Robot Framework - Quick Guide

Robot Framework - Overview

Robot Framework is an open source test automation framework for acceptance testing and acceptance test-driven development. It follows different test case styles − keyword-driven, behaviour-driven and data-driven for writing test cases. Robot Framework provides support for external libraries, tools which are open source and can be used for automation. The most popular library used is Selenium Library used for web development & UI testing.

Test cases are written using keyword style in a tabular format. You can use any text editor or Robot Integrated Development Environment (RIDE) for writing test cases.

Robot framework works fine on all the Operating Systems available. The framework is built on Python and runs on Jython (JVM) and IronPython (.NET).

Robot Framework Features

In this section, we will look at the different features offered by Robot.

Tabular format for test cases

Robot framework comes with a simple tabular format where the test cases are written using keywords. It is easy for a new developer to understand and write test cases.

Keywords

Robot framework comes with built-in keywords available with robot framework, keywords available from the libraries like Selenium Library (open browser, close browser, maximize browser, etc.). We can also create user-defined keywords, which are a combination of other user-defined keywords or built-in or library keywords. We can also pass arguments to those keywords, which make the user-defined keywords like functions that can be reused.

Variables

Robot framework supports variables – scalar, list and dict. Variables in robot framework are easy to use and are of great help while writing complex test cases.

Libraries

Robot framework has support for a lot of external libraries like SeleniumLibrary, Database Library, FTP Library and http library. SeleniumLibrary is mostly used as it helps to interact with the browsers and helps with web application and UI testing. Robot framework also has its own built-in libraries for strings, date, numbers etc.

Resources

Robot framework also allows the import of robot files with keywords externally to be used with test cases. Resources are very easy to use and are of great help when we need to use some keywords already written for other test projects.

Data driven test cases

Robot framework supports keyword driven style test cases and data driven style. Data driven works with high-level keyword used as a template to the test suite and the test cases are used to share data with the high-level keyword defined in the template. It makes the work very easy for testing UI with different inputs.

Test Case Tagging

Robot framework allows to tag test-cases so that we can either run the tags test-cases or skip the tagged testcases. Tagging helps when we want to run only a group of test cases or skip them.

Reports and Logs

Robot framework provides all the details of test suite, test case execution in the form of report and logs. All the execution details of the test case are available in the log file. The details like whether the test case has failed or passed, time taken for execution, steps followed to run the test case are provided.

RIDE

This editor available with Robot framework helps in writing and running test cases. The editor is very easy to install and use. RIDE makes life easy for writing test cases by providing framework specific code completion, syntax highlighting, etc. Creation of project, test suite, test case, keywords, variables, importing library, executing, tagging the test case is easily done in the editor. Robot framework also provides plugins for eclipse, sublime, Textmate, Pycharm that has support for robot test cases.

Robot Framework Advantages

Robot framework is open source, so anyone who wants to try out can easily do so.

- It is very easy to install and helps in creating and executing test cases. Any new comer can easily understand and does not need any high level knowledge of testing to get started with robot framework.
- It supports keyword-driven, behaviour-driven and data-driven style of writing test cases.
- It is a good support for external libraries. Most used is Selenium Library, which is easy to install and use in robot framework.

Robot Framework Limitations

Robot lacks support for if-else, nested loops, which are required when the code gets complex.

Conclusion

Robot Framework is an open source test automation framework for acceptance testing and acceptance test-driven development. The test cases in Robot Framework are based on keywords written in tabular format, which makes it clear and readable, and conveys the right information about the intention of the test case. For example, to open browser, the keyword used is **“Open Browser”**.

