multiple possible values and execute different actions based on user input. By incorporating the Input Dialog activity to gather information and the Message Box activity to display the output, we can create an interactive experience for the user. The Switch activity provides a structured and efficient way to handle various cases, ensuring that the workflow is robust and adaptable.

For Termwork 5b:

By building the prime number checker workflow using a While loop in UiPath Studio, we have learned how to determine whether a given number is prime or not. This workflow demonstrates the use of looping and conditional statements to perform a repetitive task and make decisions based on certain conditions. The process of developing this workflow in UiPath Studio helps us understand the concepts of variables, user input, and flow control. Overall, this task provides a practical application of programming concepts and showcases the potential of using UiPath Studio to automate such repetitive tasks efficiently.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 6:

Problem Statement:

Build a workflow using Format, Join, IndexOf, Split, and Substring methods that extracts key information from a text and prints in a different format.

Introduction:

In UiPath Studio, you can develop powerful workflows to extract and manipulate key information from text using various methods such as Format, Join, IndexOf, Split, and Substring. These methods allow you to perform operations like string formatting, concatenation, searching for specific patterns, and extracting substrings based on predefined rules. By combining these methods, you can create an efficient workflow to extract and transform data from unstructured text into a structured format.

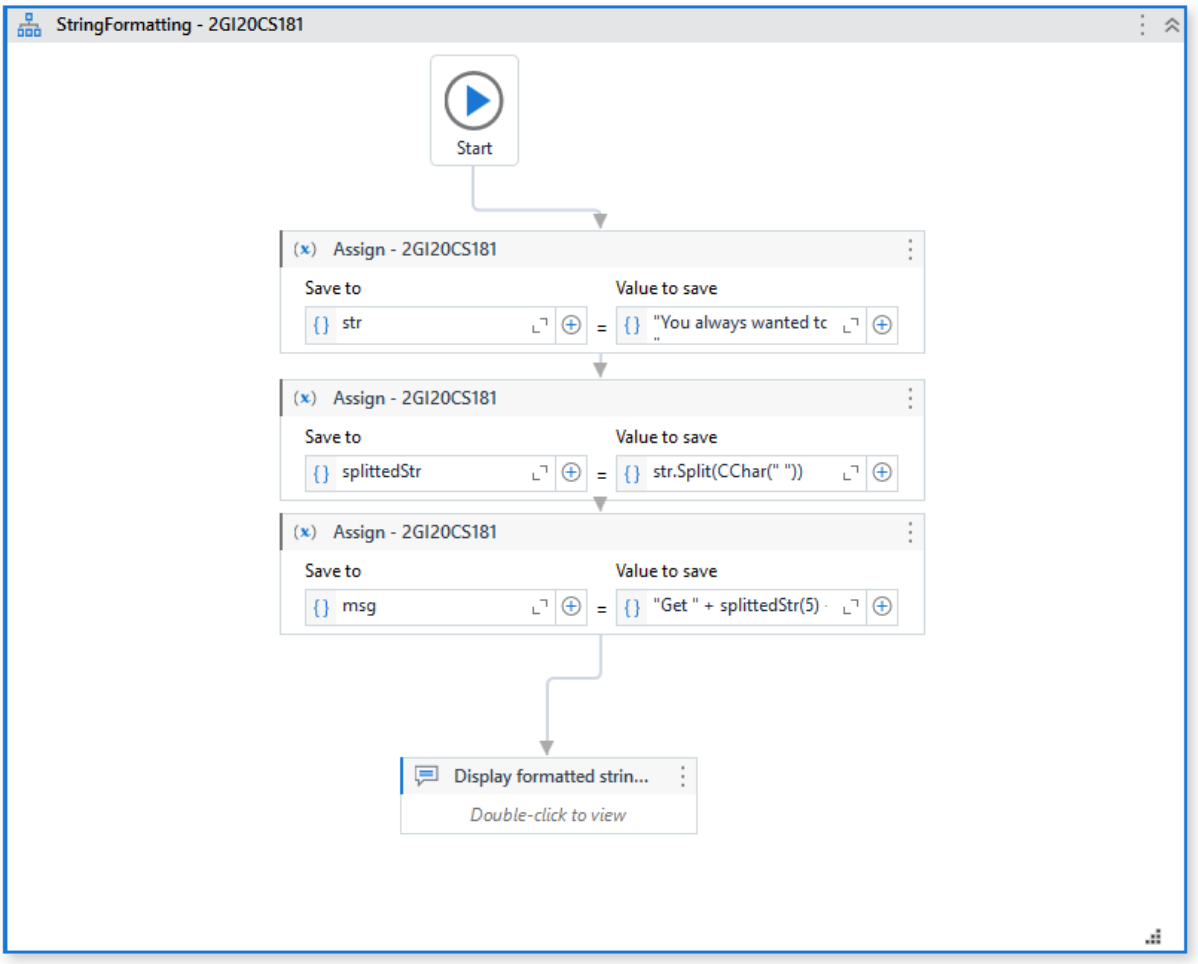
the Format method allows you to format strings based on specified patterns. It helps in standardizing the output format of the extracted information. Join method concatenates multiple strings into a single string, which is useful when combining different pieces of information into a cohesive output. IndexOf method helps in locating the position of a specific character or substring within a string, allowing you to identify key information based on its position.

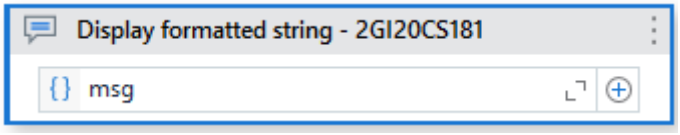
The Split method splits a string into an array of substrings based on a specified delimiter. This is particularly helpful when dealing with text that has a consistent structure but needs to be divided into separate fields. Finally, the Substring method extracts a portion of a string based on its position and length, enabling you to extract specific information within a larger text.

To develop a workflow that extracts and formats key information from text, you can use the following activities in UiPath Studio:

1. **Read Text File:** Read the input text from a file.
2. **Assign:** Use variables to store and manipulate data.
3. **Format Value**: Format extracted information based on desired output format.
4. **Assign:** Concatenate and join different pieces of information.
5. **Index Of:** Find the position of a specific character or substring.
6. **Split**: Divide a string into an array of substrings using a delimiter.
7. **Assign**: Extract substrings using the Substring method.
8. **Write Line**: Output the extracted and formatted information to the console or a file.

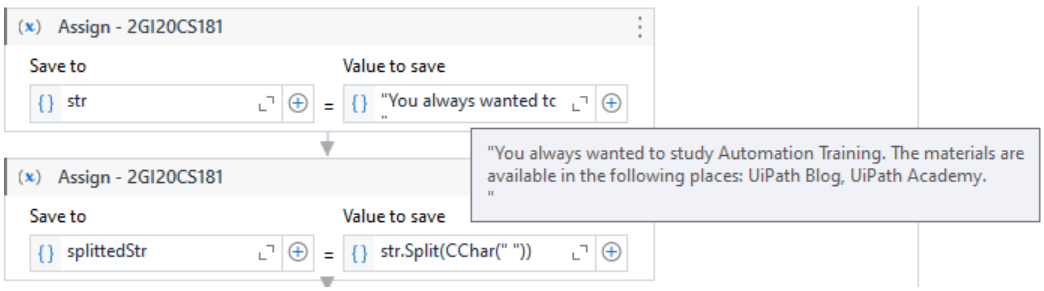
Workflow design:



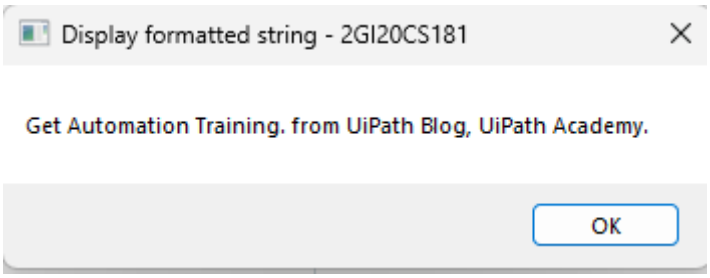


Output:

Initial string:



After formatting:



Conclusion:

By leveraging the Format, Join, IndexOf, Split, and Substring methods in UiPath Studio, you can build a workflow that extracts and transforms key information from unstructured text into a structured format. This enables you to automate data extraction tasks, saving time and reducing manual effort. The workflow can be customized to suit specific requirements and applied to a variety of scenarios, such as parsing log files, extracting data from invoices, or processing customer feedback.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 7:

Problem statement:

Build a workflow using data table activities to join two library databases using matching student ID and display output in a message box.

