Projektarbete inom affärssystem

PROAFF - 7,5hp   HT2023

Stockholms universitet

Tutorial 1 - Introduction to UiPath

v04

Contents

1. Introduction

Enterprises adopt automation methods for executing routine operations. Robotic Process Automation (RPA), such as UiPath, OpenSpan, Blue Prism, and WorkFusion, a software technology (softbot) that automates tasks that are similarly performed by human beings (imitates) that humans perform the tasks. RPAs perform repetitive and rule-based tasks.

1.1. UiPath and the User Interface

UiPath is one of the popular RPA tools available today with the ease of implementation that works on Windows platforms. UiPath has three main components:

    a. UiPath Studio – an advanced visual interface that lets users build robots.
    b. UiPath Robot – executes tasks mimicking humans or as humans without human supervision.
    c. UiPath Orchestrator – is a web application that enables you to deploy, monitor, schedule, and manage processes and robots. It allows you to manage robots.

Let us now learn more about the user interface of UiPath. Start your UiPath Studio from the Start Menu of your Windows; as illustrated below, you can enter Uipath on the start menu and select UiPath Studio.
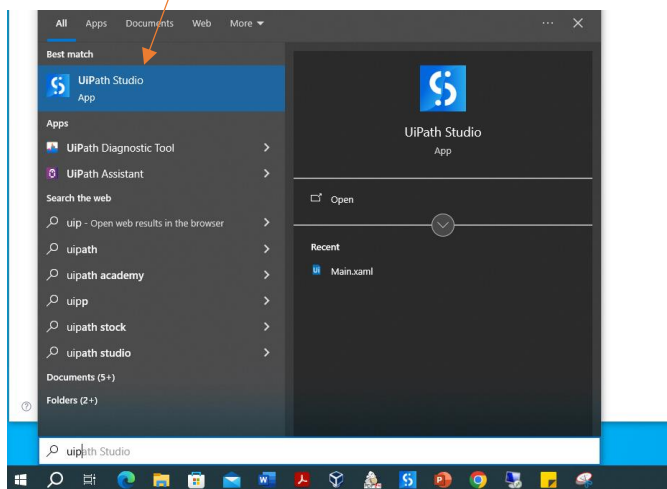

1.1.1. Start or Home Tab

The Start tab or Home tab (encircled in a red oval shape below), also known as Backstage View, provides the option to open or create projects. It also enables you to configure UiPath. This view is the first view you get to see when you open your UiPath studio. You can also get the Backstage view from the Home tab (from already opened projects). Using the start tab, you can:

- open recently opened projects that are locally available or from version control systems such as GIT and TFS (File opening options)
- create a new blank project or a project from the available templates (New project options)
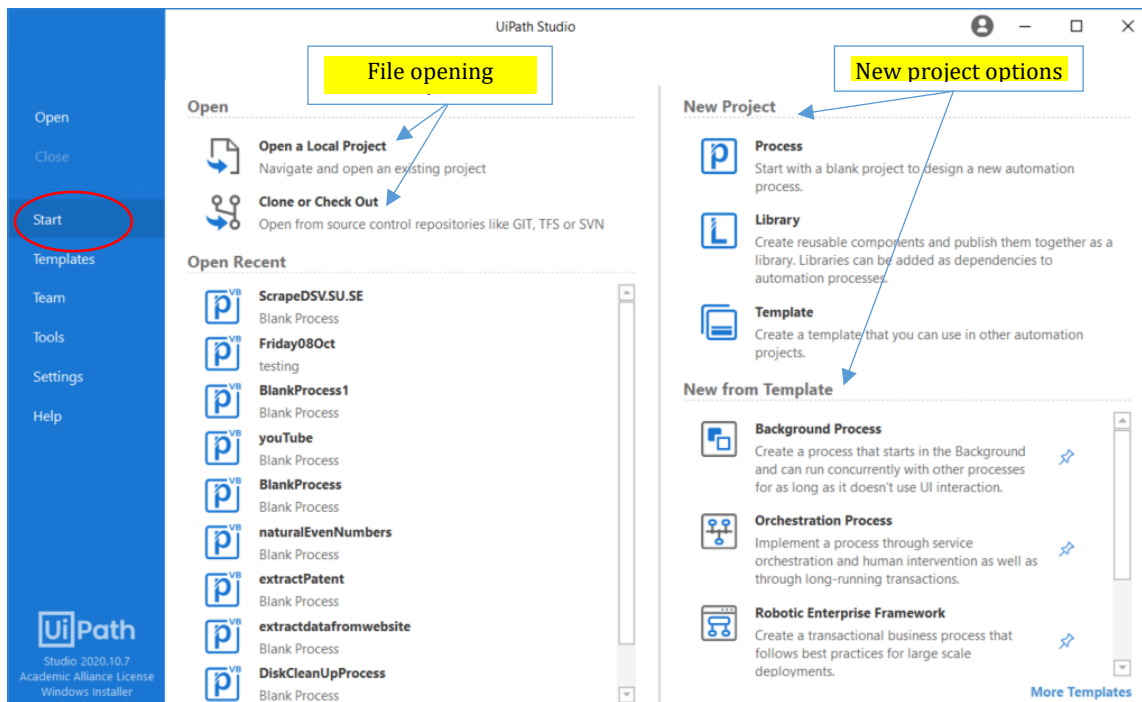
1.1.2. Template Tab

The template tab allows you to create new projects based on available templates. Also, you can search and find available templates that are not visible.
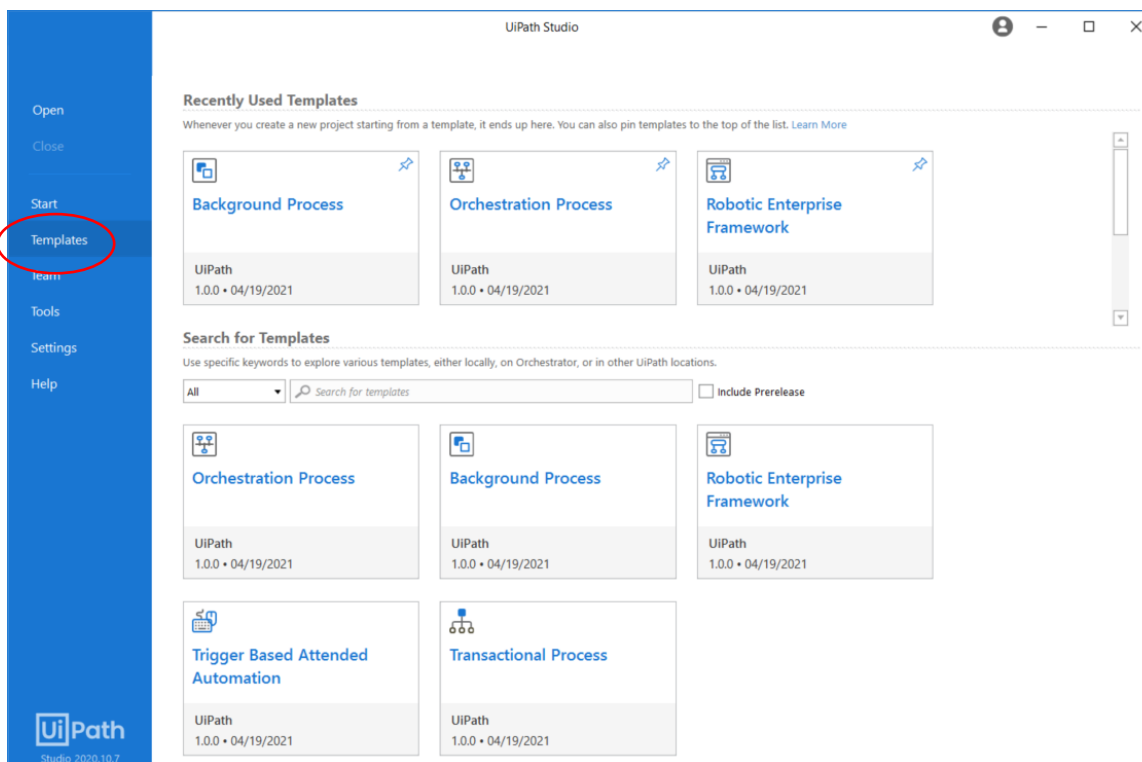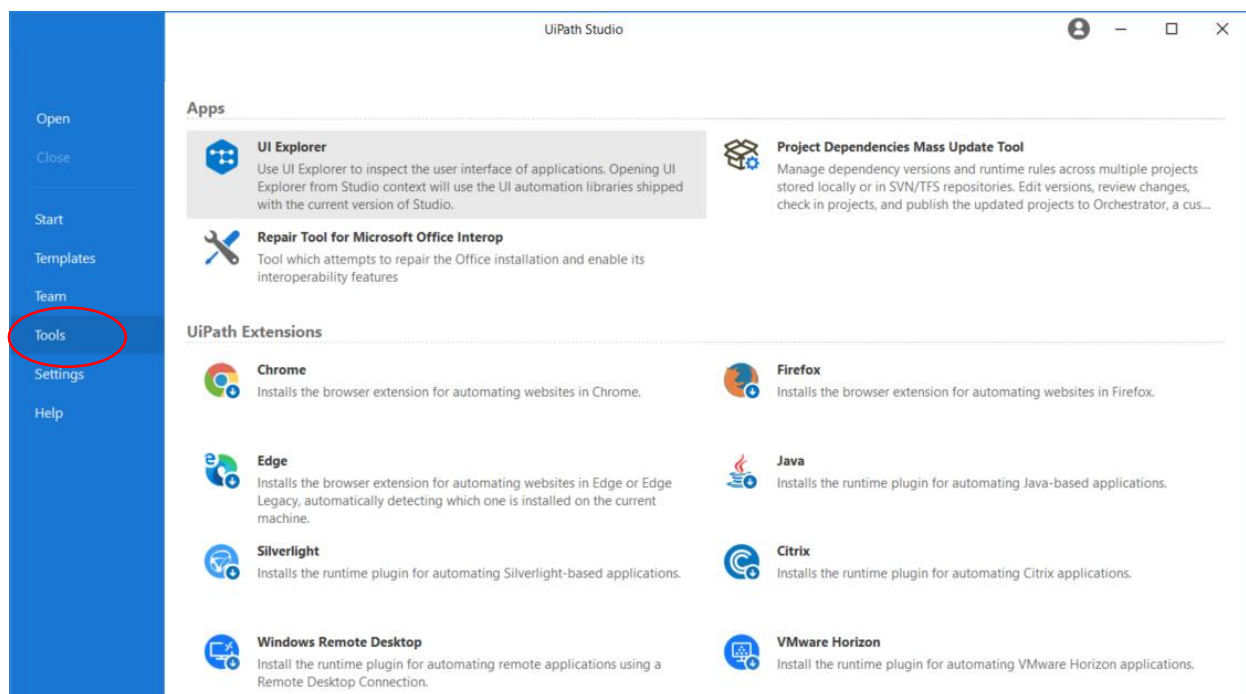
1.1.3. Team Tab