Robot Framework - Environment Setup

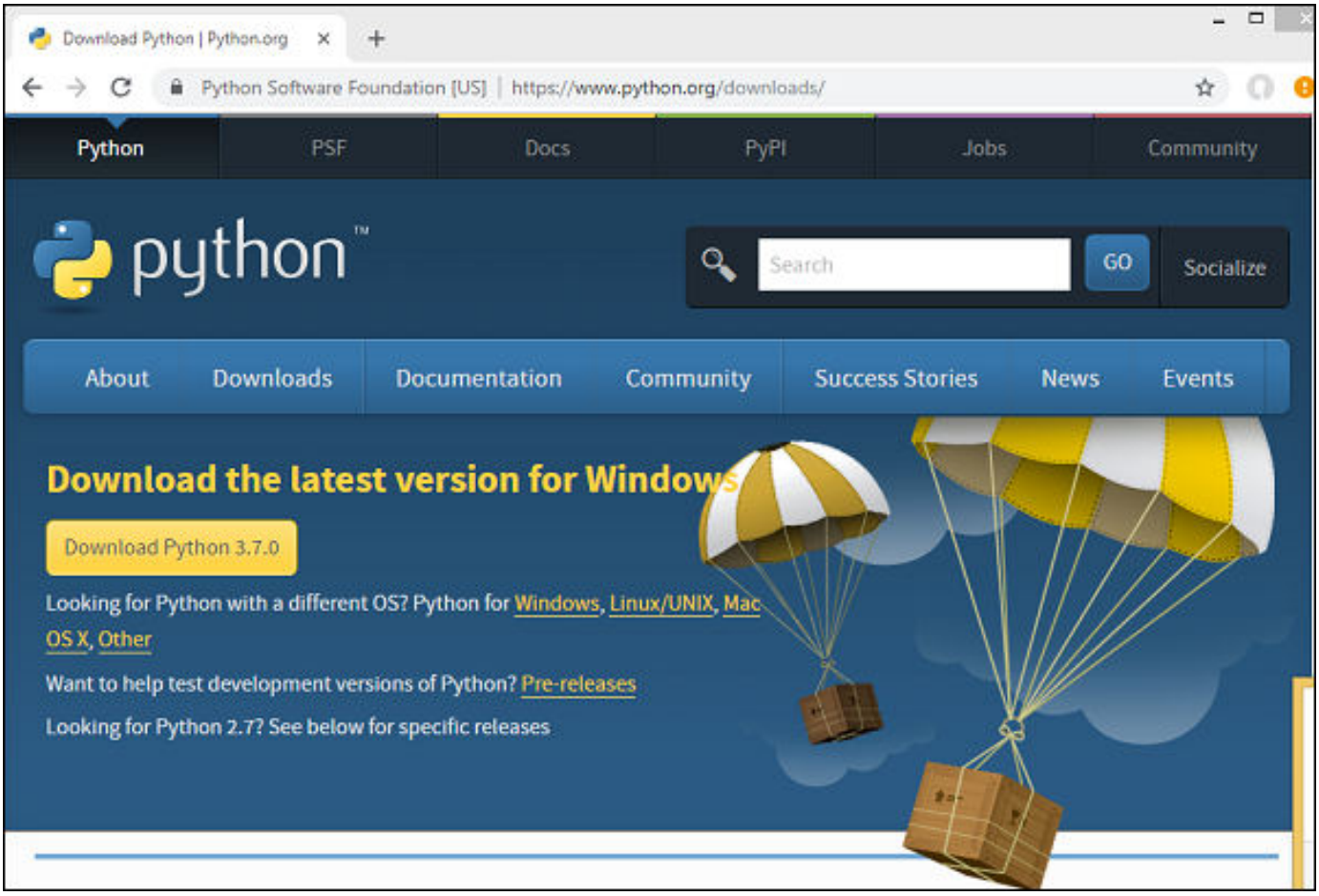
Robot framework is built using python. In this chapter, we will learn how to set up Robot Framework. To work with Robot Framework, we need to install the following −

- Python
- pip
- Robot Framework
- wxPython for Ride IDE
- Robot Framework Ride

Install Python

To install python, go to python official site − https://www.python.org/downloads/ and download the latest version or the prior version of python as per your operating system (Windows, Linux/Unix, Mac, and OS X) you are going to use.

Here is the screenshot of the python download site −



The latest version available as per release dates are as follows −

Before you download python, it is recommended you check your system if python is already present by running the following command in the command line −

