Ramaiah Institute of Technology

(Autonomous Institute, Affiliated to VTU)

Department of Computer Science & Engineering

Robotic Process Automation Design and Development (CSE552)

Title of the Project : SIS Bot	
USN : 1MS20CS030	NAME : BHARGAVA M
USN : 1MS20CS059	NAME : KAUSHIKI SHAHA
USN : 1MS20CS089	NAME : SWAPNA RAMINENI
USN : 1MS20CS134	NAME : VAIEBHAV CHETTRI

Abstract:

SIS Bot is a software program which logins into the student SIS portal and scraps the necessary data. These bots can be used to get details regarding the students Attendance, CIE marks, Fee payments, Students general details, Proctorship details, Exam history, Events and many more. Generally to get any of the above details of a student a human is required to login to the students SIS portal and get the necessary. But our SIS Bot can do the same without any human interference with a good speed and high accuracy with least errors.

The most common uses of our bot are:

- Help a student to get his attendance status without internet connection.
- Send weekly alerts to parents about the student's attendance status.
- Send warning message to the students if the attendance percentage drops below 85.

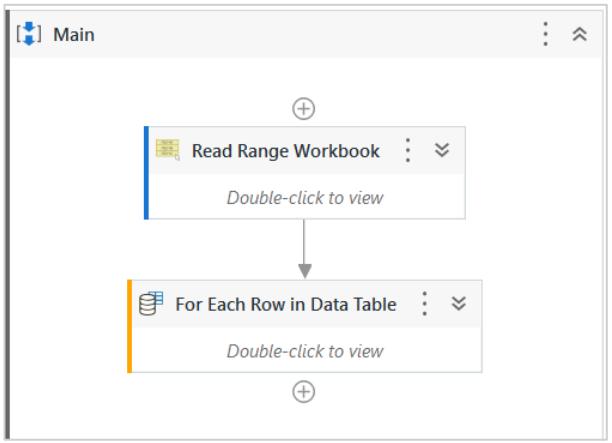
Introduction:

We have developed SIS Bot which tracks attendance of students. Purpose of our bot is to send the students their attendance percentage via text messages. This helps students and parents to track the attendance. The project we have undertaken will help the students to access their attendance and marks without proper internet connection. The bot is triggered automatically on a weekly basis without any human interference.

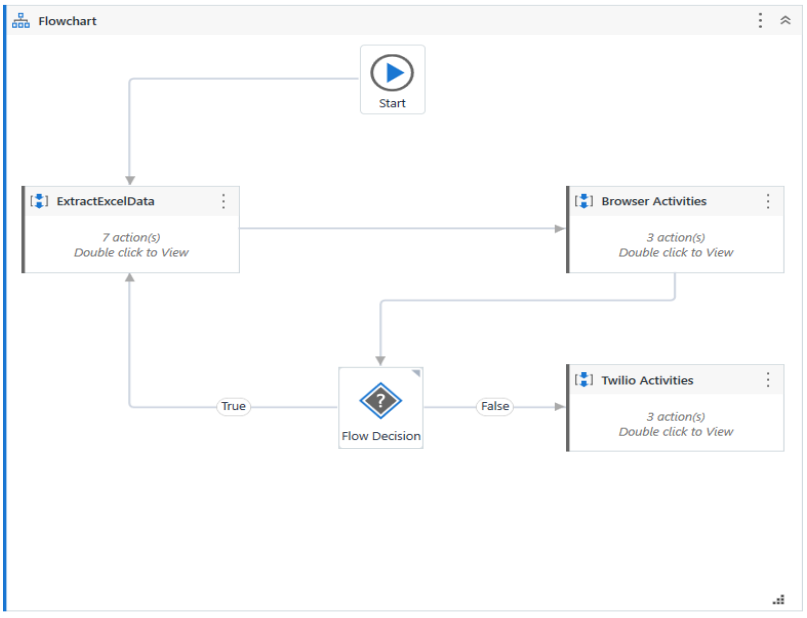
The student details are stored in a excel sheet. The bot reads the student details and uses it to login to the SIS ,scraps the data related to attendance and sends it to the student.

WorkFlows Used:

1. Sequence:



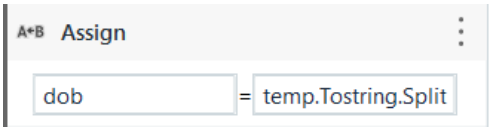
2) FlowChart:



Activities Used:

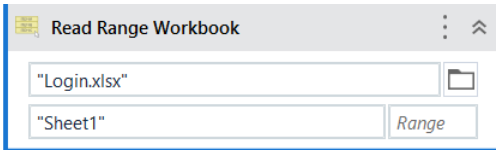
1) Assign Activity:

-This activity is used to assign values to the variables.



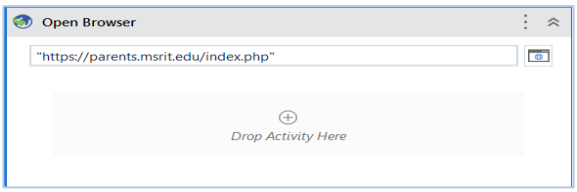
2) Read Range Workbook:

-This activity is used to read the excel sheet.



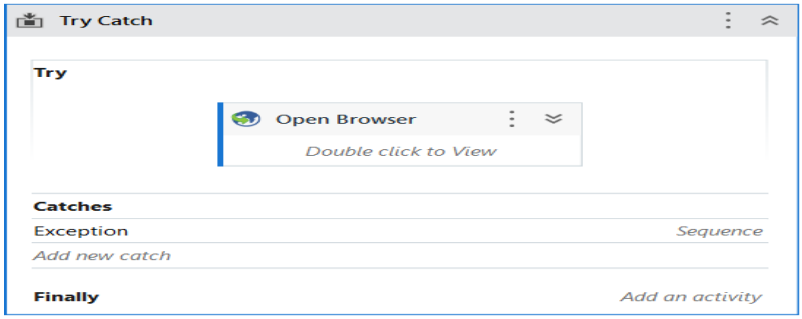
3) Open Browser Activity:

-This activity is used to open the browser.



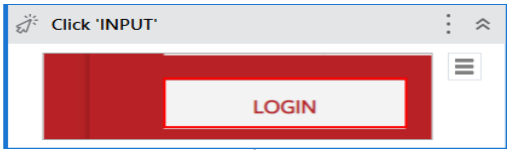
4) Try catch Activity:

-This activity is used to handle exceptions while conducting browser activities.



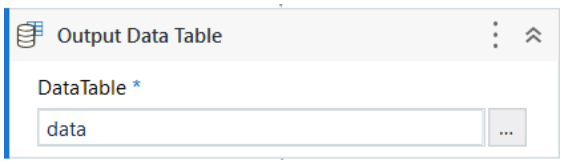
5) Click activity:

-This activity is used to click the buttons which causes appropriate actions.



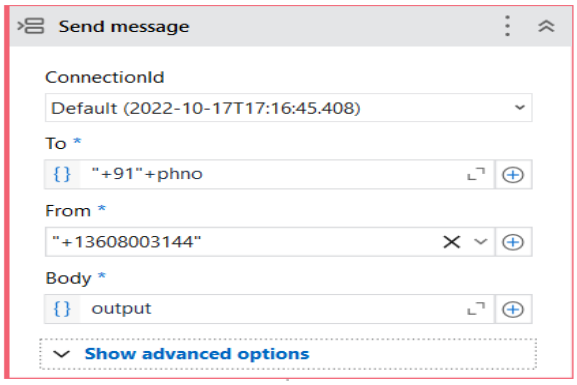
6) Output Data Table:

-This activity is used to convert the variable type from System.Data.DataTable to String.



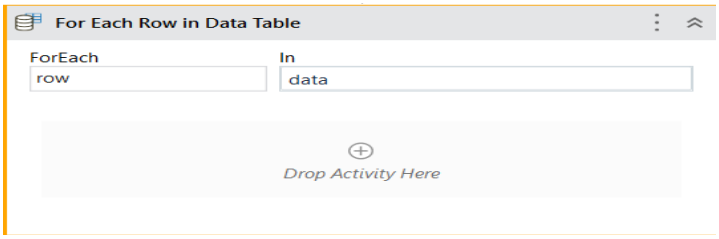
7) Send Message (Twilio):

-This activity is used to send message to a phone number.



8) For Each Row in DataTable:

-This activity is used to iterate into each row of the DataTable.



10)Type into Activity:

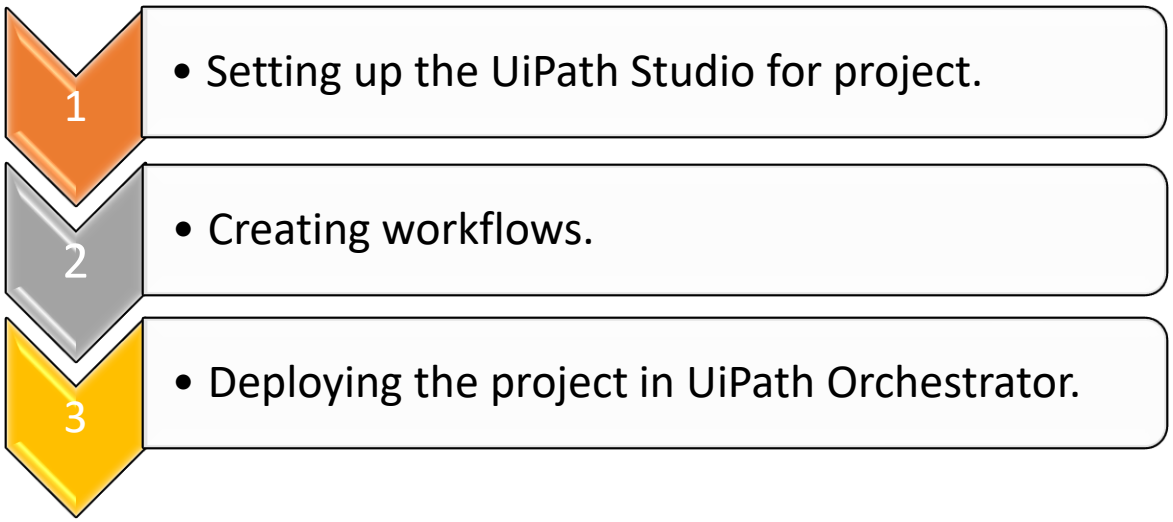
-This activity helps to type into a browser or application in a specified location.

Problem Statement/Use case Identification:

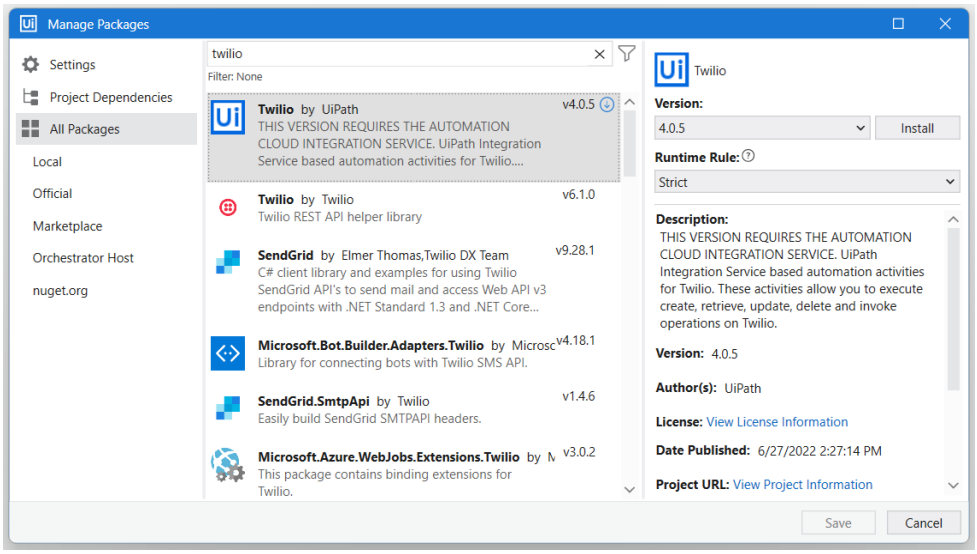
Develop a SIS Bot which can login to student's SIS portal scrap attendance data and send a text message to the student.