The team tab allows you to manage source control integration. This tab is used to clone or copy a repository, add your current project to a repository, etc.
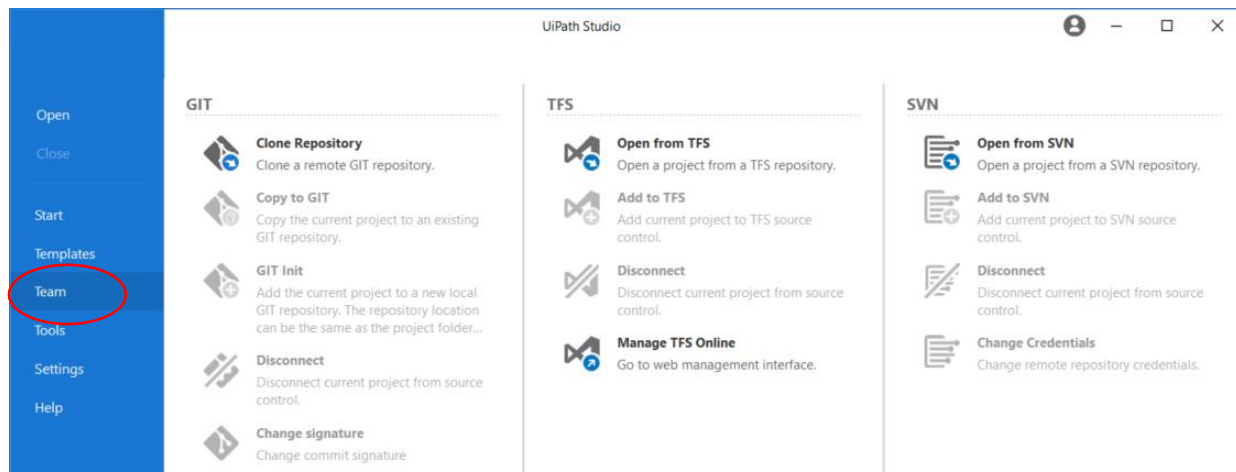
1.1.4. Tools Tab

The tools tab enables you to install extensions such as Chrome, Edge, Firefox, Silverlight, Citrix, Java, Windows Remote Desktop, VMware Horizon, etc.


1.1.5. Settings Tab

The setting tab allows you to change configurations and the look and feel of your UiPath studio.

- General - enables you to change language, change theme (color of your interface – light or dark), enable or disable the sending of usage data to UiPath, and reset to default.
- Design - enables you to set or change settings such as backup interval, etc.

- Locations option- enables you to set default project paths, publishing process URL, publish library URL, etc.
- Manage Sources - enables you to add and remove package sources (do not change anything here).
- License and Profile – enable you to manage your licenses.
- Team - enables you to enable and disable repositories such as GIT, SVN, and TFS.
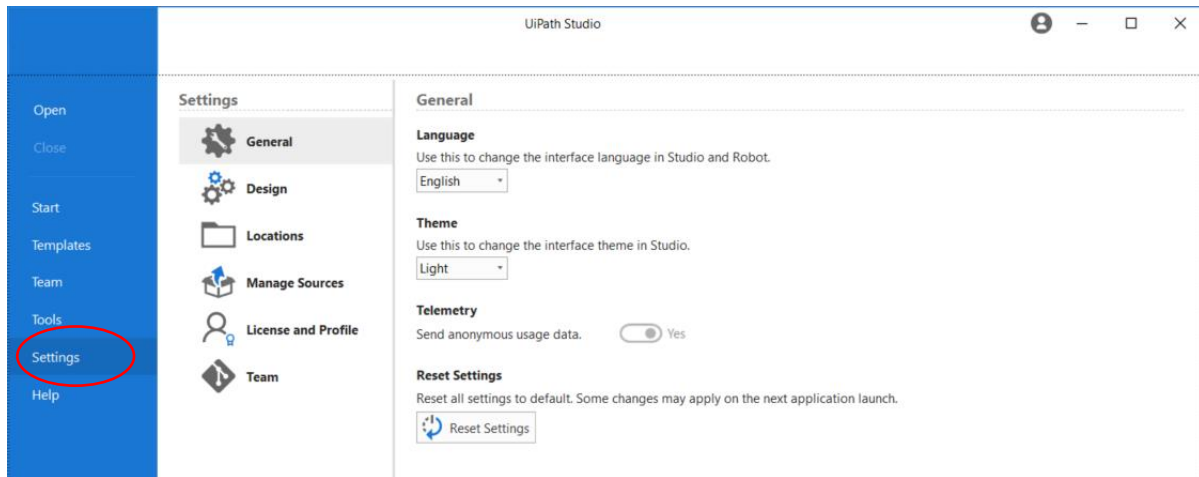
1.1.6. Help Tab
Help tab provides links to different help documentation and learning sources.
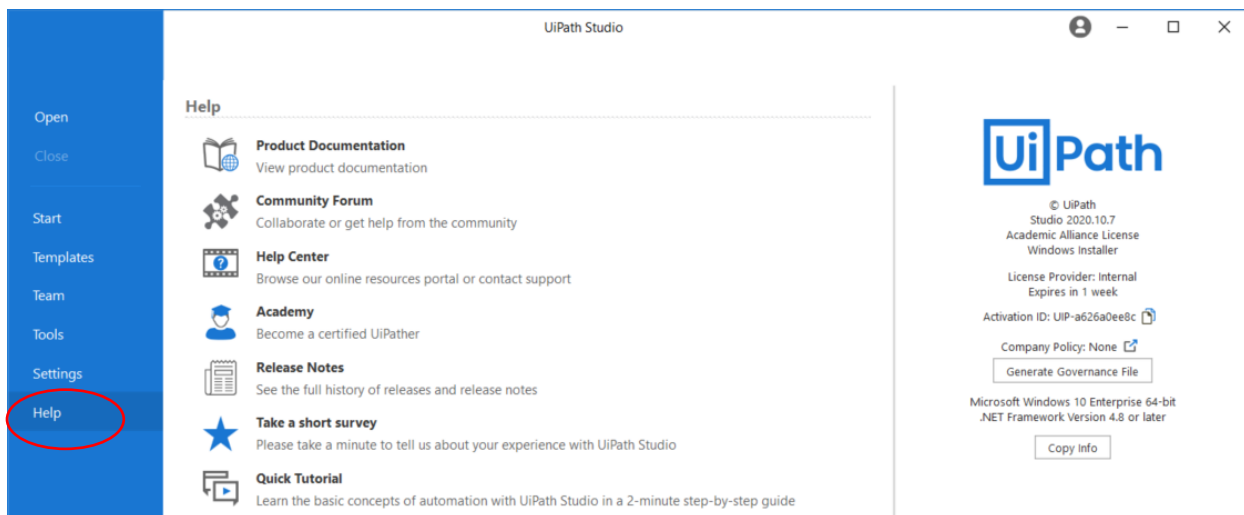
1.1.7. Ribbon Tabs
After you open an already existing project or create a new project, you will access three main areas of UiPath Studio. The three main areas, namely Home, Design, and Debug, of UiPath Studio are grouped as the Ribbon tab (you will see them once you create or open a project).