Windows Installation

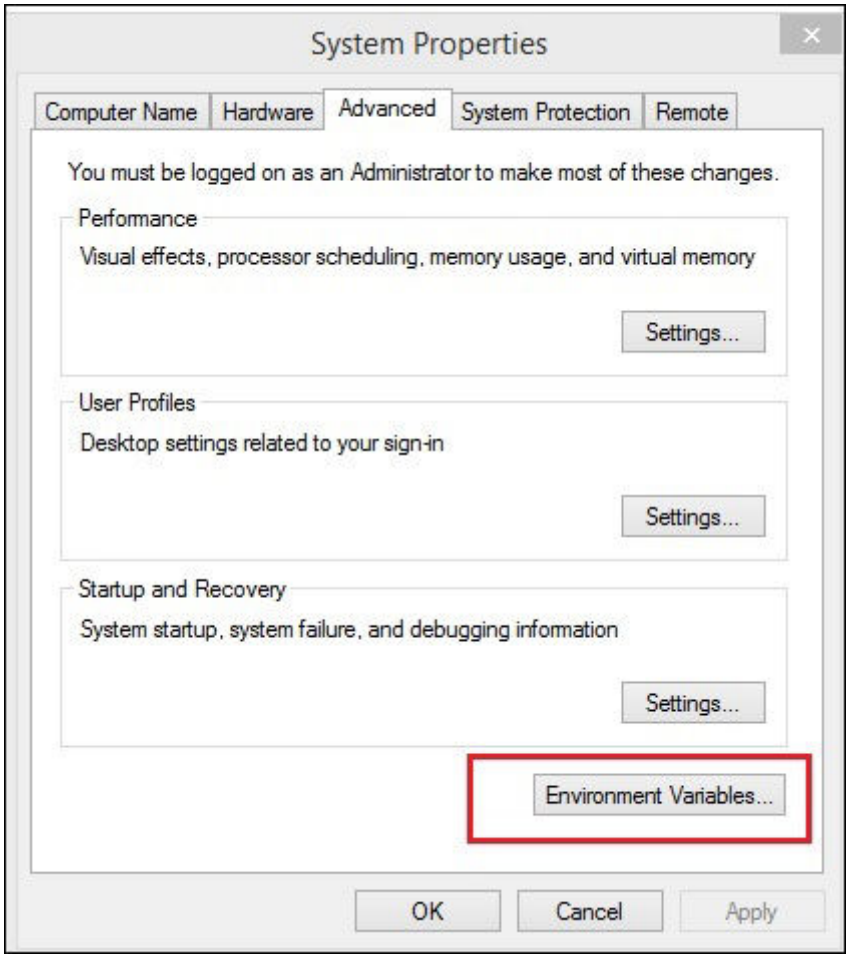
```
python --version
```

If we get the version of python as output then, we have python installed in our system. Otherwise, you will get a display as shown above.

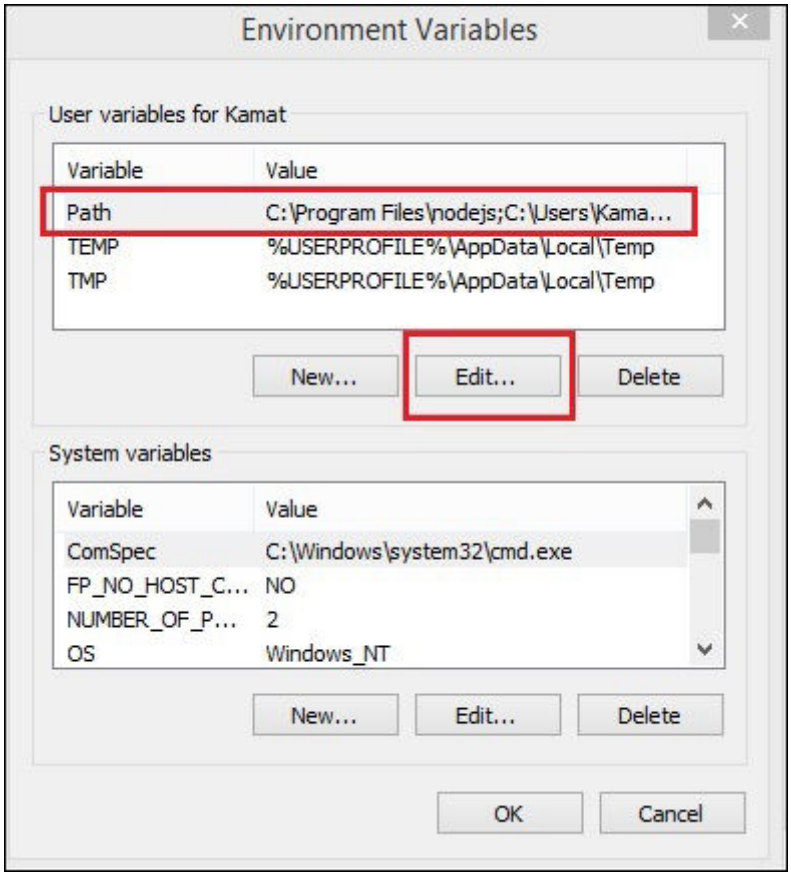
Here, we will download python version 2.7 as it is compatible to the windows 8 we are using right now. Once downloaded, install python on your system by double-clicking on .exe python download. Follow the installation steps to install Python on your system. Once installed, to make python available globally, we need to add the path to environment variables in windows as follows −

