

# **UiPath StudioX**

## **RDA Basic Training**

### **Daily Course**



# Contents

<b>Session1. Learn about Uiopath StudioX</b>	<b>... 3 page</b>
1. Goal of the SESSION1	
2. RPA Definition	... 3 page
2.1 Scope of RPA Coverage	
2.2 RPA vs RDA	
3. Introducing Uiopath	...5 page
4. Introducing the StudioX interface	... 6 page
4.1 Interface Introduction	
4.2 How to use Activities	
 <b>Session2. Practice Part1: Hello RPA</b>	 <b>... 13 page</b>
 <b>Session3. Practice Part 2: Get Currency Information</b>	 <b>... 21 page</b>

# SESSION1. Learn about UiPath StudioX

## 1. Goal of the SESSION1

- You can understand the RPA/RDA concept.
- You can give a brief description of the interface of UiPath StudioX.
- You can open a web page using the Use Application/Browser activity.
- You can see the data with your eyes using the Message box activity.

## 2. RPA definition

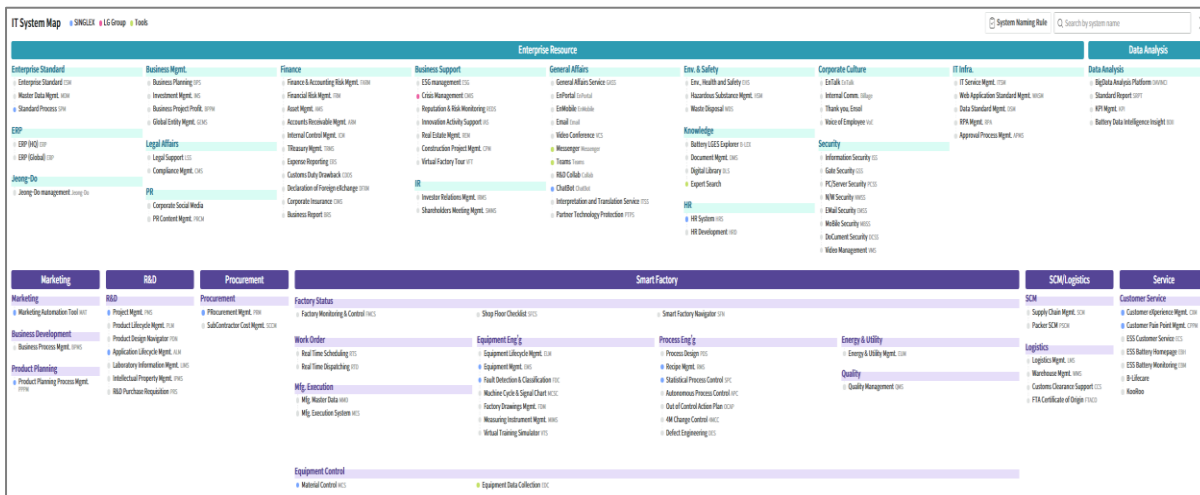
- RPA means Robotic Process Automation, which is a kind of automation for simple and well-defined process. The robot in the computer(Robotic) does the repetitive work (Process) more than once. The robot automatically performs at the time the user wants(Automation).

### 2.1 Scope of RPA can do

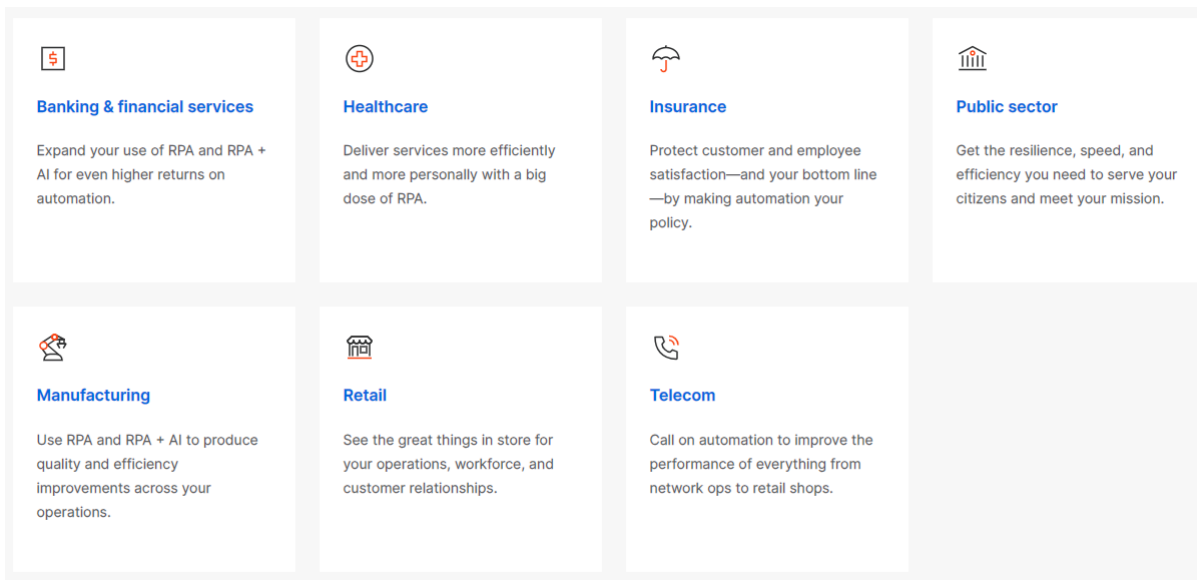
- RPA can follow any process that a person does. When we work, we use the keyboard to enter text, and we also use the mouse to click on certain buttons. RPA also performs keyboard input and mouse activity, as it coded.

### - RPA Coverage

: RPA is available in most internal/external systems, like DW(Standard Report), SCM, MES.



- Common field that RPA is frequently used



## 2.2 RPA vs RDA

- Because RPA(Robotic Process Automation) copies exactly what people do, RPA requestors have to make a process definition file which gives a specific description of their workflow. RPA developer refers to this process definition file, and make a RPA to do the same work as requested. It's quite annoying thing for the requesters, not only does this processes cause a lot of manpower, but there is also the inconvenience of having to revise the work definition and re-request the task whenever there is a small changes or exception to the process.

- RDA (Robotic Desktop Automation) is a very similar concept to RPA, but it differs from the fact that you – citizen developers- develops you own tasks, not a professional developer. And the tool used for development is not for professional developer(Studio) but for citizen developer(StudioX).

Today's basic training also uses StudioX Community ver, a free version of StudioX.

If you want to develop your own work in En-Cloud after this class, you need the enterprise version of StudioX, not the Community version.

\* Person in Charge of StudioX : Minki Seong , Hyungju Ahn

### 3. Introducing UiPath

- UiPath is a company that makes RPA software and was founded in Romania in 2005. Uipath's tool is based on Drag&Drop way, which means Low Coding Software, so it is easy for developers and general users to handle. Uipath is currently leading the global RPA market based on its extensive ability with other OA tools like Excel, Outlook, Power Point.

\* It has 48% market share in North America, 31% in global.

