Lab 3: UiPath Variables

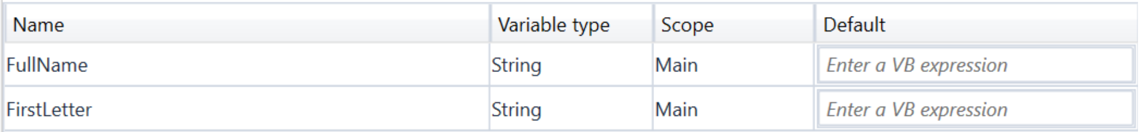
Lab Solutions

Lab solution(s) are present in `Solution\Lab03` folder.

Text Variables

To exemplify how you can work with text variables, we are going to create a project that asks for the user's name, stores it and displays only the first letter of his name in the **Output** panel.

1. Create a sequence.
2. Create two simple string variables, FullName and FirstLetter.



Name	Variable type	Scope	Default
FullName	String	Main	*Enter a VB expression*
FirstLetter	String	Main	*Enter a VB expression*

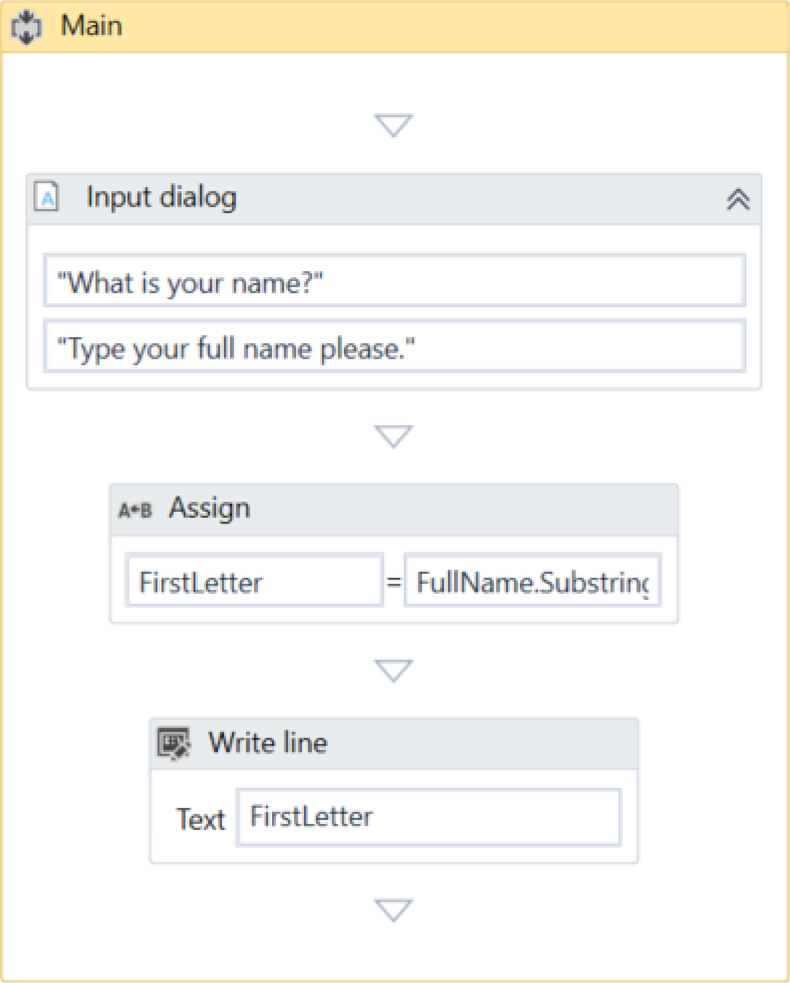
3. Add an [**Input Dialog**] activity to the **Designer** panel.
4. In the **Properties** panel, in the **Label** field, type "Type your full name please.".
5. In the **Title** field, type "What is your name?".
6. In the **Result** field, add the FullName variable. This variable stores whatever the user writes when prompted with the **Input Dialog** activity.
7. Add an [**Assign**] activity under the **Input Dialog** one.
8. In the **Properties** panel, in the **To** field, add the FirstLetter variable.
9. In the **Value** field, type 1). The FirstLetter variable is assigned the new value created by the FullName.Substring(0,1) expression.

> *Note: This field uses the Substring() function to find the first character from the string added by the user in the **Input Dialog**.*

10. Add a [**Write Line**] activity under the **Assign** one.

11. In the **Properties** panel, in the **Text** field, enter the

    FirstLetter variable. This means that the **Output** panel is going to display the first letter of what the user wrote in the **Input Dialog**. The project should look as in the following screenshot.