Create a new UiPath Process Project

- Start UiPath if you have not started it and if UiPath is already started, select Process under **New Project** from the Start tab as illustrated below.
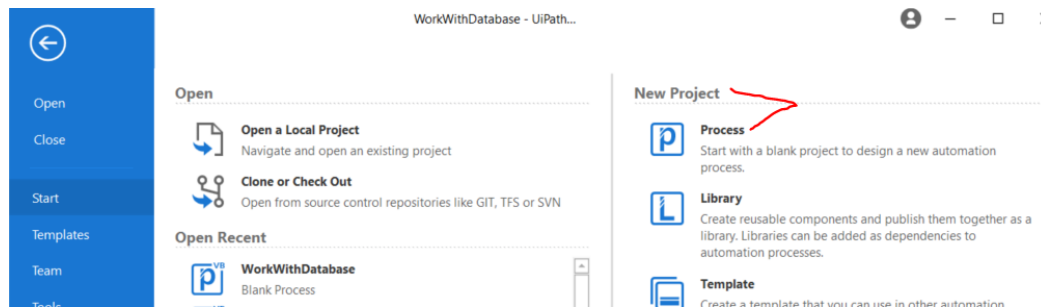

- In the **New Blank Process** dialog box, illustrated below, enter MyFirstProject under **Name.**
- Specify the location of where your project should be stored under **Location.**
- Specify what your robot will do under **Description.**
- Click on **Create.**

**Illustrations of the Ribbon Tabs**

- Now you will be able to see the three ribbon tabs as illustrated below.

- **Home** tab – this is the first tab that appears when you start UiPath Studio. You can open and create projects. Also, you can configure your UiPath studio from **Home**, as illustrated in the previous subsections.
- **Design** tab – this tab enables you to create and launch projects consisting of any combination of sequences, state machine, and flowchart diagrams.
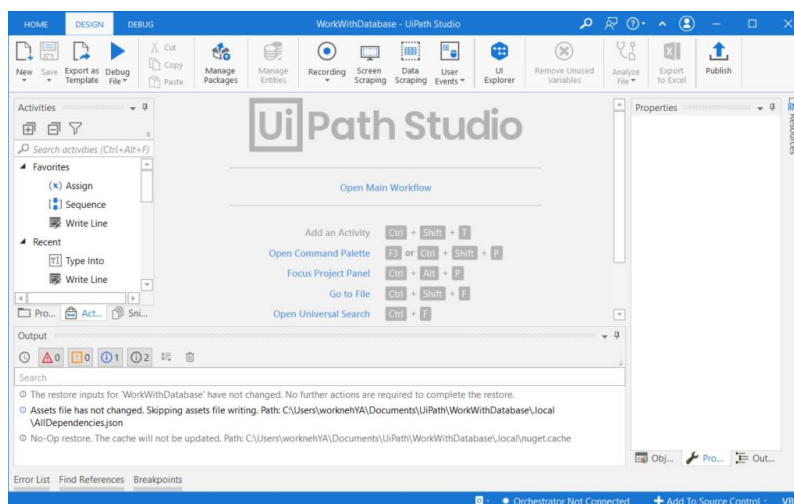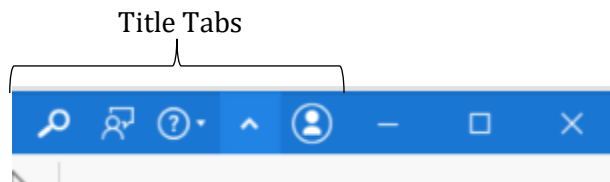

- **Debug** tab – this tab contains a comprehensive set of tools for debugging your projects.
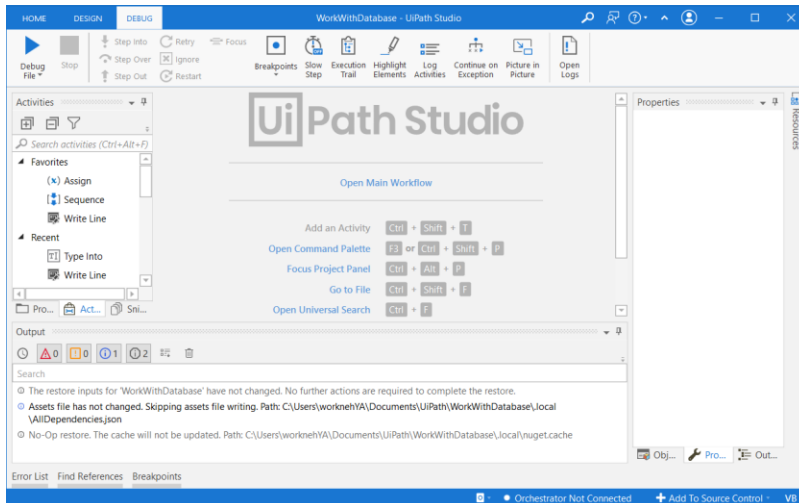
1.1.8. Title Bar

The title bar allows you to open the command search palette, send feedback to UiPath, access the help resources, and sign in to your UiPath account.
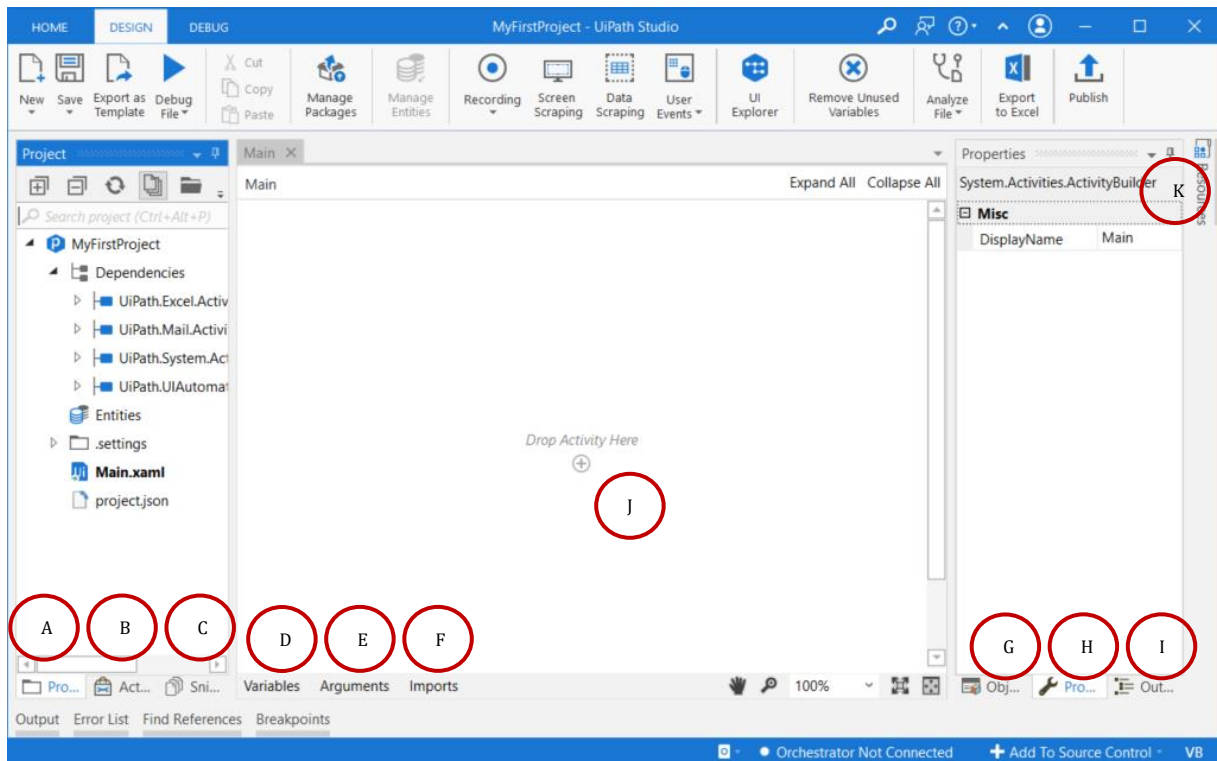
Title Tabs

1.1.9. UiPath Studio Window

Click on the "Open Main Workflow" from the Designer Panel, i.e., at the center of the opened UiPath Window, then the designer pannel will be displayed as illustrated below.
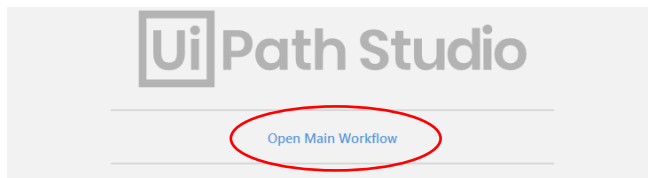
(A) – **Project** Panel - View the contents of your current project, manage files, folders, and dependencies, and adjust project settings.