Figure 1: Magic Quadrant for Robotic Process Automation

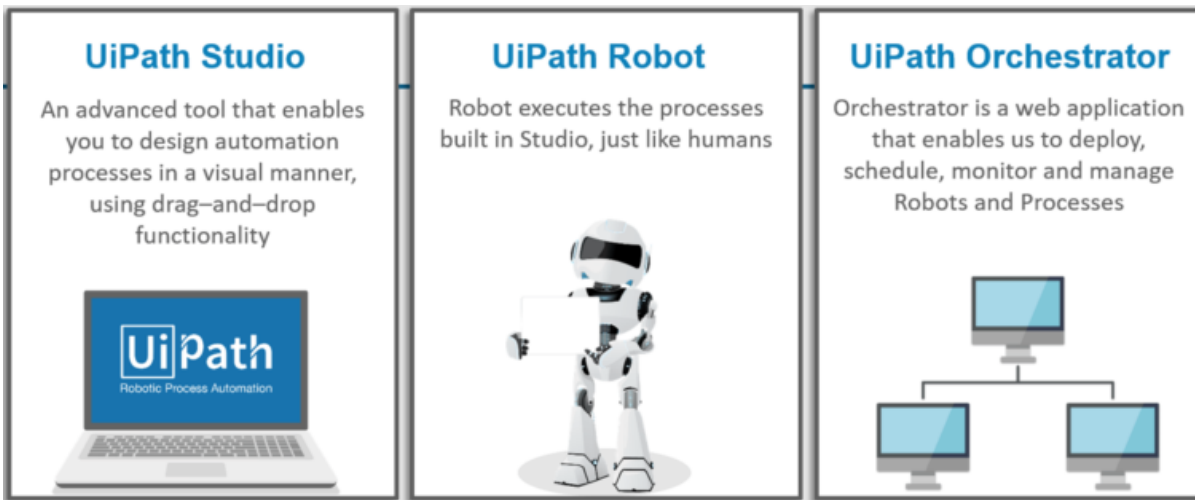


Source: Gartner (August 2023)

#### 3.1 Introducing Uipath Infrastructure

There are three main tools for developing and operating RPA.

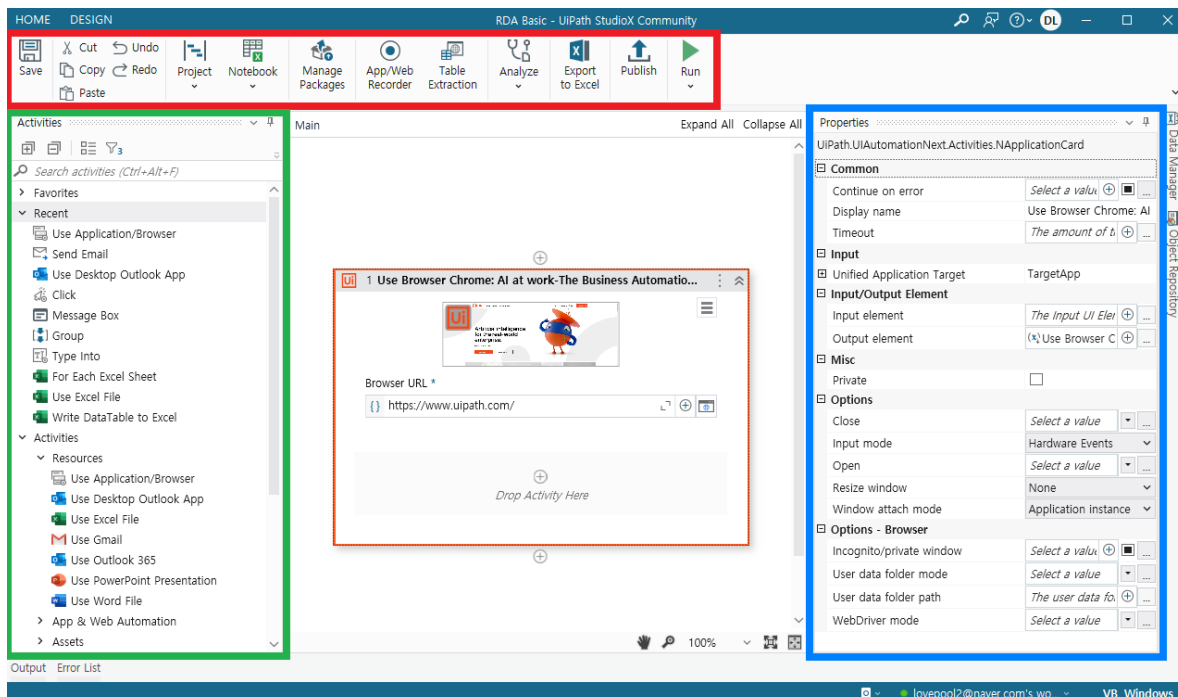
- 1) StudioX: A software for developing RPA. You can automate your work using proper activities, and also run the developed code. StudioX is available in Enterprise and Community versions. Enterprise version is used for corporation, and the community version is used for personal and educational and it is free.
- 2) Robot: Execution software that automated tasks in StudioX.
- 3) UiPath Orchestrator: Browser-based server platforms that control, execution, monitoring of multiple robots and processes. You can make a time trigger or schedule of jobs, check the utilization of bots, and manage error rate of each task.



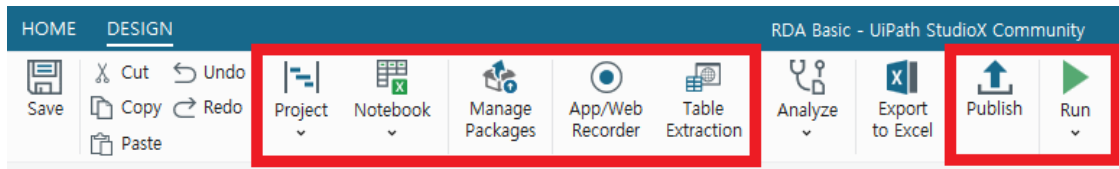
#### 4. Introducing the StudioX interface

- There are three panels in StudioX's interface : ribbon menu, activities panel, and properties panel.

##### 4.1 Interface Introduction : We only deal with the elements that necessary for development.



1) Ribbon menu: Group of frequently used features in development



(1) Project: Managing various default settings, including the name and location of the project.

(2) Notebook: Excel file that contains various type of variables.

As you develop with StudioX, you'll often need to use constantly changing data in a specific format. For example, today's date, message recipient lists, and uppercase/lowercase conversions.

UiPath provides these frequently used variables in advance as an Excel file, which is named Notebook.

You can get the cell name of the variable you want from your notebook and use it for development as is.

Also, you can edit the Notebook yourself and make your own various.

(3) Manage Paackages: A collection of activities to install, update, and delete packages

(4) App/Web Recorder: Recording user's tasks in order, and create coded processes.

When you press this button, StudioX will record your mouse click or typing job, and the process will be coded and returned to the panel as soon as you complete the recording. This feature makes it easier to achieve Low-coding.

(5) Table extraction: the ability to extract structured table data.

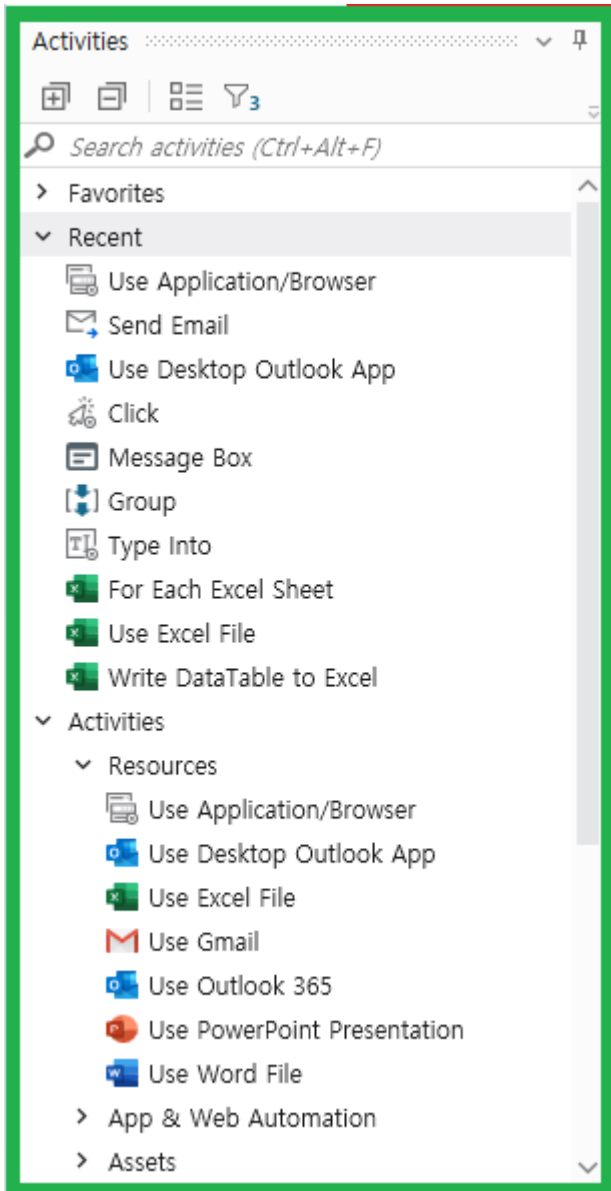
you can easily think of it as a function that automatically extracts the row and column information of the table.

