Lab 4: Overview of the Automation Anywhere Development Interface

In this lab, we will cover the following topics:

- Bot development interface
- What can a bot do?
- Programming techniques using Automation Anywhere
- Variables and triggers
- Debugging and dependencies

Technical requirements

In order to install the Automation Anywhere Bot agent, the following is required:

- Web browser: Google Chrome
- Completed registration with Automation Anywhere Community Edition
- Successful logon to Automation Anywhere Community Edition
- Successful registration of a local device

Bot development interface

The development interface is where all the magic happens. This is where bots are created, edited, and debugged. In order to look at what it has to offer, you need to start by creating a new bot. Let's dive straight into creating a bot so that we can explore the development interface.

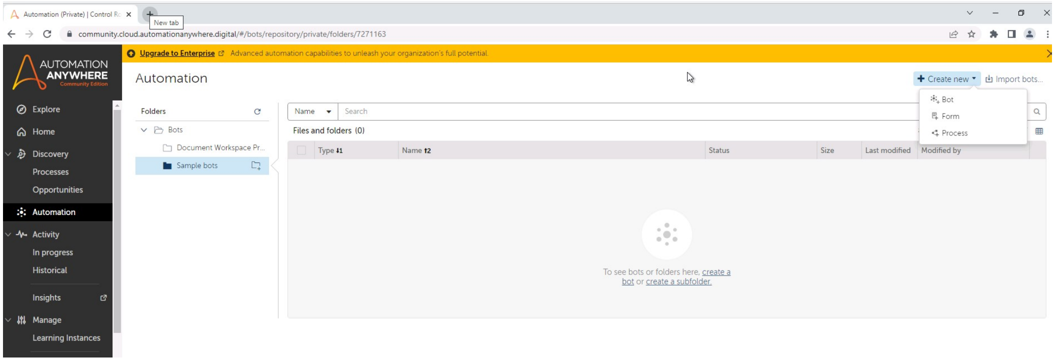
Creating a new bot

There are a number of shortcuts available to create a new bot. The following steps will guide you through the process of creating a new bot:

1. Log in to the **Control Room**.

2. Navigate to the **Automation** section.

3. Select the **My bots** sub-section:

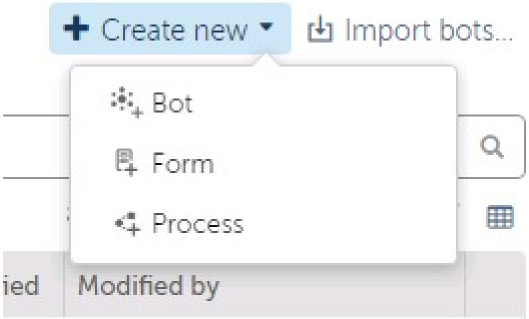


community.cloud.automationanywhere.digital/#/bots/repository/private/folders/7271163

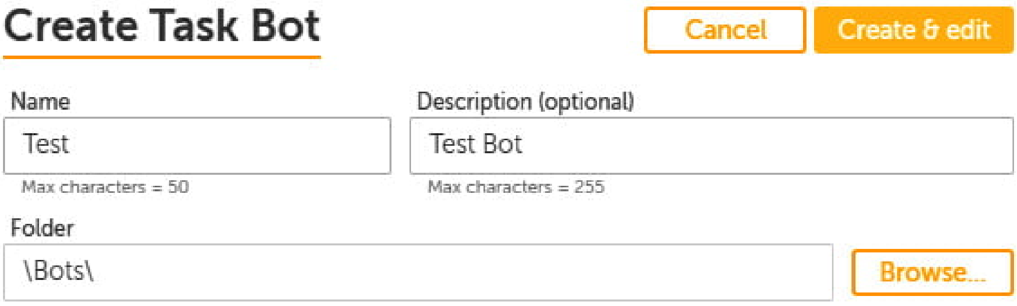
Upgrade to Enterprise Advanced automation capabilities to unleash your organization's full potential.

To see bots or folders here, create a bot or create a subfolder.

4. Click on the **Create a bot** icon from the icon options in the top-right corner:



5. The following bot properties dialog is presented:



Create Task Bot

Cancel | Create & edit

Name: Test
Max characters = 50

Description (optional): Test Bot
Max characters = 255

Folder: \Bots\

Browse...

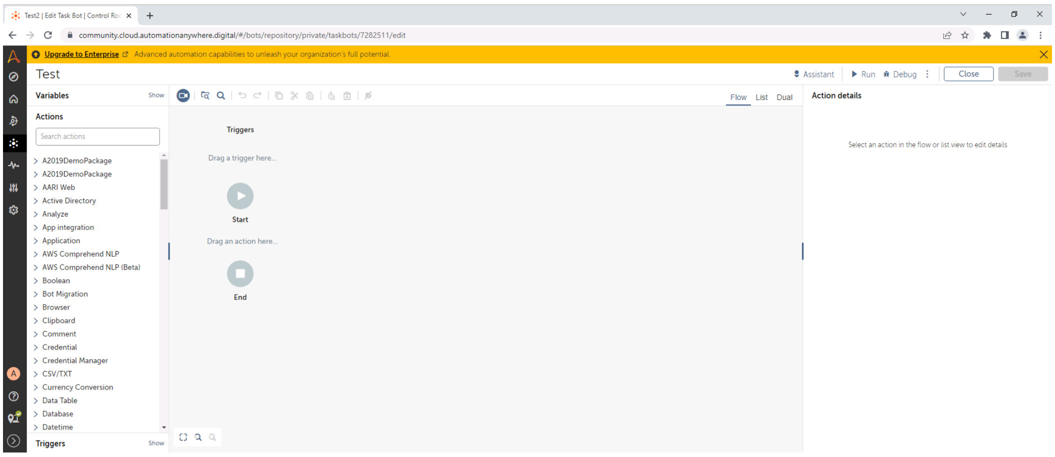
6. Set the following properties for your bot:

   Name: `Test`

   Description (optional): `Test Bot`

   Folder: `\Bots\`

7. Click on the **Create & edit** button. This will open the development interface:



Test2 | Edit Task Bot | Control Roc

community.cloud.automationanywhere.digital/#/bots/repository/private/taskbots/7282511/edit

Upgrade to Enterprise — Advanced automation capabilities to unleash your organization's full potential.

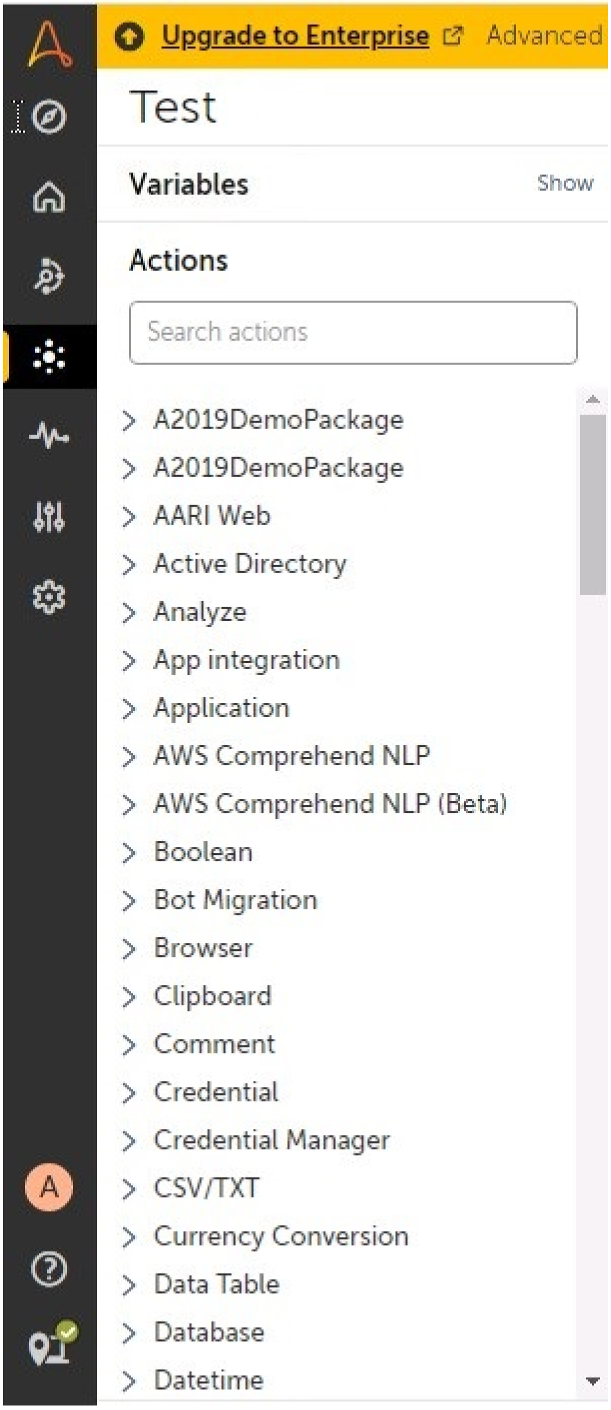
Test

Select an action in the flow or list view to edit details

Great! You have now created a new bot and have access to the full development interface. So, what's the next step? In the next section, we will look at what functionality is available. You will learn about some of the key tasks your bot will be able to automate.

What can a bot do?