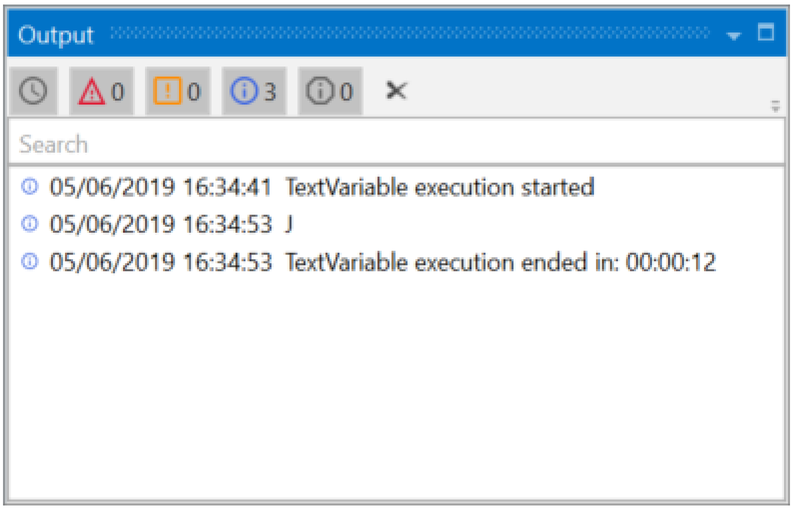
"What is your name?"

"Type your full name please."

FirstLetter = FullName.Substrinç

Text FirstLetter

12. Press F5. The **What is your name?** window is displayed.
13. Type your name in the text field and click **OK**. In **UiPath Studio**, in the **Output** panel, note that the first letter of your name is displayed.



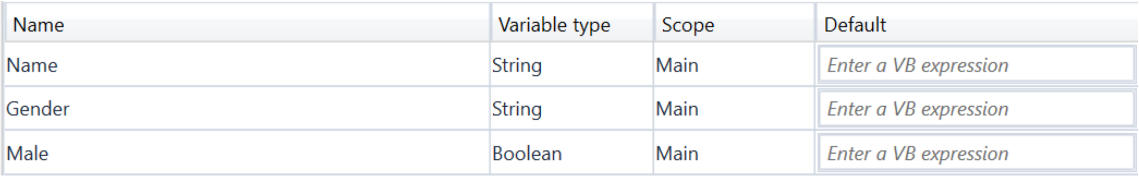
```
05/06/2019 16:34:41  TextVariable execution started
05/06/2019 16:34:53  J
05/06/2019 16:34:53  TextVariable execution ended in: 00:00:12
```

True or False Variables

The true or false variable, also known as boolean, is a type of variable that only has two possible values, true or false. These variables enable you to make decisions, and thus have a better control over your flow.

To exemplify how you can work with true or false variables, we are going to create an automation that asks the user for his name and gender, and displays the results in another window.

1. Create a new process and add a **Flowchart**.
2. Create two string variables, Name and Gender. The first is going to be used to store the name of the user, and the second to store the user’s gender.
3. Create a boolean variable, Male. This variable is going to be used to verify if the user is a male.



Name	Variable type	Scope	Default
Name	String	Main	*Enter a VB expression*
Gender	String	Main	*Enter a VB expression*
Male	Boolean	Main	*Enter a VB expression*

4. Add an [**Input Dialog**] activity to the **Designer** panel and connect it to the **Start** node.

5. In the **Properties** panel, in the **Label** field type "What is your name?".

6. Add a title and, in the **Result** field, add the Name variable.

7. Add another **Input Dialog** activity and connect it to the previous one.

8. In the **Properties** panel, in the **Label** field, type "What is your gender?".

9. Add a title and, in the **Result** field, add the Gender variable.

10. Add a [**Flow Decision**] activity to the **Designer** panel, and connect it to the second **Input Dialog**.

11. In the **Properties** panel, in the **Condition** field, type

    Gender = "Male" or Gender = "male". This activity checks if the user is a male or female.

12. Add two [**Assign**] activities.

13. Connect one to the **True** branch of the **Flow Decision** activity.

14. In the **Properties** panel, in the **To** field enter the

    Male variable.

15. In the **Value** field, type **True**. This assigns the **True** value to the Male variable when the Gender = "Male" or Gender = "male" condition is met.

16. Connect the second **Assign** activity to the **False** branch of the **Flow Decision**.

17. In the **Properties** panel, in the **To** field, enter the

    Male variable.

18. In the **Value** field, type **False**. This assigns the **False** value to the Male variable when the Gender = "Male" or Gender = "male" condition is not met.