(6) Publish: the ability to deploy a developed process.

(7) Run: Run the developed process.

- 2) Activity Panel: Group of Activities. When developing tasks by UiPath StudioX, you can find proper activities in this Activities panel, then bring it to the Main panel.

There are 3 ways to get activity ; 1) drag and drop, 2) double click, 3) click plus button in Main panel.





- 3) Properties panel: A panel that contains information about each activity. It must be checked for process's accuracy and stability.

Properties UIPath.UIAutomationNext.Activities.NApplicationCard

**Common**

Continue on error	Select a value <span>+</span> <span>■</span> <span>...</span>
Display name	Use Browser Chrome: AI
Timeout	The amount of time <span>+</span> <span>...</span>

**Input**

Unified Application Target	TargetApp
----------------------------	-----------

**Input/Output Element**

Input element	The Input UI Element <span>+</span> <span>...</span>
Output element	(x) Use Browser Chrome <span>+</span> <span>...</span>

**Misc**

Private	<input type="checkbox"/>
---------	--------------------------

**Options**

Close	Select a value <span>▼</span> <span>...</span>
Input mode	Hardware Events <span>▼</span>
Open	Select a value <span>▼</span> <span>...</span>
Resize window	None <span>▼</span>
Window attach mode	Application Instance <span>▼</span>

**Options - Browser**

Incognito/private window	Select a value <span>+</span> <span>■</span> <span>...</span>
User data folder mode	Select a value <span>▼</span> <span>...</span>
User data folder path	The user data folder <span>+</span> <span>...</span>
WebDriver mode	Select a value <span>▼</span> <span>...</span>

## 4.2 How to use Activities

As I introduced above, we will develop an RDA by finding the correct activity from the activity panel and dragging it to the main panel.

Here, let's follow two simple examples and see how we can use Activities.

### 1) Open the Uipath website using 'Use Application/Browser' activity

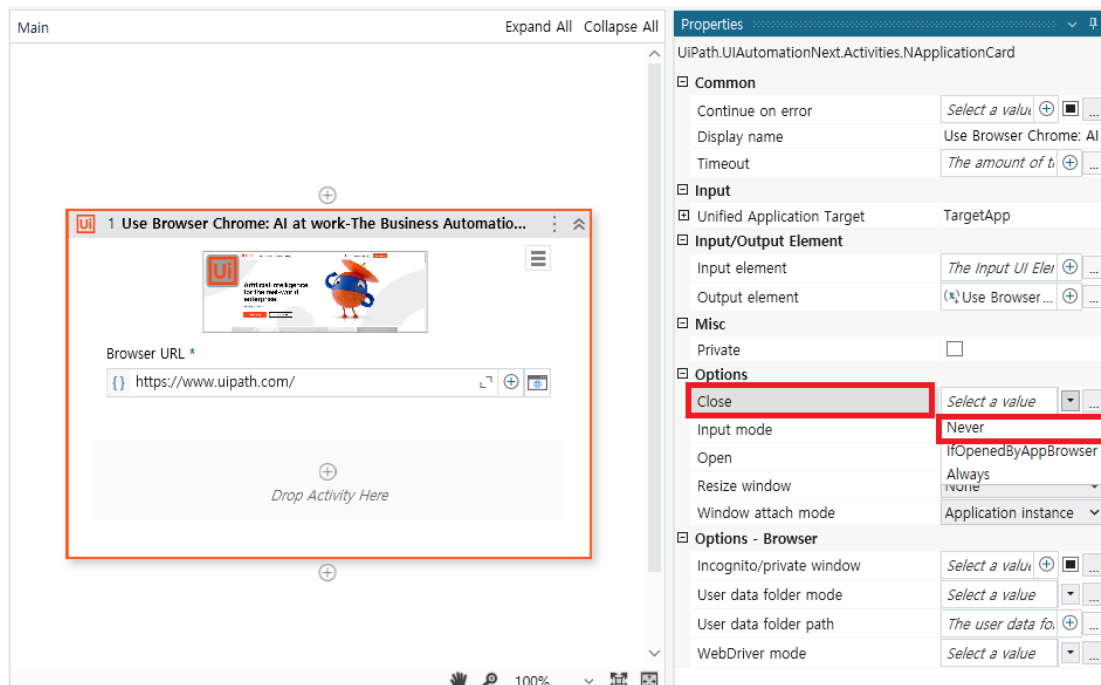
- \* Step 1. Open the <https://www.uipath.com/> website on your local PC in advance.
- \* Step 2. Search "Use Application/Browser" in the Activity Panel, and then drag and drop the activity into Main panel.
- \* Step 3. Click "Indicate application to automate (I) " button to select the website.
- \* Step 4. Check that the Uipath homepage is recognized as a full green frame, and click
- \* Step 5. Close the <https://www.uipath.com/> website
- \* Step 6. Check the results using 'Run' button.

Q1: The Browser will be shut down after the process.

A1: You need to change the Close option to 'Never' in the properties panel.

**Tip )** Once the RPA is performed, you can see that the browser shuts down automatically.

This is because the default value for the Use Application/Browser activity is set to close the browser after performance. If you do not want to close the browser after running, you can select the 'Never' options in Properties Panel – Options – Close value.



2) Create variable using 'Set variable' activity, and create a message box.

(1) Create variables

\* Step1. Search the 'Set Variable Value' in the activity Panel, and drag and drop the activity.

'Set Variable Value' is an activity that allows you to create variables.

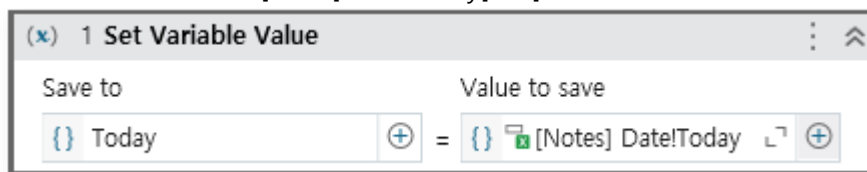
\* Step2. Click the plus button(+) at the side of the 'Save to' -> Click Create variable ->

Type the name of the variable you want into 'Give your variable a name' column.

I'll type in 'Today' -> Click 'OK'

\* Step3. Click the plus button(+) at the side of the 'value to save'

-> Notebook -> Date[sheet] -> Today[Cell]

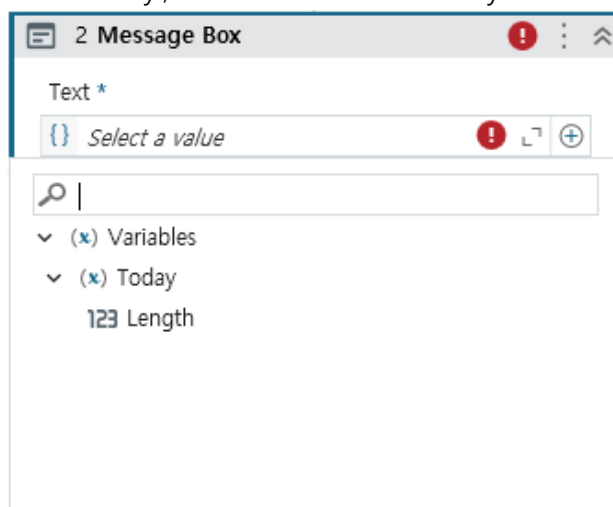


(2) Create a message box about today using 'Message Box' activity

\* Step1. Search the 'Message Box' activity and drag and drop it to under the 'Set Variable Value' box.