We are now ready to start looking at what functionality Automation Anywhere offers as regards bot development. There are hundreds of actions available to help automate your tasks. All the options are listed on the left pane. These actions are grouped into categories known as **packages**. Each package is a collection of individual actions. Here you can see the list pane showing all the available packages:

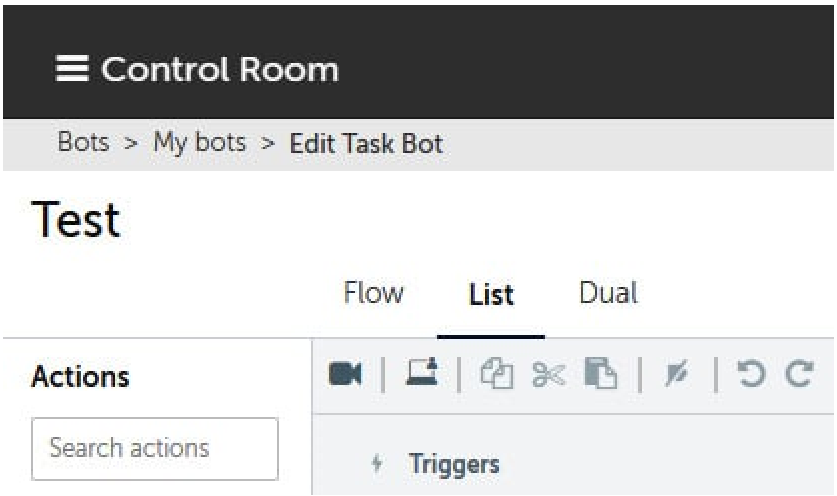


- A2019DemoPackage
- A2019DemoPackage
- AARI Web
- Active Directory
- Analyze
- App integration
- Application
- AWS Comprehend NLP
- AWS Comprehend NLP (Beta)
- Boolean
- Bot Migration
- Browser
- Clipboard
- Comment
- Credential
- Credential Manager
- CSV/TXT
- Currency Conversion
- Data Table
- Database
- Datetime

Programming techniques using Automation Anywhere

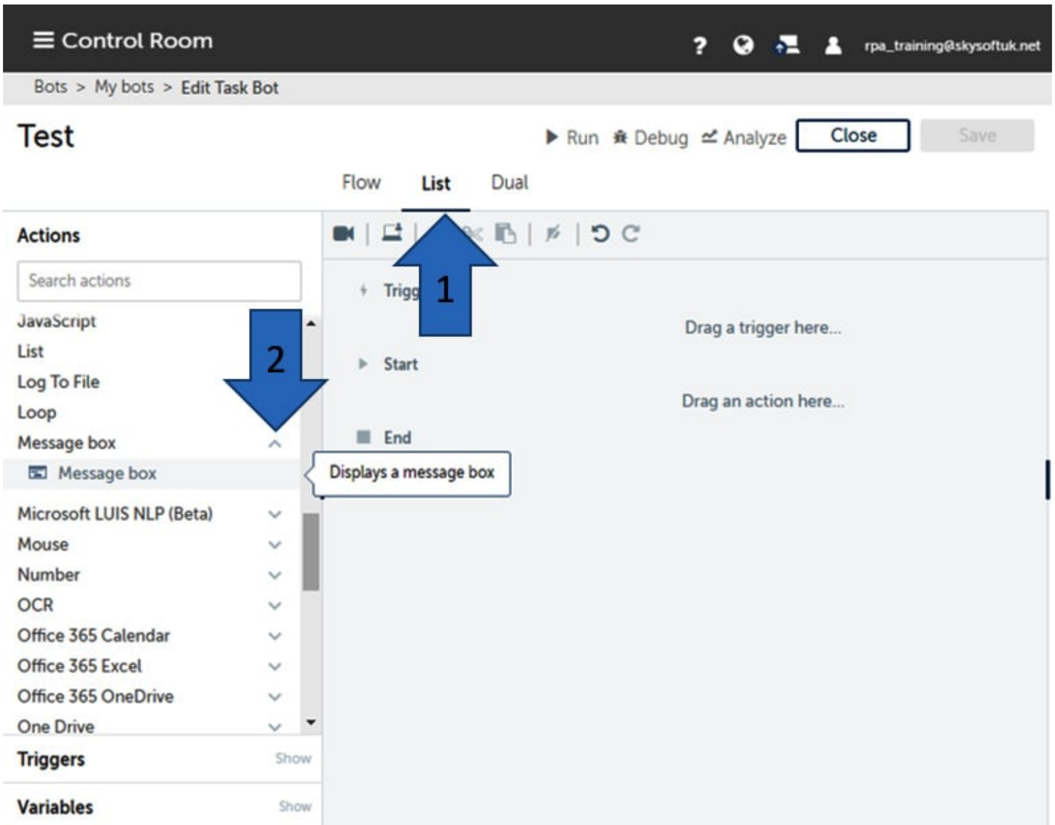
Building tasks for your bot using Automation Anywhere is comparatively easier than other scripting languages, such as VBScript, JavaScript, or Python. To make a bot perform a task, you give it a list of actions. These actions are executed in a sequential manner. To put it simply, the bot will run through a list of actions. These actions, put together, become a task. The complete list is what makes a taskbot.

There are three different ways to visualize your bot actions. These are Flow, List, and Dual. The default view is Flow when you initially create a bot. You can switch between the three ways by selecting the desired tab located on the top pane of the interface, as shown in the following screenshot:

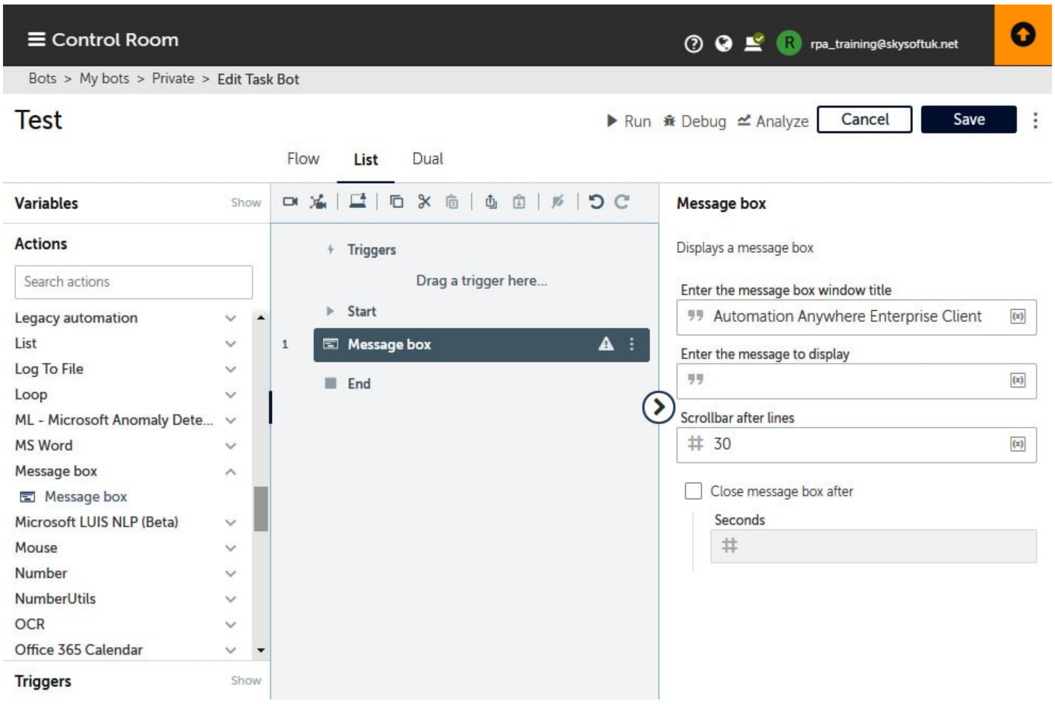


Let's explore the three views in more detail. Before we do this, we will add a simple action for the bot to perform. We will add a message box; the following steps will walk you through the process of adding a message box action:

1. Select the **List** view from the view selection tab at the top and expand the **Message box** package:



2. Drag and drop the **Message box** action to the development pane, between **Start** and **End**:



Message box

Displays a message box

Enter the message box window title
Automation Anywhere Enterprise Client

Enter the message to display

Scrollbar after lines
30

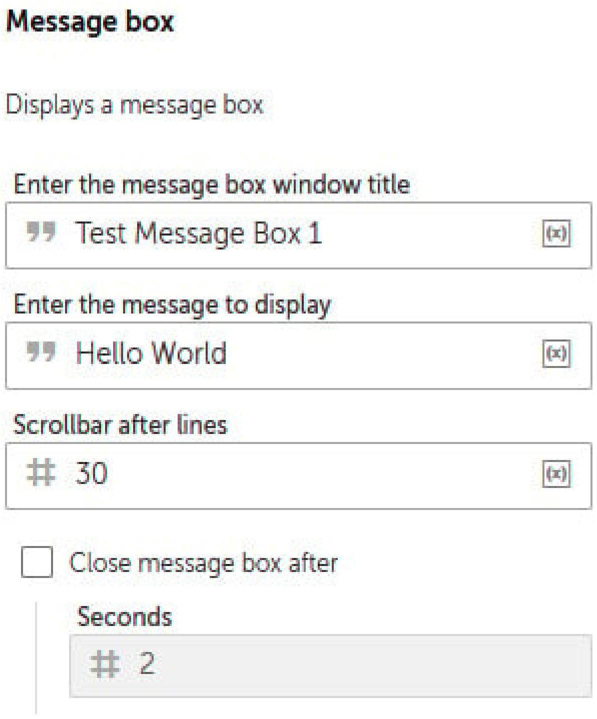
□ Close message box after

Seconds

3. You will now see your first action set for your bot along with the properties pane on the right.

4. This action needs to be configured by setting its attributes and properties. The properties available will vary depending on the type of action.