19. Add a new **Flow Decision** and connect the previously added **Assign** activities to it.

20. In the **Properties** panel, in the **Condition** field, type
    Male = True.

21. Add a [**Message Box**] activity and connect it to the **True** branch of the **Flow Decision**.

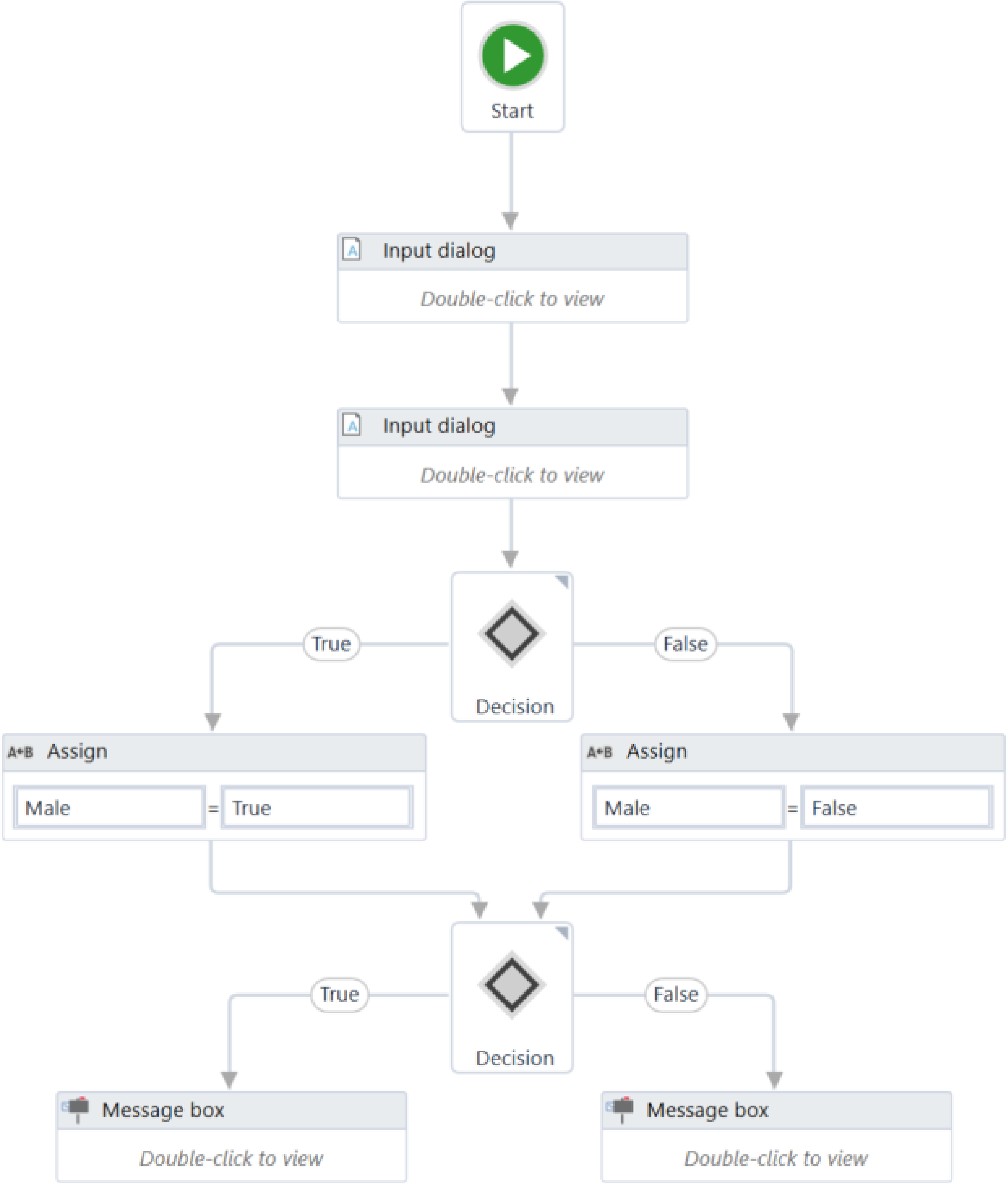
22. In the **Properties** panel, in the **Text** field, type

    Name + " is a " + Gender + ".". This message displays the name of the user and its gender, if Male is true.

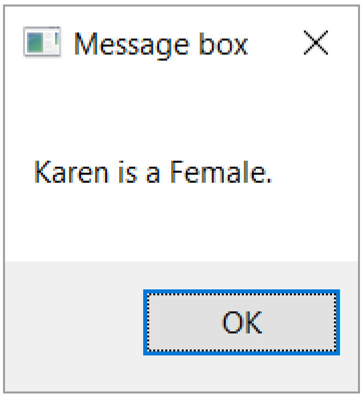
23. Add another **Message Box** activity and connect it to the **False** branch of the **Flow Decision**.