Introduction:

UiPath Studio provides a comprehensive platform for automating repetitive tasks. One common use case is joining databases to retrieve and manipulate data efficiently. In this scenario, we will explore how to build a workflow using data table activities in UiPath Studio to join two library databases based on matching student IDs and display the output in a message box.

Data table activities in UiPath Studio allow for effective manipulation and analysis of structured data. These activities provide a range of functionalities, including data extraction, filtering, sorting, and merging. By leveraging these activities, we can establish a workflow to join two library databases using matching student IDs.

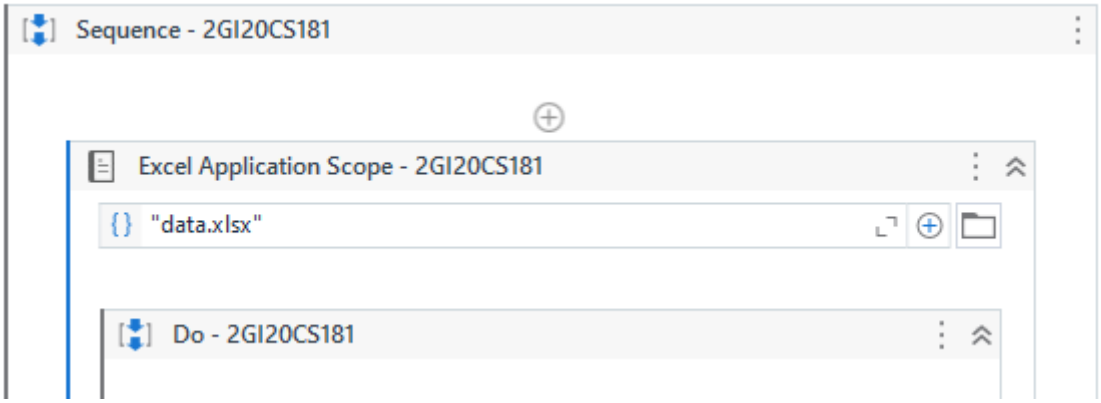
To develop the workflow in UiPath Studio, we follow these steps:

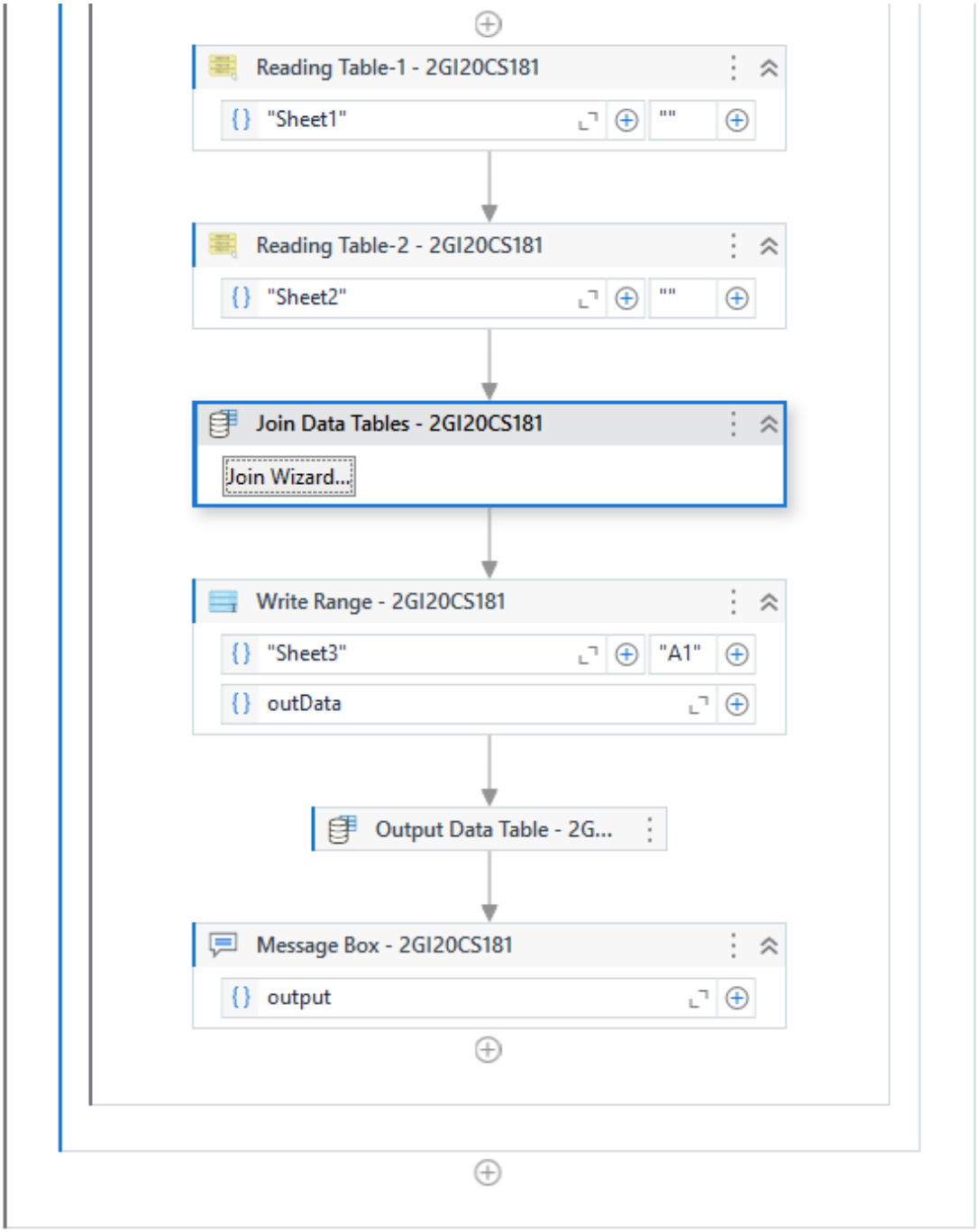
1. **Read Database Activity:** Use this activity to read the data from the two library databases and store them as data tables.
2. **Join Data Table Activity**: Employ this activity to join the two data tables based on the matching student IDs. Specify the join type (inner, left, right, or full) according to the desired output.
3. **Assign Activity**: Create a new data table variable to store the joined data table from the previous step.
4. **Message Box Activity**: Display the output data table using a message box to provide a visual representation of the joined data.

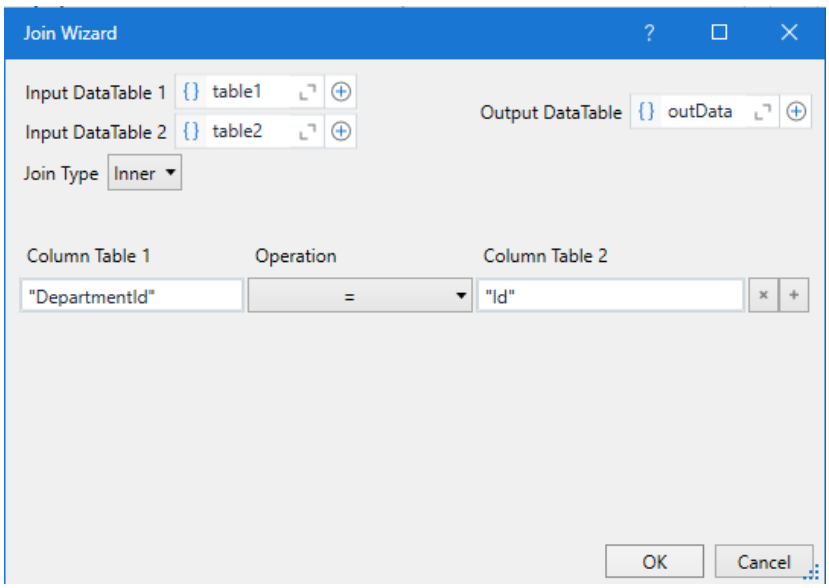
List of Activities: To execute the workflow successfully, the following activities are essential:

1. **Read Database Activity**: Used to read data from the library databases.
2. **Join Data Table Activity**: Performs the join operation based on student IDs.
3. **Assign Activity**: Creates a new data table variable to store the joined data.
4. **Message Box Activity**: Displays the output data table in a message box.