(B) – **Activities** Panel - View all available activities and add activities to your automation.

(C) – **Snippets** Panel - Use pre-built workflows and add your reusable automation.

(D) – **Variables** Panel - Manage variables.

(E) – **Arguments** Panel - Manage arguments.

(F) – **Imports** Panel - Manage imported namespaces.

(G) – **Object Repository** Panel - Create and reuse UI taxonomies inside and across projects.

(H) – **Properties** Panel - View and configure the properties of a selected activity.

(I) – **Outline** Panel - View the hierarchy of the current workflow and all available nodes.

(J) – **Designer** Panel - Build your automation by managing the activities added to the current workflow file.

(K) – **Resource** Panel - Add resources such as assets, queues, processes, and entities from Orchestrator.

1.1.9.1. Project Panel

On the lower left side of your screen, select Project panel. See the illustration below for a further understanding of the Project panel.
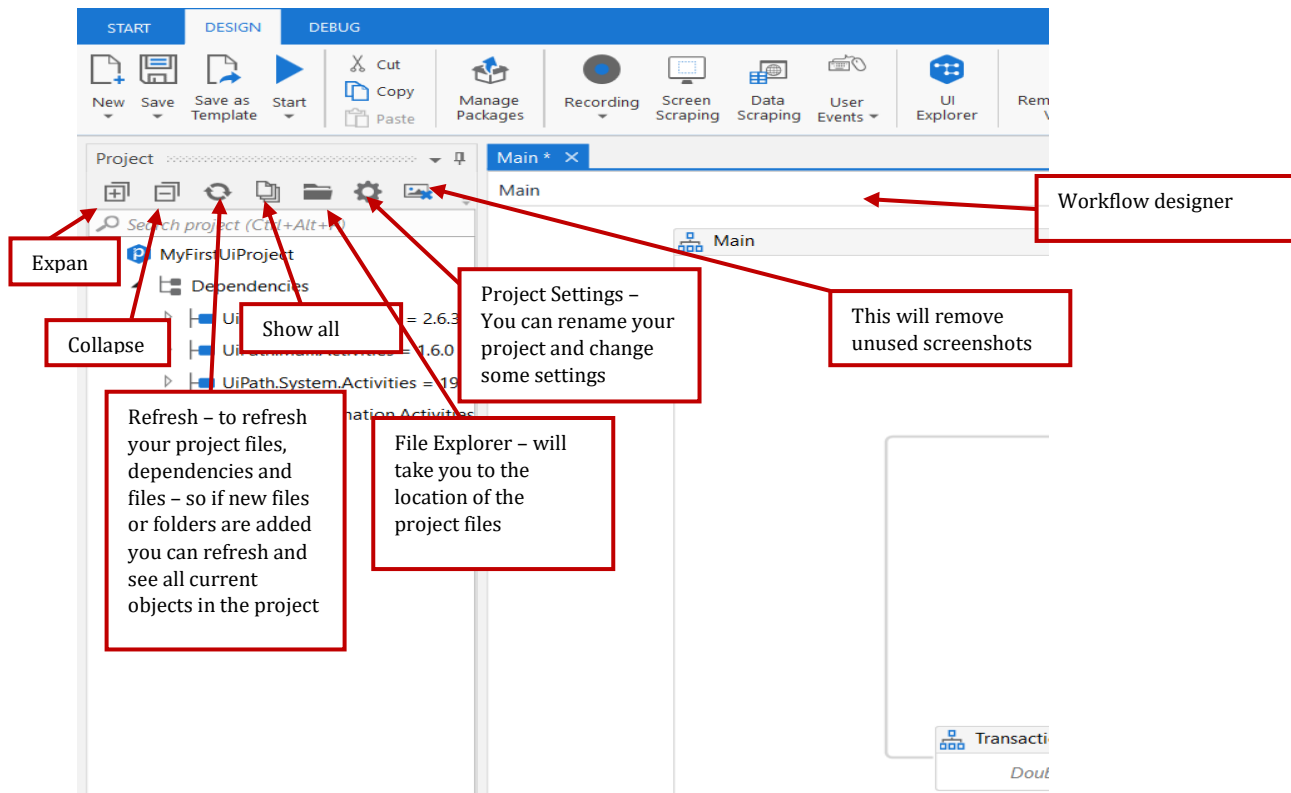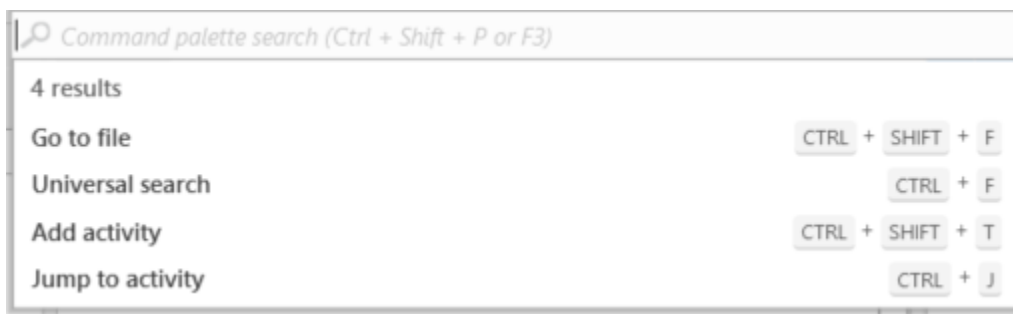
1.1.9.2. Activities Panel

On the lower left side of your screen, select Activities Panel. See the illustration below for a further understanding of the activities panel.
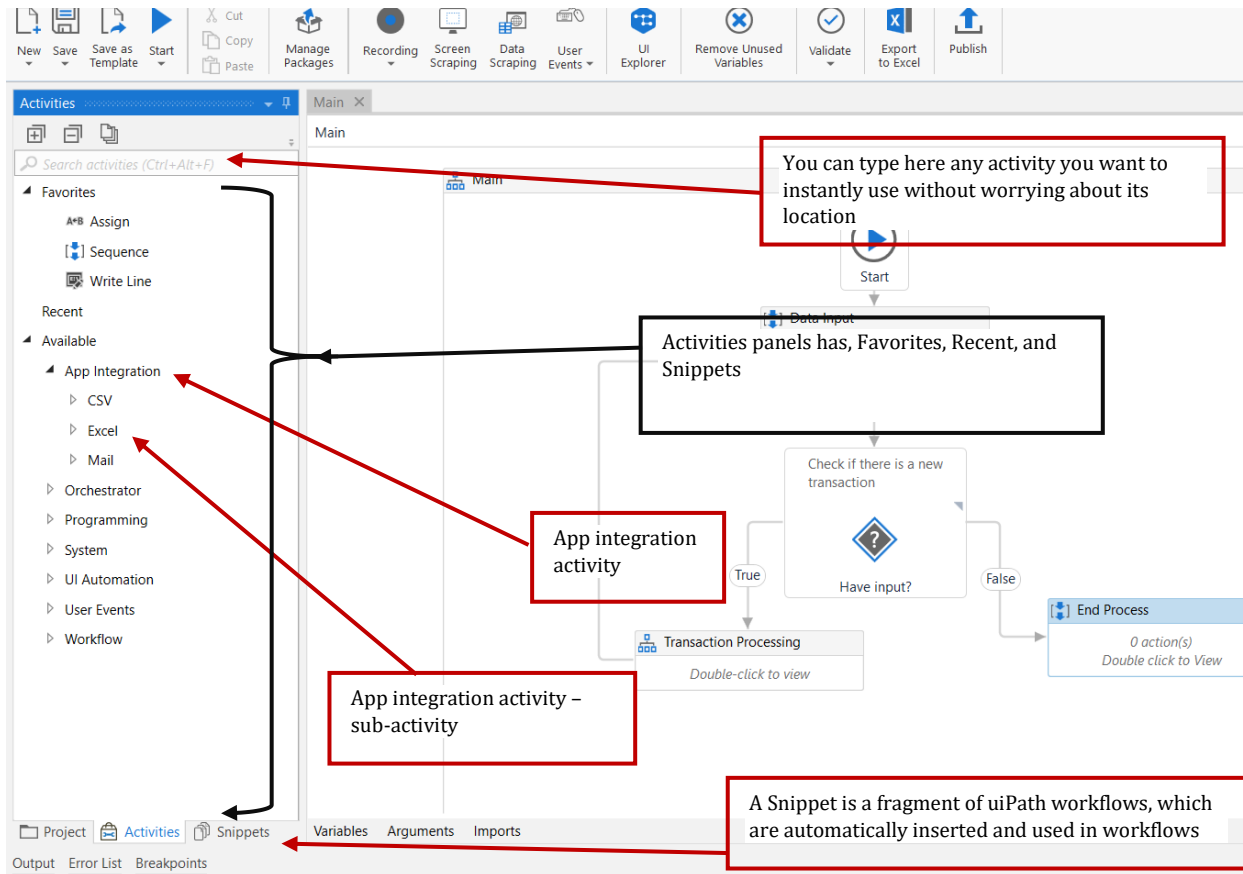