24. In the **Properties** panel, in the **Text** field, type

    Name + " is a " + Gender + ".". This message displays the name of the user and its gender, if Male is false.
    The final project should look like in the following screenshot.



25. Press F5. The automation is executed. Note that the final **Message Box** displays the message as expected.



Karen is a Female.

Number Variables

Number variables are also known as integer or Int32, and are used to store numeric information. They can be used to perform equations or comparisons, pass important data and many others.

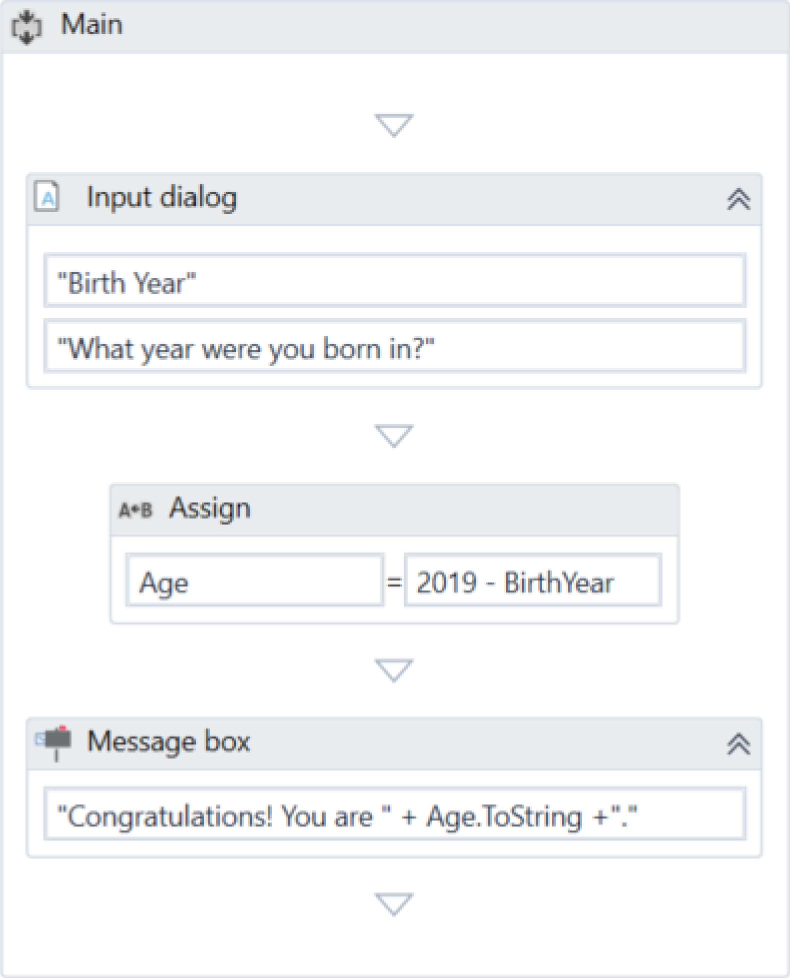
Example of Using a Number Variable

To exemplify how you can work with number variables, we are going to create an automation that asks the user for the year in which he or she was born and displays the age in a window.

1. Create a new sequence.
2. Create two Int32 variables, BirthYear and Age. The first stores the user's birth year and the second, the user's age.
3. Add an [**Input Dialog**] activity to the sequence.
4. In the **Properties** window, type an appropriate title and label.
5. In the **Result** field, add the BirthYear variable.
6. Add an [**Assign**] activity under the **Input Dialog**.
7. In the **Properties** panel, in the **To** field, add the Age variable.
8. In the **Value** field, type 2019 – BirthYear. This assigns the value of the subtraction (2019 minus the user's birth year) to the Age variable.
9. Add a [**Message Box**] activity under the **Assign** one.
10. In the **Properties** panel, in the **Text** field, type "Congratulations! You are " + Age.ToString + ".".

> *Note:*
>
> *The .ToString method converts the integer stored in the Age variable to a string and displays it as such.*

The final project should look as in the following screenshot.