Workflow Design:




Reading Table-1 - 2GI20CS181
"Sheet1"
""
Reading Table-2 - 2GI20CS181
"Sheet2"
""
Join Data Tables - 2GI20CS181
Join Wizard...
Write Range - 2GI20CS181
"Sheet3"
"A1"
outData
Output Data Table - 2G...
Message Box - 2GI20CS181
output


Join Wizard
Input DataTable 1
table1
Input DataTable 2
table2
Join Type
Inner
Output DataTable
outData
Column Table 1
Operation
Column Table 2
"DepartmentId"
=
"Id"
OK
Cancel

Output:

Before execution: data.xlsx file

Sheet 1:

Id	Name	DepartmentId	Email
1	Krishna Ronaldo	1	ashok@gmail.com
5	Laxman Messi	2	joy@gmail.com
7	Mukesh	3	alex@gmail.com
4	suresh	4	arun@gmail.com
8	Abhishek	4	aditya@gmail.com
6	Ramesh	3	sita@gmail.com
2	Lord Puneet	2	ram@gmail.com
9	Kiran Mbappu	1	sohan@gmail.com
10	Anil Ambani	1	anil@gmail.com
3	Raghu Dixit	3	raghu@gmail.com

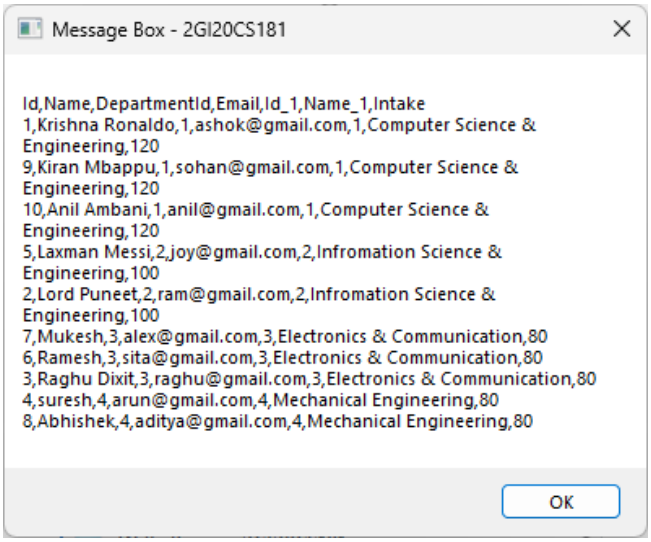
Sheet 2:

Id	Name	Intake
1	Computer Science & Engineering	120
2	Infromation Science & Engineering	100
3	Electronics & Communication	80
4	Mechanical Engineering	80
5	Civil Engineering	120

After Execution: **data.xlsx** file

Sheet 3:

1	Krishna Ronaldo	1	ashok@gmail.com	1	Computer Science & Engineering	120
9	Kiran Mbappu	1	sohan@gmail.com	1	Computer Science & Engineering	120
10	Anil Ambani	1	anil@gmail.com	1	Computer Science & Engineering	120
5	Laxman Messi	2	joy@gmail.com	2	Infromation Science & Engineering	100
2	Lord Puneet	2	ram@gmail.com	2	Infromation Science & Engineering	100
7	Mukesh	3	alex@gmail.com	3	Electronics & Communication	80
6	Ramesh	3	sita@gmail.com	3	Electronics & Communication	80
3	Raghu Dixit	3	raghu@gmail.com	3	Electronics & Communication	80
4	suresh	4	arun@gmail.com	4	Mechanical Engineering	80
8	Abhishek	4	aditya@gmail.com	4	Mechanical Engineering	80



Conclusion:

Building a workflow to join two library databases using UiPath Studio and data table activities offers a powerful solution for data manipulation and analysis. Through this exercise, we have learned how to read data from databases, perform join operations using data table activities, and display the output using a message box. This workflow automation eliminates the need for manual data handling, saving time and reducing the chances of human error. By leveraging the capabilities of UiPath Studio, we can streamline data processing tasks and increase overall efficiency in library management systems and various other domains where similar data integration needs arise.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 8:

Problem statement:

Termwork 8a: Build a workflow using Screen Scraper Wizard that scrapes text using Full-Text scraping method and stores it in a Notepad file.

Termwork 8b: Build a workflow using Data Scraping wizard that scrapes blog post titles from UiPath Blog from multiple pages.

Introduction:

For Termwork 8a:

Screen scraping is a technique used to extract data from the user interface of an application or website. It involves automating the process of capturing text, images, or other data displayed on the screen. In UiPath Studio, the Screen Scraper Wizard is a powerful tool that enables users to extract data using various scraping methods.

Screen Scraper Wizard: The Screen Scraper Wizard in UiPath Studio allows users to create scraping activities to extract data from applications or websites. It provides multiple scraping methods, including Full-Text scraping, which is used to extract complete textual content from an application or webpage.

To build a workflow for text scraping and storage using the Screen Scraper Wizard in UiPath Studio, the following steps can be followed:

1. **Install and open UiPath Studio**: Download and install UiPath Studio, a comprehensive automation tool.
2. **Create a new project**: Start a new project in UiPath Studio to develop the workflow.
3. **Use Screen Scraping Wizard**: Open the Screen Scraping Wizard and select the Full-Text scraping method.
4. **Indicate the target**: Indicate the application or webpage from which you want to scrape the text.
5. **Configure the scraping options**: Customize the scraping options, such as the scope, OCR settings, and selectors.
6. **Extract the text:** Preview and validate the extracted text. Adjust the scraping options if necessary.
7. **Store the text in a Notepad file**: Use the Write Text File activity in UiPath Studio to save the extracted text into a Notepad file.
8. **Save and execute the workflow**: Save the workflow and execute it to perform the text scraping and storage process.

List of Activities: The following activities can be used to execute the workflow successfully:

- **Open Application/Attach Window:** To open the target application or webpage for scraping.
- **Screen Scraping Wizard:** To choose the Full-Text scraping method and configure the scraping options.
- **Write Text File:** To save the extracted text into a Notepad file.
- **Save Workflow**: To save the workflow for future use.
- **Execute Workflow**: To run the workflow and perform the text scraping and storage process.

For Termwork 8b:

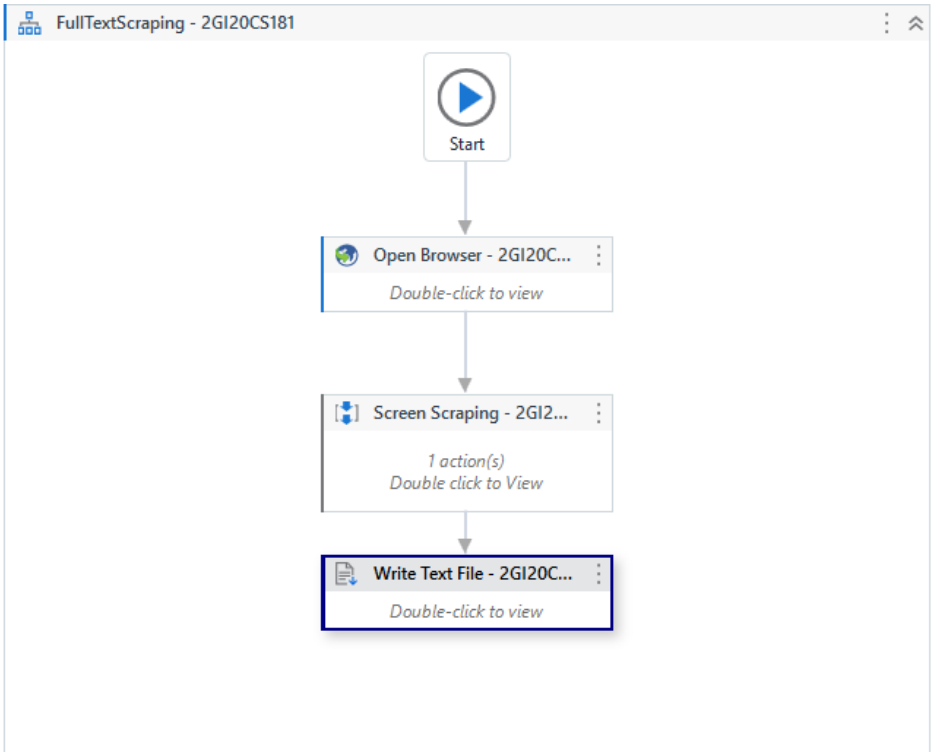
Data scraping is a technique used to extract information from websites and automate the process of gathering data. UiPath Studio provides a powerful tool called the Data Scraping Wizard, which allows users to easily extract structured data from websites. In this case, we will develop a workflow using the Data Scraping Wizard to scrape blog post titles from the UiPath Blog across multiple pages.