Designing the RPA Bot:

The steps for designing the bot are:

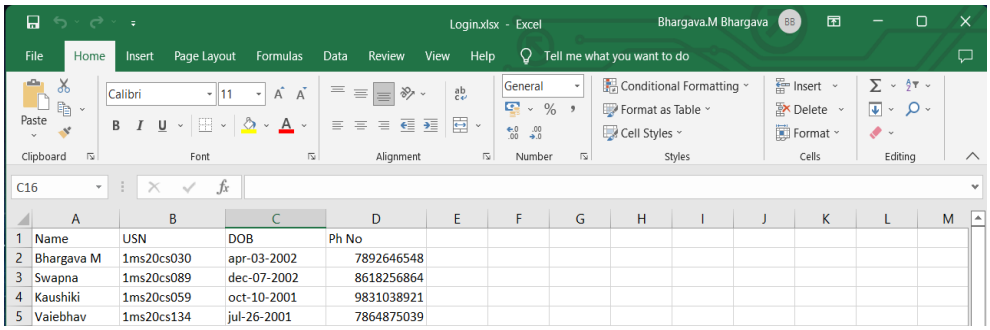


1) **Setting up the UiPath Studio for Project:**
   - Download the UiPath community edition available for free from the official UiPath website.
   - Open the UiPath studio and create a blank process with name SISBot.
   - Open settings in the project and disable Modern Design Experience.
   - Enable the show modern activities from the filters.
   - Click on manage packages and install the twilio package.



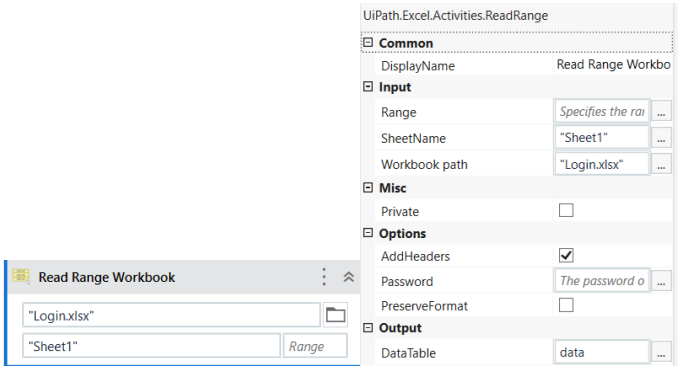
2) Creating WorkFlows:

- Create a excel file which contains the details of students. Here we have filled the details of our team.

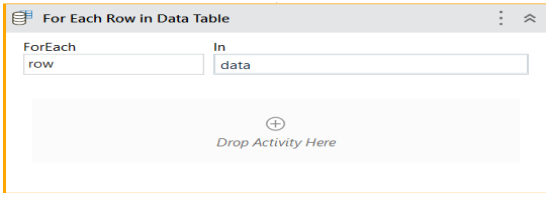


	A	B	C	D
1	Name	USN	DOB	Ph No
2	Bhargava M	1ms20cs030	apr-03-2002	7892646548
3	Swapna	1ms20cs089	dec-07-2002	8618256864
4	Kaushiki	1ms20cs059	oct-10-2001	9831038921
5	Vaiebhav	1ms20cs134	jul-26-2001	7864875039

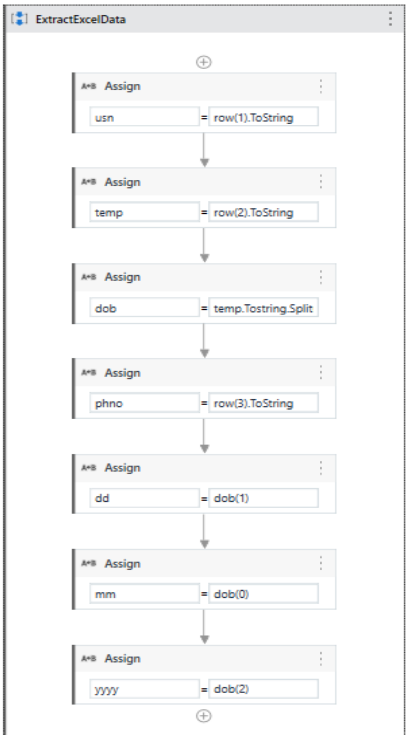
- Use a *Read range Workbook* activity to read the details in the excel sheet and store it in the variable type System.Data.DataTable.



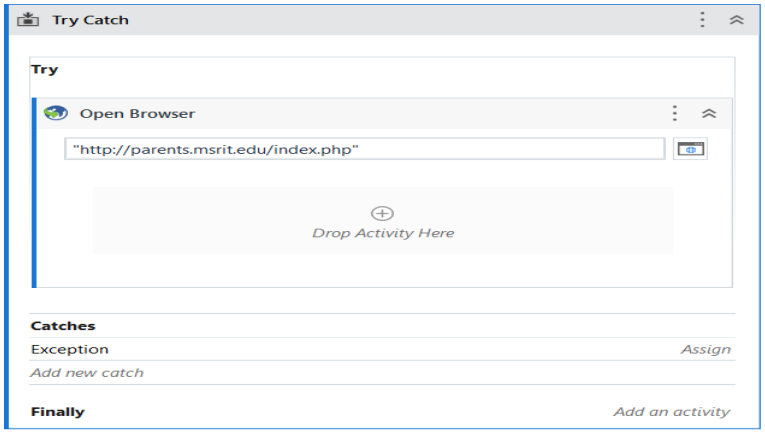
- Use a *For each row in DataTable* activity to iterate through each row in the DataTable and perform each students activity.



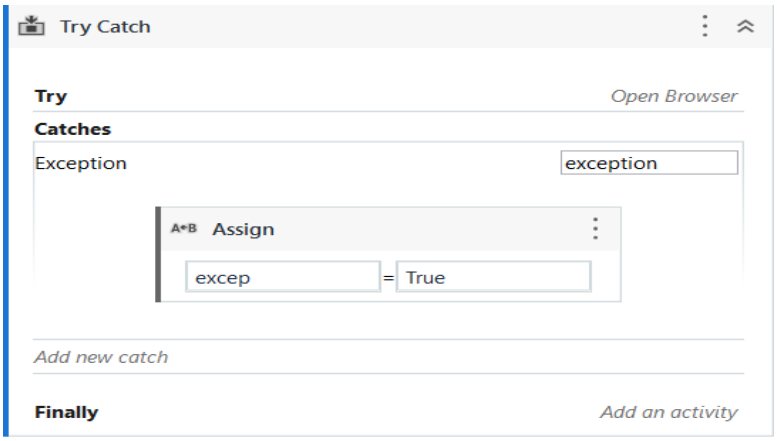
- For our next processes we will be using FlowChart.
- Lets add a new sequence in our flow chart and name it as *EctractExcelData*.
- This sequence splits the rows in DataTable and stored them in separate variables.
- Complete workflow of *ExtractExcelData*:



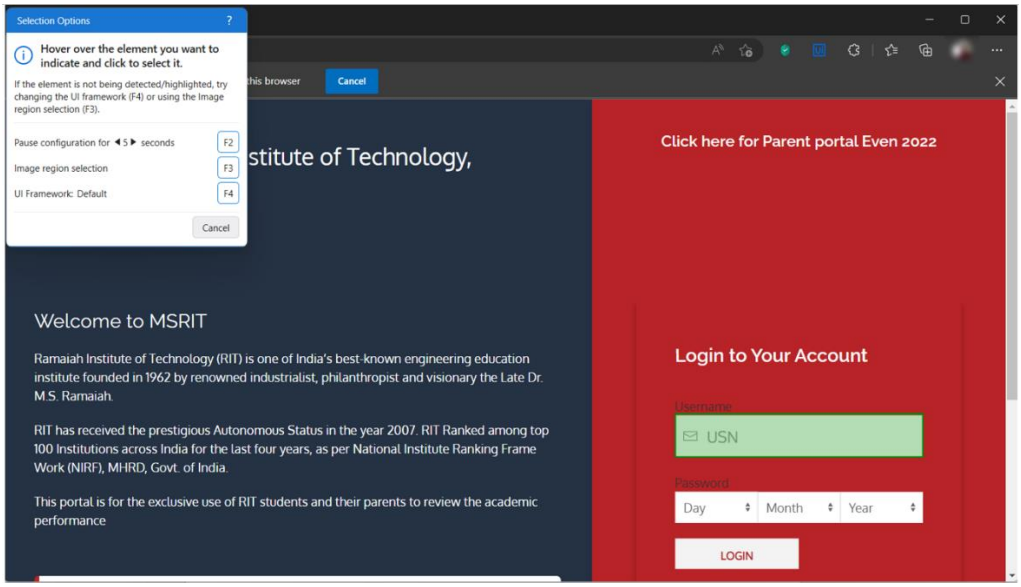
- By this we have completed the activities related to the sequence *ExtractExcelData*.
- Lets add a new sequence into our work flow and name it as *BrowserActivities*.
- All activities related to opening browser, logging into SIS portal, scraping data are completed here.
- Here we use a try/catch activity for the browser activities to handle exceptions and to ensure that an exception doesn't interrupt the normal flow of the activity.
- An *Open Browser* activity is added into the try activity, url of SIS portal ("http://parents.msrit.edu/index.php") is inserted.



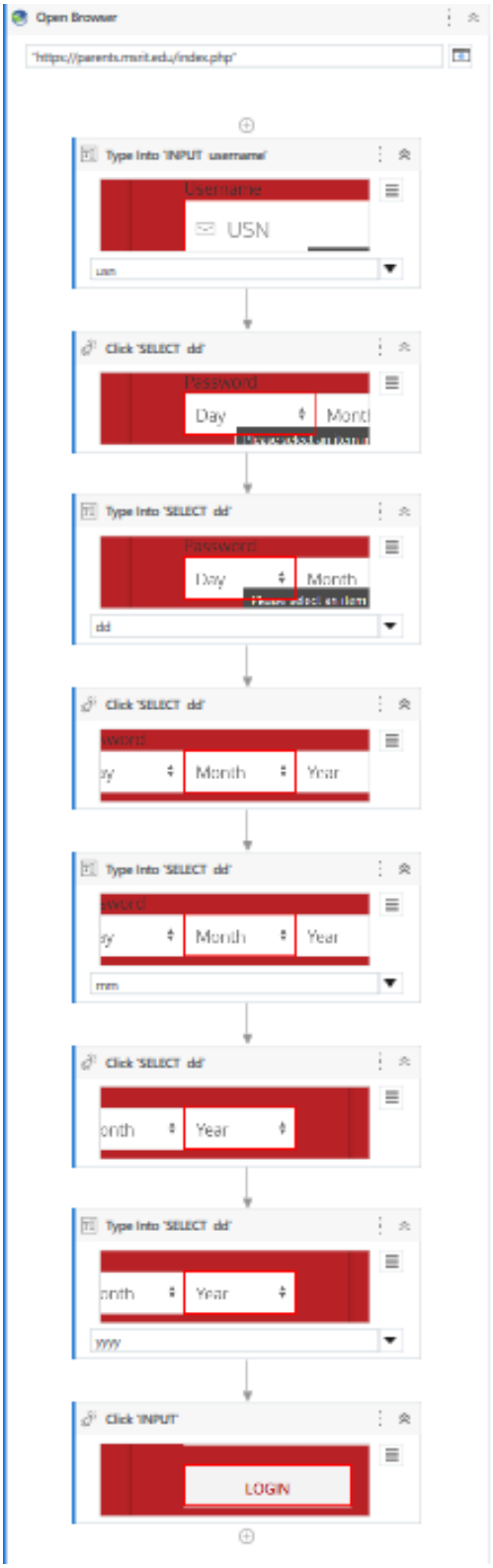
- If an exception occurs, a Boolean variable *excep* initialized to false is set true.