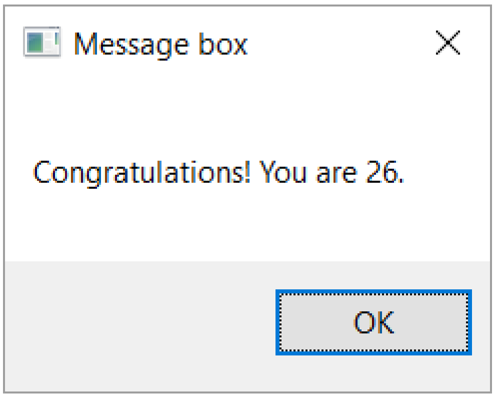
"Birth Year"

"What year were you born in?"

Age = 2019 - BirthYear

"Congratulations! You are " + Age.ToString +"."

11. Press F5. The automation is executed. Note that the **Message Box** displays your age, as expected.



Congratulations! You are 26.

Date and Time Variables

The date and time variable is a type of variable that enables you to store information about any date and time. This type of variable can be found in the **Browse and Select a .Net Type** window, under the System namespace

System.DateTime. For more information, see Browsing for .Net Variable Types.

For example, they can be used to append dates to invoices or any other documents you may be working with and are time-sensitive.

Example of Using a Date and Time Variable

To exemplify how you can work with a date and time variable, we are going to build an automation that gets the current date and time, subtracts a specific amount of time and writes the result to a Microsoft Excel spreadsheet.

1. Create a new sequence.
2. Create two DateTime variables, Today and LastTime.
3. Create a TimeSpan variable, called Span, and in the **Default** field type 1.02:10:04.

> *Note:*
>
> *The default value attributed to the Span variable uses the day.hh:mm:ss format.*

4. Add an [**Assign**] activity to the **Designer** panel.

5. In the **Properties** panel, in the **To** field, add the

   Today variable.

6. In the **Value** field, type Now. This gives you the date and time when the project is executed, in the dd/MM/yyyy and hh:mm:ss formats.

7. Add another **Assign** activity under the previous one.

8. In the **Properties** panel, in the **To** field, add the LastTime variable.

9. In the **Value** field, type Today.Subtract(Span). This is going to subtract the default value of the Span variable from the current date and time, stored in the Today variable.

10. Add an [**Excel Application Scope**] activity under the last **Assign** one.

> *Note:*
>
> *Use the Manage Packages feature to download the Excel activities, if you do not already have them installed.*

11. In the **Properties** panel, in the **WorkbookPath** field, type the path of the Excel file you want to write to, between quotation marks. In our case, "%HOMEPATH%\Desktop\urgent_invoice.xlsx".

> *Note:*
>
> *If the file does not exist at the provided path, it is going to be created.*

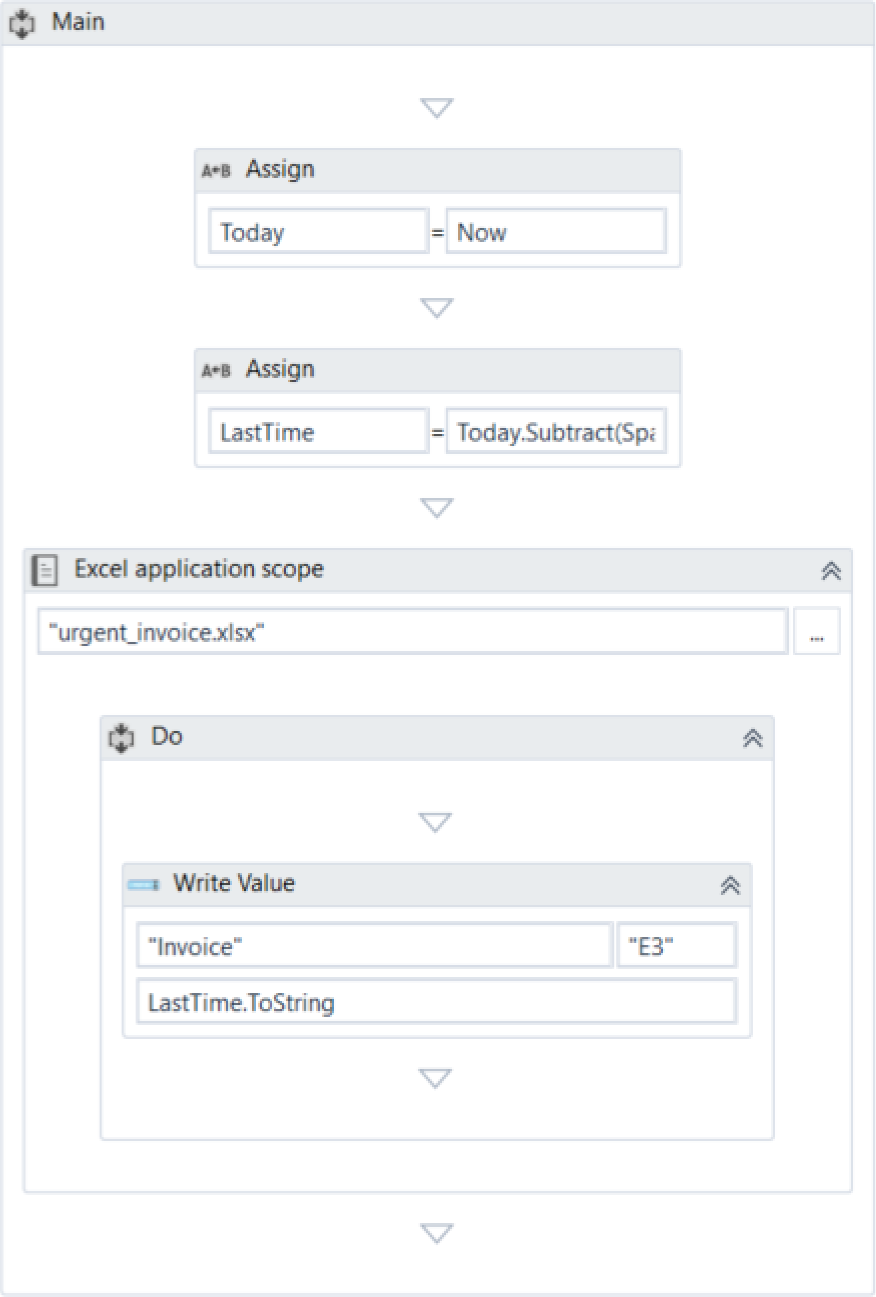
12. Add a [**Write Cell**] activity in the **Excel Application Scope** activity.