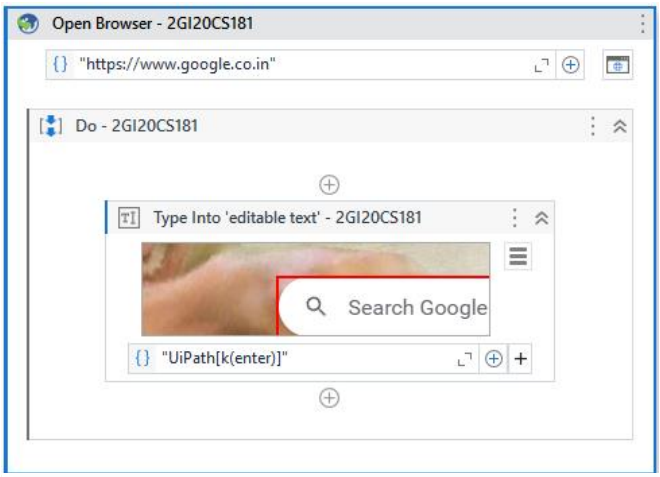
To develop this workflow in UiPath Studio, we can follow these steps:

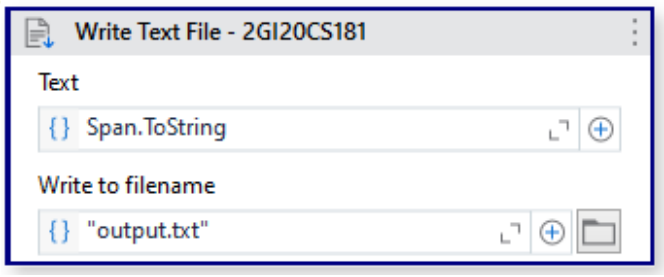
1. Launch UiPath Studio and create a new project.
2. Drag and drop an "Open Browser" activity to open the UiPath Blog webpage.
3. Use the Data Scraping Wizard to extract the blog post titles. Select the "Extract Structured Data" activity and indicate the first blog post title on the webpage. The wizard will guide you through the process of defining the data extraction pattern.
4. Configure the data extraction by specifying the columns to extract (in this case, the blog post titles) and setting the extraction scope to "Multiple Pages." UiPath Studio will automatically generate a datatable to store the scraped data.
5. Add a "While" loop activity to iterate through multiple pages. Use a counter variable to keep track of the page number.
6. Inside the loop, use the "Click" activity to navigate to the next page of the blog.
7. Use the Data Scraping Wizard again to extract the blog post titles from the current page and append them to the existing datatable.
8. Increment the counter variable to move to the next page.
9. Once the loop is complete, save the extracted data to a file or perform further processing as needed.

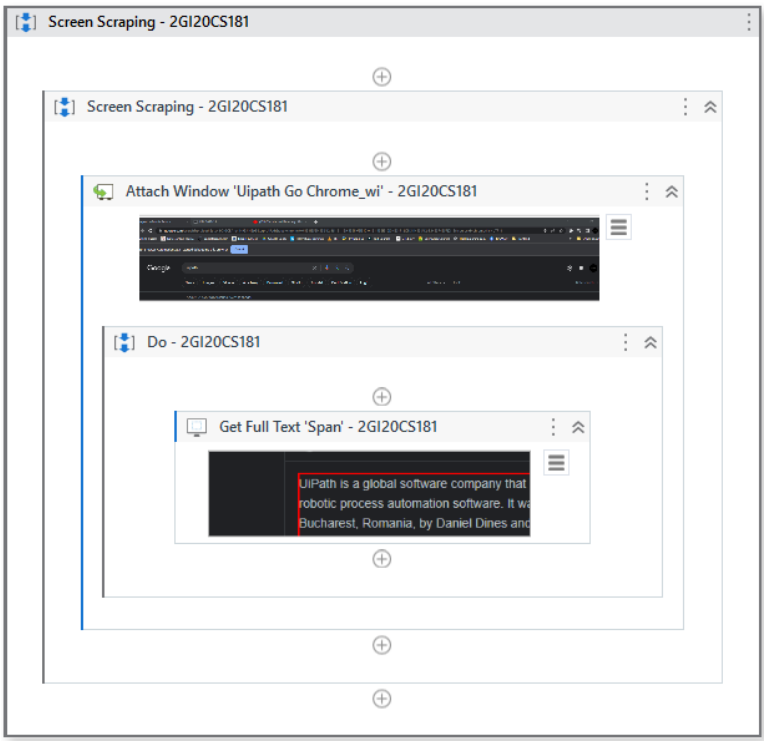
Workflow design:

For Termwork 8a:

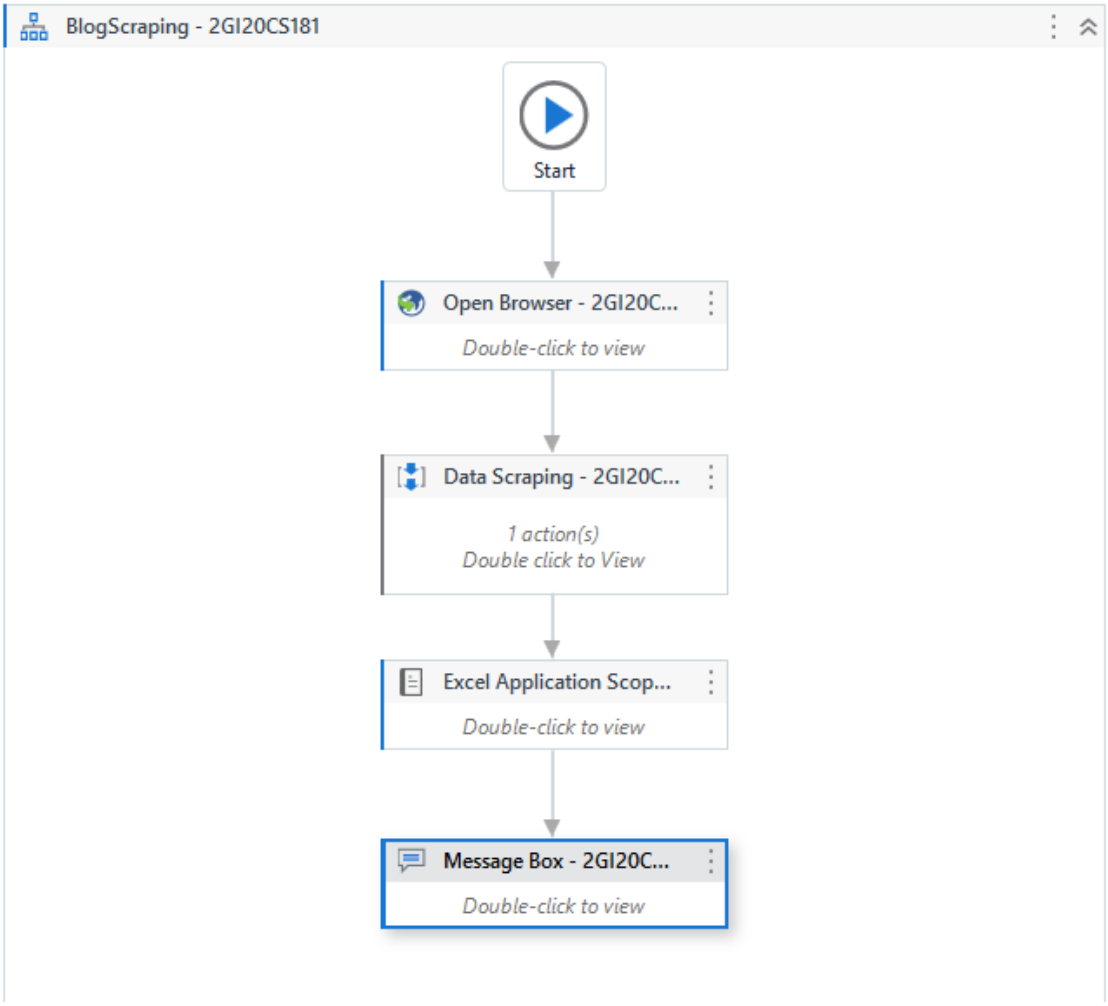


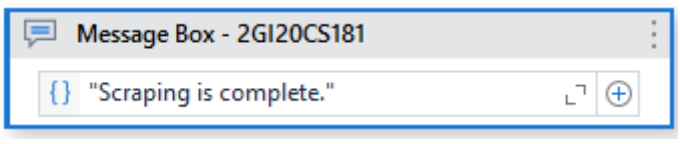


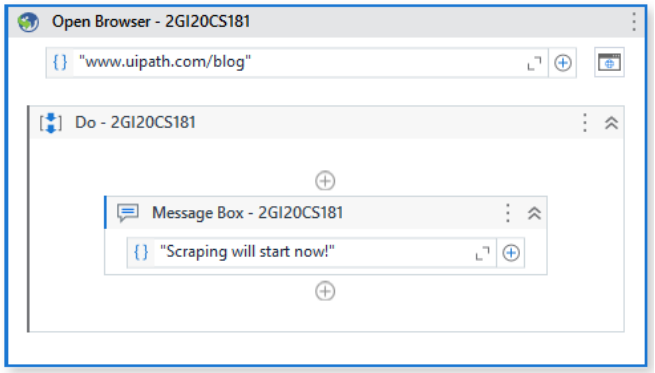


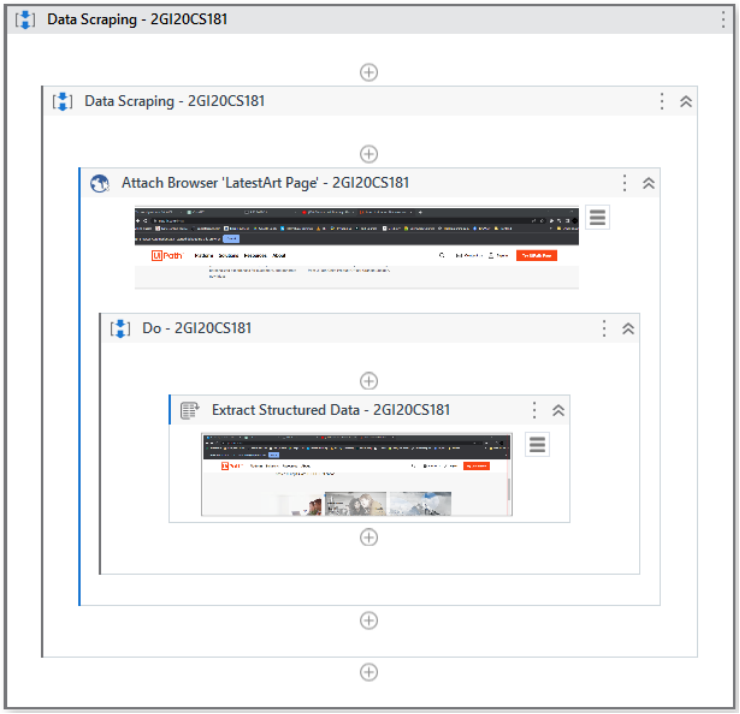


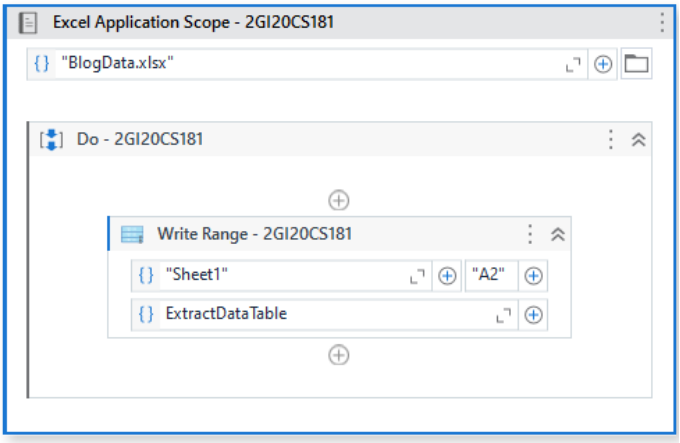
For Termwork 8b:





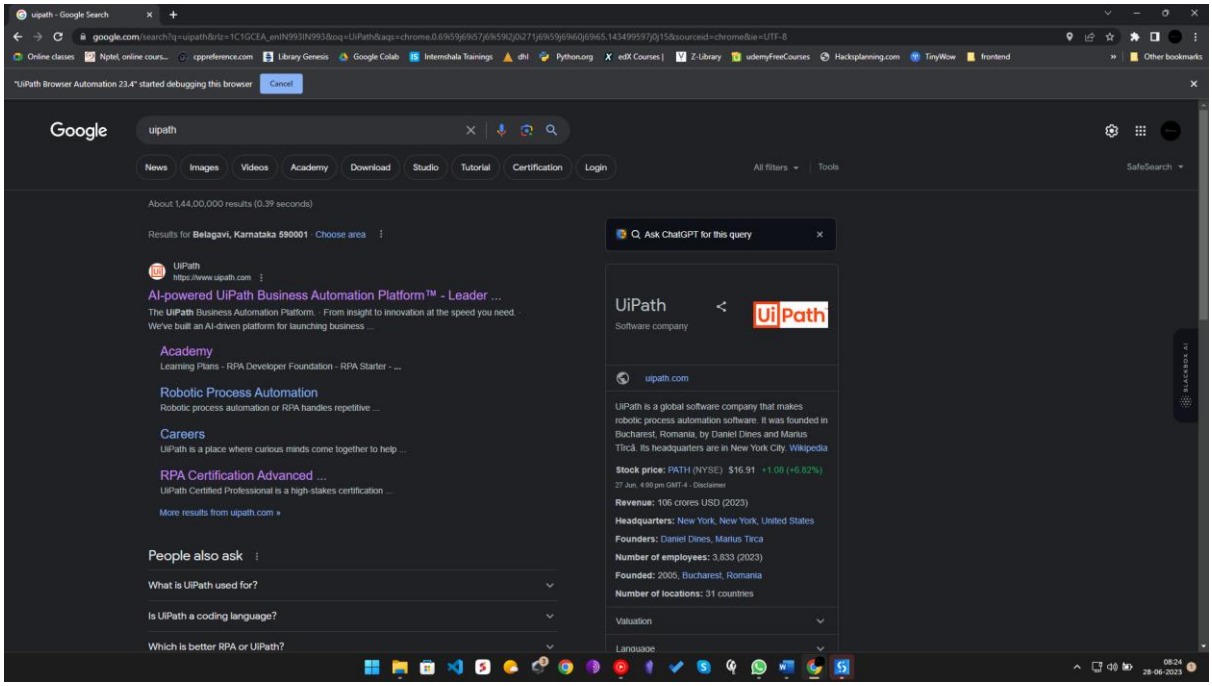


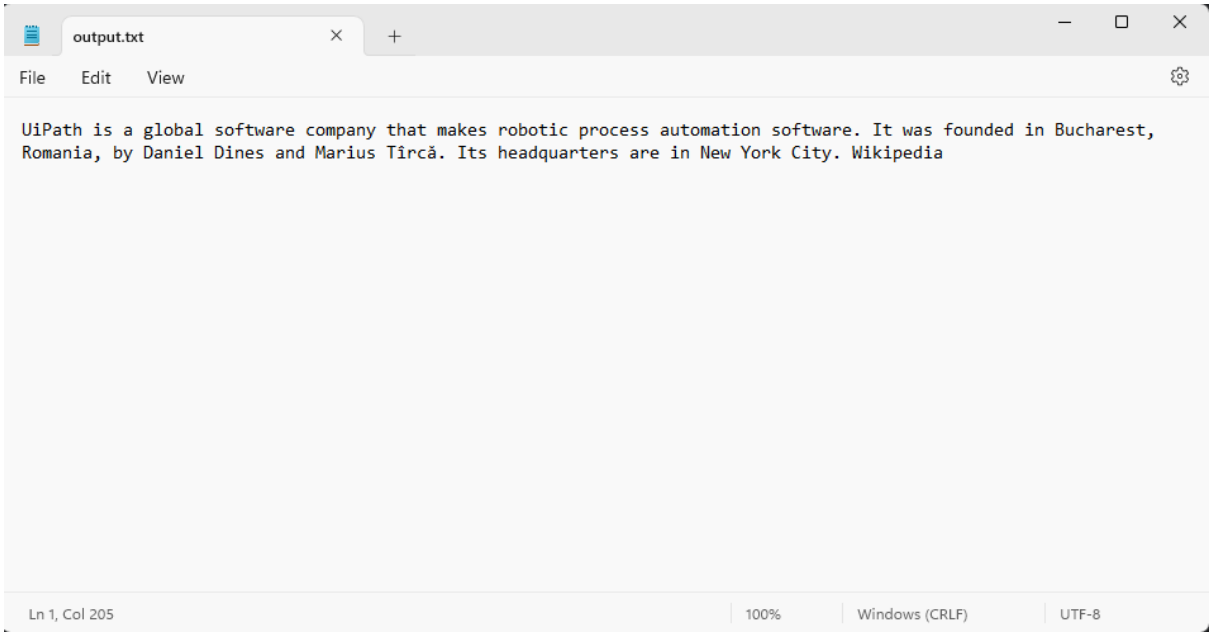




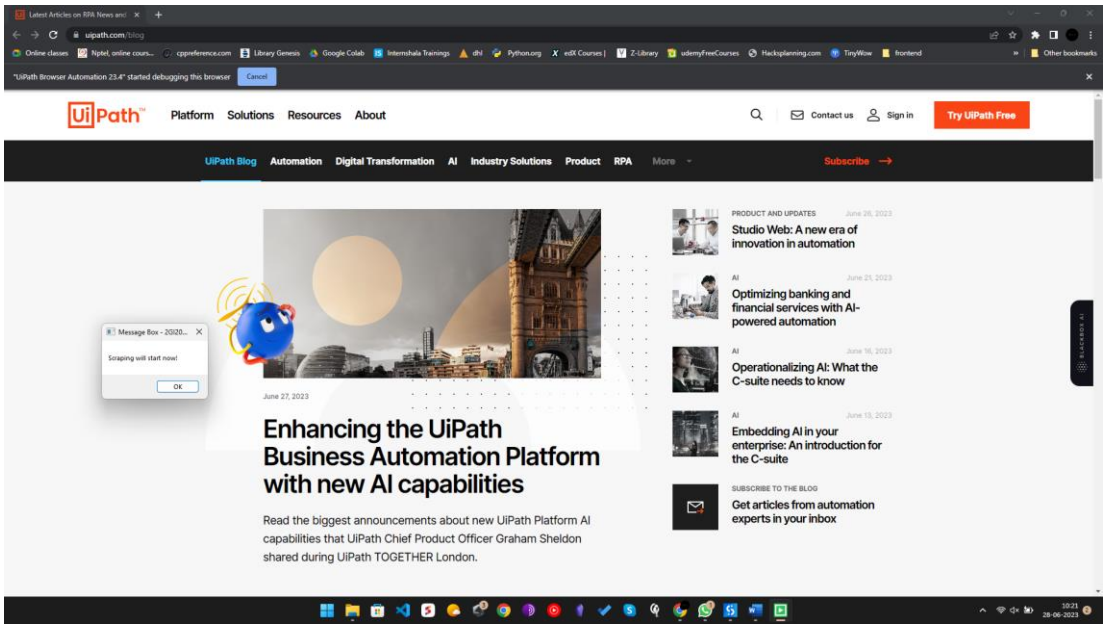
Outputs:

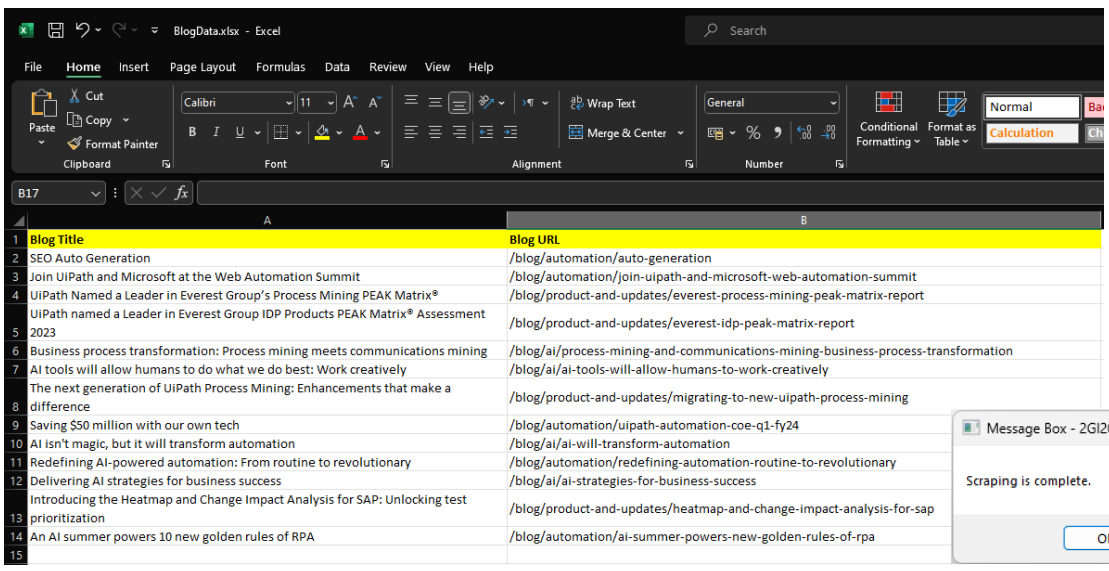
For Termwork 8a:





For Termwork 8b:





Conclusion:

For Termwork 8a:

In this termwork, we learned about the concept of screen scraping, which involves automating the extraction of data from applications or websites. We explored how UiPath Studio's Screen Scraper Wizard can be utilized to develop a workflow for text scraping and storage using the Full-Text scraping method. By following the outlined steps, we were able to extract text from the target source and store it in a Notepad file. This process enables automation and simplifies the extraction of valuable information from various applications or websites.

For Termwork 8b:

In conclusion, developing a workflow using the Data Scraping Wizard in UiPath Studio enables us to automate the extraction of blog post titles from the UiPath Blog across multiple pages. This process eliminates the need for manual data collection, saving time and effort. Through this exercise, we have learned how to use the Data Scraping Wizard to extract structured data, navigate through web pages using activities like "Open Browser" and "Click," and implement loops for iterative data extraction.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 9

Problem statement:

Build a workflow using Read PDF Text activity and extract only Email IDs and Phone Number from a PDF file and store in an MS Word file.

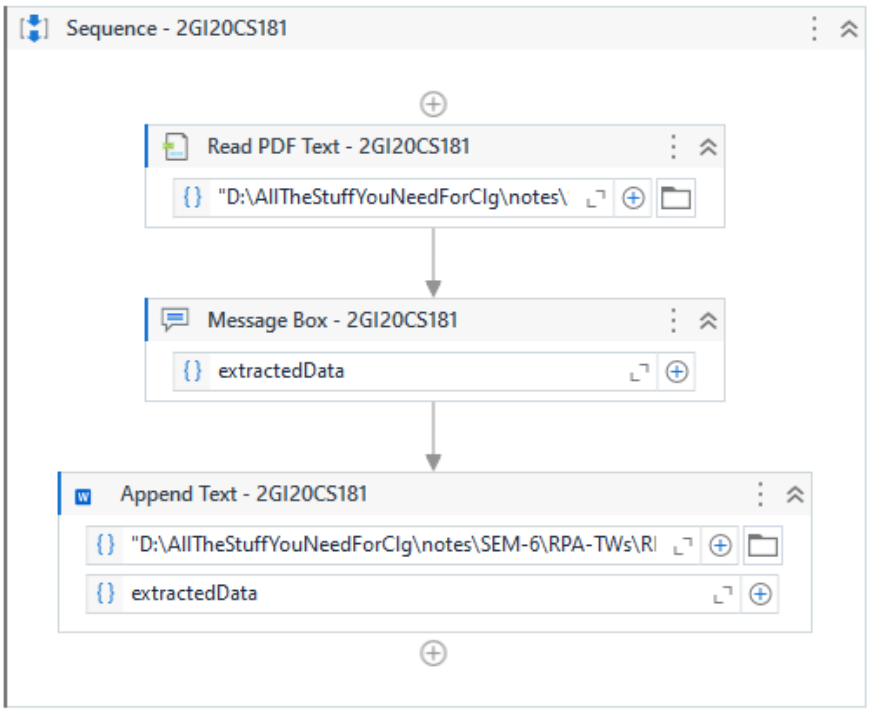
Introduction:

UiPath Studio is a powerful Robotic Process Automation (RPA) tool that allows users to automate various tasks in a workflow. One common task is extracting specific information from PDF files, such as email addresses and phone numbers. In this scenario, we will develop a workflow using UiPath Studio to extract email IDs and phone numbers from a PDF file and store them in an MS Word file.

To accomplish this task in UiPath Studio, we will utilize the following activities:

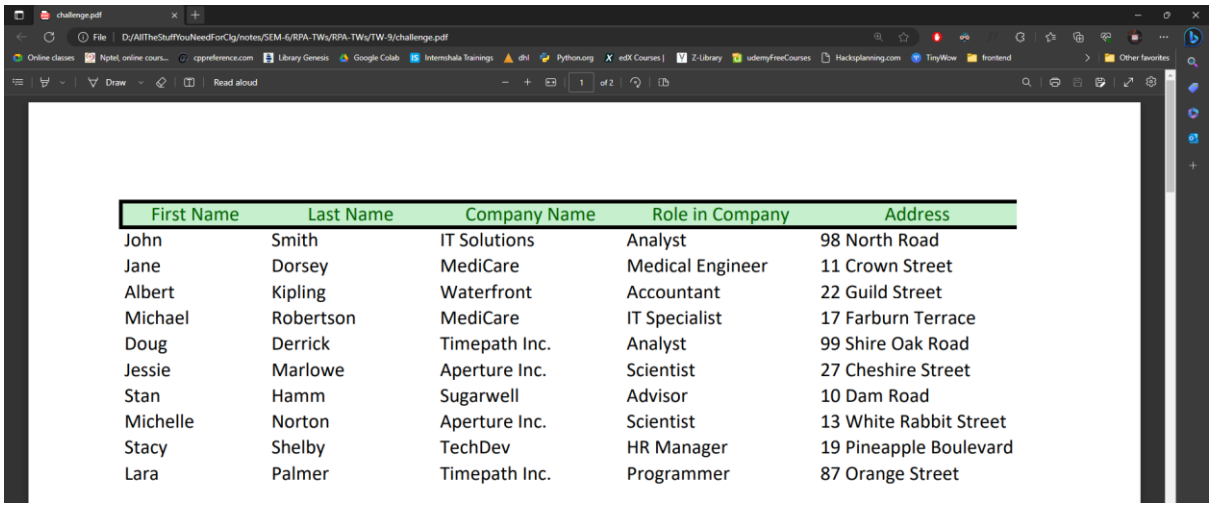
1. **Read PDF Text:** This activity reads the text content of the PDF file and stores it as a string variable.
2. **Regular Expression:** We will use regular expressions to extract email IDs and phone numbers from the text. Regular expressions are powerful patterns used to match and extract specific patterns of text.
3. **Matches:** This activity uses regular expressions to find all occurrences of email IDs and phone numbers in the text and stores them in a Matches collection variable.
4. **For Each**: We will iterate through each match in the Matches collection to extract individual email IDs and phone numbers.
5. **Write Text File**: This activity will write the extracted email IDs and phone numbers to a text file.
6. **Word Application Scope:** This activity allows us to interact with Microsoft Word. We will use it to open an existing MS Word file and append the extracted information.
7. **Append Text**: Within the Word Application Scope, we will use this activity to append the extracted email IDs and phone numbers to the MS Word file.

Workflow Design:



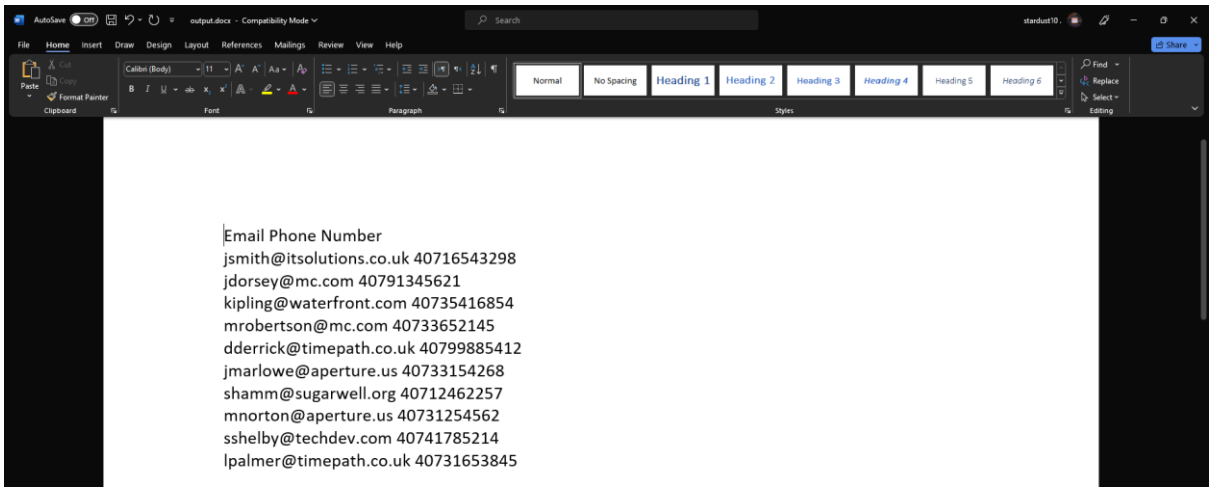
Output:

challenge.pdf content:

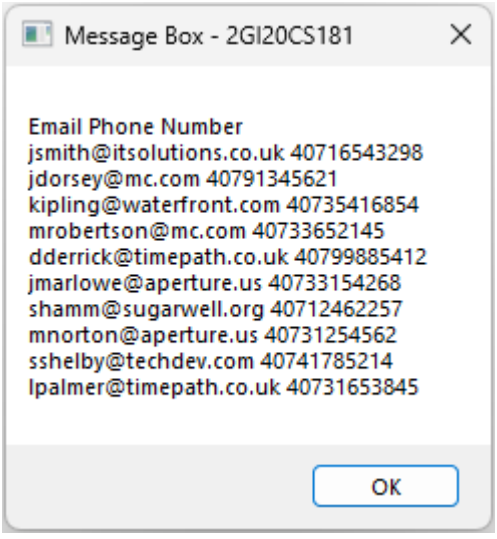


First Name	Last Name	Company Name	Role in Company	Address
John	Smith	IT Solutions	Analyst	98 North Road
Jane	Dorsey	MediCare	Medical Engineer	11 Crown Street
Albert	Kipling	Waterfront	Accountant	22 Guild Street
Michael	Robertson	MediCare	IT Specialist	17 Farburn Terrace
Doug	Derrick	Timepath Inc.	Analyst	99 Shire Oak Road
Jessie	Marlowe	Aperture Inc.	Scientist	27 Cheshire Street
Stan	Hamm	Sugarwell	Advisor	10 Dam Road
Michelle	Norton	Aperture Inc.	Scientist	13 White Rabbit Street
Stacy	Shelby	TechDev	HR Manager	19 Pineapple Boulevard
Lara	Palmer	Timepath Inc.	Programmer	87 Orange Street

output.docx content:



Email Phone Number
jsmith@itsolutions.co.uk 40716543298
jdorsey@mc.com 40791345621
kipling@waterfront.com 40735416854
mrobertson@mc.com 40733652145
dderrick@timepath.co.uk 40799885412
jmarlowe@aperture.us 40733154268
shamm@sugarwell.org 40712462257
mnorton@aperture.us 40731254562
sshelby@techdev.com 40741785214
lpalmer@timepath.co.uk 40731653845



Conclusion:

Building a workflow using UiPath Studio to extract email IDs and phone numbers from a PDF file and store them in an MS Word file is a valuable task for automating information extraction. By utilizing activities such as Read PDF Text, Regular Expression, Matches, For Each, Write Text File, Word Application Scope, and Append Text, we can efficiently extract and store the desired information. This workflow not only saves time and effort but also reduces the chances of human errors in data extraction.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

Termwork 10:

Problem statement:

Build a workflow that extracts attachments from the emails containing the word "Resume" in its subject.

Introduction:

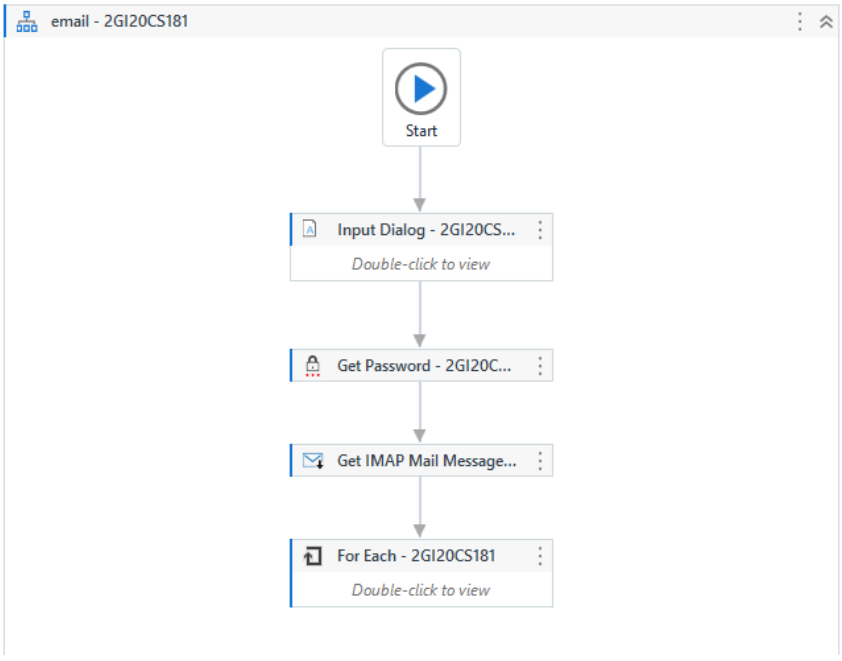
In today's digital world, automation has become essential to streamline and optimize various business processes. Extracting attachments from emails can be a time-consuming and tedious task, especially when dealing with a large volume of emails. However, by leveraging robotic process automation (RPA) tools like UiPath Studio, we can develop a workflow to automate this process and improve efficiency.