- **Activities** panel - contains all the actions we need to automate different applications - like clicking, typing, data-processing actions, etc.

1.1.9.3. The Command Palette

The Command Palette allows you to open search bars for Add activity, Universal search, Go to file, and Jump to activity. If you press the F3 key or press (**Ctrl+Shift+P**), you will open the Command Palette.

For example, to add an activity to your designer panel, you can press **Ctrl+Shift+T** and enter the activities name.
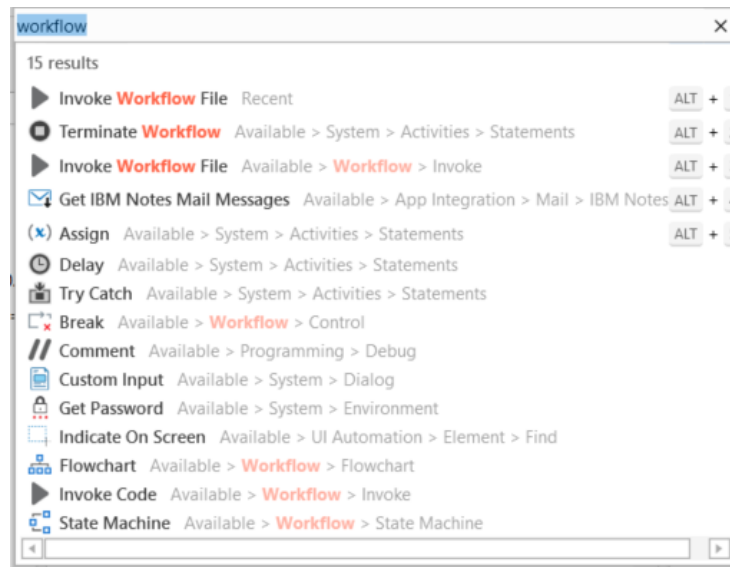
### 1.1.9.4. Outputs, Error List, Find References and Breakpoints Panels

The Outputs, Error List, Find References, Breakpoints panels are presented in this section.

- (A) – **Output** - View the output of the **Log message** and **Write Line** activities, status information regarding the execution of your project, errors generated by activities packages, and more.
- (B) – **Error List** - View all the errors generated when running the Workflow Analyzer.
- (C) – **Find References** - View all the places where an element is referenced in your project.
- (D) – **Breakpoints** - Manage breakpoints added to the project.
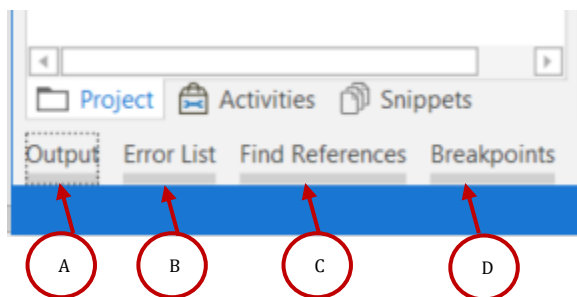
1.1.9.5. Variables, Arguments, and Imports

(A) – **Variables** – Here, you can create variables, assign scopes, etc.
(B) – **Arguments** Panel enables you to create and manage arguments.
(C) – **Imports** – allows managing imports from VB.NET namespaces.
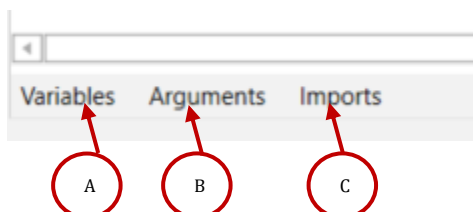
1.2. Variables

A variable is a placeholder in computer memory. Here or in any programming environment, a variable is created to hold values in a computer memory temporarily. A datatype is the type of data that could be stored in variables, ex

- **Integer** - -….-3, -2, -, 0, 1, 2, 3, ….

- **String** – "Workneh," "Nickelson", ….

- **Boolean** – True or False

- **Generic** – stores any data

- **Array** – list of any given data type

- **Date and Time** - stores dates and times

- **Data Table** – this variable is used to store larger information than can be held by any of the above variables. It can store information with columns and rows. For example, if you want to extract data from a database or website and store it in an Excel worksheet, you can use this variable.

1.2.1. Naming Conventions

Naming variables and other UiPath elements such as workflows, activities, and arguments should be done consistently. Proper naming enhances the quality of the work and helps in reading and understanding projects. Furthermore, the names should be meaningful so that their usage can accurately describe their purpose in projects.

The naming convention recommended by UiPath is:

- Use CamelCase in naming variables. Example: CreditHours, TermsOfLone … etc.

- Use CamelCase for arguments with the pre prefix of the argument. Example: in_FilePath, out_FilePath, etc.

- Names of actions should dictate the actions taken, for example, "select File menu," etc. Similarly, the names of workflows should reflect the task they are designed to perform, such as "ExecuteEmailMerging," "ProcessPayroll," etc.

2. Hello World Program

In this task, you will create a flowchart that asks the user to enter her/his name, stores the name in a variable, checks if the name contains "w" or "W", and displays "Hellow: " + Mrs. X. + " – your name contains w" OR "Hellow: " + name + " – your name does not contain w" using a message box.