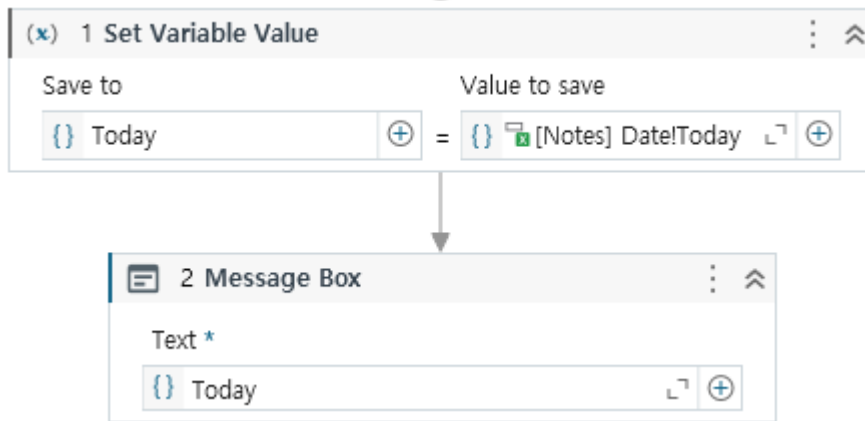
\* Step2. plus button(+) at the side of the the text >- click 'Use Variable'

\* Step 3. Click 'Today', the name of the variable you made earlier.

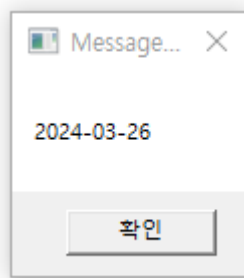


(3) Check the finished flowchart, click 'Run' from the top ribbon menu

\* finished flowchart



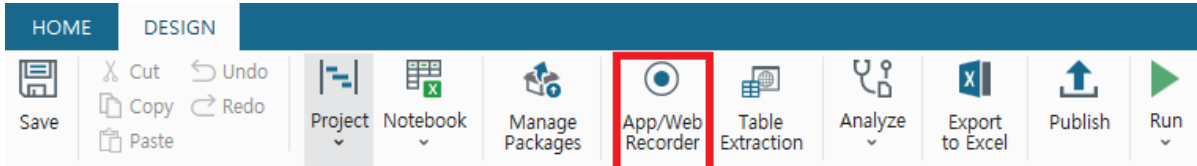
\* The result



## SESSION2. RDA Practice Part1: Hello RPA

### 1. Recording

: Record my tasks and automatically generate code from them.

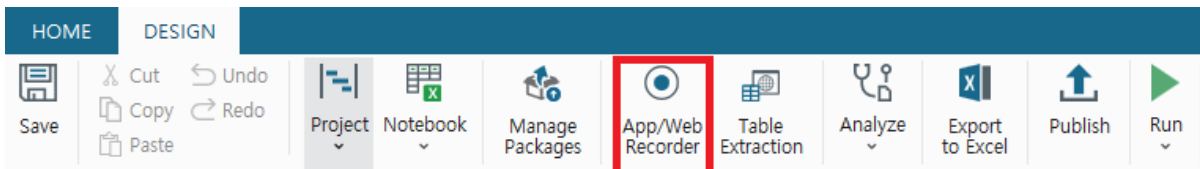


Scenario with using App/Web Recorder

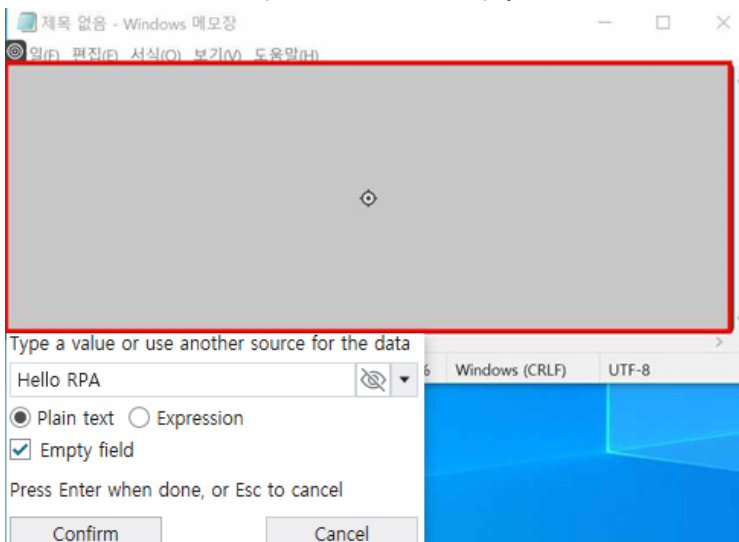
- 1) Open the notepad and enter text



- 2) Run App/Web Recorder



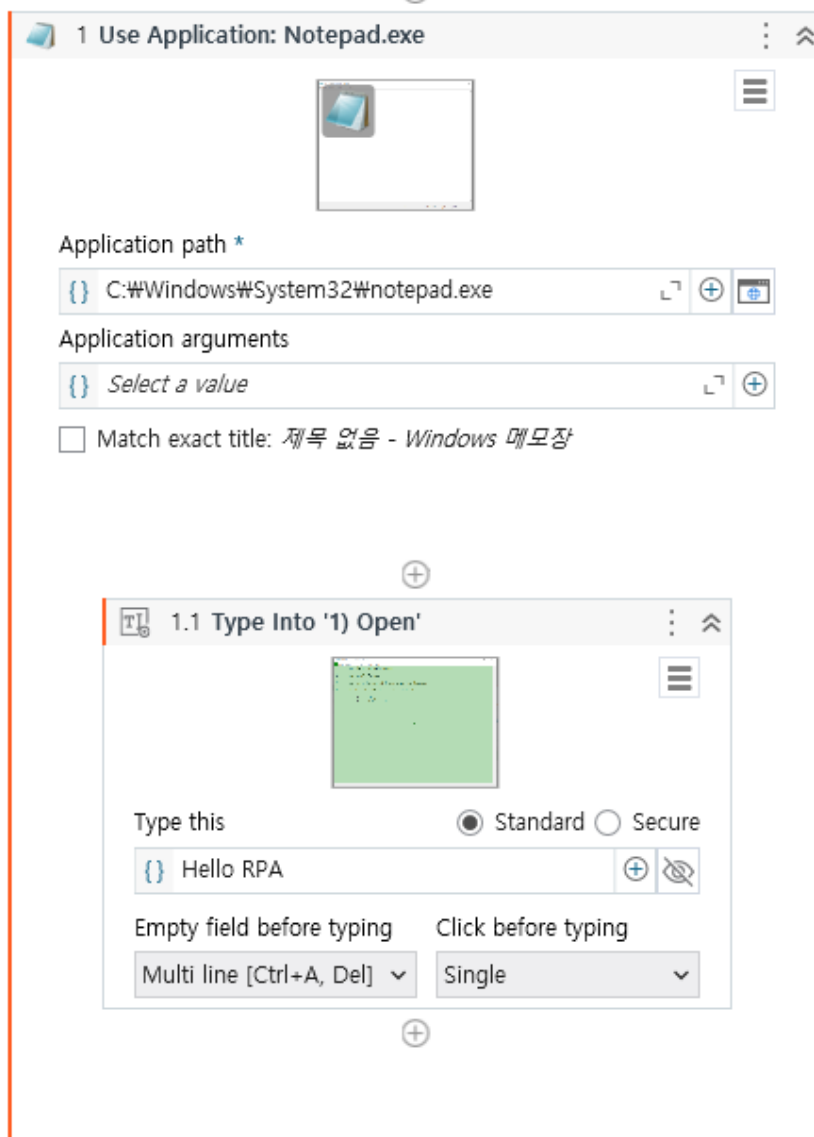
- 3) Enter text in the notepad(select the empty filed check box)