5. Set the following properties for the **Message box** action:



Message box

Displays a message box

Enter the message box window title

Test Message Box 1

Enter the message to display

Hello World

Scrollbar after lines

30

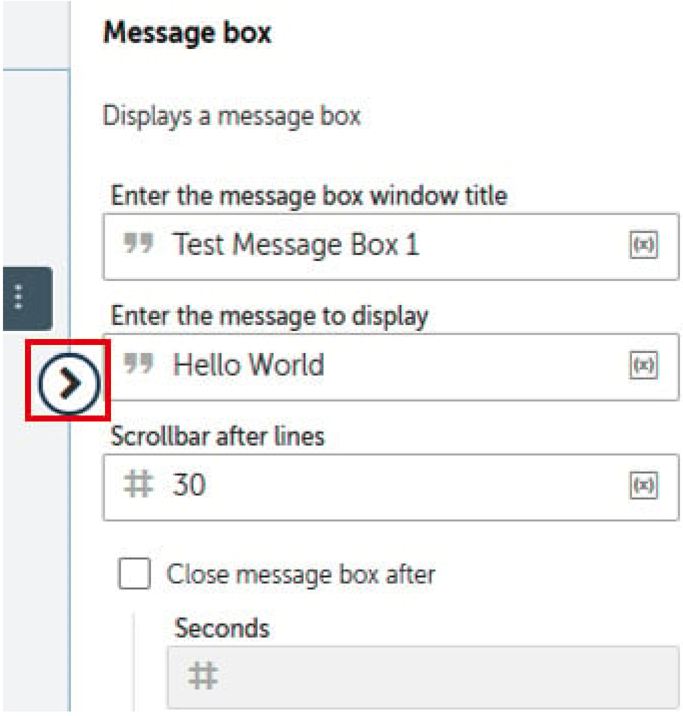
□ Close message box after

Seconds

2

6. As this action is the first instruction for your bot, it is set as instruction number 1. Every action you set will have a number. This is also referred to as a line number.

7. You can collapse the properties pane when you are not using it. Just hover over and click the collapse icon to hide it:



Message box

Displays a message box

Enter the message box window title

Test Message Box 1

Enter the message to display

Hello World

Scrollbar after lines

30

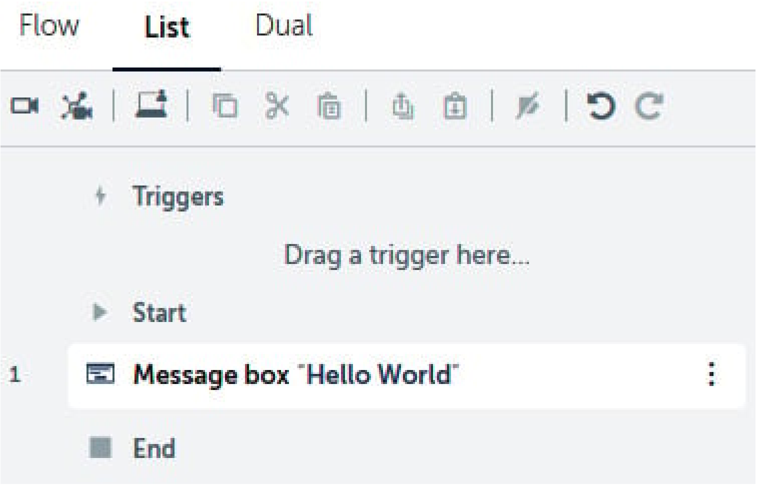
□ Close message box after

Seconds

You have now created a bot that will perform a very basic task of displaying a **Message box**. We can take a look at the different views available to help us build our functionality further.

List view

You have used this so far to add the **Message box** action. In this view, all actions are listed, similar to a script. The line number provides the logical workflow of the task:



Triggers

Drag a trigger here...

Start

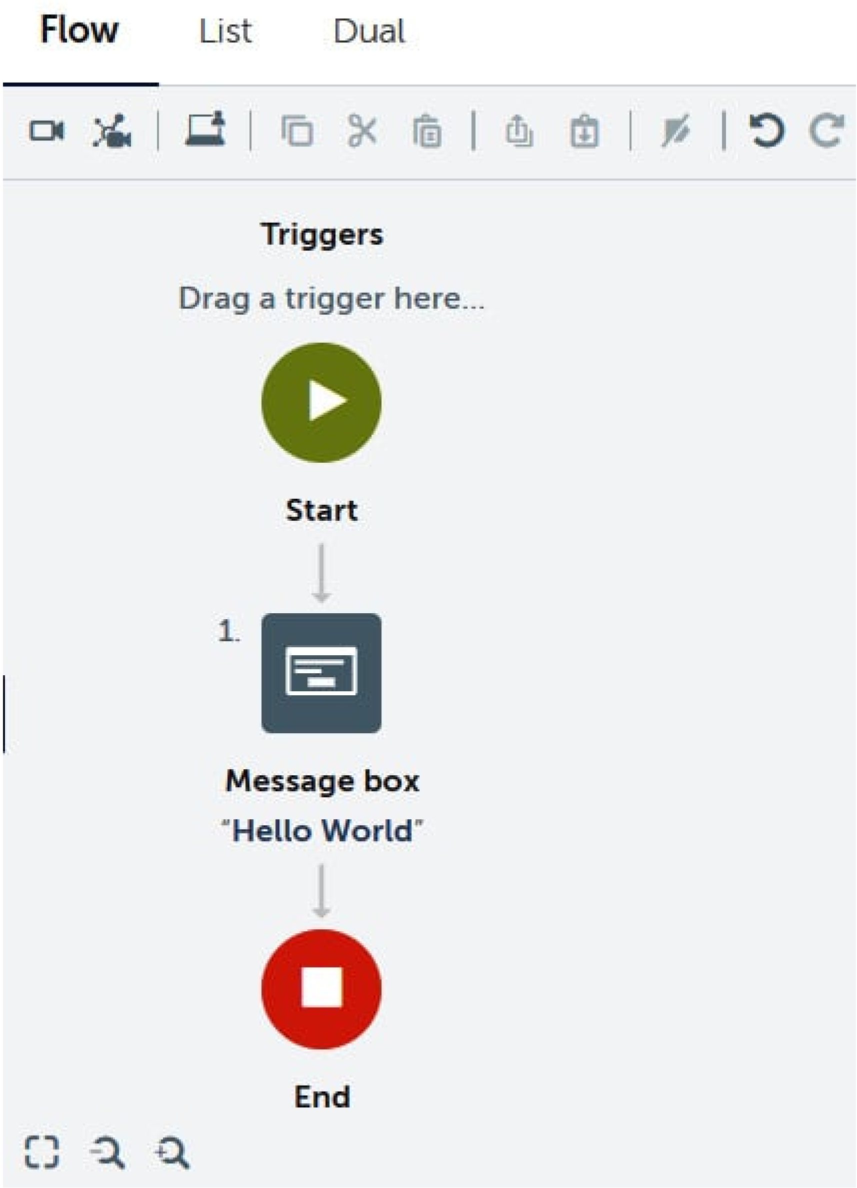
1 Message box "Hello World"

End

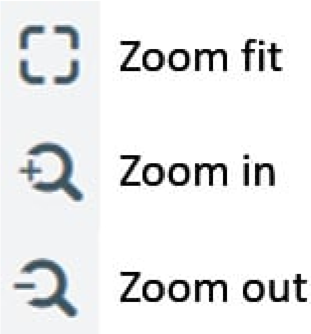
You can also see the same task represented graphically. This is effected by using the **Flow** view.

Flow view

The **Flow** view shows your task actions as a flowchart. As you can see, this provides a more visual process flow of how your bot works through the workflow. The line numbers are omitted as they are not necessary:



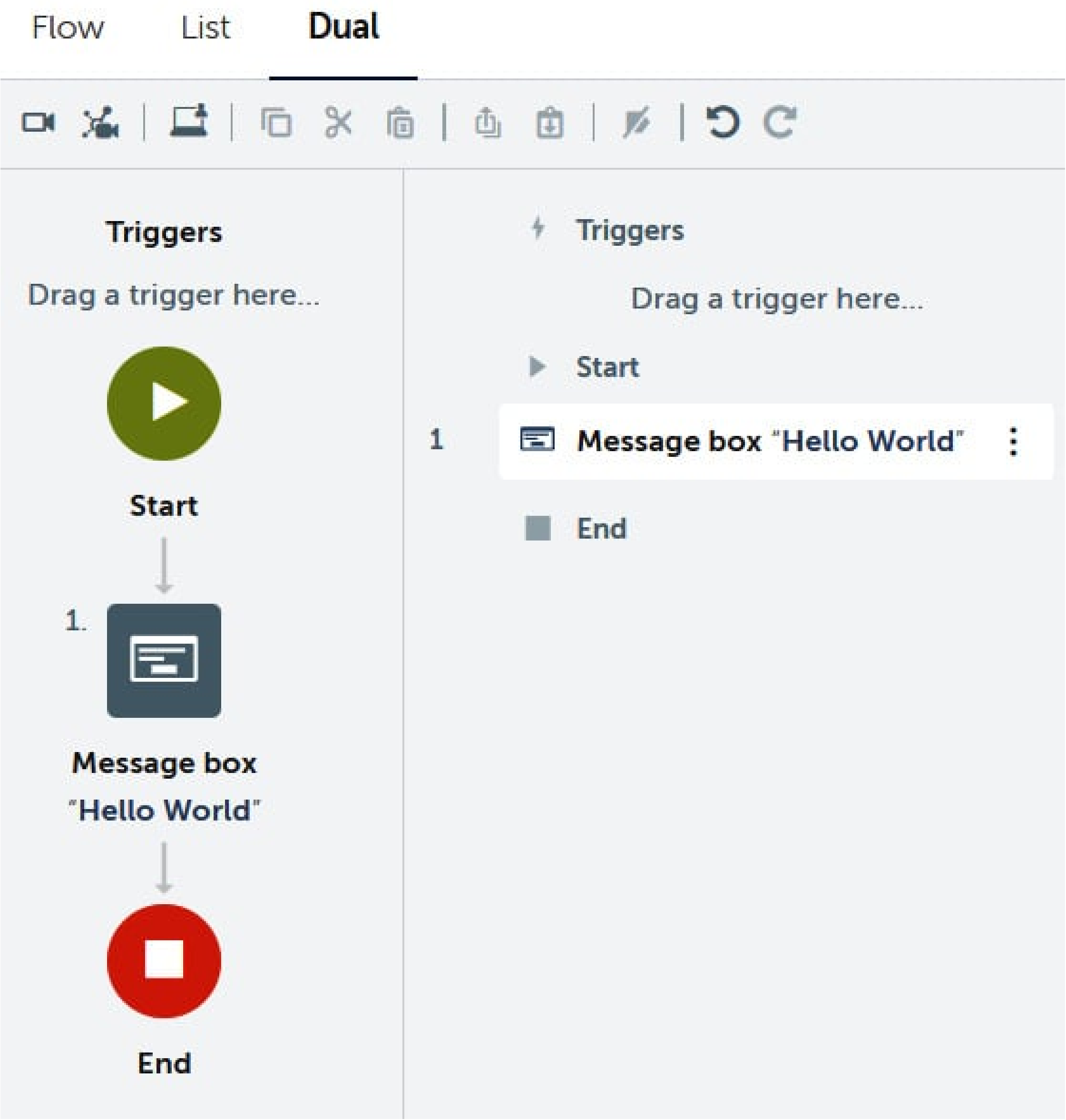
You can change the size of the flow diagram using the sizing options on the bottom left. These options are as follows:



An alternative view is the **Dual** view. This is a combination of both the **List** and **Flow** views.