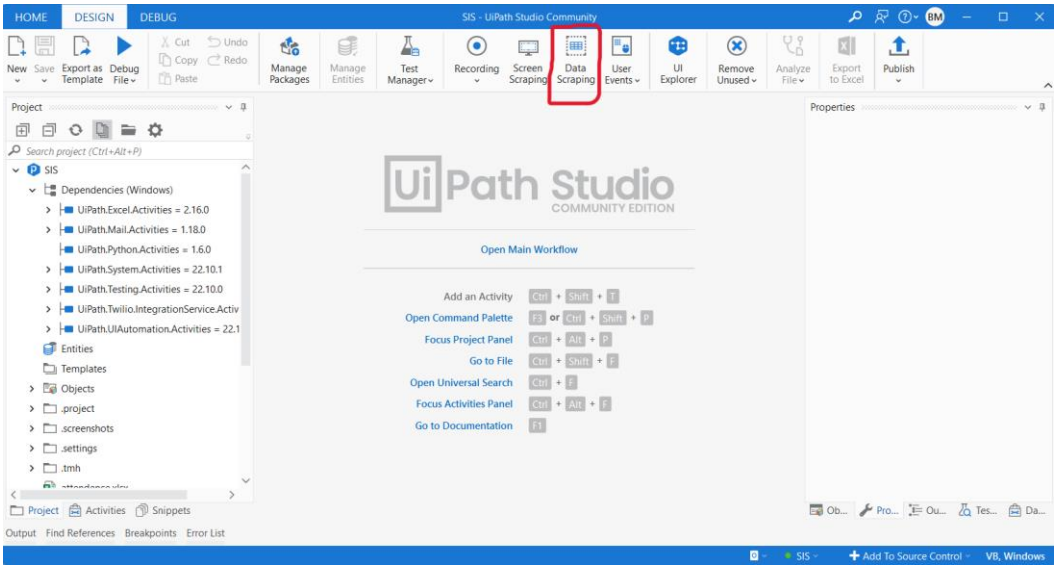
- In the *Open Browser* activity use a *Type Into* activity and configure the typing location on the screen.



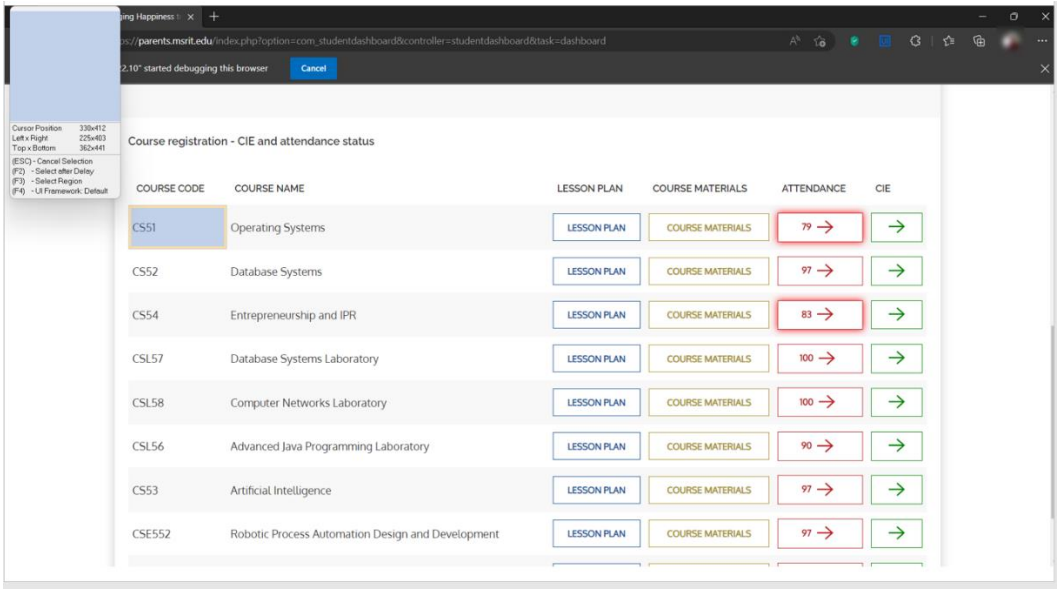
- In the similar way all the fields are entered with the respective details from the data extracted from the excel sheet.
- Complete workflow of *Open Browser*.



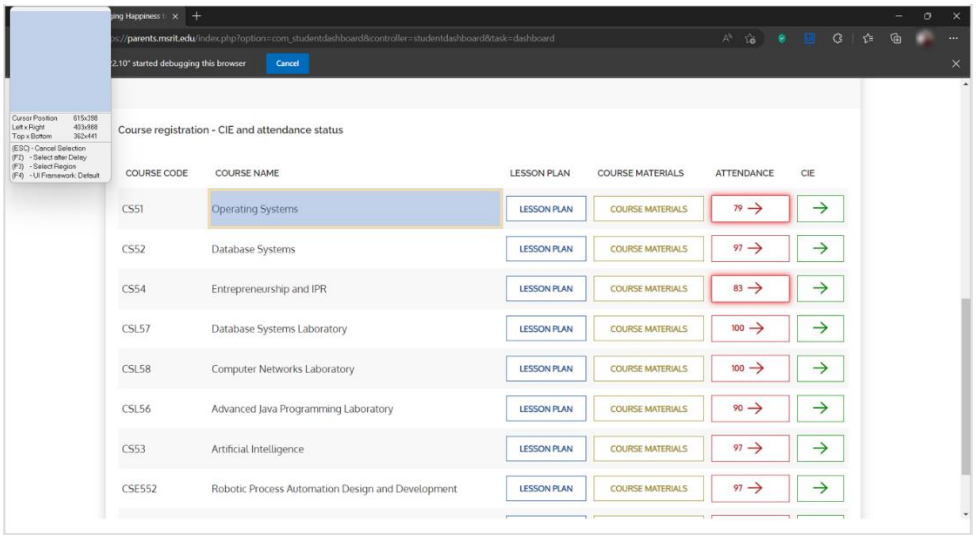
- The most important part is the data scraping. For this we use the *Data Scraping* activity present in the design panel.

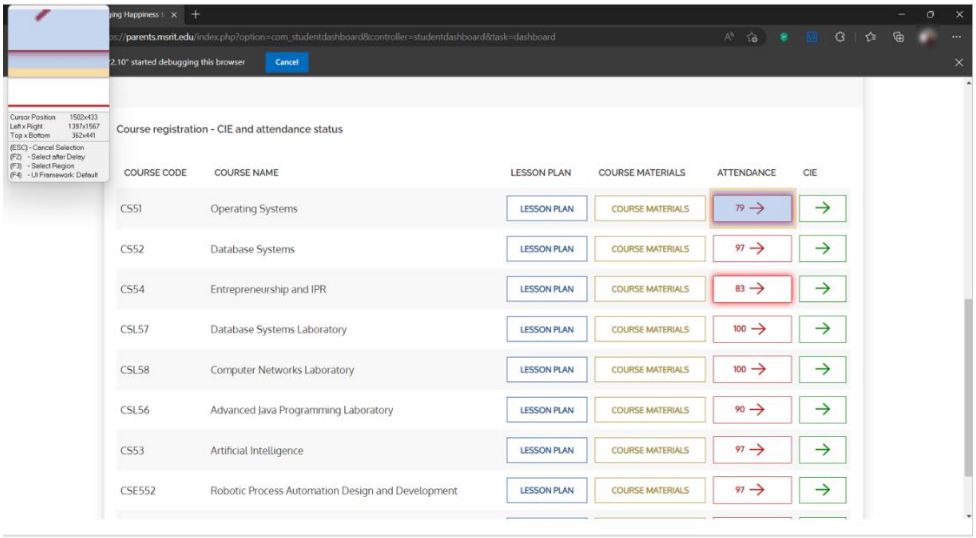


- Click on the Data Scraping activity and click next on the appeared wizard. Select the value of first course code as shown.

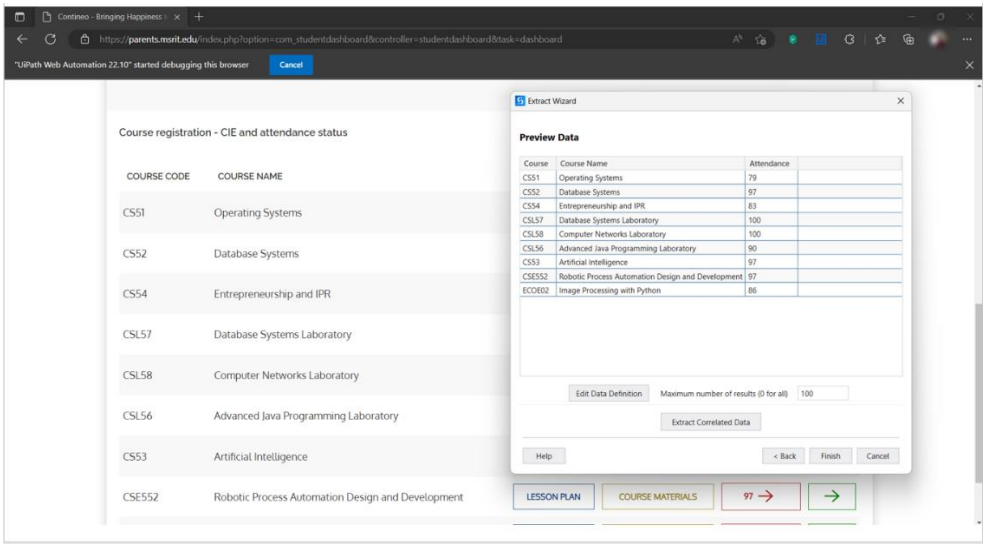


- After that select a similar field in the course code to scrap the entire column.
- Now continue the same process for Course Name and Attendance.