- 4) Stop Recording – Click Save and Return to Studio



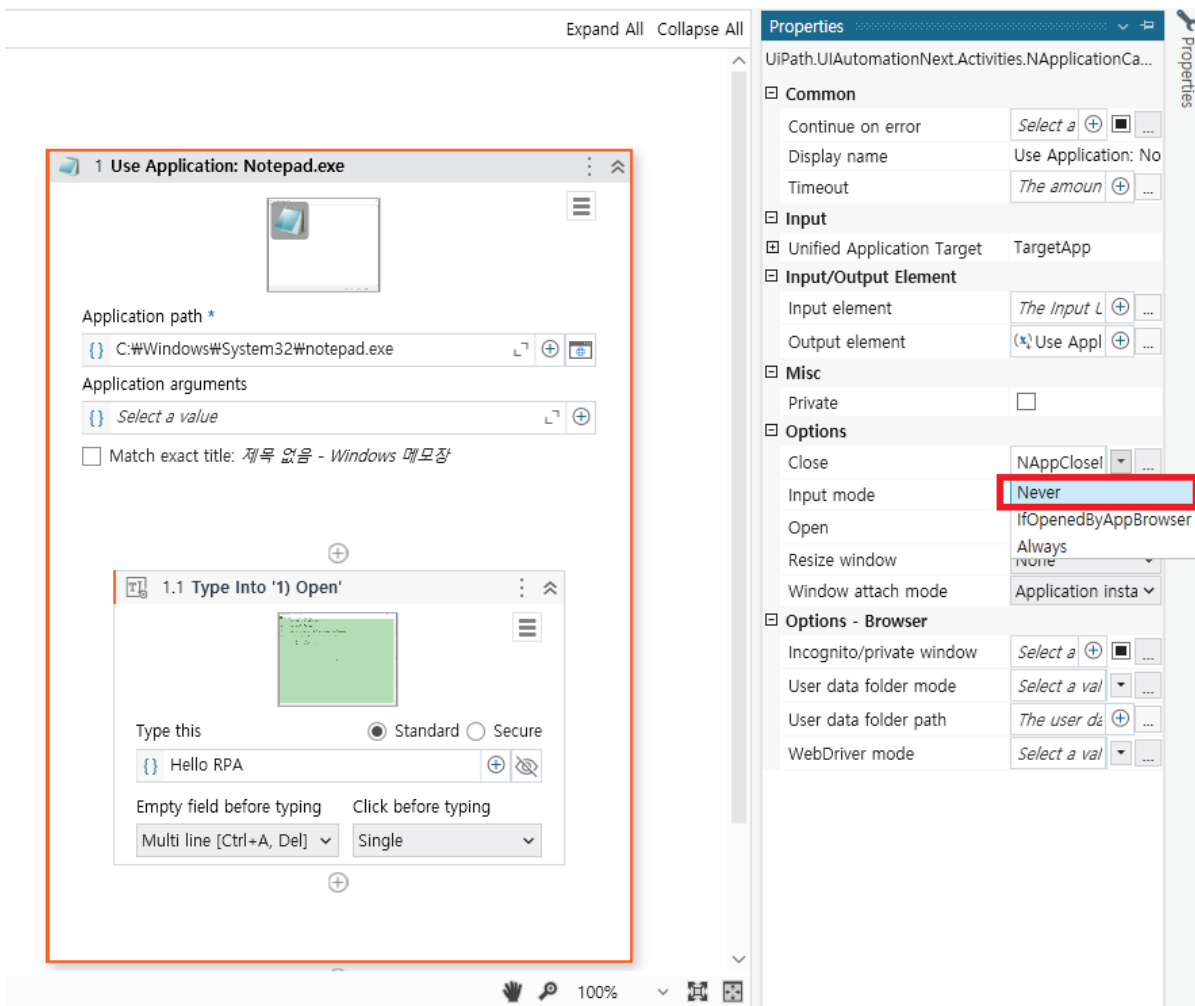
- 5) Check the recording



- 6) Check the result after execution

**Q1: The Notepad will be shut down after the process.**

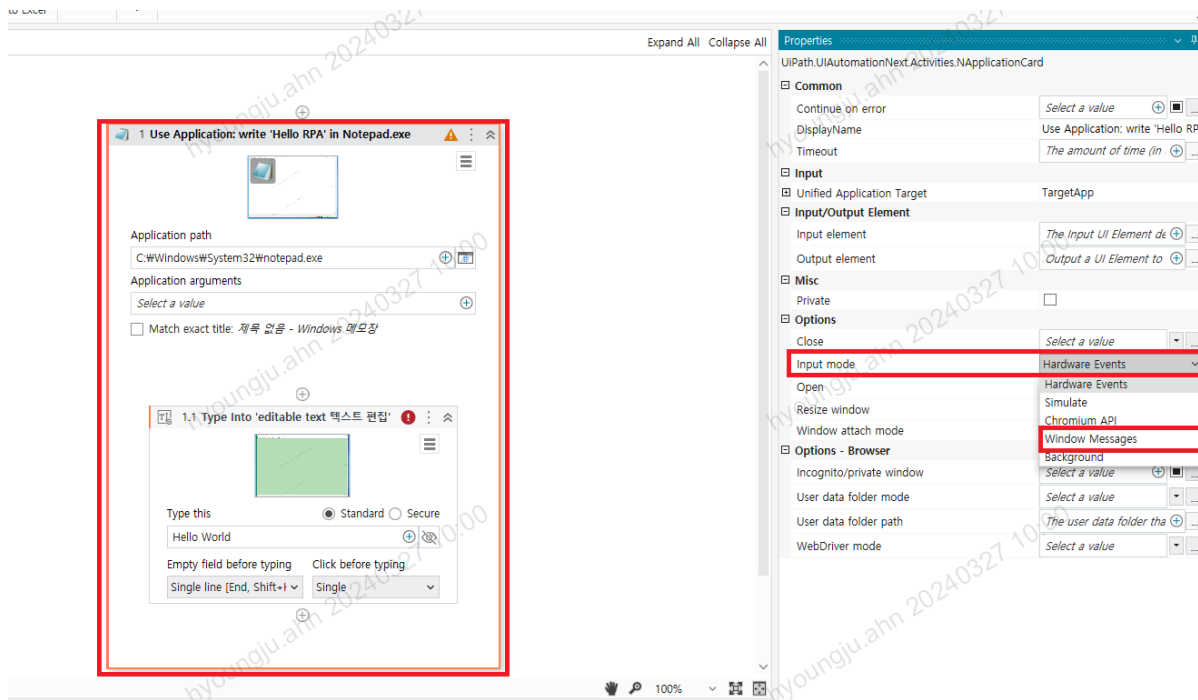
**A:** This part needs to change the Close option to 'Never' in the Use Application ~ Activity property.



Close	<ul style="list-style-type: none"> <li>- Never: Does not close the window</li> <li>- IfOpenedByAppBrowser: Closes only the windows opened by RPA</li> <li>- Always: Always closes the window after the process ends</li> </ul>
Open	<ul style="list-style-type: none"> <li>- Never: Does not open a window</li> <li>- IfNotOpened: Opens a window only if the window RPA is supposed to work with is not already open.</li> <li>- Always: Always opens a new window</li> </ul>

Q2: I need to input in English, but it types in Korean (한글 | 영문).

A: For this issue, you should change the input mode option in the Use Application ~ activity properties to 'Simulation' or 'Window Messages'.