Dual view

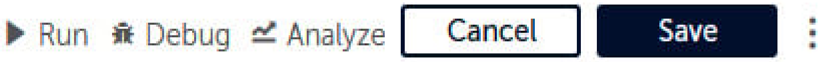
You are shown both views here side by side. This gives the best of both worlds. The views are totally synchronized with one another. If you select an action on either view, it will also be selected in the other view. This makes navigation and editing much easier:



By selecting any action on any view, the properties window will appear on the left to edit. To add actions while using the **Flow** view independently or in **Dual**, you simply drag and drop the action to the required position.

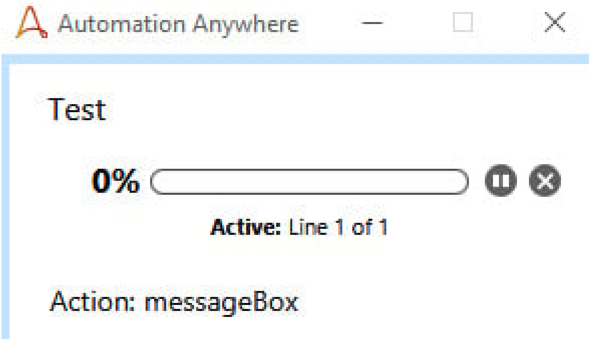
Whenever you want to execute a bot, it needs to be saved. A bot will always be executed from the last saved version. Let's test our bot so far:

1. Click on the **Save** button in the top-right pane:



2. Click on **Run** to execute the bot.

3. While the bot is executing, a progress window will appear in the bottom-left corner. This shows what line number the bot is currently running. This progress window gives a real-time view of what action is being performed. It is useful for testing and debugging your bot:



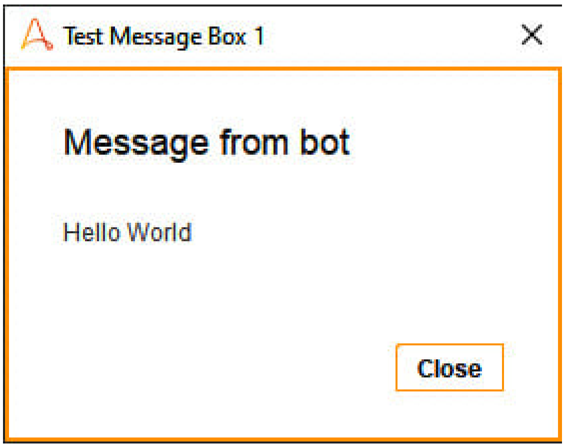
Test

0%

Active: Line 1 of 1

Action: messageBox

4. The **Message Box** should be displayed as your bot runs the action:

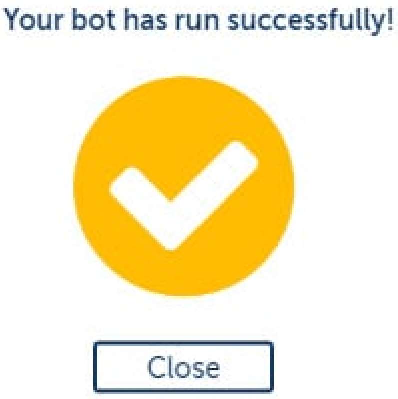


Test Message Box 1

Message from bot

Hello World

5. Click on the **Close** button in **Message Box**. Once the bot has completed, you will be presented with the following:



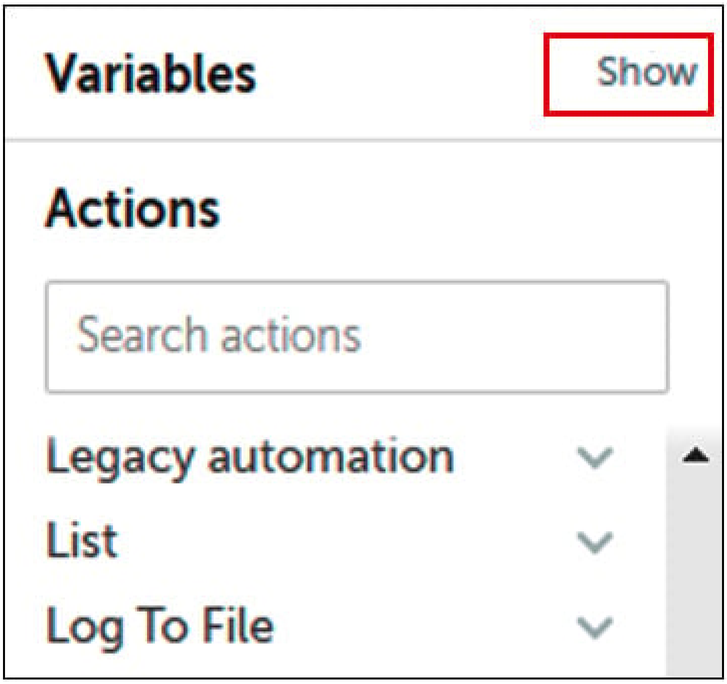
Your bot has run successfully!

Congratulations on building a simple bot and running it successfully! In the next section, we will be looking at variables and triggers. These are essential to any type of development.

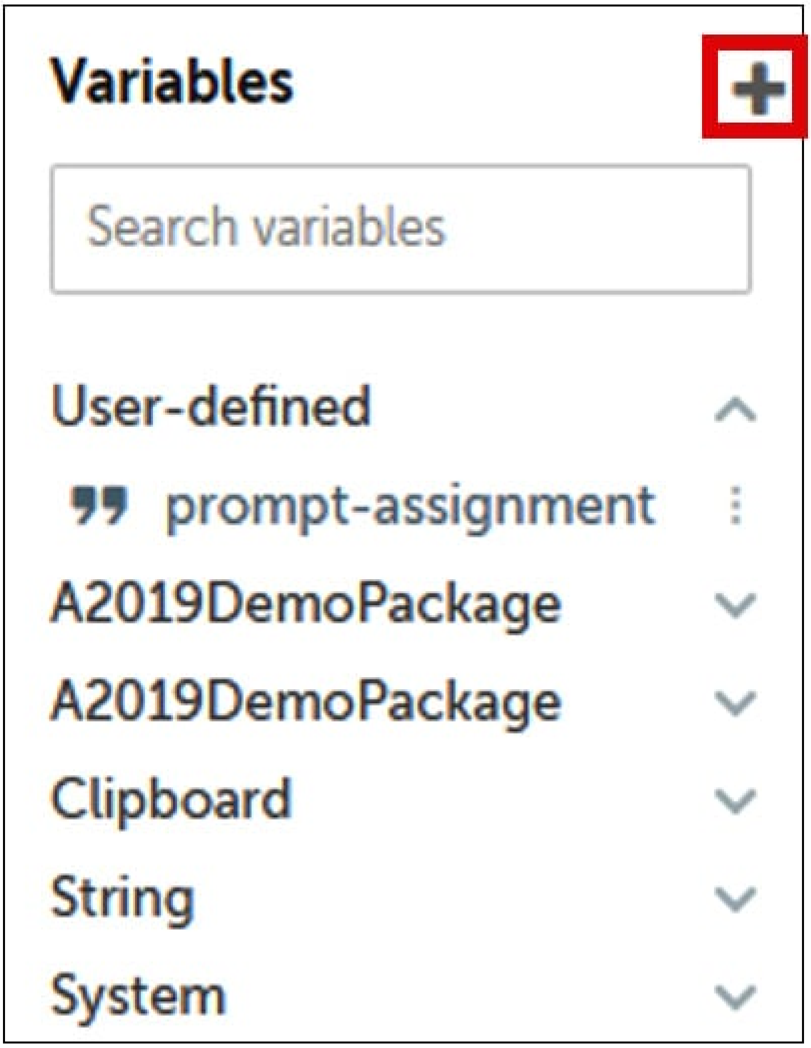
Variables and triggers

As we build more functionalities, we will need to understand how to use the basics of programming. One of the key elements of programming is assigning and reading variables. Automation Anywhere can handle a variety of variable types, including numeric, string, list, array, date, and Boolean. We will demonstrate how to create, assign, and read a variable through the following walk-through:

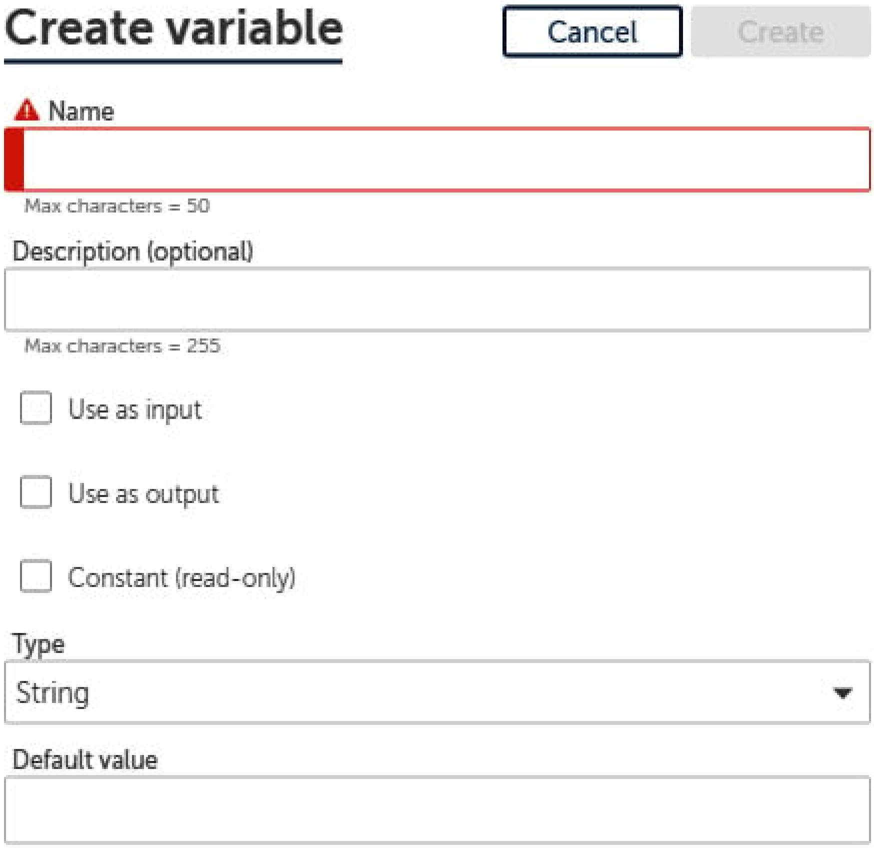
1. Click on **Show** for the **Variables** tab from the option pane on the left:



2. Click on the **+** icon to create a new variable:



3. This will launch the **Create variable** dialog box:



Create variable

Cancel Create

Name

Max characters = 50

Description (optional)

Max characters = 255

☐ Use as input

☐ Use as output

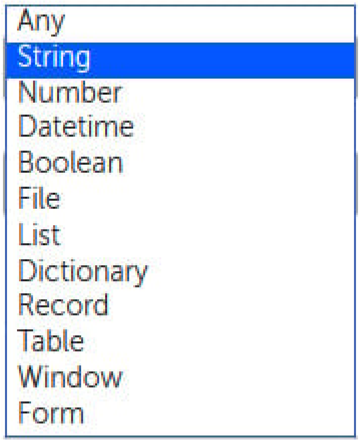
☐ Constant (read-only)

Type

String

Default value

4. You will notice from the **Type** variable drop-down list all the different data types that are available for your variables:



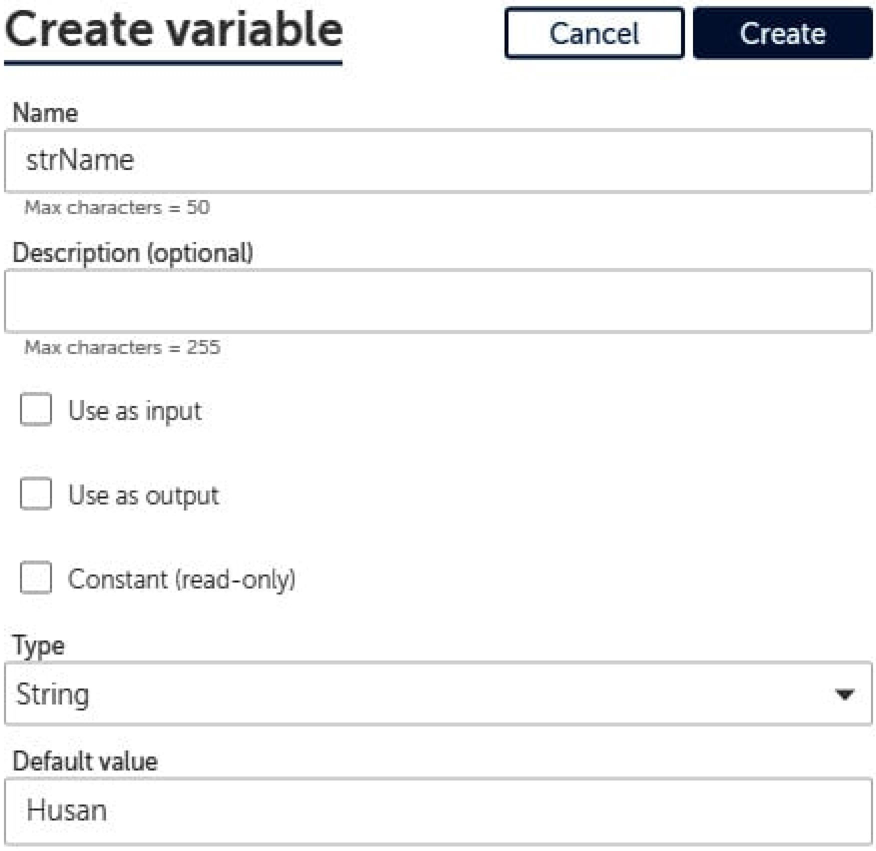
5. Set the following properties to create a new variable:

   Name: `strName`

   Type: **String**

Default Value: *(Enter your name)*

The **Create variable** dialog box should look similar to this:



Create variable

Name

strName

Max characters = 50

Description (optional)

Max characters = 255

□ Use as input

□ Use as output

□ Constant (read-only)

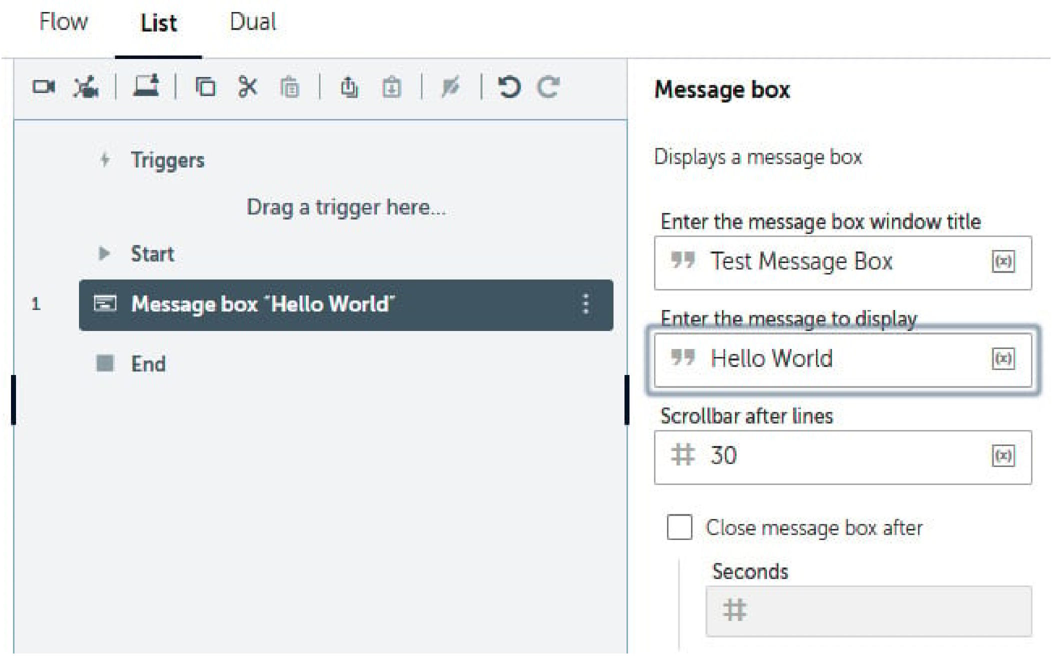
Type

String

Default value

Husan

6. Click on **Create** and then click on **Save**.
7. Select the **Message box** action on line **1** that we created earlier so the properties can be updated to include the `strName` variable value:



Message box

Displays a message box

Enter the message box window title: Test Message Box

Enter the message to display: Hello World

Scrollbar after lines: 30

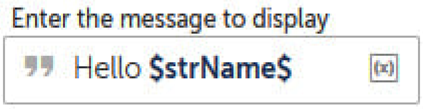
□ Close message box after

Seconds

8. Modify the following property value:

   Enter the message to display: `Hello $strName$`

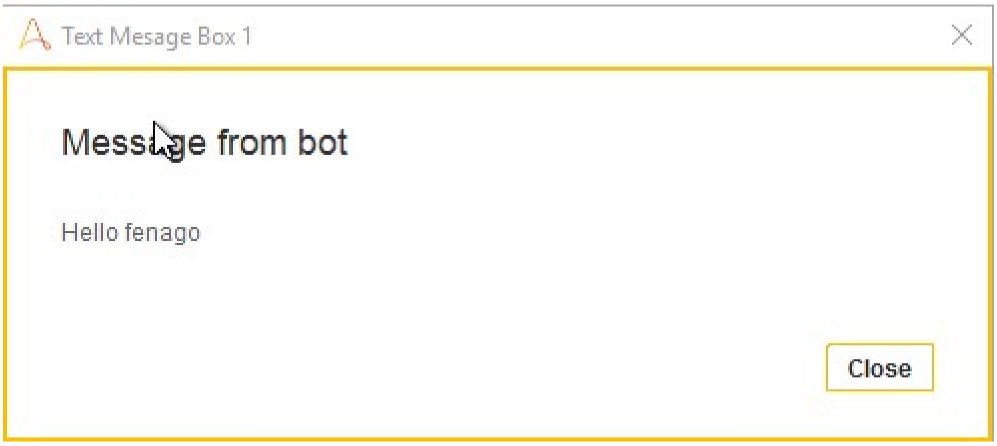
9. The property value should look like this:



Enter the message to display: Hello $strName$

10. Click on **Save**.

11. Now, let's run the bot by clicking on **Run**. You should get a **Message Box** with your name:



Text Mesage Box 1

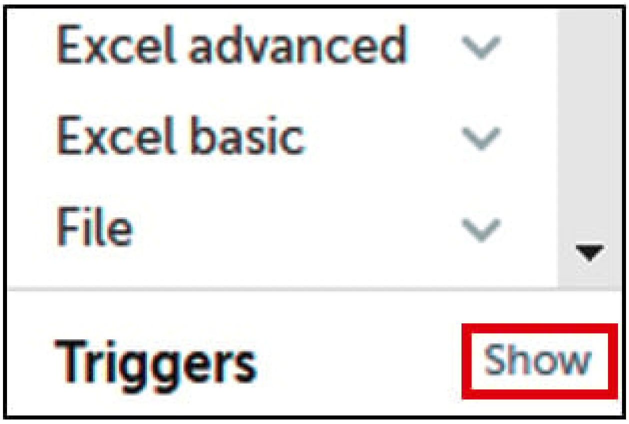
Message from bot

Hello fenago

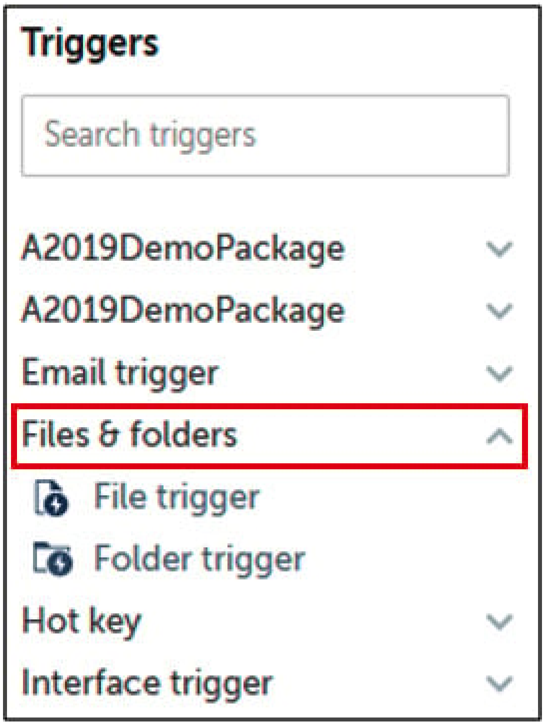
You have successfully created a `String` type variable and assigned your name to it. The value was read by the bot and output to a **Message Box**.

We will now take a look at triggers. Once a bot is built, we may need to execute it when a specific event occurs. This is often when a specific file or folder is created, deleted, or modified. We will create a trigger, setting our bot to run when a specific file is modified. Perform the following steps to create this trigger:

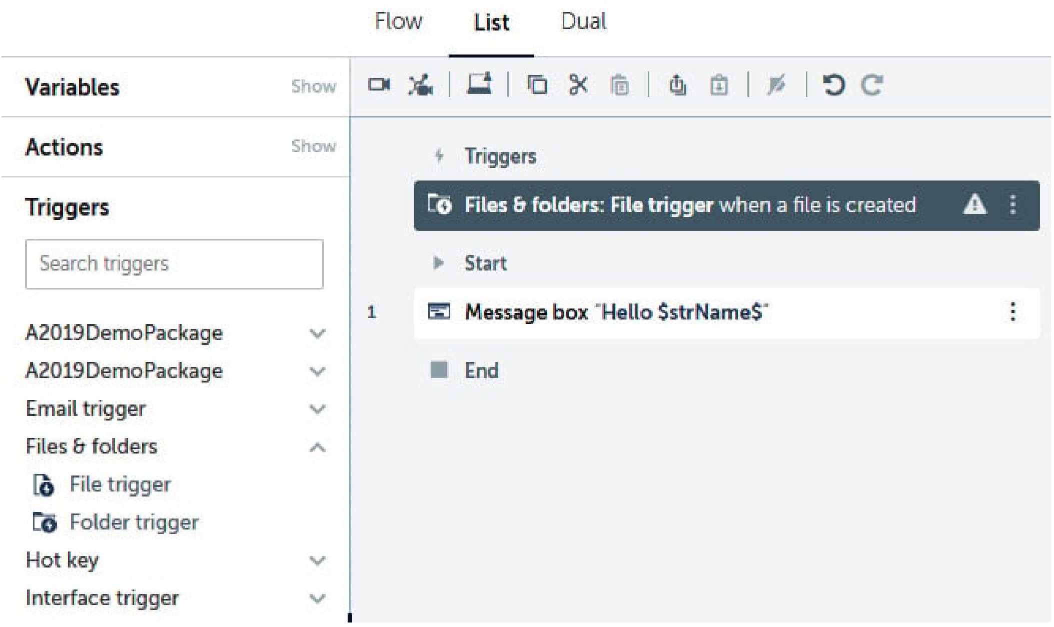
1. Create the following folder: `C:\RPA\`.
2. Create a text file in this folder called `TriggerFile.txt`. We now have a file that can be used to initiate a trigger.
3. Click on **Show** on the **Triggers** tab from the option pane on the left:



4. Expand the **Files & folders** trigger group:



5. To create a new file trigger, select and drag the **File trigger** option to the **Triggers** section in your development window. Your interface should look like this:



Triggers

Files & folders: File trigger when a file is created

Start

1 Message box "Hello $strName$"

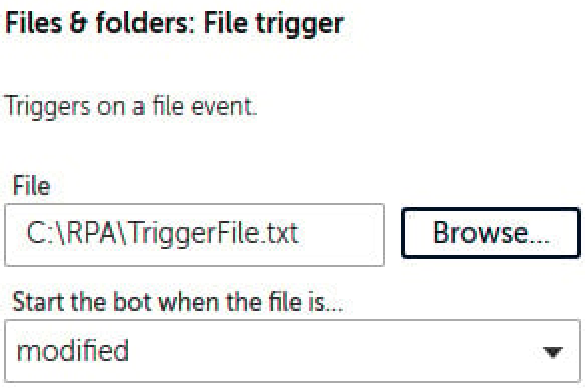
End

6. Set the following properties for the new **Files & folders: File trigger**:

   File: `C:\RPA\TriggerFile.txt`

   Start the bot when the file is...: **modified**

   The trigger properties should look similar to this:



Files & folders: File trigger

Triggers on a file event.

File

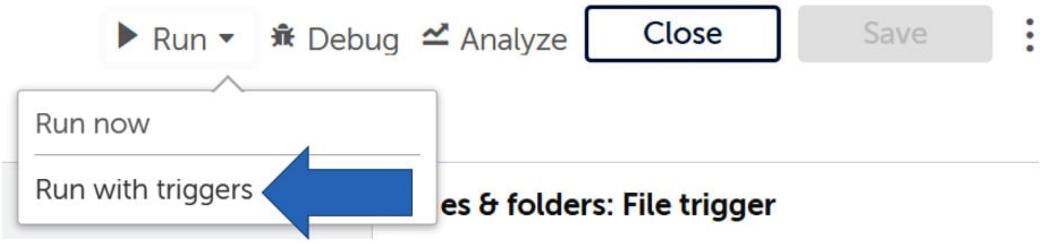
C:\RPA\TriggerFile.txt

Start the bot when the file is...

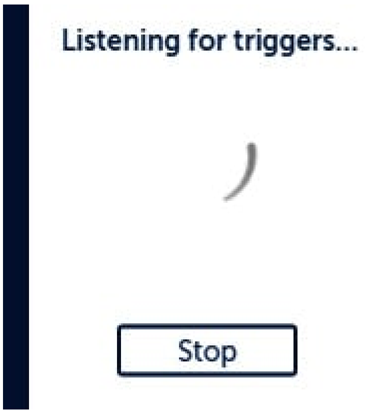
modified

7. Click on **Save**.

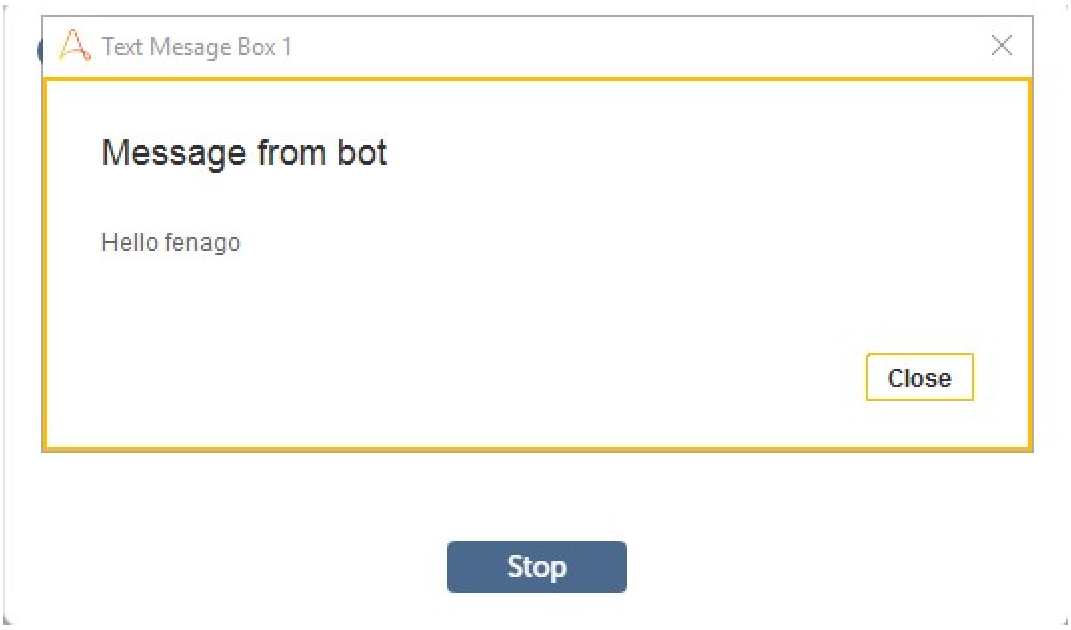
8. To run the bot with triggers, click on **Run** and, from the dropdown, select **Run with triggers**:



9. The bot will be deployed to your device. It will then wait for the trigger event to be true. This is known as listening for triggers. The following message box should appear as it listens for the trigger:



10. Open, edit, and save the `TriggerFile.txt` trigger file that we created. You will notice the bot start and execute once you have saved the file:


Text Mesage Box 1

Message from bot

Hello fenago

You can `Stop` the bot now.