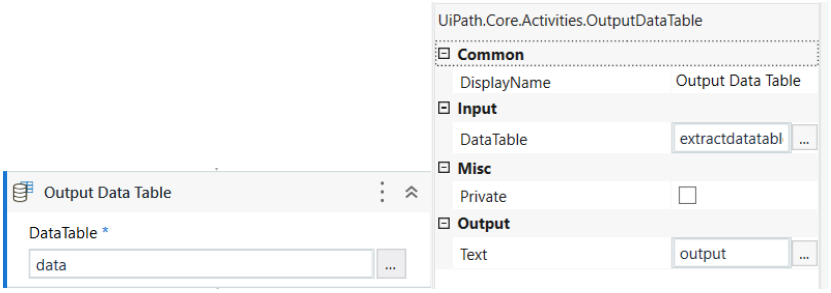




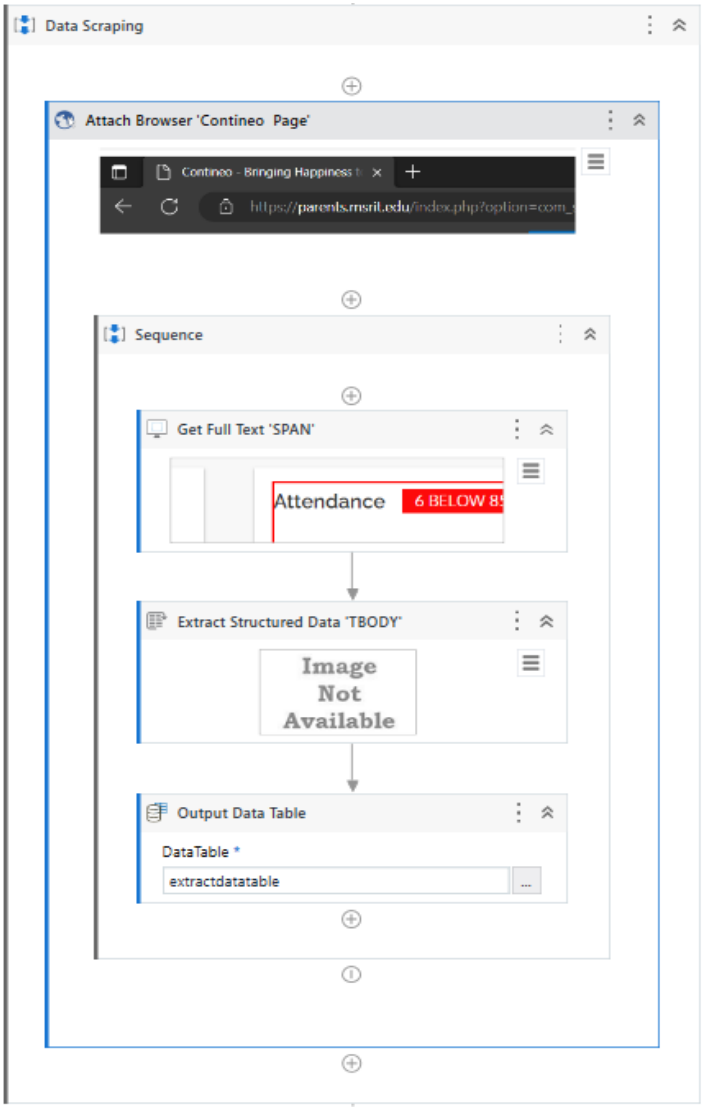
- Finally we get a table as shown in the Extract Wizard box.



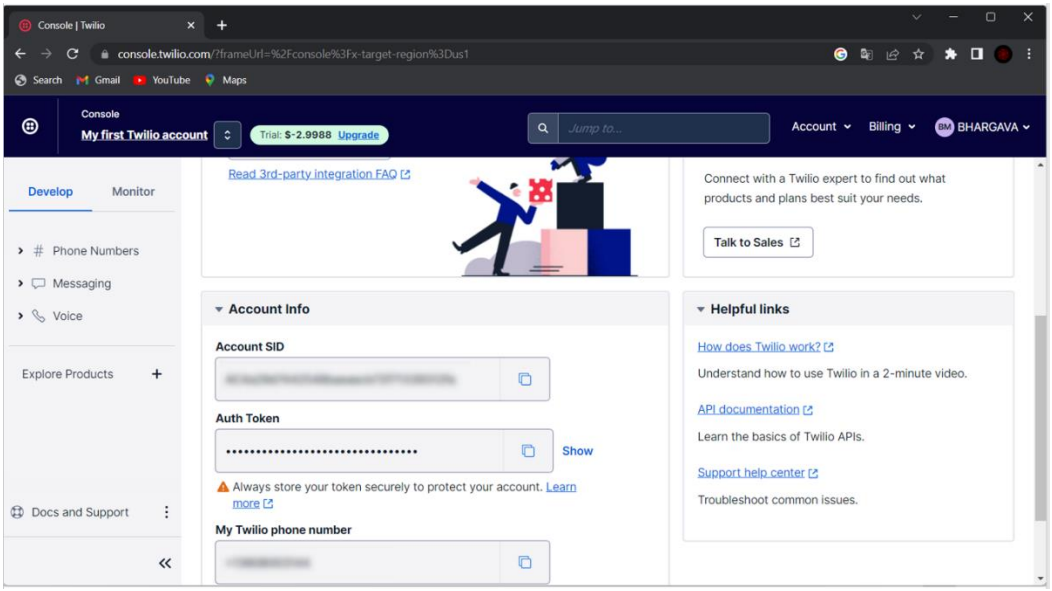
- The output from the *Data Scrap* activity is stored in a variable extractdatatable of type System.Data.DataTable.
- To convert this variable to string type we use *Output Data Table* activity.



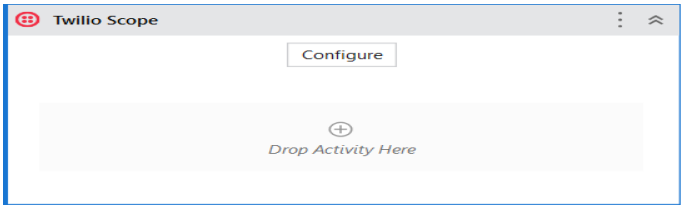
- Activity *Get Full Text* is used to scrap the data which contains the course code of courses whose attendance percentage is less than 85.
- Complete workflow of *Data Scraping*:



- By this we have completed the activities related to the sequence
- *BrowserActivities.*
- Lets add a new sequence into our work flow and name it as *TwilioActivities*.
- All activities related to sending a text message to the student are done here.
- Twilio is an American based in San Francisco, California which provides programmable communication tools for making and receiving phone calls, sending and receiving text messages and performing other communication functions using its web service APIs.
- UiPath provides integration service with Twilio.
- First we need to create a Twilio account.
- After creating a Twilio account login and open the console.

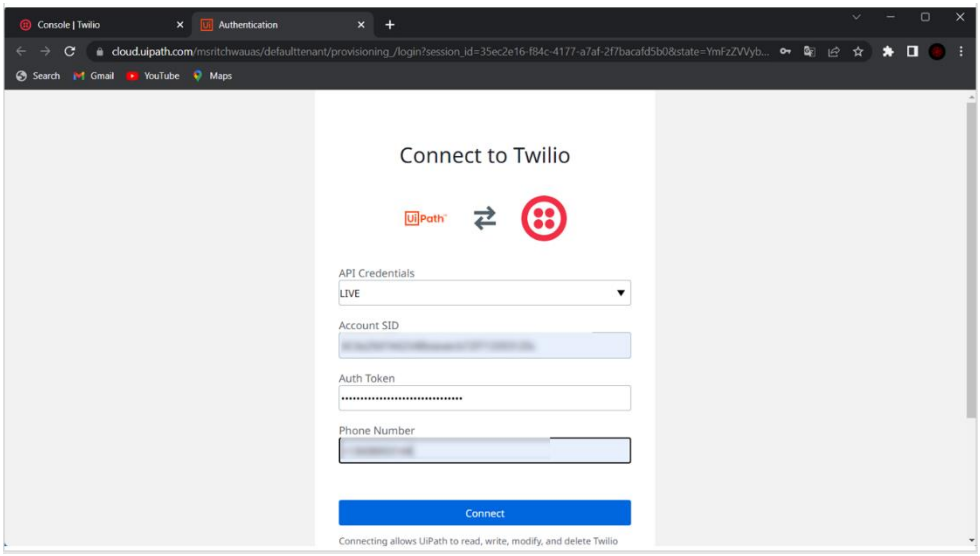


- You will be provided with a Account SID, Auth Token and a Twilio Phone number.
- Now add a *Twilio Scope* activity in the *Twilio Activities* sequence.

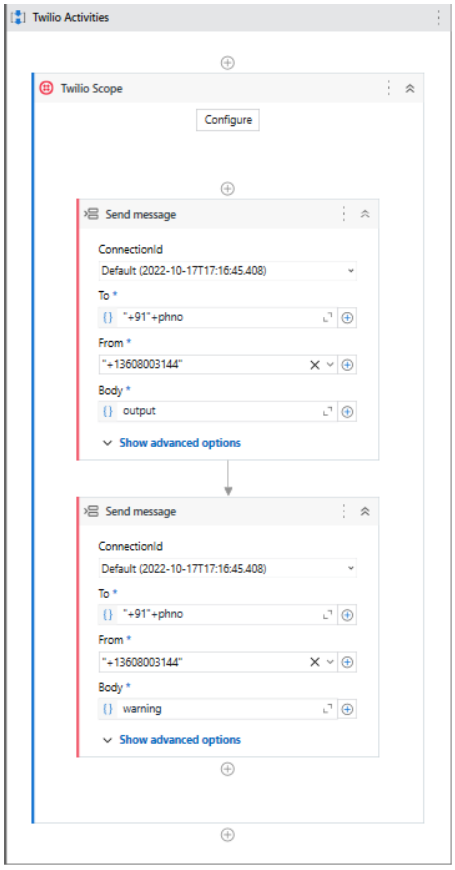


- Click on Configure and add a new connection.
- It directs to a web page.

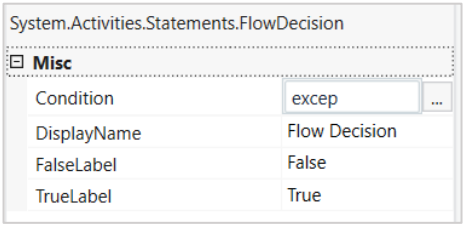
- Fill in with all details and press connect.



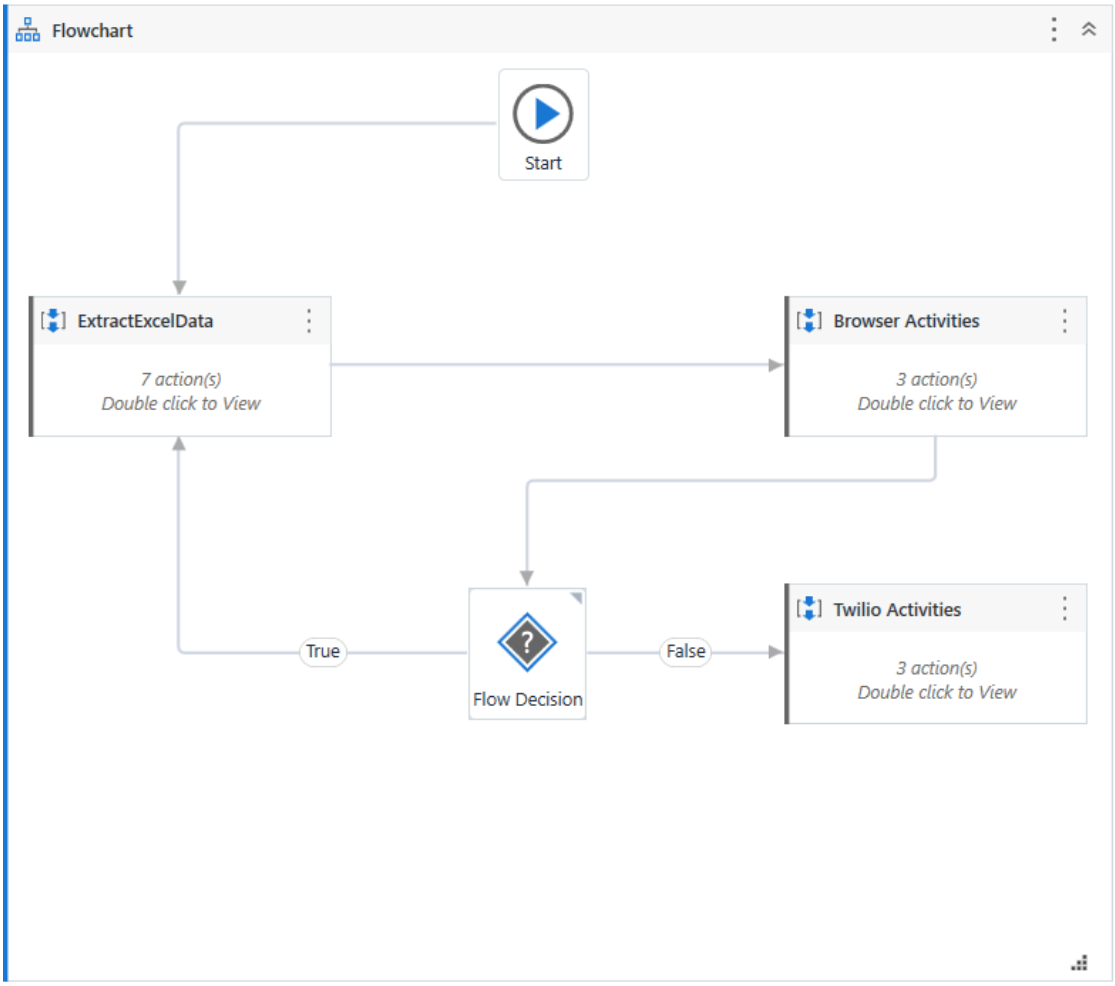
- After successful connection add *Send Message* activity to the *Twilio Scope*.
- Configure the *Send Message* activity with the required details.
- Complete workflow of *Twilio Actvities.*