Setting path for Windows

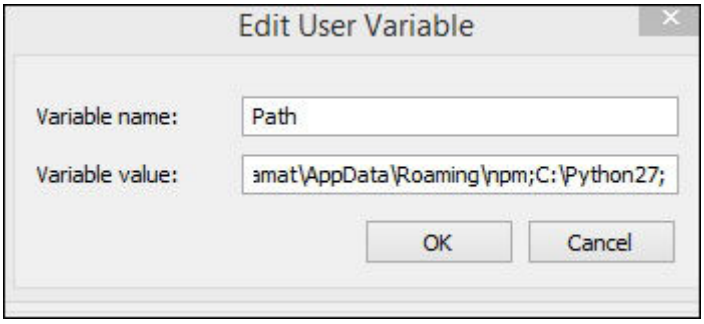
Right-click on My Computer icon and select properties. Click on Advanced System setting and the following screen will be displayed.



Click on *Environment Variables* button highlighted above and it will show you the screen as follows −

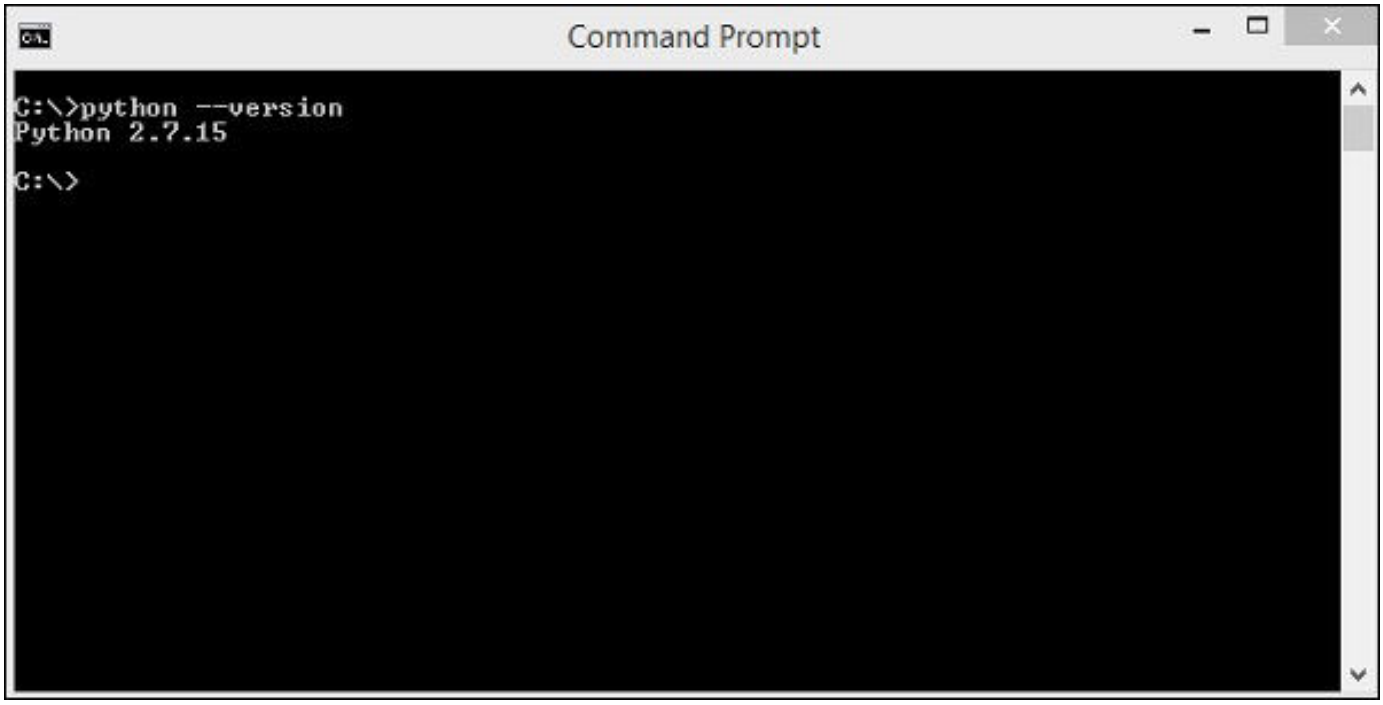


Select the *Variable Path* and click the *Edit* button.