13. In the **Properties** panel, in the **Range** field, type the coordinates of an Excel cell between quotation marks. In our case,

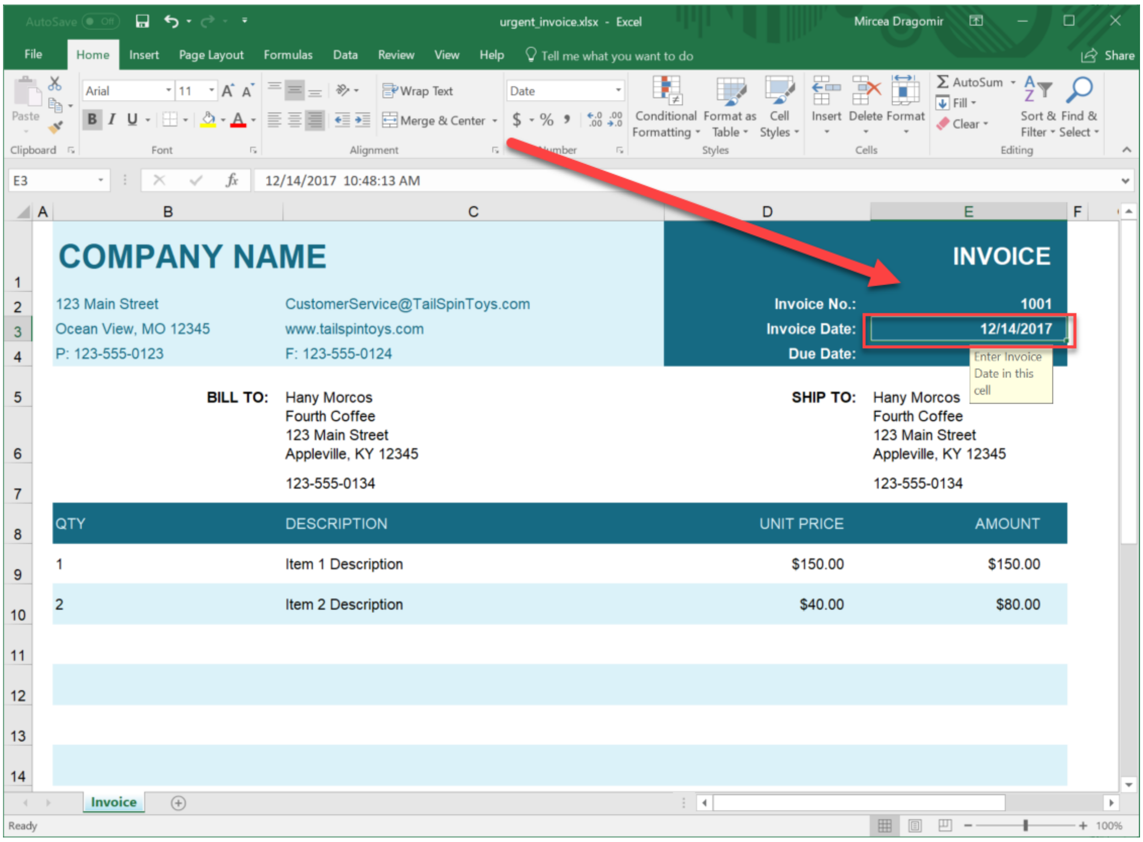
    "E3".