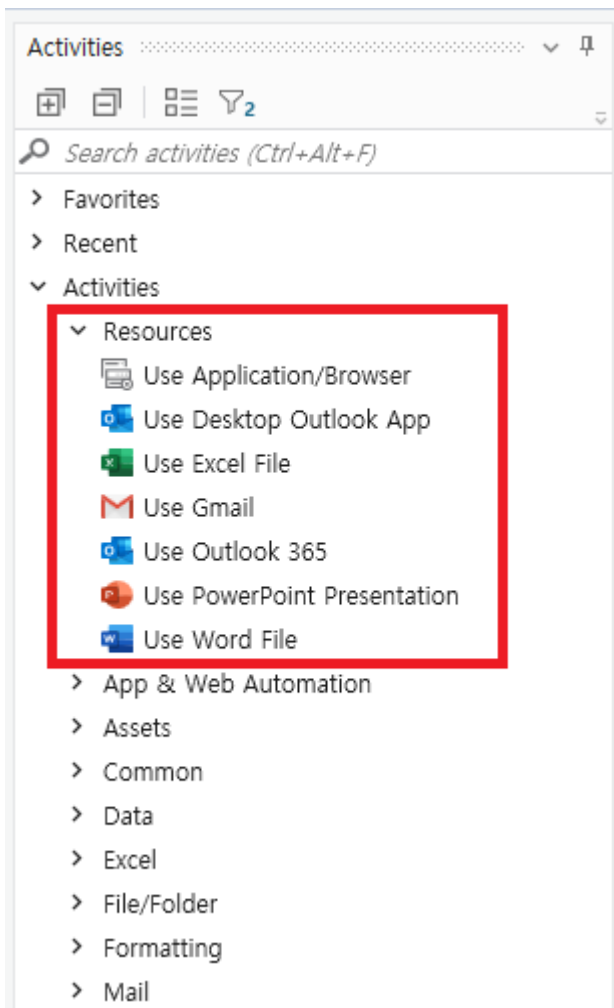
Hardware Event	<ul style="list-style-type: none"><li>- Executes as if a person is directly typing on the keyboard</li><li>- Ignores the Korean/English toggle, so caution is needed</li></ul>
Simulation	<ul style="list-style-type: none"><li>- Executes in a copy-paste manner</li><li>- May not be supported depending on the type of program</li></ul>
Chromium API	<ul style="list-style-type: none"><li>- An input mode that works only with web elements.</li></ul>
Window Message	<ul style="list-style-type: none"><li>- A method that sends the typed messages directly to the target program.</li></ul>

\*When changing the input mode to Simulation or Window Messages, set the "Click before typing" option in the Type Into to 'None'



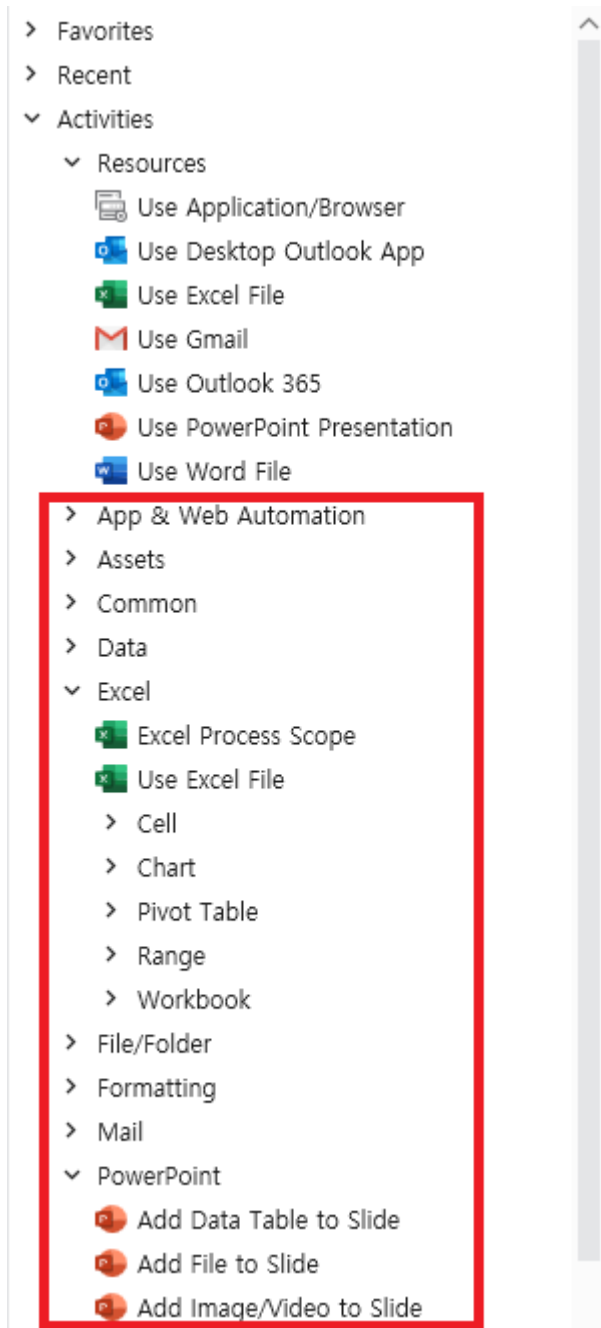
## 2. Activity

- ◆ Resource Activity



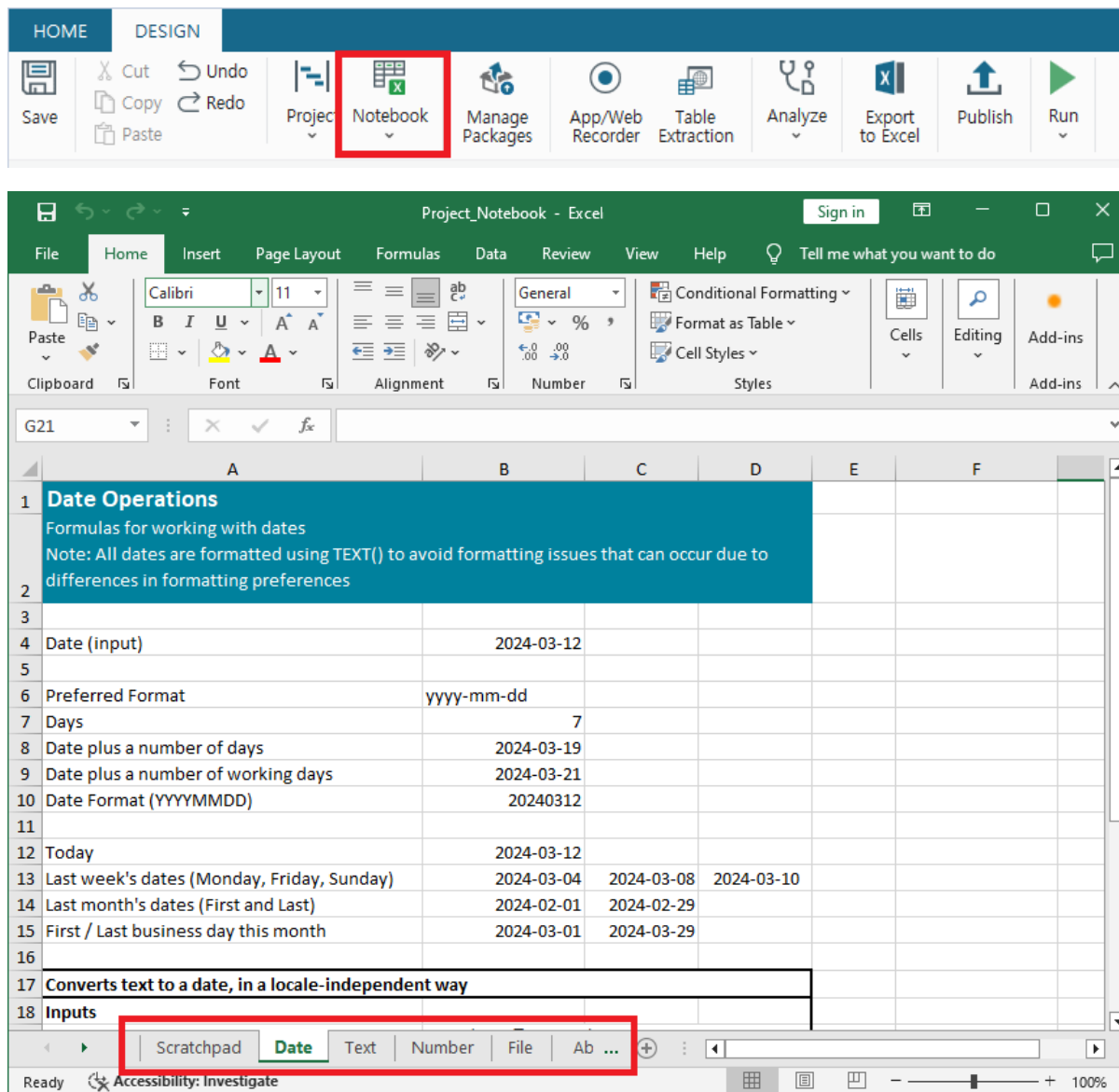
- Activity to select a program to use action activity
- Whenever a program changes, you must select the program you want to use through the resource activity.
- Multiple resource activities can be overlapped and used.