Get the path where python is installed and add the same to Variable value at the end as shown above.

Once this is done, you can check if python is installed from any path or directory as shown below −



Robot Framework - Unix and Linux Installation

Let us now see a few simple steps to install Python on Unix/Linux machine. Open a Web browser and go to https://www.python.org/downloads/ .

- Follow the link to download zipped source code available for Unix/Linux.
- Download and extract files.
- Editing the Modules/Setup file if you want to customize some options.
- run ./configure script
- make
- make install

This installs Python at standard location */usr/local/bin* and its libraries at */usr/local/lib/pythonXX* where XX is the version of Python.

Setting Path at Unix/Linux

To add the Python directory to the path for a particular session in Unix −

In the csh shell

type setenv PATH "$PATH:/usr/local/bin/python" and press Enter.

In the bash shell (Linux)

type export ATH="$PATH:/usr/local/bin/python" and press Enter.

In the sh or ksh shell

type PATH="$PATH:/usr/local/bin/python" and press Enter.

Note − /usr/local/bin/python is the path of the Python directory

Install PIP

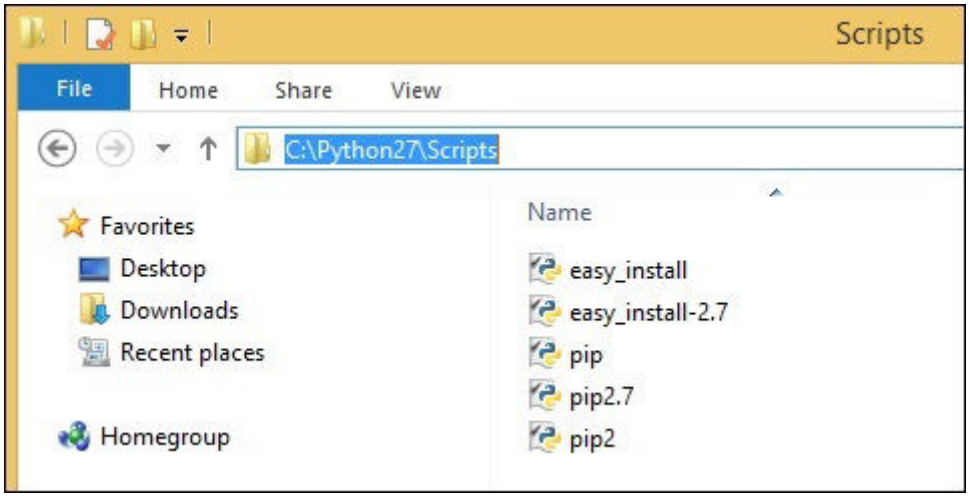
Now, we will check for the next step, which is pip installation for python. PIP is a package manager to install modules for python.

PIP gets installed along with python and you can check the same in command line as follows −