- By this we have completed the activities related to the sequence *TwilioActivities*.
- Add a *Flow Decision* activity with Boolean variable excep(used in try/catch activity in Browser Activity sequence) variable as condition.



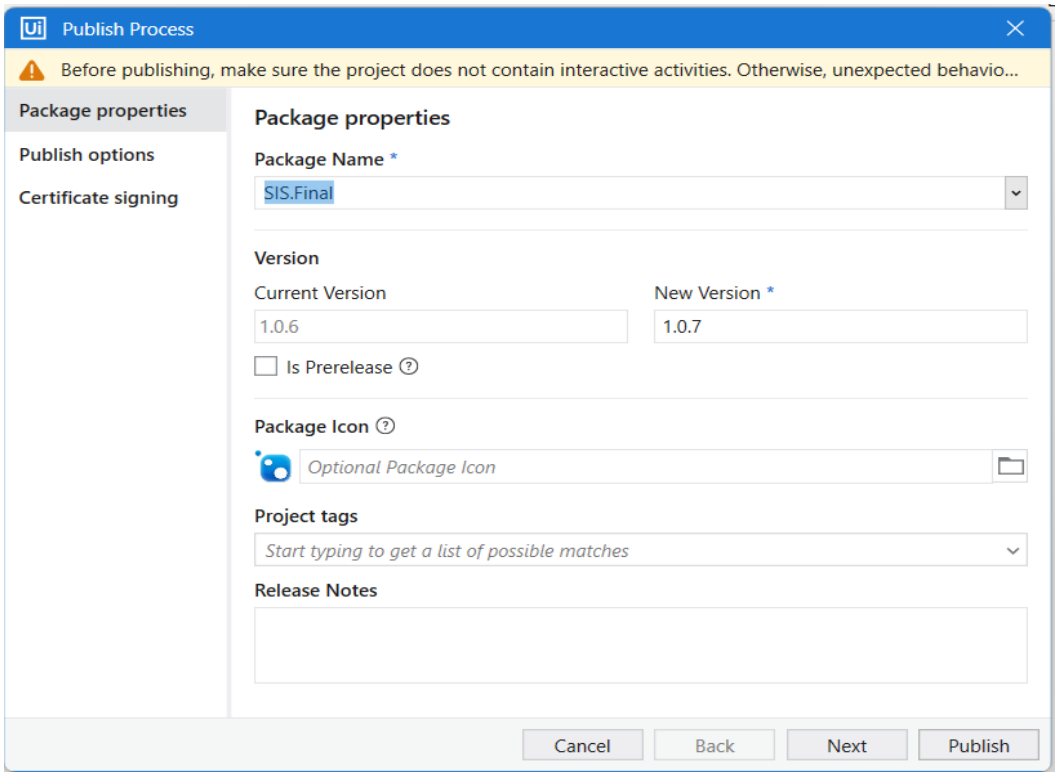
- Finally connect the sequences in the flowchart as shown.

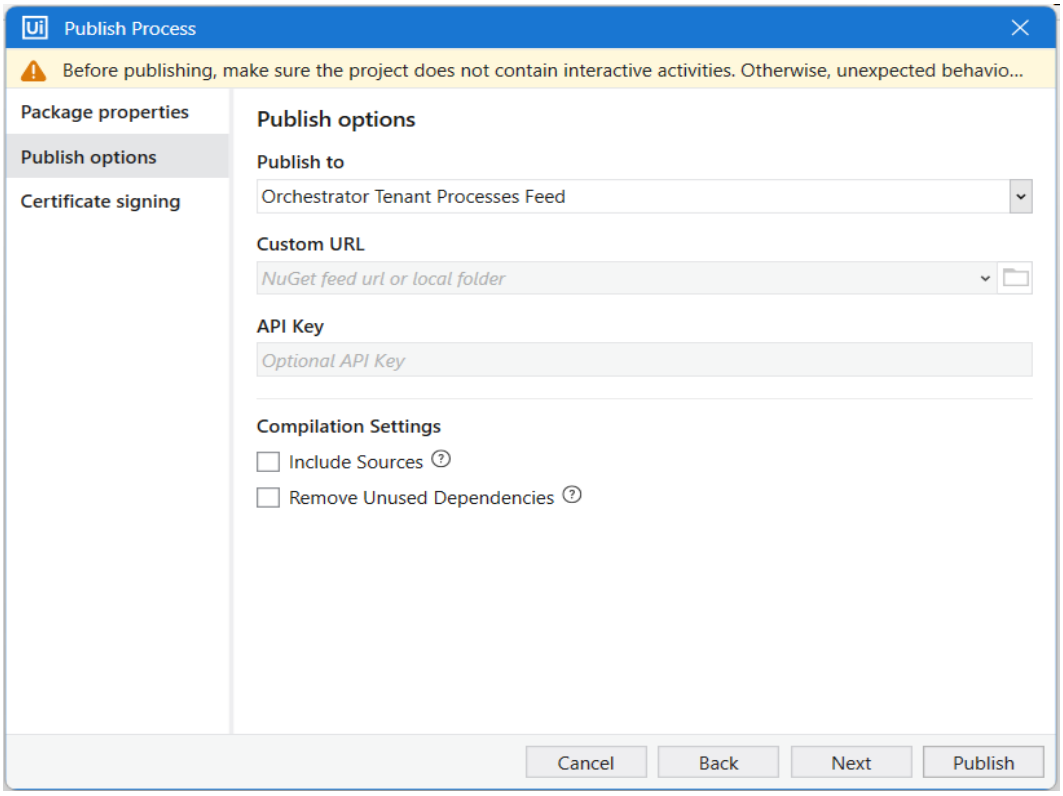


- By this we have completed the creation of workflows.

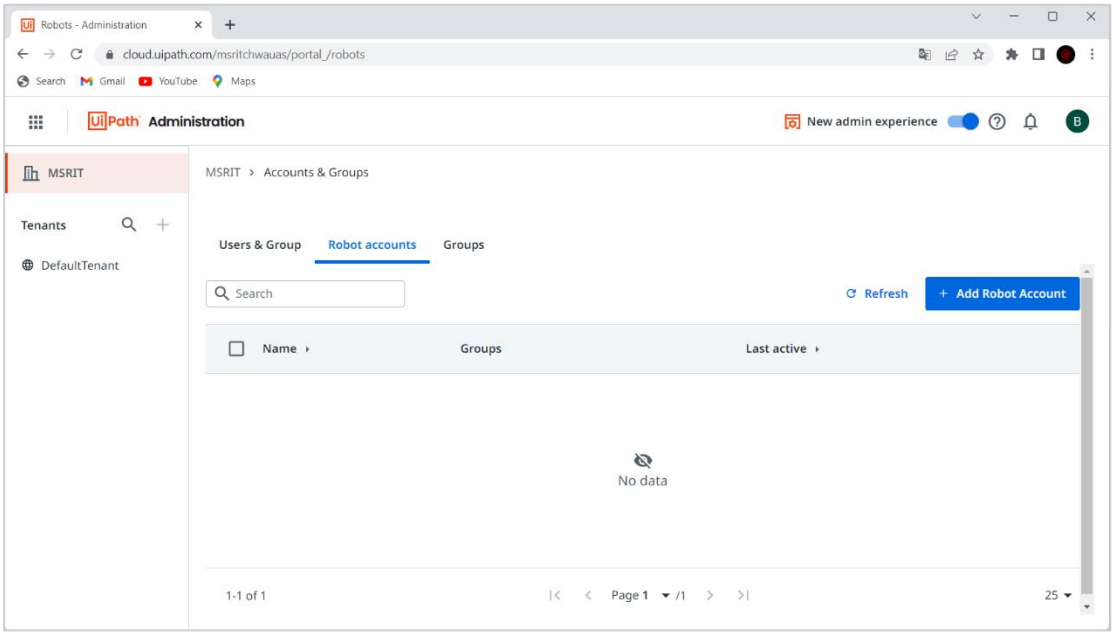
3) Deploying the project in UiPath Orchestrator:

- First we need to publish our project.
- Click on the publish option present in the Design panel.
- Click next and choose publish to orchestrator tenant process feed.

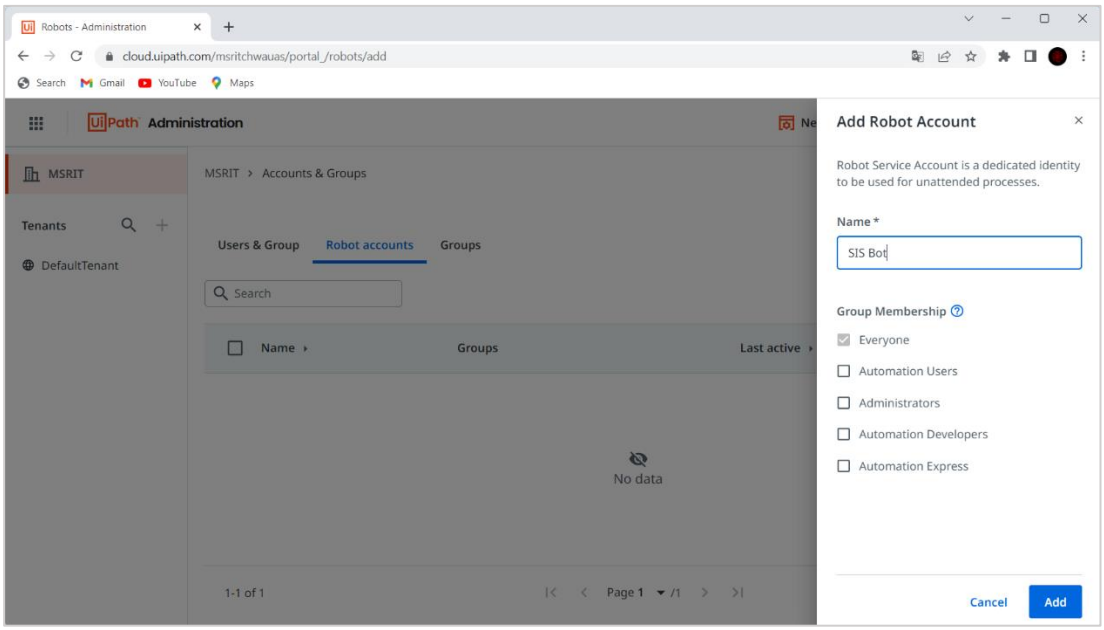




- Open the UiPath cloud (cloud.uipath.com).
- Since we are creating a unattended robot we need to create a robot account.
- Go to the Admin section, click on Accounts and groups, select Robot Accounts and click on Add Robot Account.

