Taking Control of the Controls

Module-4

Chapter-5

POINTS TO REMEMBER

1. **Finding and attaching windows**

2. Finding the control :- Following are the activities that help in finding the controls

- Anchor base
- Element Exists
- Element scope
- Find children
- Find element
- Find relative element
- Get ancestor
- Indicate on screen

3. Techniques for waiting for a control :- There are three techniques through which we can wait for a control. They are:

1. Wait Element Vanish
2. Wait Image Vanish
3. Wait attribute

4. Act on controls -mouse and keyboard activities

- **Mouse activities:-** There are three mouse activities in UiPath Studio:

1. Click activity
2. Double-click activity
3. Hover activity

- **Keyboard activities:-** In UiPath Studio, the following are keyboard activities:

1. Send hotkey
2. Type into
3. Type secure text

5. Working with UiExplorer

6. Handling events:- An event occurs when some action is performed. There are different types of events:

1. Element triggering event
   a. Click trigger
   b. Key press trigger
2. Image triggering event
3. System triggering event
   c. Hotkey trigger
   d. Mouse trigger
   e. System trigger

7. Revisit recorder:- there are four types of recording in UiPath Studio:

a. Basic recording
b. Desktop recording
c. Web recording
d. Citrix recording

8. Screen Scraping:- The Screen Scraper wizard has three scraping methods:

a. Full Text
b. Native
c. OCR

9. When to use OCR?

10. Types of OCR available

a. Microsoft OCR
b. Google OCR

11. How to use OCR?

12. Avoiding typical failure points:- we will work with the following entities to tackle failure points:

a. Selectors
b. Scope of the variable
c. Delay
d. Element Exists
e. Try/Catch
f. toString method

Avoiding typical failure points:- Selectors

- It is tedious to deal with selectors while working with them selector has attributes, title, and class properties
- Different instances of an application may have different properties of a UI element.
- properties will differ when we select the UI element of a different instance of an application with the selector
- The property will differ and the selector will fail to recognize the same UI element of another instance of the application

Avoiding typical failure points:- Selectors

easily fix this problem by using wildcard characters or by attaching it to a live element

1. The question mark symbol, ?, which replaces one character
2. The asterisk symbol, that is, *, which replaces a number of characters

simply replace the variables (the name that changes continuously) with wildcard characters

can also use the Attach to live element option from the selector property window and indicate the element again. It automatically detects the variable properties and fixes them for us.

Avoiding typical failure points:- Scope of the variable

When we try to access a variable from outside its scope, it cannot be accessed. We have to change the scope of the variable.

Avoiding typical failure points:- Delay activity

- some situations, we must wait for a particular action
- when opening the Outlook application, it needs to connect to the server (for synchronization)

- the robot's activity is waiting for the UI element to be stable so that it can perform the action. After waiting for some time, if the UI element is not stable, it results in an error because the activity cannot find the UI element

- add a Delay activity to ensure that the UI element is stable for action

Avoiding typical failure points:- Element Exists

- used to ensure that the required Element Exists. It is used to ensure that the element we are looking for exists in this context.
- This is a good way of checking whether the activity exists or not

Avoiding typical failure points:- **Try/Catch**

- This is an exception handling mechanism used to tackle exceptions.
- Put all suspicious activities inside the try block.
- If an error occurs, it can be detected by the catch block.

Avoiding typical failure points:- toString

- Sometimes, we forget to use the toString method with variables and we end up with an error.
- For example, when outputting an integer variable inside the Message box, we have to apply the toString method.

Screen Scraping

- Method of extracting data from documents, websites, and PDFs
- powerful method for extracting text

The Screen Scraper wizard has three scraping methods:

- Full Text
- Native
- OCR

Screen Scraping : Full Text

- To extract information from various types of documents and websites
- It has a 100% accuracy rate. It is the fastest method among all three methods.
- It even works in the background. It is also capable of extracting hidden text.
- Not suitable for Citrix environments

Screen Scraping : Native

- like the Full text method but has some differences.
- slower speed than the Full text method.
- It has a 100% accuracy rate, like the Full text method.
- It does not work in the background.
- It has an advantage over the Full text method in that it is also capable of extracting the text's position.
- It cannot extract hidden text.
- It also does not work with a Citrix environment.

Screen Scraping : OCR

- This method is used when the previous two methods fail to extract information.
- It uses the two OCR engines: Microsoft OCR and Google OCR.
- It has also a scale property: you can choose the scale level as per your need.
- Changing the scale property will give the best results

Capability Method	Speed	Accuracy	Background Execution	Extract text position	Extract hidden text	Support for Citrix
Full Text	10/10	100%	Yes	No	Yes	No
Native	8/10	100%	No	Yes	No	No
OCR	3/10	98%	No	Yes	No	Yes

Screen Scraping : When to use OCR

- normal activities such as Get Text and Click Text activities fail to extract the text or perform an action
- OCR stands for Optical Character Recognition. It is a text recognition technique that transforms printed documents that are scanned into electronic formats
- OCR is used mainly for images, scanned documents, PDFs

- OCRs available in UiPath Studio:
- 1. Microsoft OCR
- 2. Google OCR

- Microsoft's OCR is known as MODI, and Google's OCR is called Tesseract

Screen Scraping : When to use OCR

There are two OCRs available in our UiPath Studio:

Microsoft OCR and Google OCR

- The advantages of Google OCR include the following:
  - Multiple language support can be added in Google OCR
  - Suitable for extracting the text from a small area
  - It has full support for color inversion
  - It can filter only allowed characters
- The advantages of Microsoft OCR include the following:
  - Multiple languages are supported by default
  - It is suitable for extracting text from a large area

----------End Of Chapter 5----------