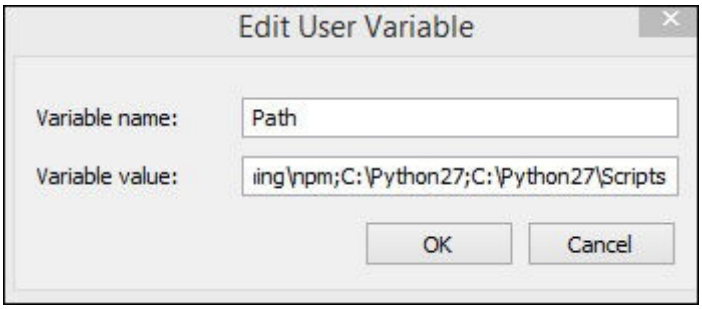
Command

```
pip --version
```

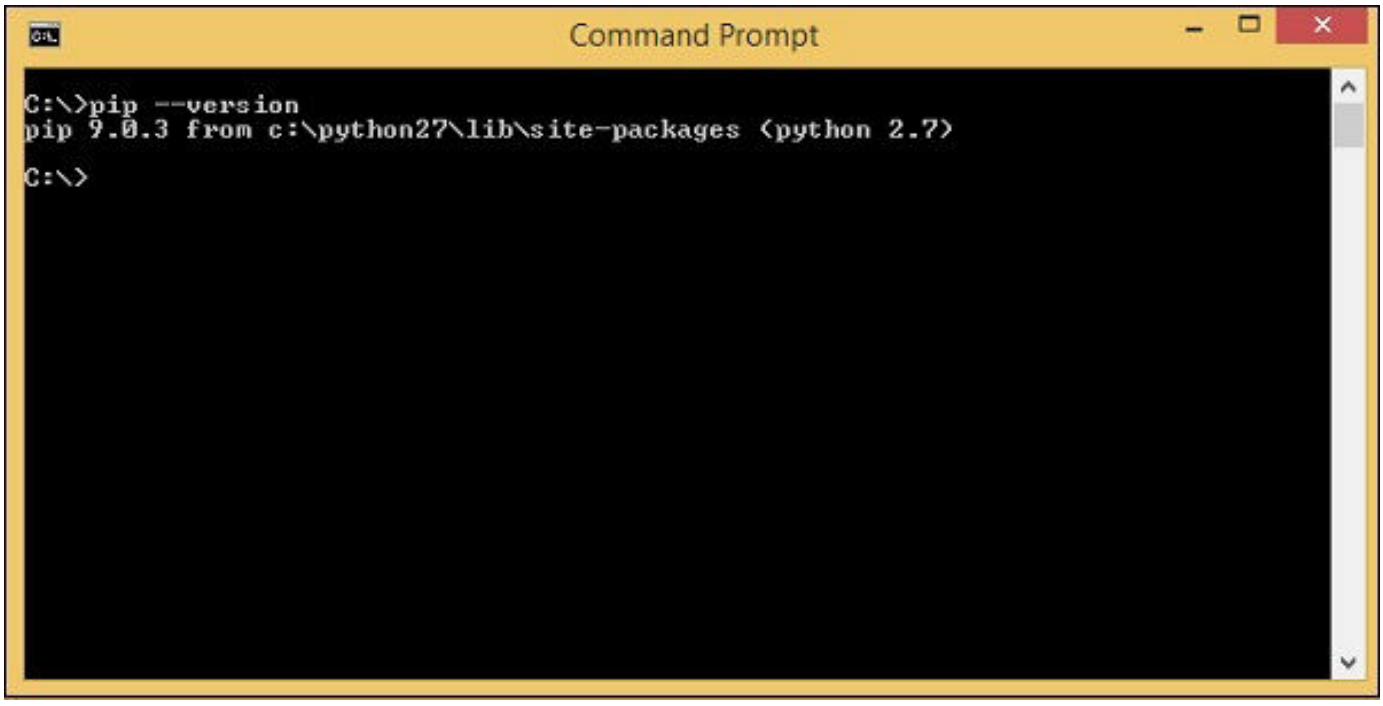
Here we are still not getting the version for pip. We need to add the pip path to Environment variables so that we can use it globally. PIP will be installed in Scripts folder of python as shown below −



Go back to environment variables and add the path of pip to the variables list. Add C:\Python27\SCripts to environment variables as follows −