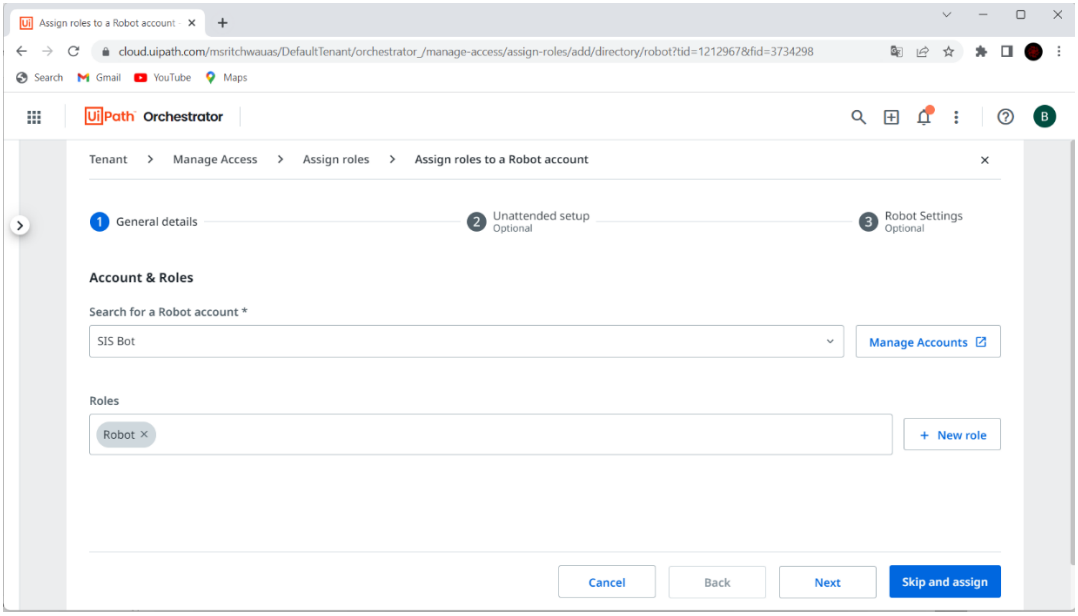


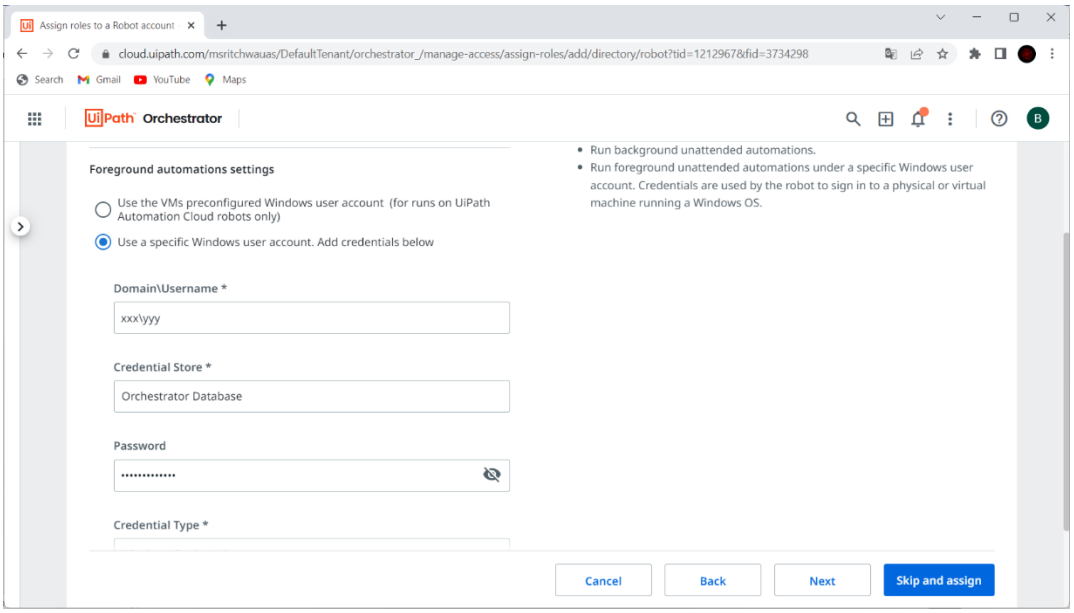
- Give a name(Eg: SIS Bot) and click on Add.



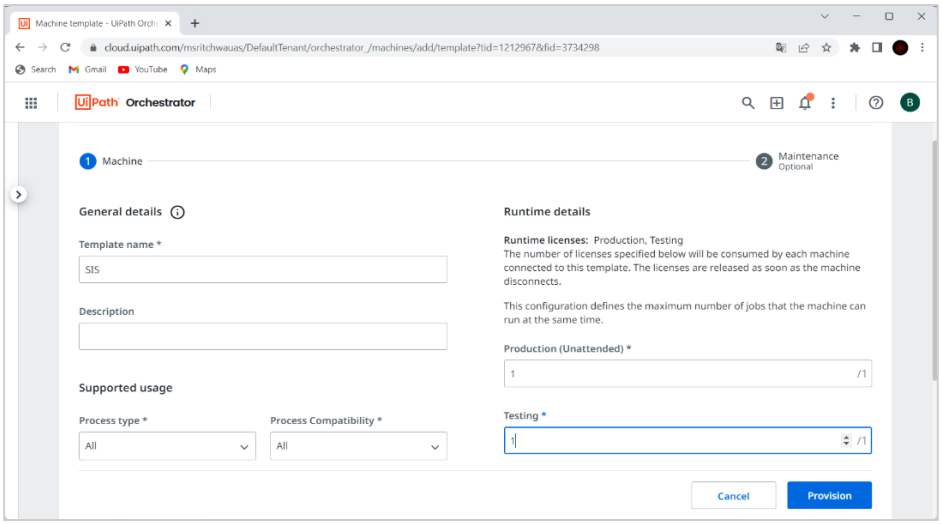
- Lets assign role to the newly created robot account.

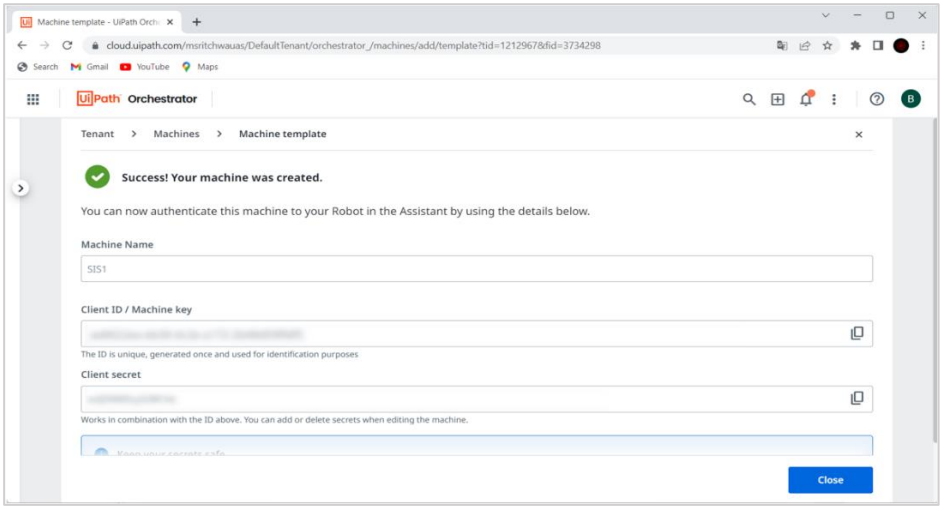
- Open the orchestrator, click on TENANT, select Manage Access and click on Assign role.
- Select Robot Account.
- Configure the General Details and unattended setup as shown:



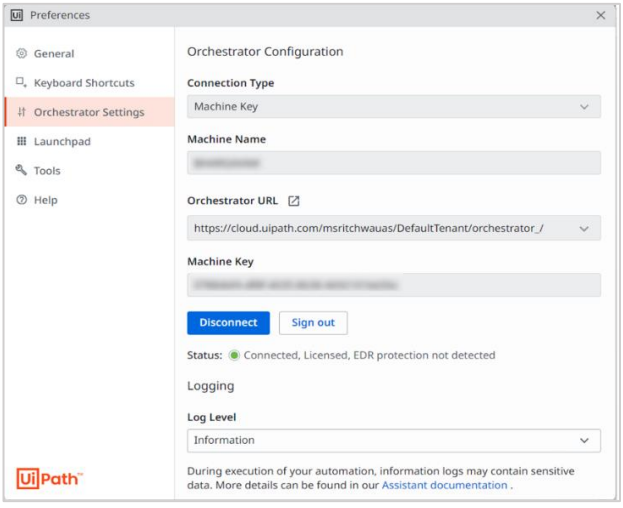


- Assign the robot.
- Now to run the process a machine is required.
- To create a machine select machines under TENANT, click on Add Machine and select Machine Template.
- Configure the machine template as shown:

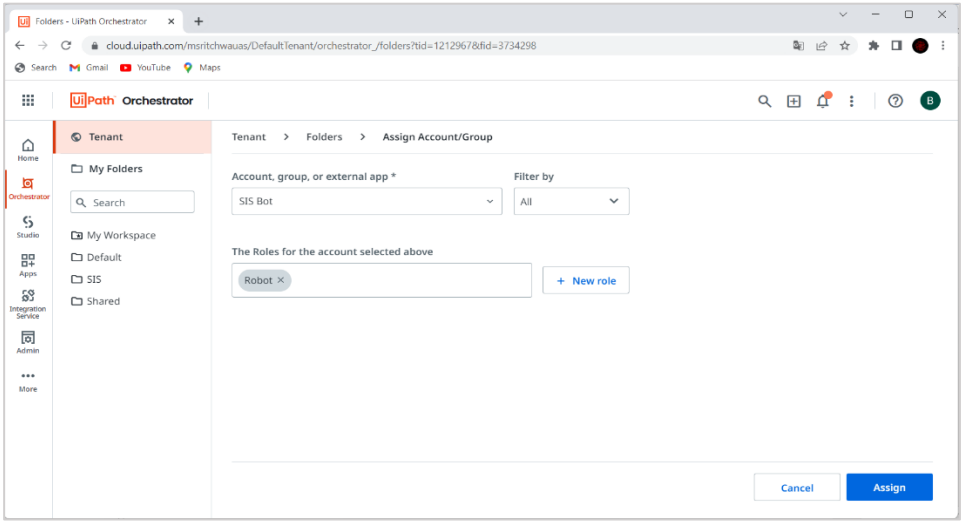




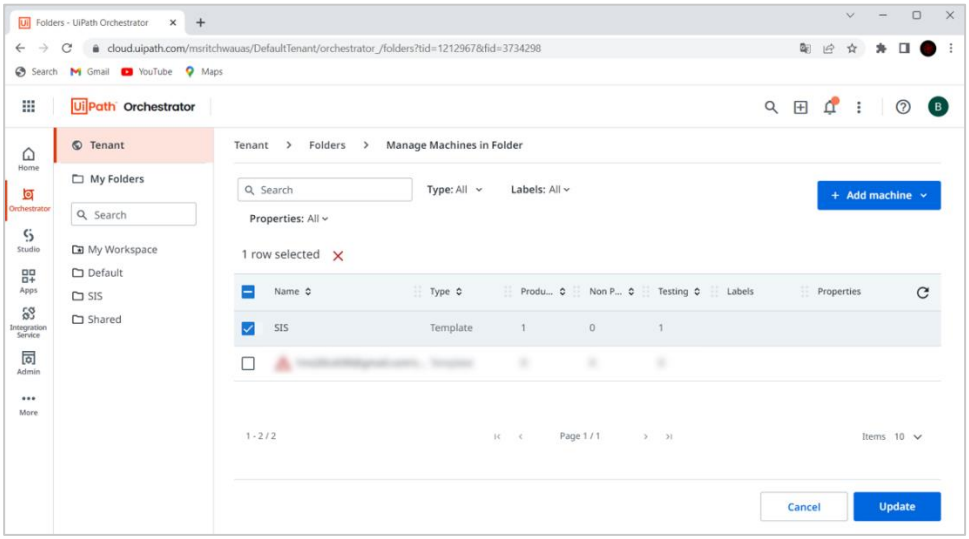
- Copy the machine key.
- Now open preferences in the UiPath assistant and configure the newly created machine in the orchestrator settings.