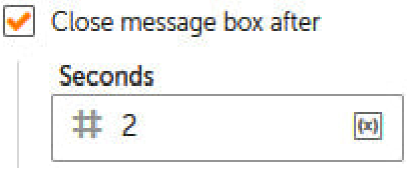
Great! You have now successfully added a trigger to your bot. You can add multiple triggers if required. In the next section, we will be taking a look at debugging and assigning dependencies to your bots.

Debugging and dependencies

Once we have built a bot, it needs to be tested. Being able to identify the root cause of any issue requires good troubleshooting skills. In order to help us troubleshoot, Automation Anywhere has a debugging tool. It allows you to go through each line one by one, so you can examine the taskbot status in more detail before moving on to the next line.

We will need to edit our current bot so that it flows end to end with no user interactions. Also, we need to add a few more actions as it only has one action at the moment. To make the message box automatically close without waiting for a user response, we can set a duration that we would like the message to be displayed for before it closes. To do this, perform the following steps:

1. Navigate to the properties of our **Message box** action on line **1** and update the following properties:



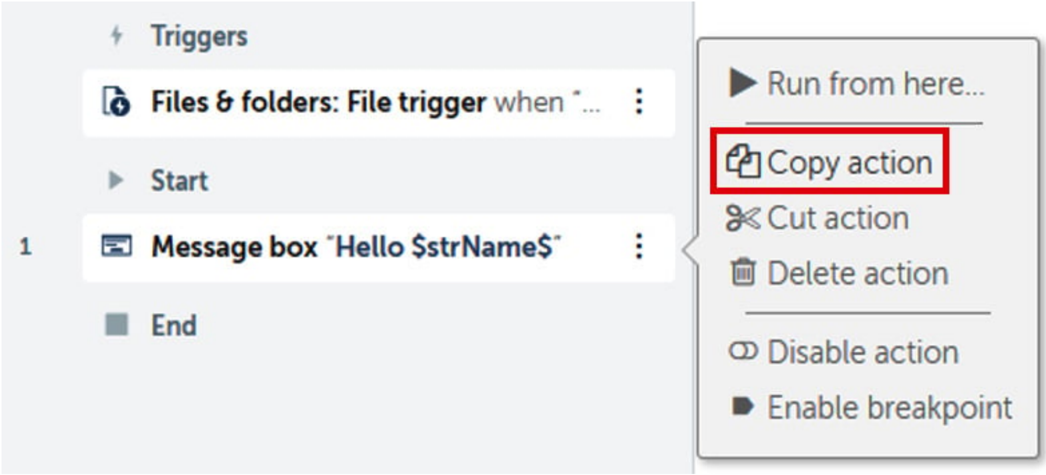
☑ Close message box after

Seconds

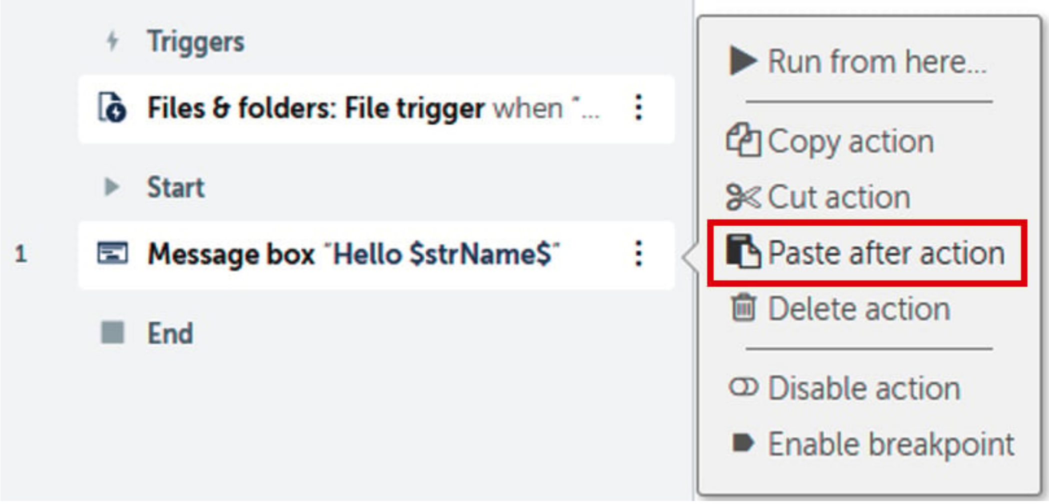
# 2

2. Click on **Save**.

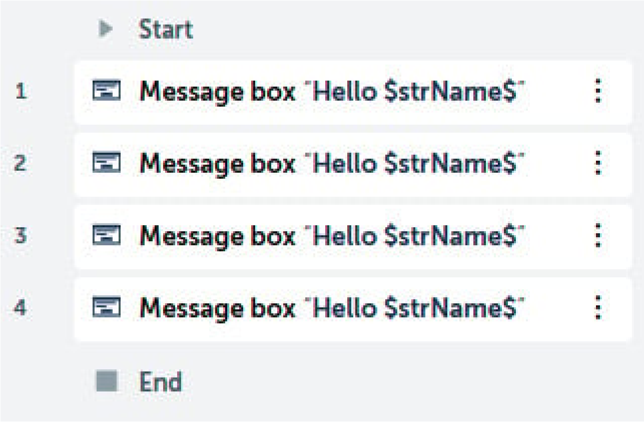
3. We need to add more actions, so we will copy and paste the existing message box action three times. To do this, click on the three dots on the action line **1** and select the **Copy action** option:



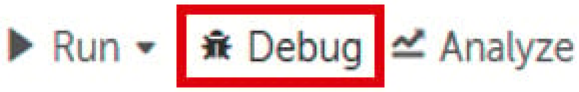
4. Click on the three dots on the action line **1** again, and this time select **Paste after action**:



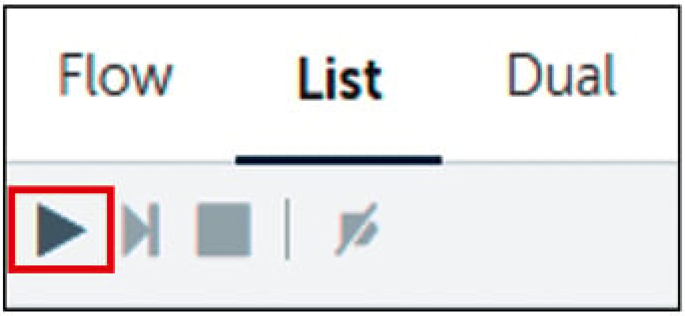
5. Repeat step *4* two more times. The development interface should look like this:


Start
1
Message box "Hello $strName$"
2
Message box "Hello $strName$"
3
Message box "Hello $strName$"
4
Message box "Hello $strName$"
End

6. Click on **Save** and run the bot without triggers by selecting **Run now**. The bot should go through the series of message boxes without any intervention from you.
7. Switch to debug mode by clicking on **Debug** from the top-right menu:

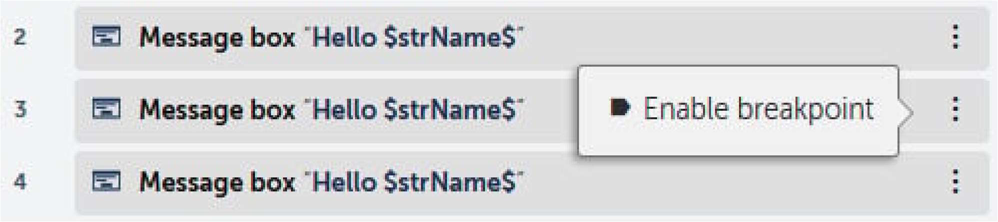


8. Once in debug mode, you can run the bot from the start icon above the development window, as shown in the following screenshot:



9. Again, the bot will run through all the message boxes without your intervention.

10. To help with debugging, we will add a breakpoint. A *breakpoint* is a flag on an action line that instructs the bot to pause. While it is paused, we can examine variable values. We will add a breakpoint to the **Message box action** on line **3**. To do this, select **Enable breakpoint** from the action line options:



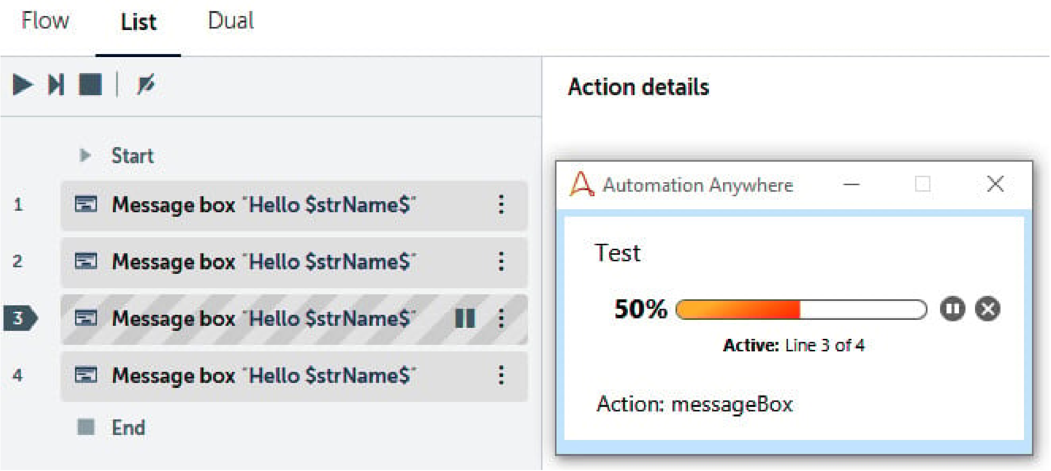
2 Message box "Hello $strName$"