Now open your command line and check the version of pip installed −



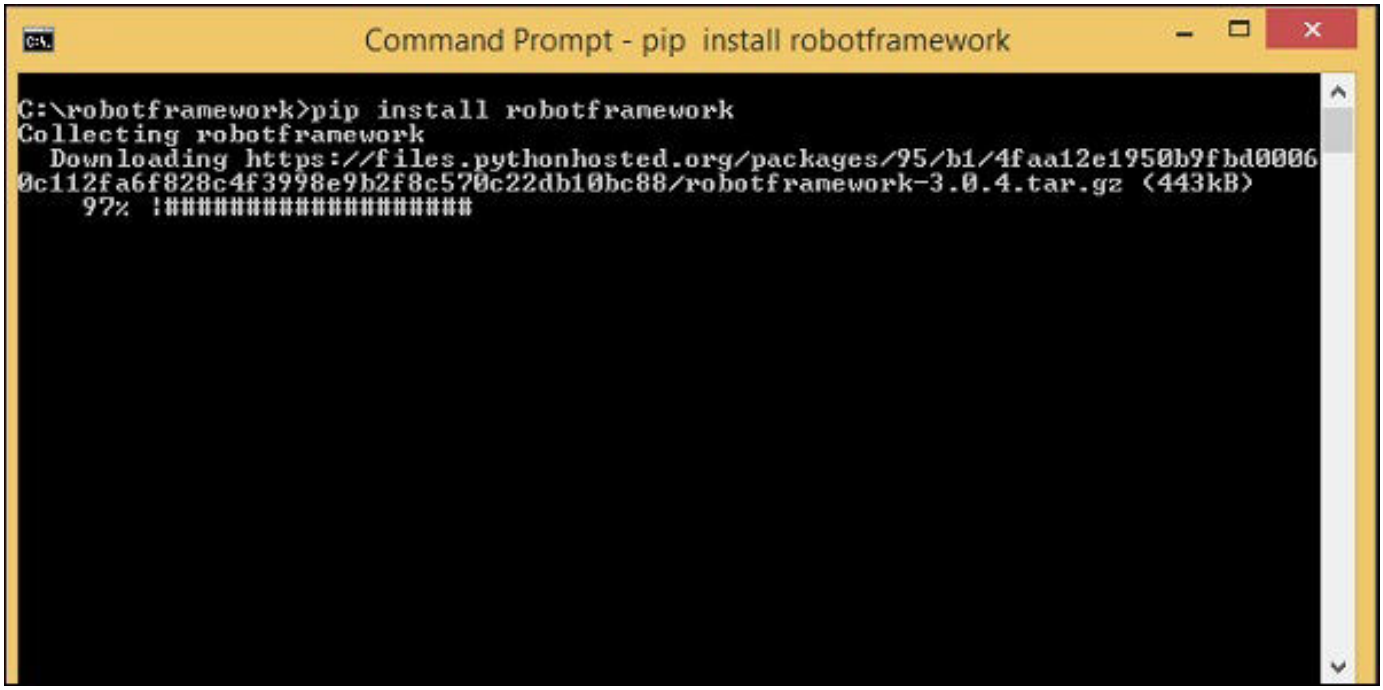
So now, we have python and pip installed.

Install Robot Framework

We will now use pip – python package manager to install the robot framework and the command for it is as follows −