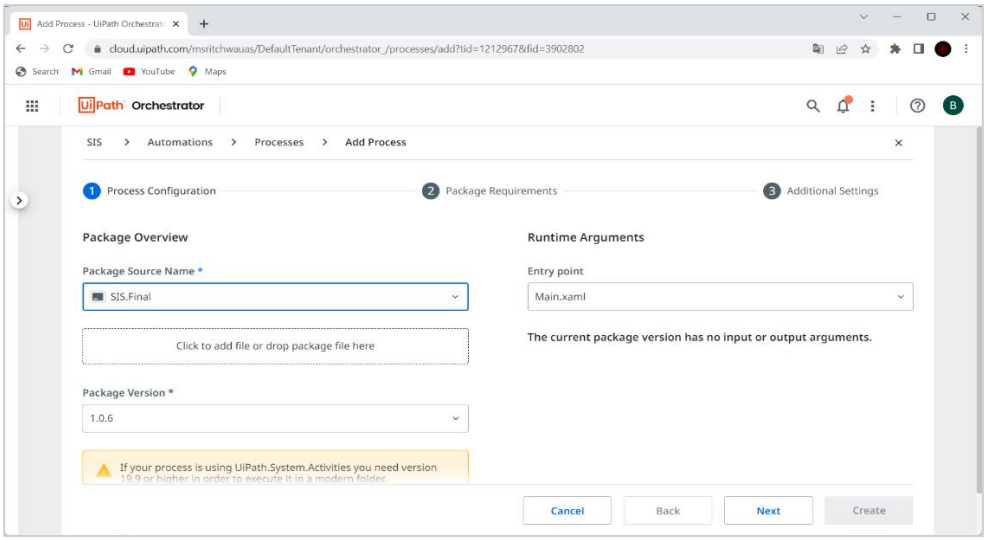
- After successful connection of the assistant with the newly created machine create a new folder (Eg: SIS) under TENANT.
- Assign Account/Group to the folder as shown with the robot account.

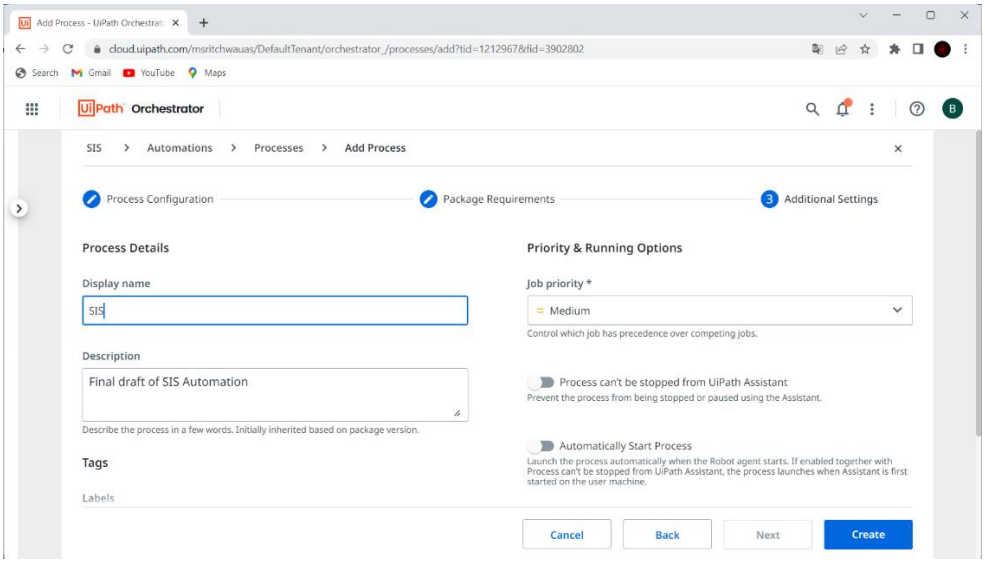


- Assign the newly created machine to the created folder.

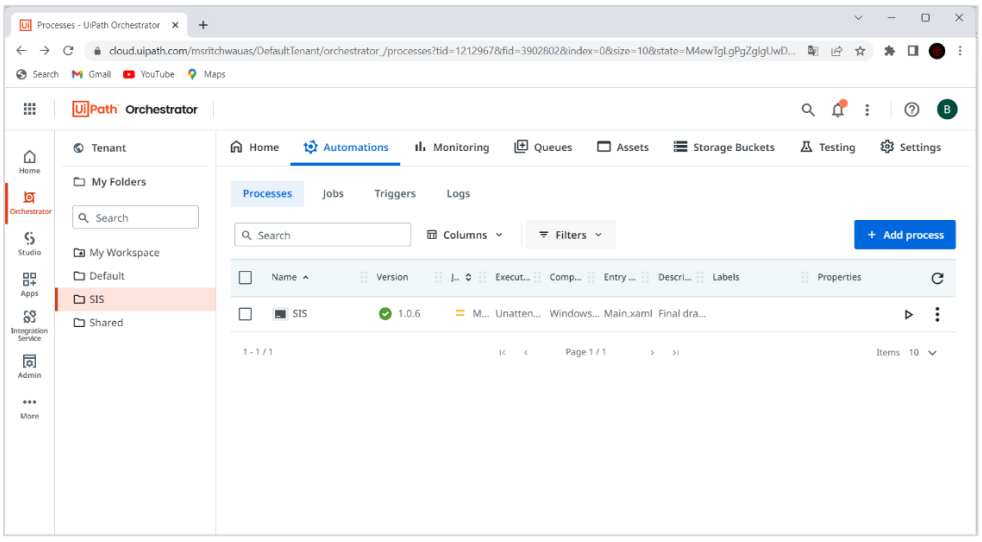


- Now we need to add the process to the folder created.
- Select processes and click on Add Process.
- Configure the process as shown :

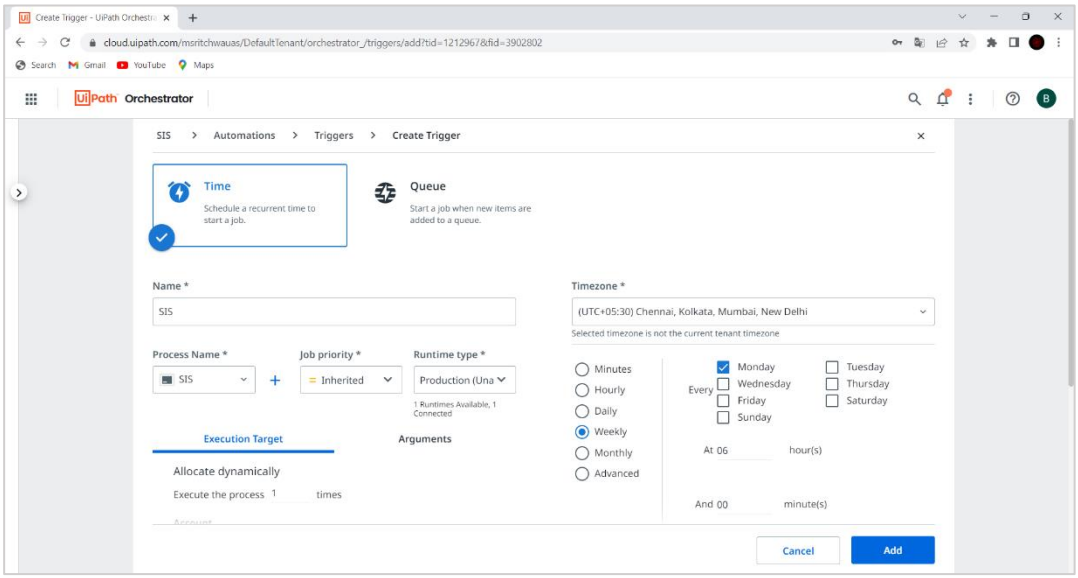


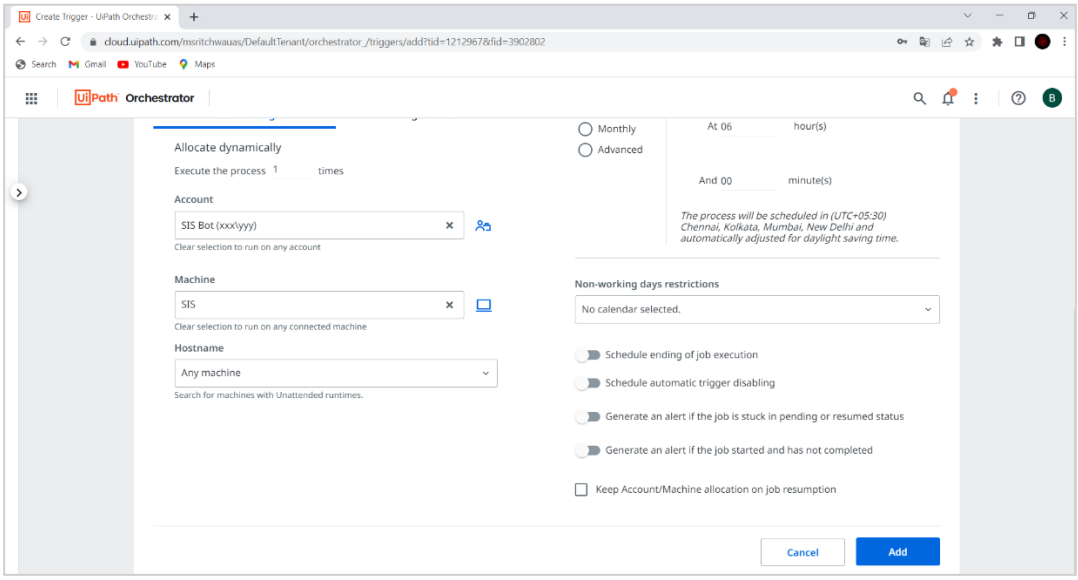


- Click on create and we can see our process has been created.