Note: UiPath – uses two ways of organizing the actions the robots perform, which controls which actions are performed where and when. These tools are sequences and flowcharts. Flowchart works by executing actions starting from the start node and following the graphically designed arrows leading to the next action until the end. Flowcharts allow you to organize tasks in a logical manner. Sequences, on the other hand, are appropriate for shorter and simpler tasks. Flowcharts and sequences are the basic building blocks of creating logically organized actions to be done by the robot.
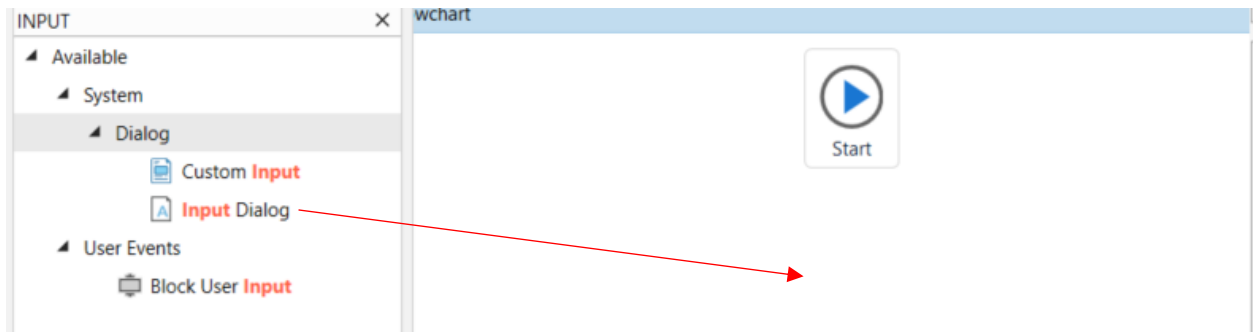
- From the **Activities**, panel search for **Flowchart** and drag and drop it onto the designer panel as illustrated below.
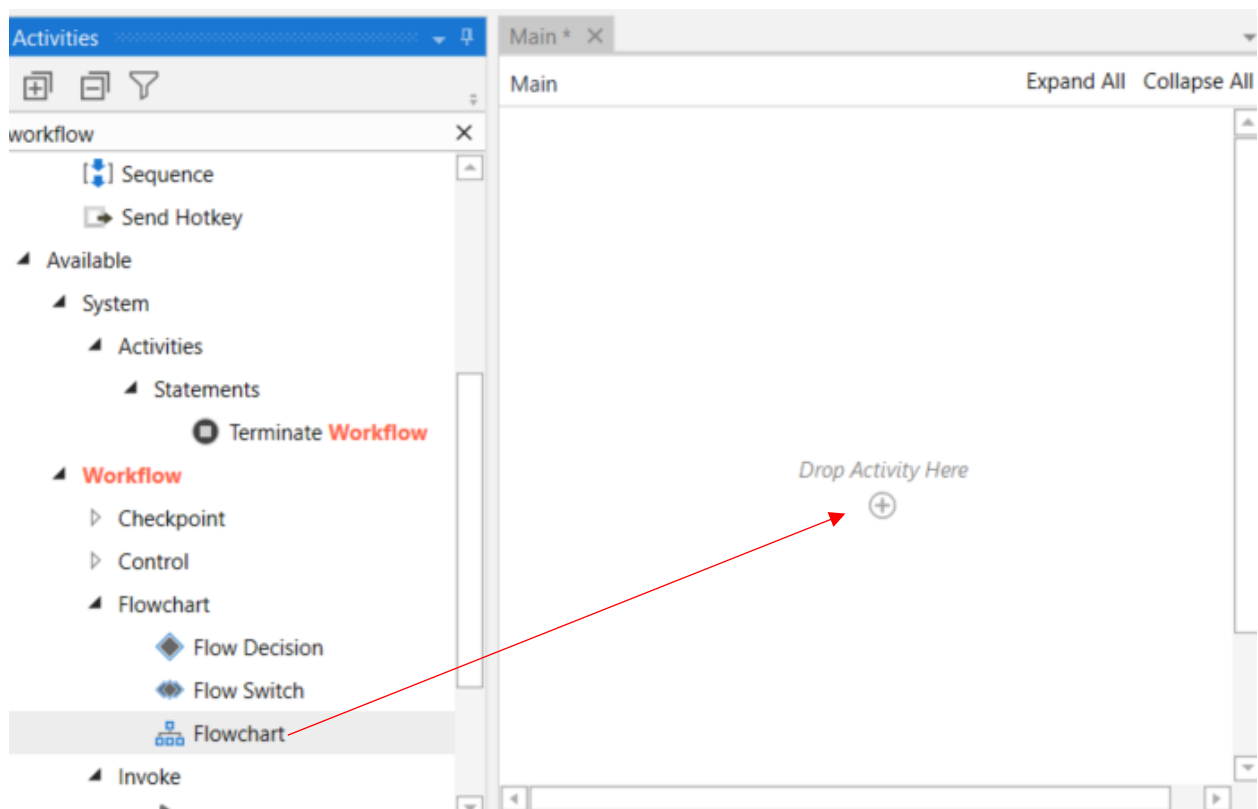
- The Flowchart will be displayed as illustrated below. Double click on "Double-click to view."
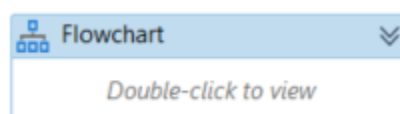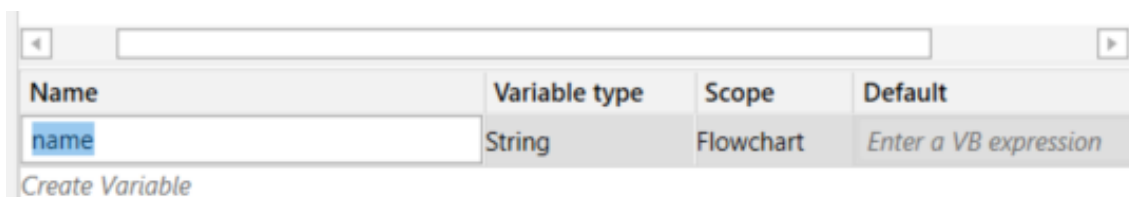

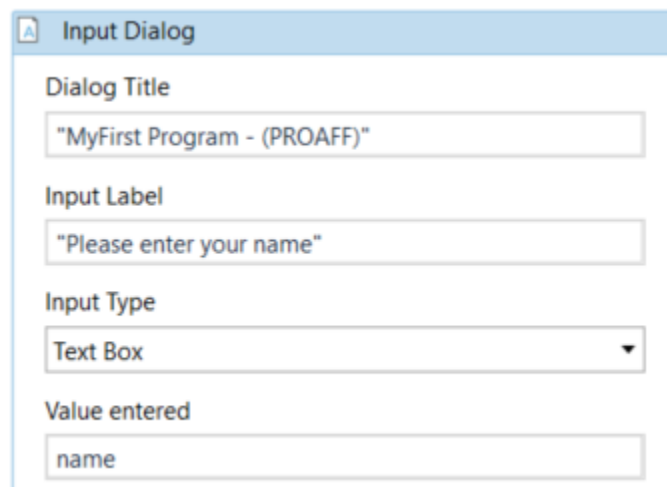- Add the **Input Dialog** activity from the **Activities** panel.

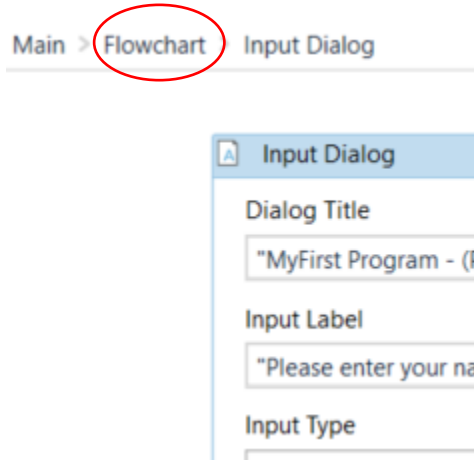- Connect the **Start** icon with the **Input Dialog** icon.

- Click on **Variables** panel, then create a new variable name as a string, and the scope should be Flowchart.

| Name	Variable type	Scope	Default
name	String	Flowchart	Enter a VB expression
Create Variable			

- Click on the **Input Dialog** to make sure that it is selected > enter a name under the **Result** box that is found under the **Properties** panel.

- Click on the **Flowchart** to go back to the flowchart.

Main > Flowchart > Input Dialog

Input Dialog

Dialog Title

"MyFirst Program - (P

Input Label

"Please enter your na

Input Type

- Add **Flow Decision** activity under the **Input Dialog** icon and connect it to it.

Flowchart

Start

Input Dialog

*Double-click to view*
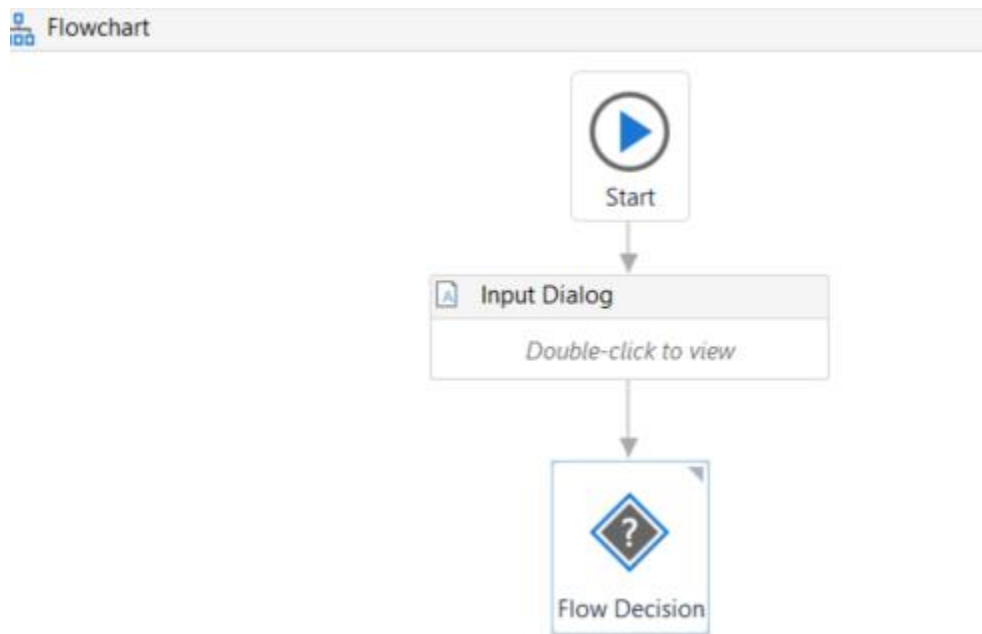
Flow Decision

- Click on **Flow Decision**, on the Properties panel, under conditions click on the ellipsis, i.e., the three dots ...
- Enter the following expression – name.Contains("w") or name.Contains("W")