3 Message box "Hello $strName$"

4 Message box "Hello $strName$"

11. Click on **Save**.

12. Now run the bot and you will notice the bot pause at the breakpoint action:



Start

1 Message box "Hello $strName$"

2 Message box "Hello $strName$"

3 Message box "Hello $strName$"

4 Message box "Hello $strName$"

End

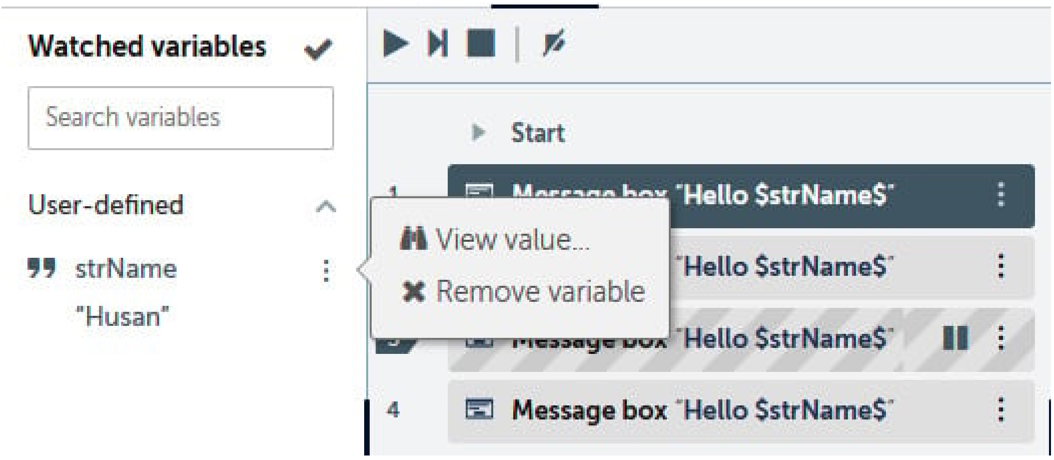
Test

50%

Active: Line 3 of 4

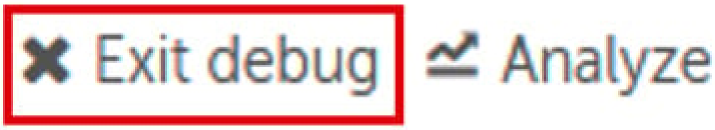
Action: messageBox

13. The breakpoint also allows you to view any values assigned variables during runtime:

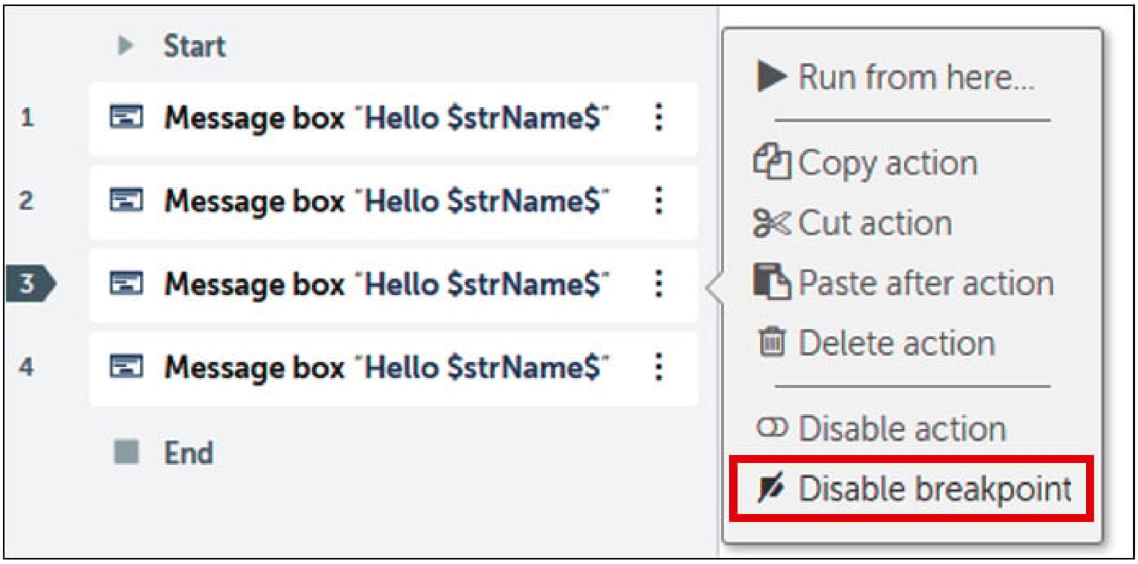


14. To continue, just click on the play button at the top. The bot will carry on executing to the next action.

15. Once the bot has completed, we can exit debug mode by clicking on **Exit debug** to take you back to the normal development interface:



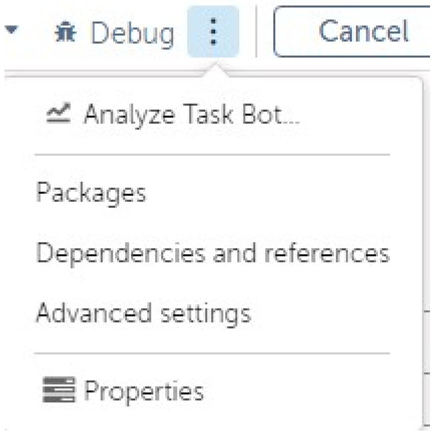
16. The breakpoint will still be enabled even when the bot is not in debug mode. Remember to disable this. This can be done from the **Disable breakpoint** line option:


Start
1 Message box "Hello $strName$"
2 Message box "Hello $strName$"
3 Message box "Hello $strName$"
4 Message box "Hello $strName$"
End
Run from here...
Copy action
Cut action
Paste after action
Delete action
Disable action
Disable breakpoint

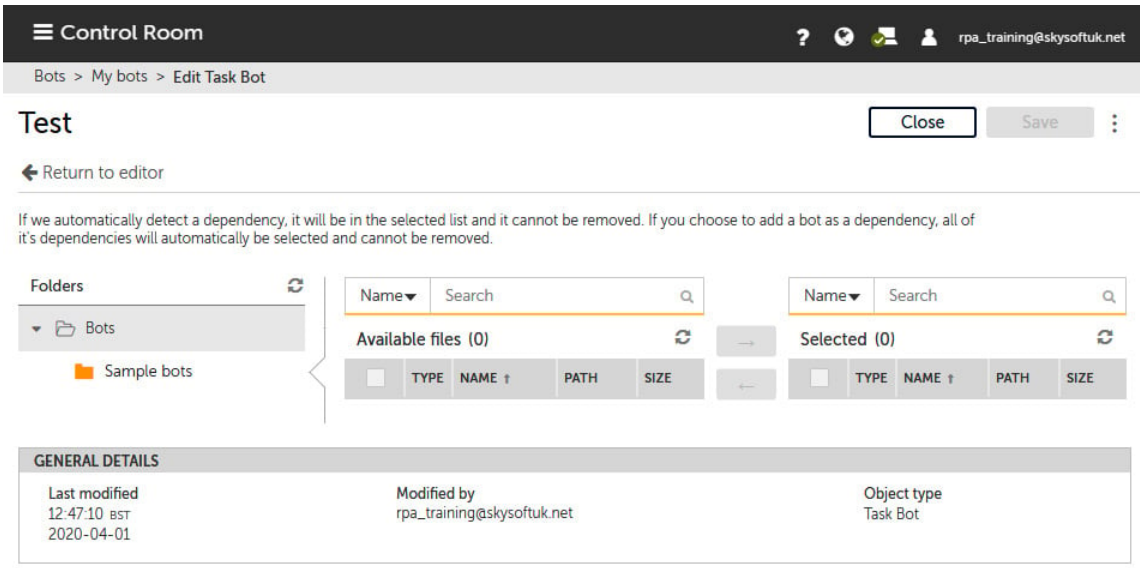
You should now have a clearer understanding of how to work with debugging your bot. Another element that may apply to your bot is dependencies. There may be certain files that need to be in place in order for your bot to perform its tasks successfully. These files are described as dependencies as the bot is dependent on them.

The following steps will walk through how to navigate to the dependency interface:

1. From the bot properties options menu in the top-right corner of the screen, select **Dependencies**:



2. The **Dependencies** interface is split into two sections -- file selection on the left and selected files on the right. To select a file as a dependent file, you would navigate to it using the folder structure. Then, add it to the list on the right:



If we automatically detect a dependency, it will be in the selected list and it cannot be removed. If you choose to add a bot as a dependency, all of it's dependencies will automatically be selected and cannot be removed.

GENERAL DETAILS

Last modified
12:47:10 BST
2020-04-01

Modified by
rpa_training@skysoftuk.net

Object type
Task Bot

Once all dependencies are set, you can navigate back to the editor from the top-left icon. You should now be confident in using the different areas of the development interface and be comfortable in creating new bots and setting variables and triggers.

Summary

You should now be comfortable with the Automation Anywhere development interface. We have gone through creating a simple bot. You have created variables and triggers for your bot. In addition, you have also acquired some hands-on experience of using the debugging tool for Automation Anywhere. Having created your initial bot and gotten an overview of all the other actions available, you must be keen to start implementing more complex actions in your bot. You have also gained knowledge of how to use the different views while building a bot. Apply the view that works best for you.

In the next lab, we will build a bot using a number of more complex actions. You will learn about working with data and files. This is just the start of your RPA development experience. It will use a practical step-by-step process to guide you. By the end, you will be confident in using Automation Anywhere to start building your bots.