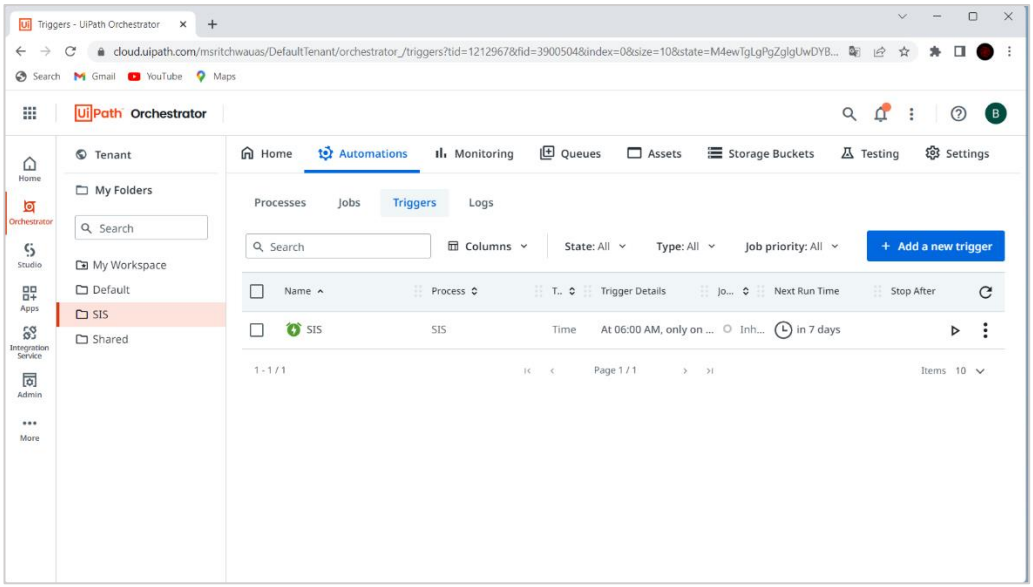


- We must add a trigger to run the bot periodically without ant human interference.
- Select the Triggers option and click on Add a new trigger.
- Let us run the bot on Monday 6 am of every week.
- Configure the trigger as shown:





- Click on Add and our trigger is created.

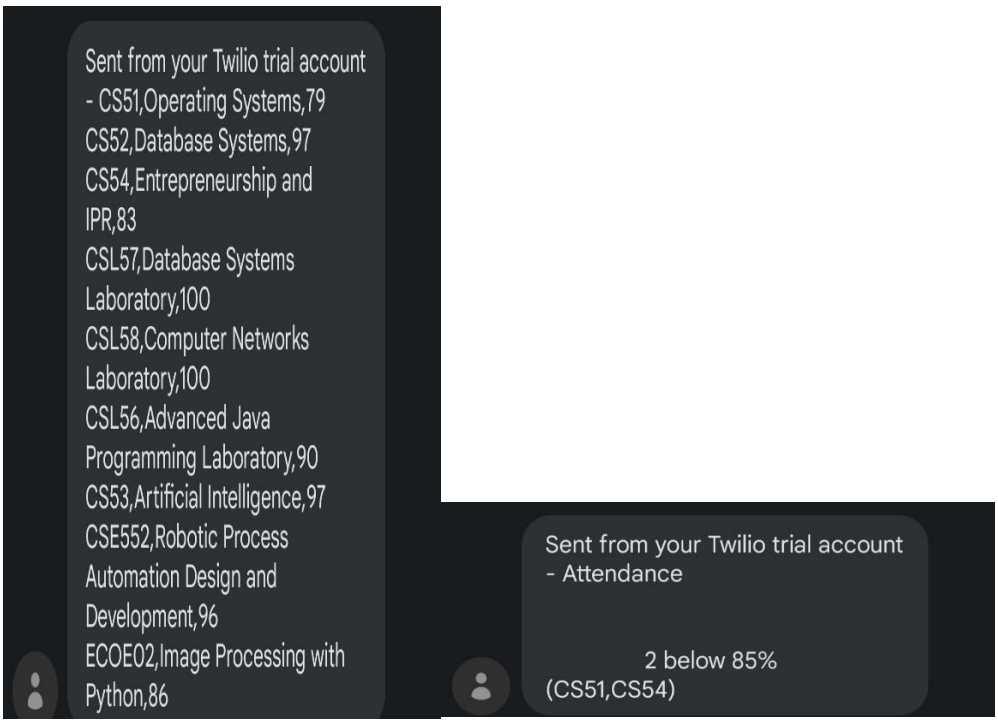


- Here we can see that our trigger is created and the next run time is scheduled.

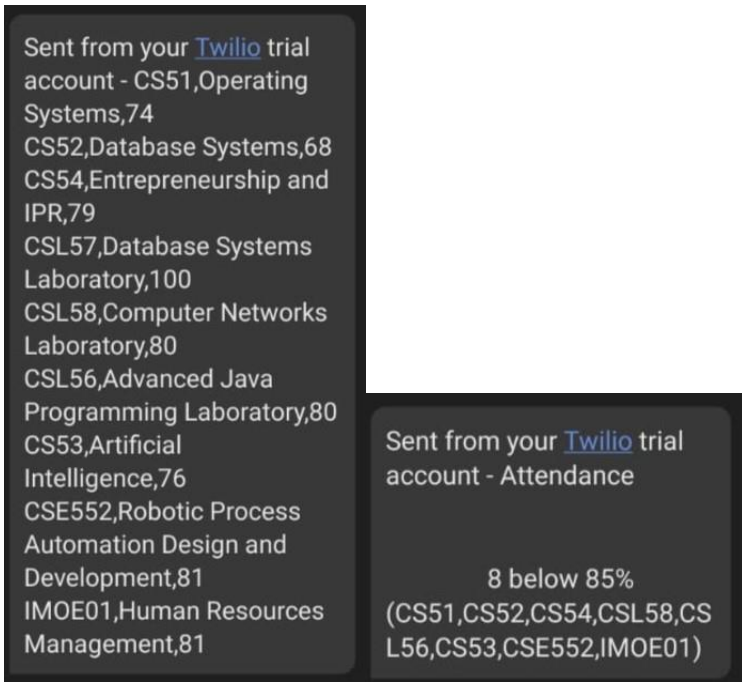
Results:

Lets see the results after the bot has successfully run.

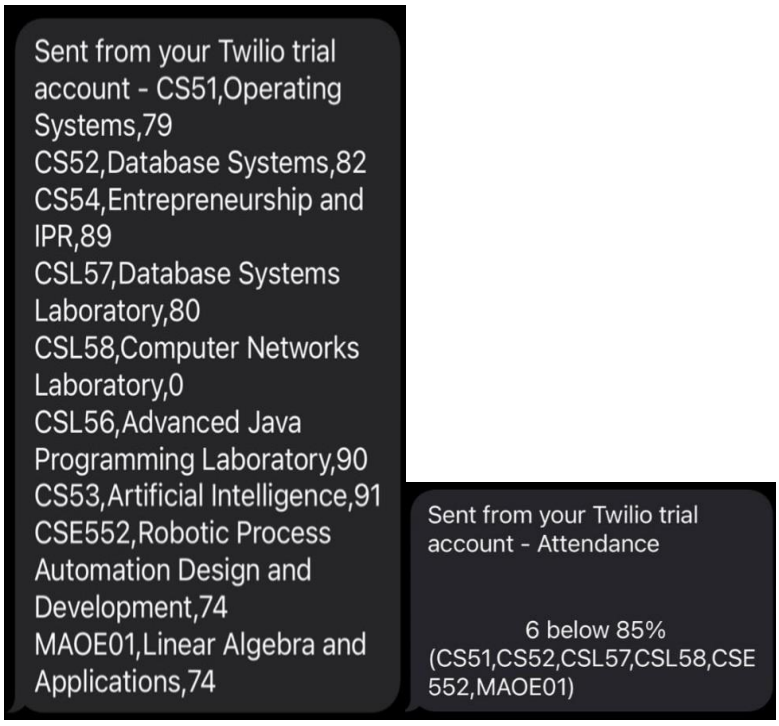
- Message received by Bhargava M.



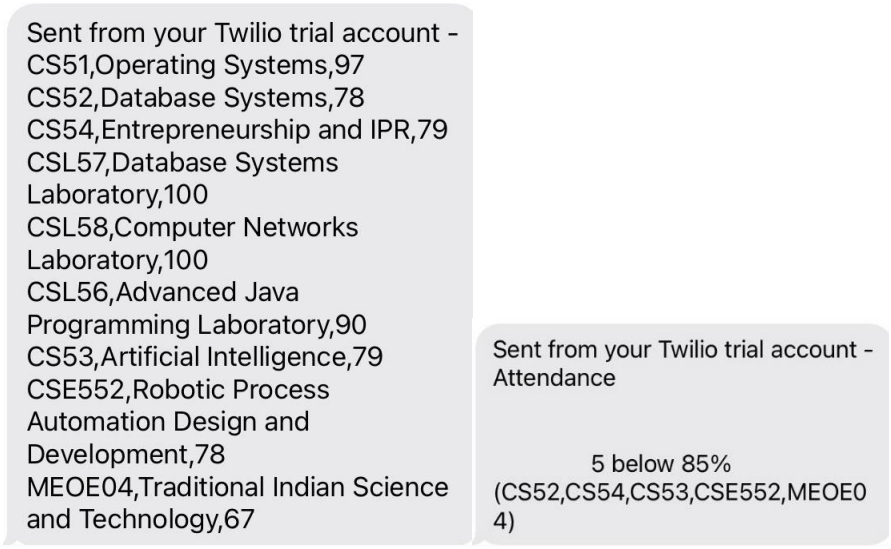
- Message received by Kaushiki Shaha.



- Message received by Swapna Ramineni.



- Message received by Vaiebhav Chettri.



- We can see that our bot has successfully completed the process and the students have received the messages regarding the attendance.

Applications/Usage of RPA Bot:

- RPA Bots are commonly used to reuce the work load.
- Usage of RPA Bots reduces the occurrence errors.
- The SIS Bot developed by us helps the students to access their attendance without network.
- The students can receive weekly status of their attendence.
- The students can also receive alerts whenever the attendance percentage drops below 85.
- The message can also be sent to parents to track attendance of their child.

Conclusion:

Nowadays automations are becoming common. SIS Bot is one among them. The SIS Bot can also be used further with modifications to send the CIE marks, Fee payments,Exam history etc of the student. This helps the students to receive messages regarding their CIE marks too. There is no need of a person to individually send messages to all student. Everything can be automated.

RPA Developer Foundation Certificates:

UiPath

Diploma of Completion

Proudly presented to:

Bhargava M

For successfully completing the learning plan:

RPA Developer Foundation (v2020.10)

10/19/2022

Date of issue

Daniel Dines

Daniel Dines

Chief Executive Officer

UiPath

Diploma of Completion

Proudly presented to:

Kaushiki Shaha

For successfully completing the learning plan:

RPA Developer Foundation (v2020.10)

10/20/2022

Date of issue

Daniel Dines

Daniel Dines

Chief Executive Officer

UiPath

Diploma of Completion

Proudly presented to:

Swapna Ramineni

For successfully completing the learning plan:

RPA Developer Foundation (v2020.10)

10/19/2022
Date of issue

Daniel Dines
Daniel Dines
Chief Executive Officer

UiPath

Diploma of Completion

Proudly presented to:

Vaiebhav Chettri

For successfully completing the learning plan:

RPA Developer Foundation (v2020.10)

10/19/2022
Date of issue

Daniel Dines
Daniel Dines
Chief Executive Officer