- ◆ Action Activity

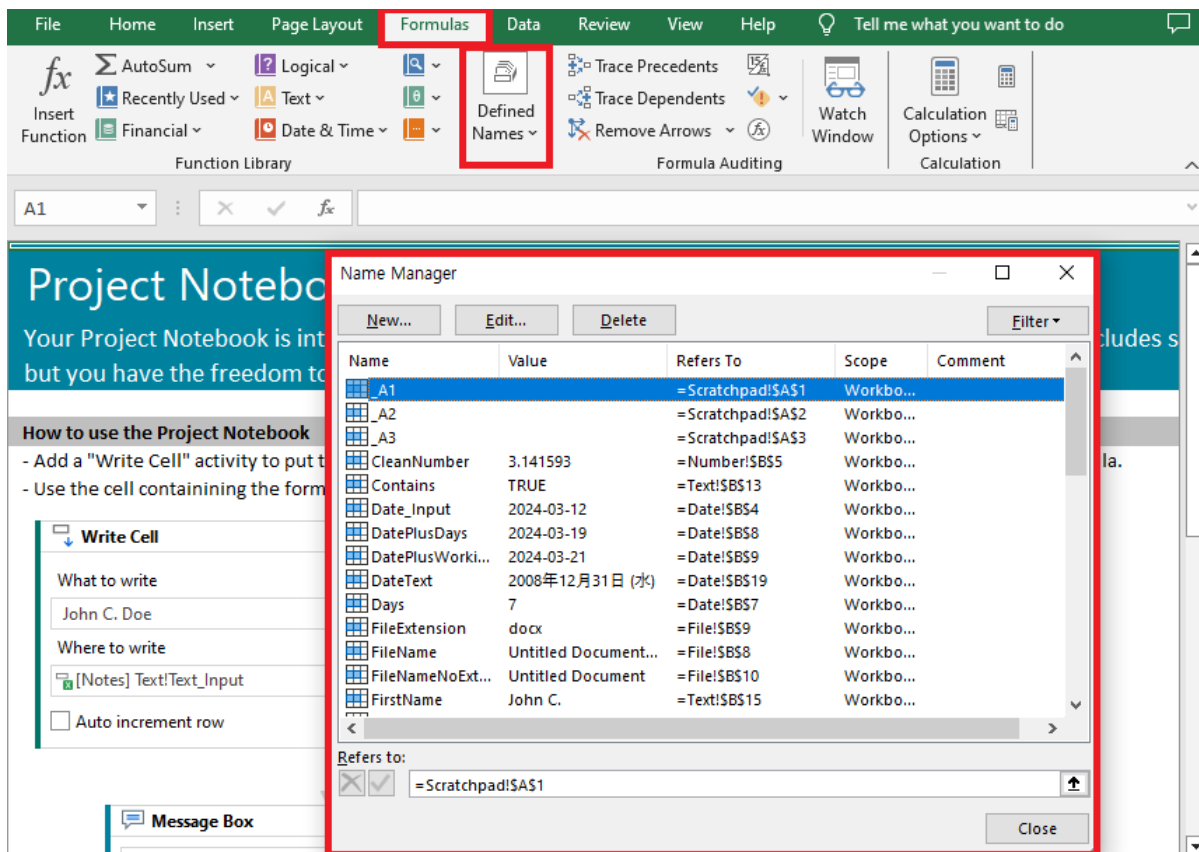


- Available only within resource activities
- There are also activities available only on certain resources (Excel, Word, Outlook, etc.)
- Refers to most activities except resource activities

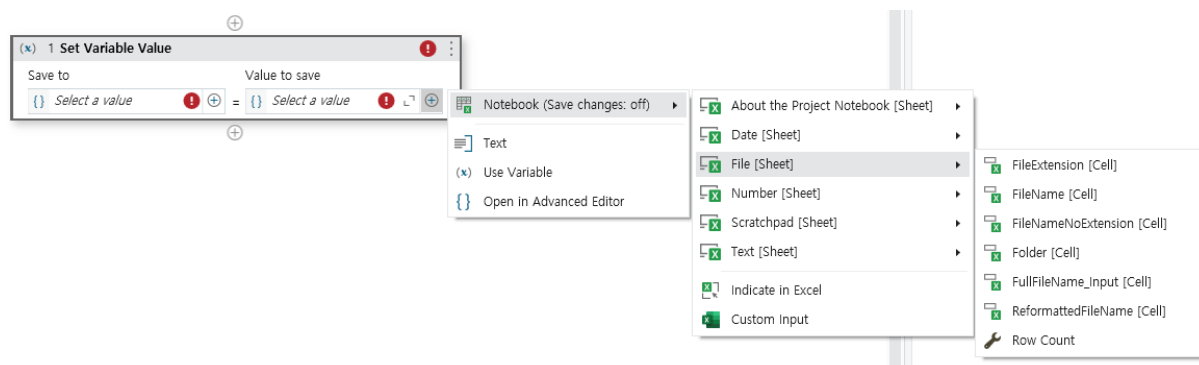
## 2. Notebook



- ◆ Excel file that stores basic information that is available only in StudioX
- ◆ Values created for each sheet can be retrieved from StudioX instead of variables and used
- ◆ Get and use the values provided by each function from multiple sheets, such as date information, file name, and number.
- ◆ Scratchpad is easy to use by editing and creating values by the user and bringing them when needed from the activity.
- ◆ Excel - More convenient if you select a name for each cell in Name Manager
- ◆ How to use the Name Manager



- You can specify a name for each cell in the Formulas – Defined Names – Name Manager
- The name specified on the notebook is imported from StudioX and available as follows:



## SESSION 3. RDA Practice Part 2: Get Currency Information

### 1.Scenario

#### 1) Get currencies information

1-1) Access the site <https://finance.yahoo.com/currencies>

1-2) Extract "Currency" value on the main screen.

