Practice Exercise - While Loop

Objective

Build a workflow using a While loop that informs the user if the input is a prime number or not.

- Ask the user to input a number.
- Check if it is a prime number.
- If the input number is prime, display "It is a prime number" in a message box.
- If the input number is not prime, display "It is not a prime number" in a message box.

Process Overview

- START
- Use an Input Dialog activity and ask for any number from the user and store it in a variable called **intNumber**.
- In the variables panel, create two more variables **intRandom** and **intCount** with Variable Type as Int32 and Default value as 2 and 0, respectively.
- Use a While activity and set the condition to **intRandom<intNumber**.
- Use an If activity within the While activity and set the condition to **intNumber mod intRandom=0**.
- Use an Assign activity within the **Then** section and increment value of **intCount** by **1**.
- Use an Assign activity after/below the If activity and increment value of **intRandom** by **1**.
- Use another If activity after/below the While activity and enter condition **intCount>0**.
- Use a Message Box activity within the Then section to display “It is not a prime number”.
- Use a Message Box activity within the Else section to display “It is a prime number”.
- STOP

Step-by-Step Process

Step 1: Open UiPath Studio.

Step 2: Create a new process and name it as “While Activity”.

Step 3: Drag a Sequence activity from the Activities panel and drop it in the Designer panel.

Step 4: Name the Sequence activity as “Sequence – ‘This is the code to test whether the input is a prime number or not.’”

Step 5: Right-click on the Sequence activity container and select *Annotations* from the context menu.

Step 6: Enter the annotation: “This block of code demonstrates a workflow using a While loop that tells the user if the input is a prime number or not.”

Step 7: Insert an Input Dialog activity within the Sequence activity. Name it as “Input Dialog – ‘To take the input from the user’” and add an annotation “Take User input as a Number”.

Step 8: In the Input Dialog activity, enter values as shown below:

Title	Label
“Number”	“Enter a number”

Step 9: In the Variables panel, create three variables as shown below:

Name	Variable type	Scope	Default
intNumber	Int32	Sequence – ‘This is the code to test whether the input is a prime number or not.’	
intRandom	Int32	Sequence – ‘This is the code to test whether the input is a prime number or not.’	2
intCount	Int32	Sequence – ‘This is the code to test whether the input is a prime number or not.’	0

Step 10: Go to the Properties panel of the Input Dialog activity and insert **intNumber** in its Output property.

Step 11: Insert a While activity below the Input Dialog activity and name it as "While – 'To check if the number is a prime number or not'".

Step 12: Right-click on the While activity container and select *Annotations* from the context menu.

Step 13: Add an annotation "This block of code will check whether the number is prime. If it is, it will increment the value of ' intCount'."

Step 14: Inside the While activity, enter the condition as **intRandom < intNumber**

Step 15: In the **Body** section of the While activity, drag and drop a Sequence activity.

Step 16: Rename the Sequence activity to "Sequence – 'Check the number using 'If'".

Step 17: Right-click on the Sequence activity container and select *Annotations* from the context menu.

Step 18: Add an annotation "In this sequence using 'If' activity, the 'Number' is divided by ' **intRandom** ' until **intRandom** = **intNumber**."

Step 19: Insert an If activity inside the Sequence activity.

Step 20: Inside the If activity, enter the condition as **intNumber Mod intRandom = 0**.

Step 21: Inside the **Then** section of the If activity, insert an Assign activity, and enter values as shown below:

To	Value
intCount	intCount + 1

Step 22: Change the Assign activity name to "Assign – 'Increment the value of intCount'".

Step 23: Right-click on the Assign activity container and select *Annotations* from the context menu.

Step 24: Add an annotation "Incrementing the value of 'intCount' when '**intNumber** is found to be a prime number."

Step 25: Insert another Assign activity below the If activity and rename it to “Assign- Incrementing the value of ‘**intRandom’**.

Step 26: In the Assign activity, enter the values as shown below:

To	Value
intRandom	intRandom +1

Step 27: Right-click on the Assign activity container and select *Annotations* from the context menu.

Step 28: Add an annotation "Incrementing the value of ' **intRandom** ' whenever the loop iterates".

Step 29: Below the While activity, insert an If activity and name it “If – Print the message”.

Step 30: Right-click on the If activity container and select *Annotations* from the context menu.

Step 31: Add an annotation “This block of code will print the message in a message box whether the input is Prime or not.”

Step 32: Inside the If activity, enter the condition **intCount >0**.

Step 33: In the **Then** section, insert a Message Box activity and name it “Message Box - Not a prime number”. Add an annotation “Displays that the number is not a prime.”

Step 34: Enter the text “It is not a prime number.”

Step 35: In the **Else** section, insert another Message Box activity and name it “Message Box - Is a prime number”. Add an annotation “Displays that the number is not a prime.”

Step 36: Enter the text “It is a prime number.”

Step 37: Save and run the workflow.