14. In the **Sheet Name** field, type the name of the sheet in which you want to write. In our case, "Invoice". Note that if the sheet does not exist, it is going to be created.

15. In the **Value** field, type LastTime.ToString. This transforms the value of the LastTime variable to a string and writes it to the coordinates previously given.
    The final project should look as in the following screenshot:



16. Press F5. The automation is executed.
17. Navigate to your Excel file and double-click the cell in which you added the date. Note that the time and date information is displayed in the cell you pointed towards.



12/14/2017 10:48:13 AM

COMPANY NAME

123 Main Street
Ocean View, MO 12345
P: 123-555-0123

CustomerService@TailSpinToys.com
www.tailspintoys.com
F: 123-555-0124

INVOICE

Invoice No.:	1001
Invoice Date:	12/14/2017
Due Date:	

Enter Invoice Date in this cell

BILL TO: Hany Morcos
Fourth Coffee
123 Main Street
Appleville, KY 12345

123-555-0134

SHIP TO: Hany Morcos
Fourth Coffee
123 Main Street
Appleville, KY 12345

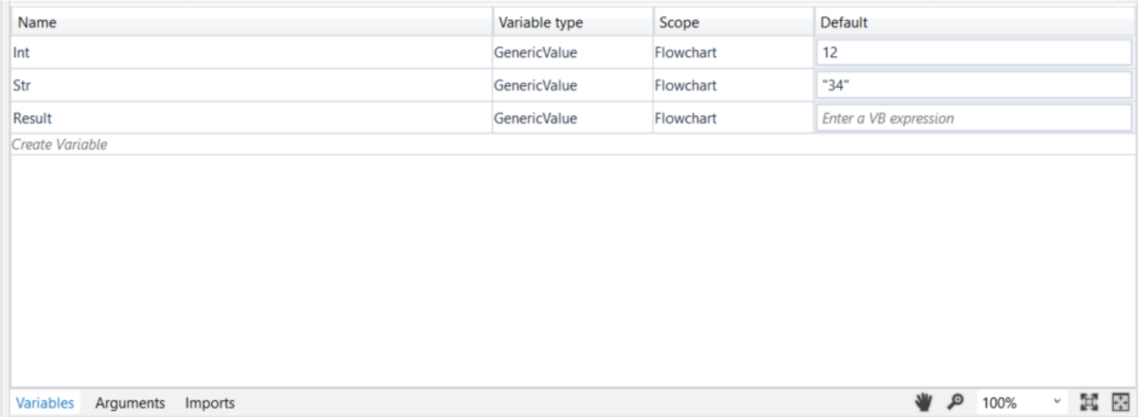
123-555-0134

QTY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Item 1 Description	$150.00	$150.00
2	Item 2 Description	$40.00	$80.00

GenericValue Variables

Let's us create an automation that performs different operations whose results depend on the way we define their expressions. We create two GenericValue variables of different data types and display the results in the **Output** panel.

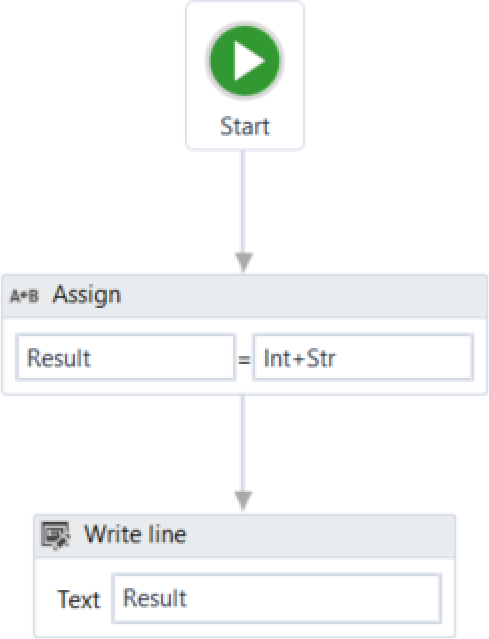
1. Create a new blank project.
2. Create three GenericValue variables: Int, Str, and Result.
3. In the **Default** column for the , and for the Str variable, type "34". The first variable is interpreted as an integer, while the second one is interpreted as a string.