1-3) Get currencies and real-time price that was viewed

#### 2) Create a data table on the Excel Template form

2-1. Using the Template.xlsx file

2-2. Write Datable to Excel

#### 3) Check if there is "/USD" or "USD/" in a specific column, and change it as null.

3-1. For each Excel row to find "/USD" OR "USD/"

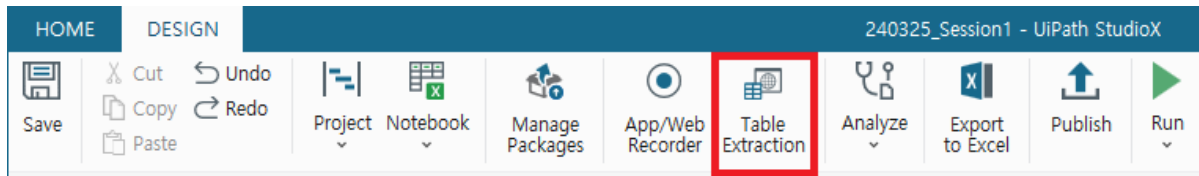
3-2. Overwrite the cell which is contained "/USD" OR "USD/"

### 2. Details of development

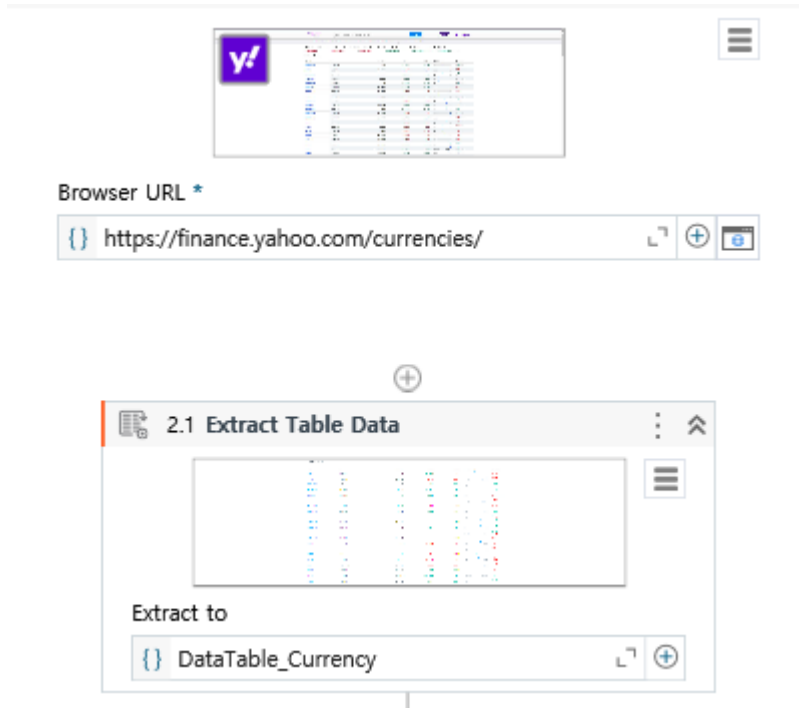
#### 1) Access Yahoo Stock Price Information Site (<https://finance.yahoo.com/currencies>)

YF Chartbook	Calendars	Trending Tickers	Stocks: Most Active	Stocks: Gainers	Stocks: Losers	Top ETFs	Futures	World Indices	Currencies	Top Mutual Funds
EURUSD=X		EUR/USD		1.0818	+0.0004				+0.03%	1.24
JPY=X		USD/JPY		151.3860	-0.0430				-0.03%	120.48
GBPUSD=X		GBP/USD		1.2606	+0.0007				+0.06%	1.22
AUDUSD=X		AUD/USD		0.6527	+0.0010				+0.15%	0.63
NZDUSD=X		NZD/USD		0.6004	+0.0009				+0.15%	0.59
EURJPY=X		EUR/JPY		163.7110	-0.0250				+0.02%	140.83
GBPJPY=X		GBP/JPY		190.8140	-0.0640				-0.03%	159.24
EURGBP=X		EUR/GBP		0.8579	+0.0004				+0.05%	0.88
EURCAD=X		EUR/CAD		1.4700	-0.0001				-0.01%	1.42
EURSEK=X		EUR/SEK		11.4382	+0.0211				+0.19%	9.83
EURCHF=X		EUR/CHF		0.9713	+0.0017				+0.17%	0.93
EURHUF=X		EUR/HUF		396.4250	-0.6350				-0.16%	387.89
EURJPY=X		EUR/JPY		163.7110	-0.0250				+0.02%	140.83
CNY=X		USD/CNY		7.2088	-0.0200				-0.28%	6.83
HKD=X		USD/HKD		7.8210	-0.0006				-0.01%	7.79
SGD=X		USD/SGD		1.3468	-0.0015				-0.11%	1.31
INR=X		USD/INR		83.4580	-0.0540				-0.06%	81.23
MXN=X		USD/MXN		16.7470	-0.0226				-0.13%	16.32
PHP=X		USD/PHP		56.3470	-0.0170				-0.03%	48.21
IDR=X		USD/IDR		15,793.0000	-20.0000				+0.13%	13,042.03
THB=X		USD/THB		36.4090	+0.0690				+0.19%	33.46
MYR=X		USD/MYR		4.7350	0.0000				0.00%	4.33
ZAR=X		USD/ZAR		18.9875	+0.0007				+0.00%	17.42

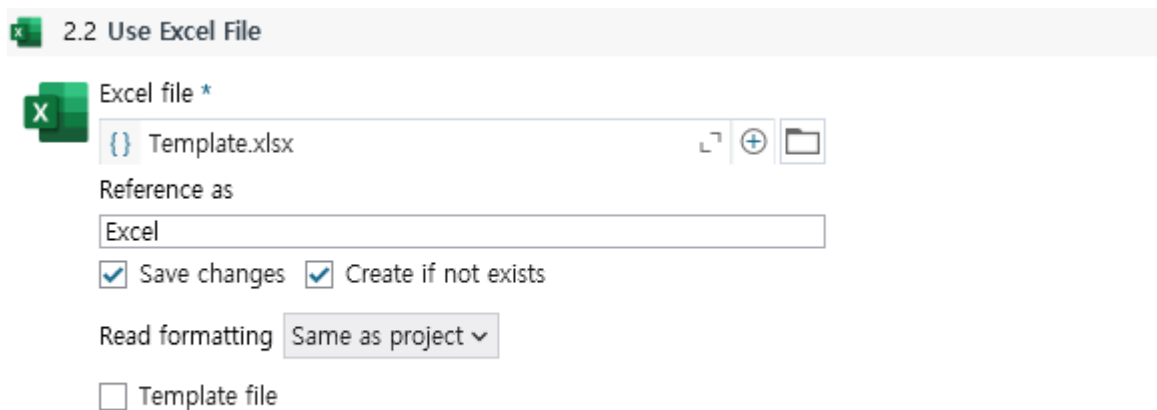
2) Extract "Currency" value on the main screen.



3) Get currencies and real-time price to Datatable.



4) Using the Template.xlsx file



5) Write DataTable created in Template.xlsx file

The screenshot shows a configuration window titled "2.2.1 Write DataTable to Excel". It has two main sections: "What to write \*" and "Destination \*". In the "What to write \*" section, there is a text box containing "{} DataTable\_Currency" and a button with a plus sign. In the "Destination \*" section, there is a text box containing "{} [Excel] Sheet1" and a button with a plus sign. Below these sections, there are two checkboxes: "Append" and "Exclude headers", both of which are currently unchecked.

6) For each Excel row to find "/USD" OR "USD/"

#### 2.2.2 For Each Excel Row

The screenshot shows a configuration window titled "2.2.2 For Each Excel Row". It has two main sections: "For each" and "In range \*". In the "For each" section, there is a text box containing "CurrentRow". In the "In range \*" section, there is a text box containing "{} [Excel] Sheet1" and a button with a plus sign. Below these sections, there are two checkboxes: "Has headers" and "Save after each row", both of which are currently unchecked.

7) Overwrite the cell which is contained "/USD" OR "USD/"

The screenshot shows a configuration window titled "2.2.2.1 If the sentence has "/USD" or "USD/'". It has two main sections: "Condition \*" and "Then". In the "Condition \*" section, there is a text box containing "{} CurrentRow.ByIndex(1).Contains("/USD ..." and a button with a plus sign. In the "Then" section, there are two sub-configurations: "2.2.2.1.1 Write Cell" and "2.2.2.1.2 Write Cell". Both sub-configurations have a "What to write \*" section with a text box containing "{} CurrentRow.ByIndex(1).Replace("/USD", "")" and a button with a plus sign. They also have a "Where to write \*" section with a text box containing "{} [CurrentRow] Column 2" and a button with a plus sign. Below these sections, there are two checkboxes: "Auto increment row", both of which are currently unchecked.