Expression Editor

Condition (Boolean)

1 | name.Contains("w") or name.Contains("W")

OK | Cancel
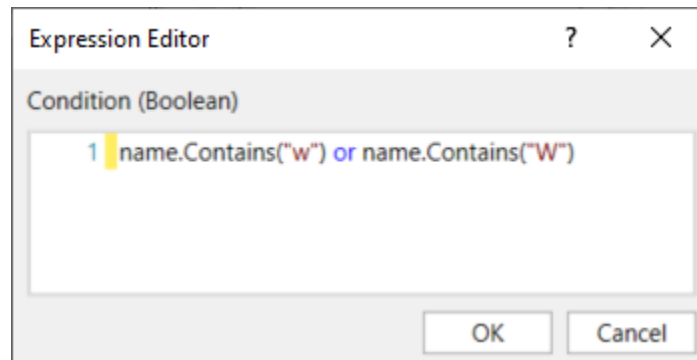
- This will check if the name contains "w", and if it does, it will execute the activity specified under the **True** condition. Otherwise, it will execute the **False** condition.
- Add two **Messages Boxes** to the right and the left of the Flow Decision and connect them with Flow Decision as illustrated below.
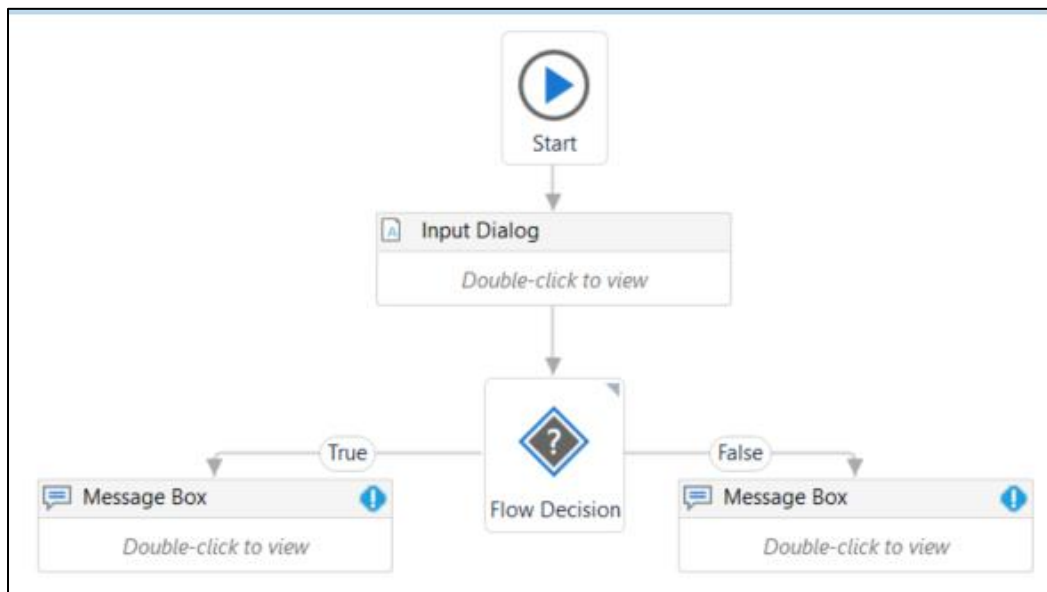
- Double click on the message box, which is on the True side, and enter the following text in double-quotes – "Hellow: " + name + " – your name contains w."
- Double click on the message box, which is on the False side, then enter the following text in double-quotes – "Hellow: " + name + " – your name does not contain w."
- The flowchart will look like the following snapshot.
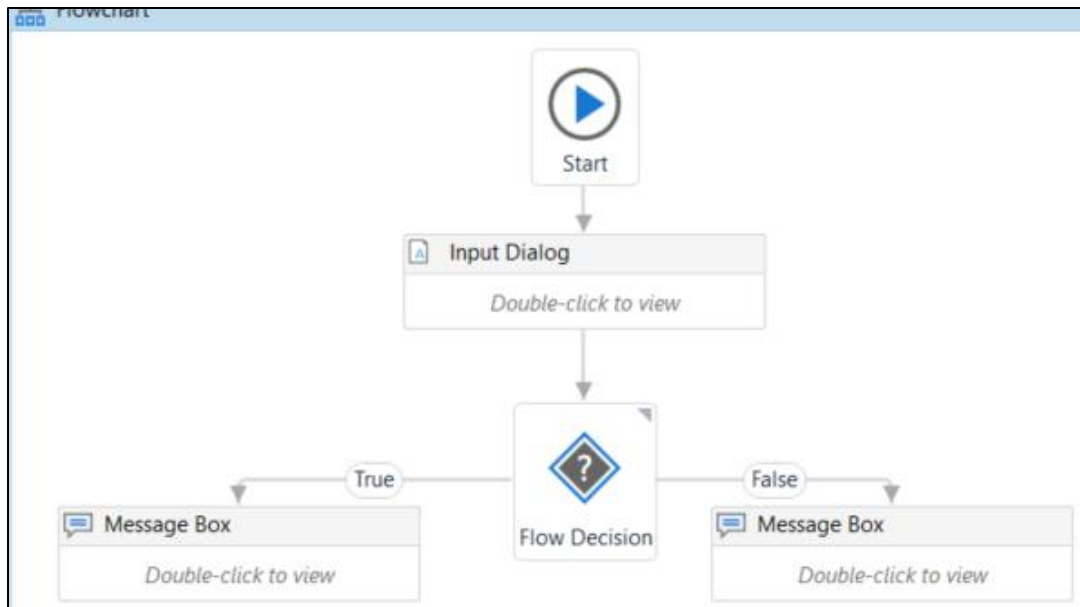
- To test your project, select **Run** from **Debug Files** from your **Ribbon** tabs

3. Email Automation

In this task, you will create a new project using a sequence that reads email from a Gmail account, displays the top ten mails on a message box, and saves the data in an Excel spreadsheet.