Name	Variable type	Scope	Default
Int	GenericValue	Flowchart	12
Str	GenericValue	Flowchart	"34"
Result	GenericValue	Flowchart	*Enter a VB expression*
Create Variable			

4. Add an [**Assign**] activity to the **Designer** panel and connect it to the **Start** node.

5. In the **Properties** panel, in the **To** field, enter the Result variable.
6. In the **Value** field, type Int + Str.
7. Add a [**Write Line**] activity and connect it to the **Assign** one.
8. In the **Properties** panel, in the **Text** field, enter the Result variable.
   The project should look as in the following screenshot.



Start

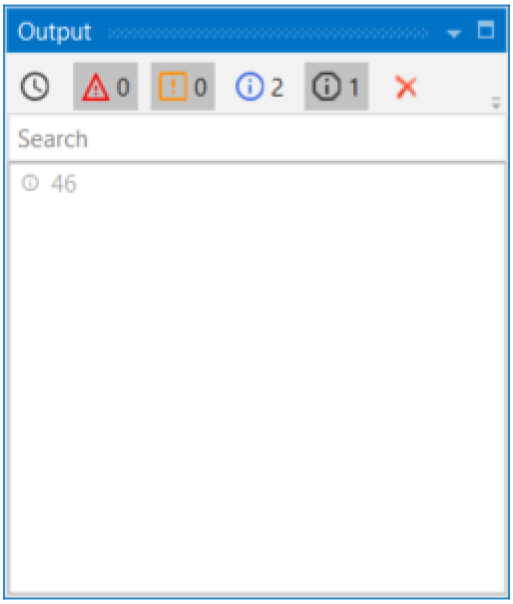
Assign

Result = Int+Str

Write line

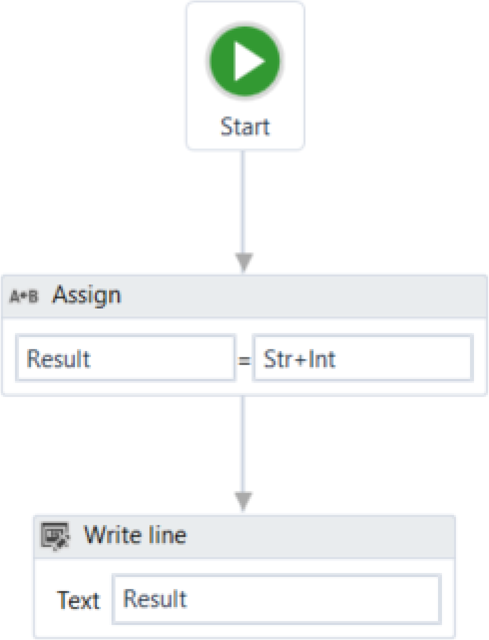
Text Result

9. Press F5 to execute your automation. Note that, in the **Output** panel, the sum of the two numbers is displayed.



46

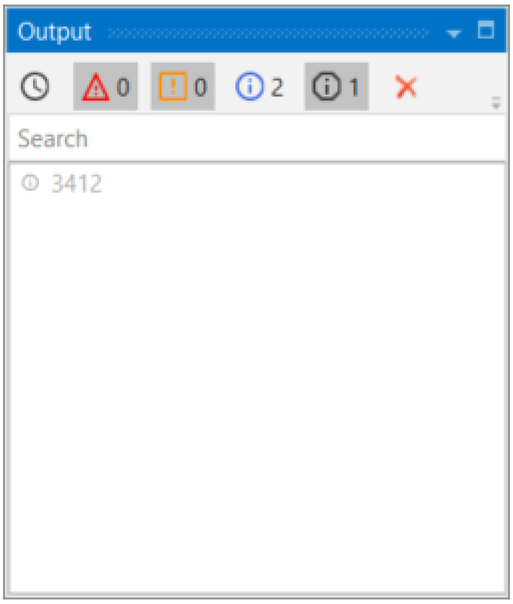
10. Go back to the previously added [**Assign**] activity and change the **Value** field to Str + Int, to reverse the order of the variables. The project should look as in the following screenshot.



Result = Str+Int

Text Result

11. Press F5 to execute your automation. Note that, in the **Output** panel, the concatenation of the two numbers is displayed.



```
3412
```

This means that UiPath Studio takes the first element defined in your expression as a guideline for what operation to perform. If the first element in your expression is an integer or a GenericValue variable filled in as integer, UiPath Studio will perform the sum of the elements.

If the first element in your expression is a string or a GenericValue variable filled in as string, UiPath Studio will perform the concatenation of the elements.