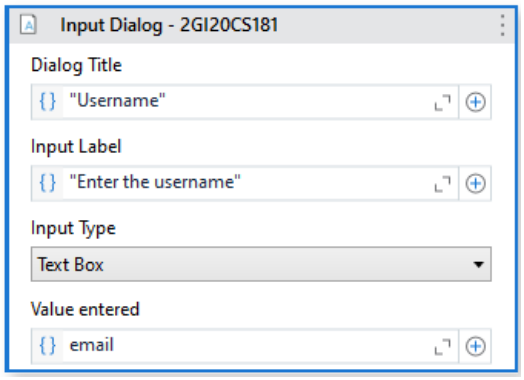
UiPath Studio is a powerful RPA tool that provides a visual interface for designing automation workflows. It offers a wide range of activities that can interact with different applications, including email clients like Microsoft Outlook or Gmail.

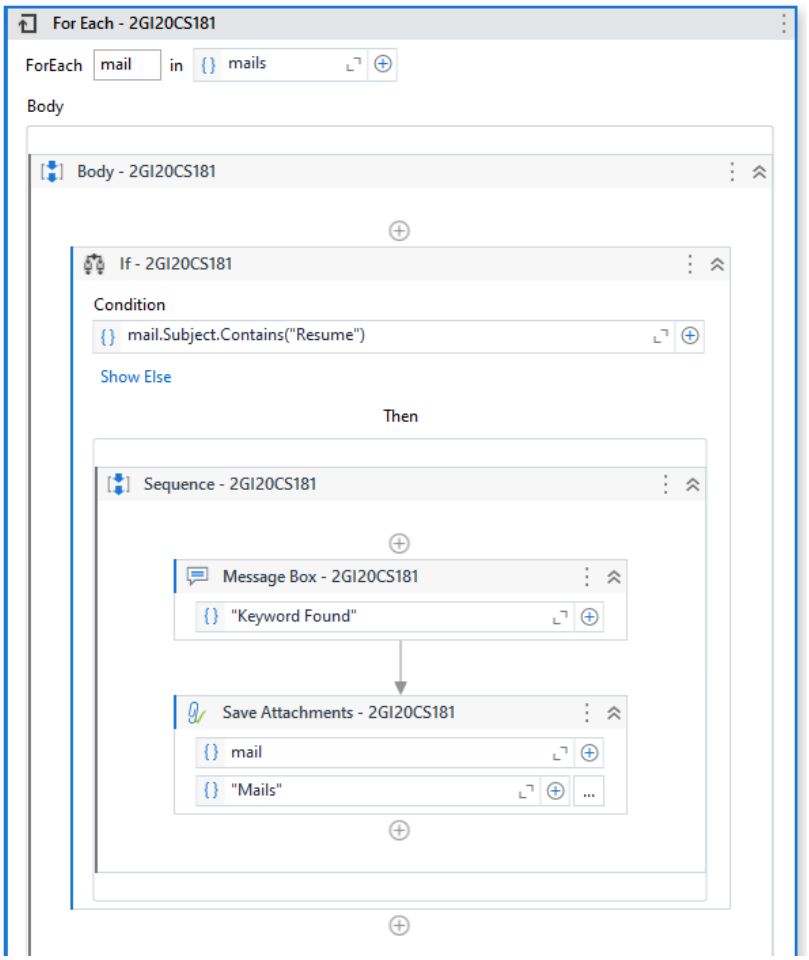
To develop a workflow for extracting attachments from emails containing the word "Resume" in their subject, we can follow these steps in UiPath Studio:

1. **Connect to the email client:** Use the appropriate activity to connect to the email client (e.g., "Get Outlook Mail Messages" activity for Outlook).
2. **Retrieve emails:** Use the activity to retrieve the emails based on specified criteria, such as subject or sender. In this case, we filter emails with the subject containing the word "Resume."
3. **Loop through emails:** Use a loop activity (e.g., "For Each") to iterate through each retrieved email.
4. **Check email subject**: Use a condition activity (e.g., "If") to check if the email subject contains the word "Resume."
5. **Extract attachments**: If the condition is true, use the appropriate activity to extract attachments from the email (e.g., "Save Attachments" activity). Specify the destination folder where the attachments will be saved.
6. **Continue or end**: Based on the requirements, you can either continue processing the remaining emails or end the workflow.

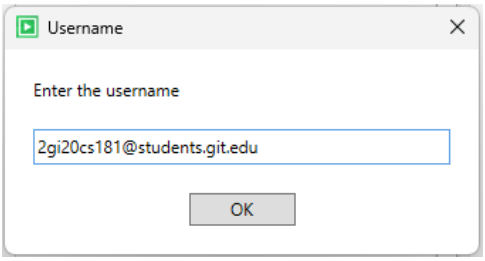
Workflow Design:

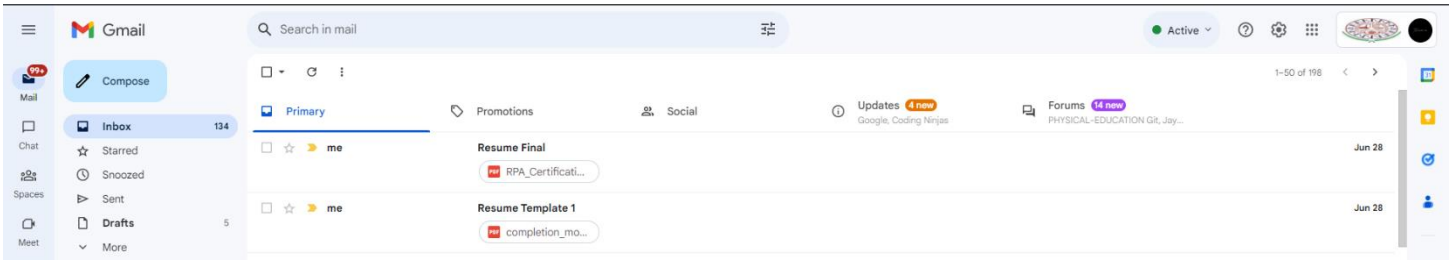


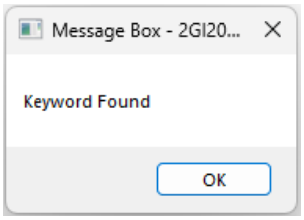

Input Dialog - 2GI20CS181
Dialog Title
"Username"
Input Label
"Enter the username"
Input Type
Text Box
Value entered
email

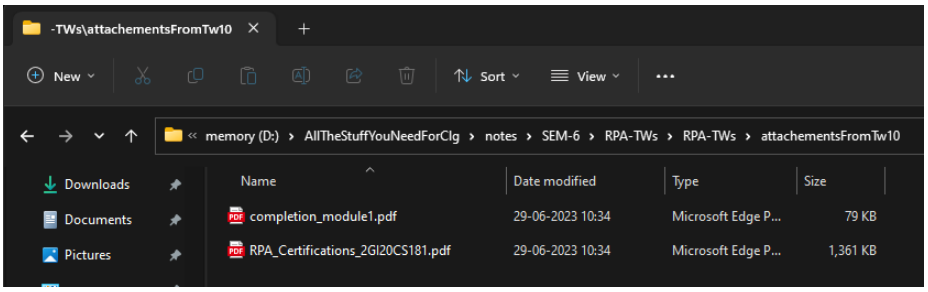

For Each - 2GI20CS181
ForEach mail in mails
Body
Body - 2GI20CS181
If - 2GI20CS181
Condition
mail.Subject.Contains("Resume")
Show Else
Then
Sequence - 2GI20CS181
Message Box - 2GI20CS181
"Keyword Found"
Save Attachments - 2GI20CS181
mail
"Mails"

Output:


Username
Enter the username
2gi20cs181@students.git.edu
OK


Gmail
Search in mail
Compose
Inbox 134
Starred
Snoozed
Sent
Drafts 5
More
Primary
Promotions
Social
Updates 4 new
Forums 14 new
me
Resume Final
RPA_Certificati...
Jun 28
me
Resume Template 1
completion_mo...
Jun 28


Message Box - 2GI20...
Keyword Found
OK


-TWs\attachementsFromTw10
New
Sort
View
memory (D:) › AllTheStuffYouNeedForClg › notes › SEM-6 › RPA-TWs › RPA-TWs › attachementsFromTw10
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29-06-2023 10:34
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79 KB
RPA_Certifications_2GI20CS181.pdf
29-06-2023 10:34
Microsoft Edge P...
1,361 KB

Conclusion:

Developing a workflow in UiPath Studio to extract attachments from emails with the word "Resume" in their subject can significantly improve productivity and efficiency. By automating this task, organizations can reduce manual efforts, minimize errors, and ensure timely processing of resumes. UiPath Studio provides a user-friendly interface and a comprehensive set of activities that enable seamless integration with email clients. Additionally, this workflow can serve as a foundation for more complex email automation scenarios, such as parsing resume data or triggering subsequent actions based on the extracted information.

References:

UiPath Website: https://www.uipath.com/

UiPath Academy: https://academy.uipath.com/

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