- Save and Close your current project.
- Start UiPath, select Process under **New Project** from the Start tab as illustrated below.
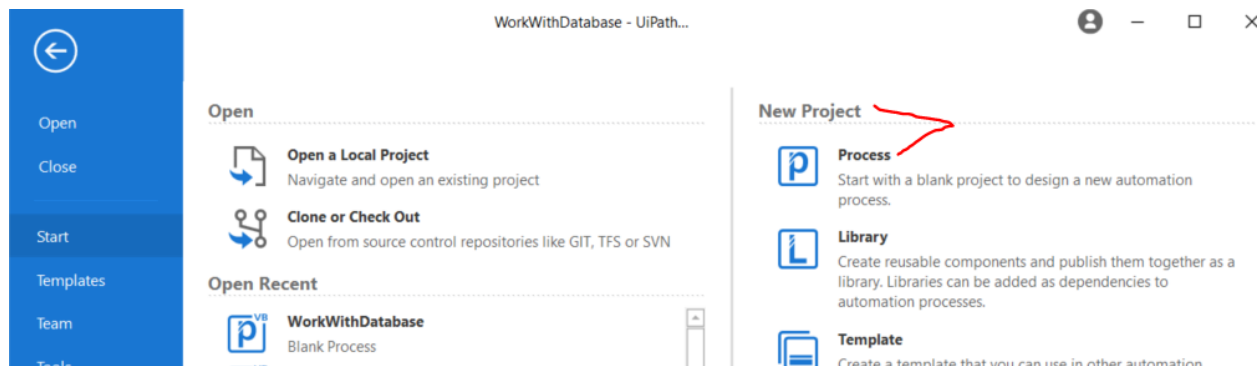
- In the **New Blank Process** dialog box, illustrated below, enter "GmailAutomation" under **Name.**
- Specify the location of your file under **Location.**
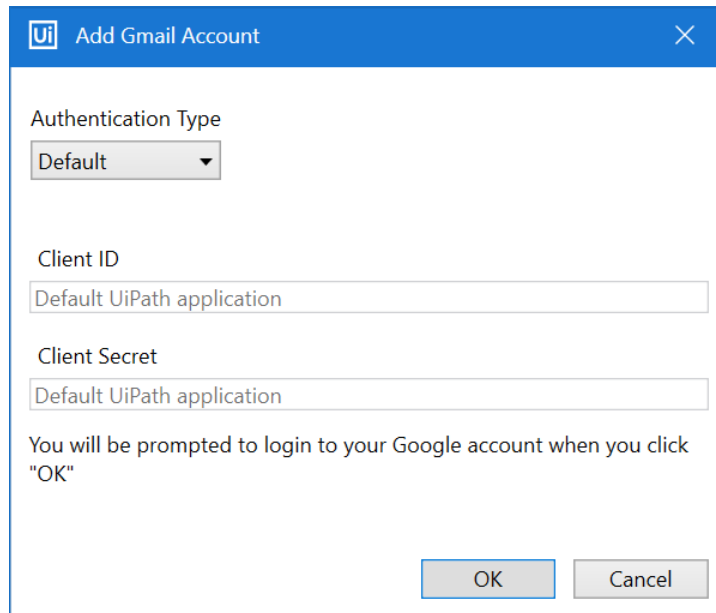- Specify what your robot will do under **Description.**
- Click on **Create.**
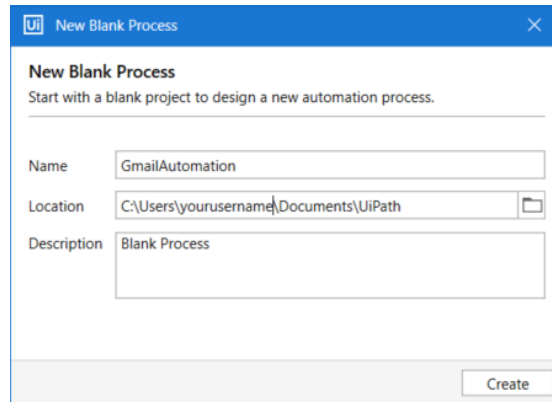
- Search for **Use Gmail** from the **Activities** pane, and add **Use Gmail** to the **Sequence** activity icon in the designer panel**.**
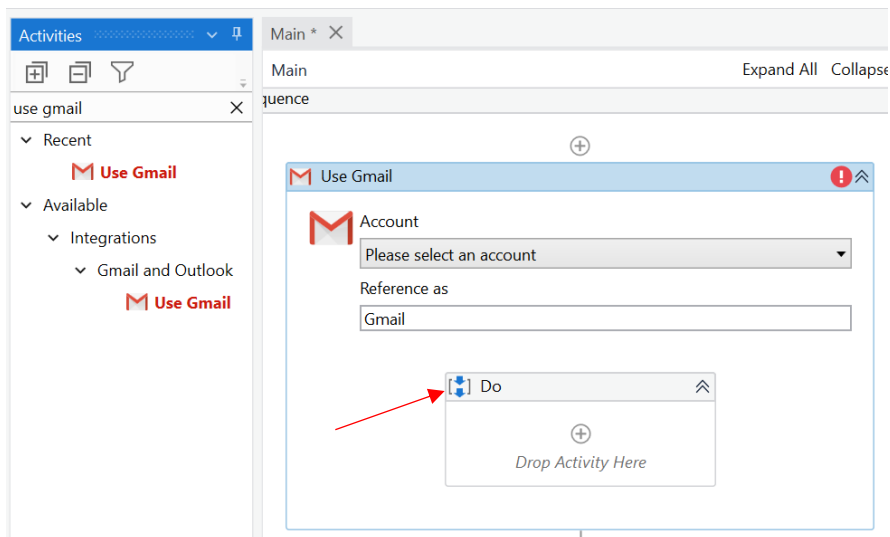
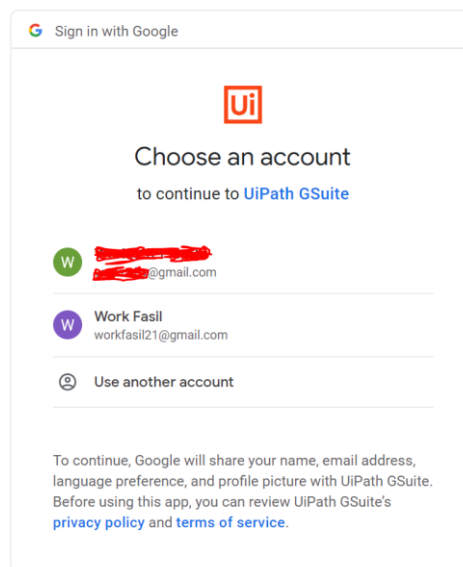

- Select + **Add new account** under **Account** list box.
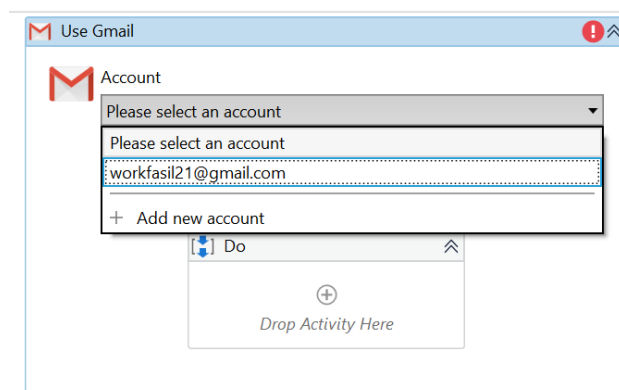
- Add **Gmail dialog** box will be displayed, click **OK**
- You will be redirected to a browser where you will be prompted to login to Gmail as illustrated below

- Select the username that you want to log in/login to your Gmail
- Check Read, Compose, Send, and Permanently delete…. as illustrated below.

- Click **Continue**

- Under **Do**, add **For Each Email** activity
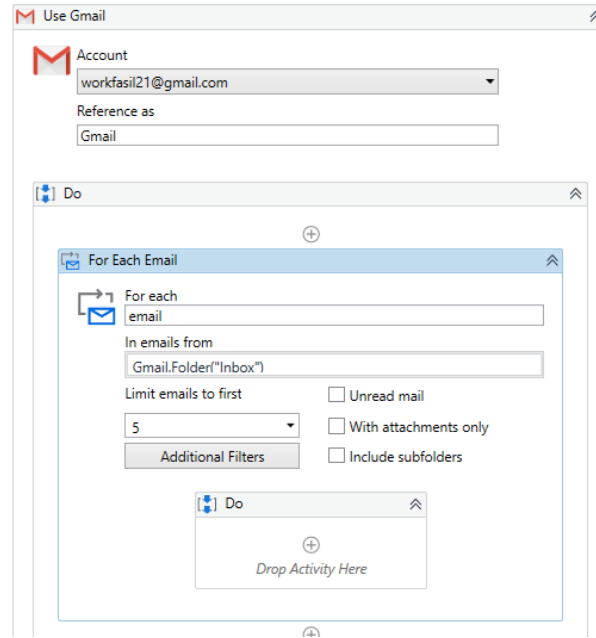
- Under the **For Each Email** set following values, as illustrated above .
  - Under **For each** - email
  - Under **In emails** from – Gmail.Folder("Inbox")
  - Under **Limit emails to first** – 5
  - Add **Message box** under **Do**, then enter the following text:

  "Subject - " + email.Subject.ToString() + ", Body - "+email.Body.ToString()

- Test it your program now

Optional exercise.

The messages part of emails is not clearly shown, so you could read documentations from the UiPath forum and other online sources and improve the display.

- https://forum.uipath.com/
- https://docs.uipath.com/user/UiPath
- https://www.youtube.com/user/UiPath
- Other sources.

References

www.docs.uipath.com

https://docs.uipath.com/installation-and-upgrade/docs/studio-enabling-gmail-for-email-activities

Appendix 1

- You can check the information posted in: https://docs.uipath.com/installation-and-upgrade/docs/studio-enabling-gmail-for-email-activities.
  Or
- Check your email and approve if Gmail prompts you to do so.

! Critical security alert

5 minutes ago

A suspicious app was blocked from accessing your account

A wor~~kee~~@gmail.com

Google prevented someone from signing in to your account using a non-Google app. If this wasn't you, they know your password and you should change it immediately.

Unknown device
Sweden

Were you recently prevented from signing in to your Google Account?

| ✕ No, secure account | ✓ Yes, it was me |

https://myaccount.google.com/security?rapt=AEjHL4OI-I-1ZRhAucR_xC749kMtQfm9Aa2Y70InPQN1BUsm4d1OKW1XF2daMwgOSDDlKHbCJf_RLksfqLnWyn1YI3G_gh_qK...

Google Account

Search Google Account

- Home
- Personal info
- Data & privacy
- **Security**
- People & sharing
- Payments & subscriptions
- About

Security

Settings and recommendations to help you keep your account secure

You have security recommendations

Recommended actions found in the Security Checkup

Protect your account

Recent security activity

Access to less secure apps was turned on	1:34 AM	›
Suspicious attempt to sign in from a less secure app	1:10 AM · Sweden	›
New sign-in on Windows	Oct 26 · Sweden	›

← Less secure app access

Some apps and devices use less secure sign-in technology, which makes your account vulnerable. You can turn off access for these apps, which we recommend, or turn it on if you want to use them despite the risks. Google will automatically turn this setting OFF if it's not being used. Learn more

Allow less secure apps: ON