Command

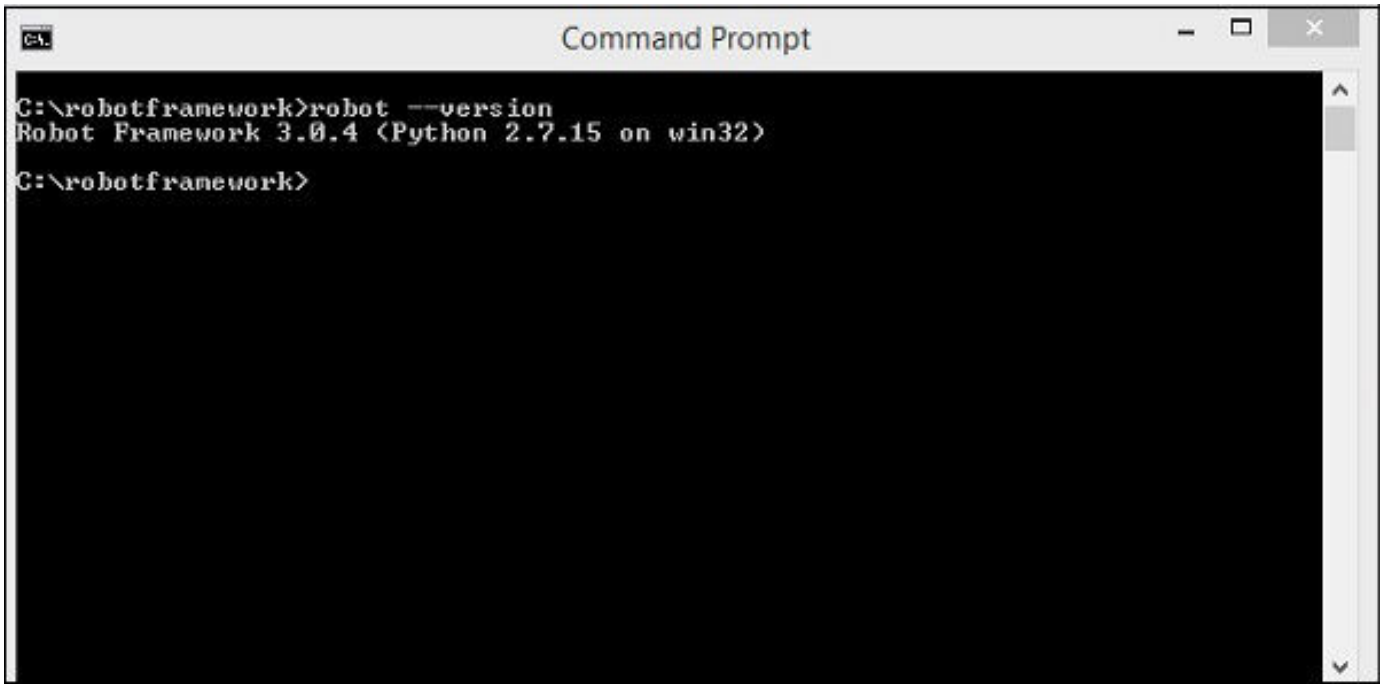
```
pip install robotframework
```



Once the installation is done, you can check the version of robot framework installed as shown below −

Command

```
robot --version
```



So, we can see Robot Framework 3.0.4 is installed.

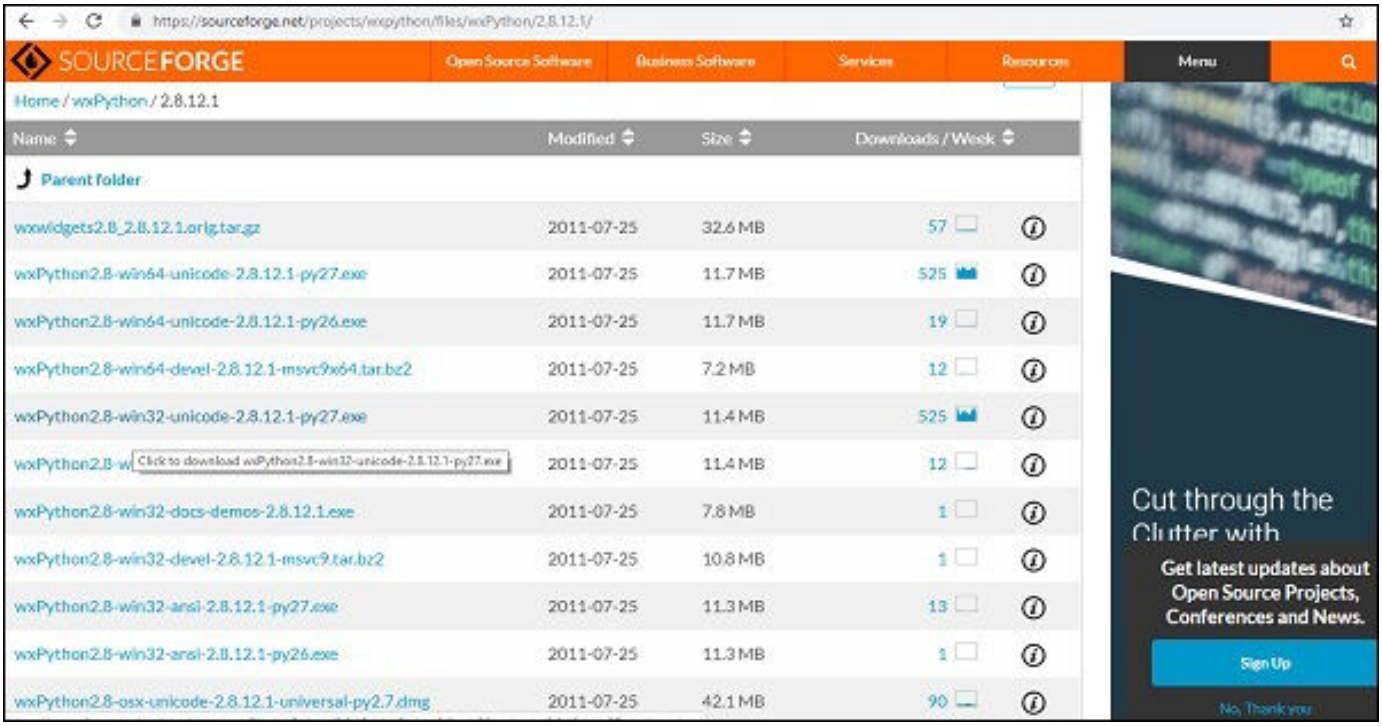
Install wxPython

We need wxPython for Robot Framework Ride, which is an IDE for Robot Framework.

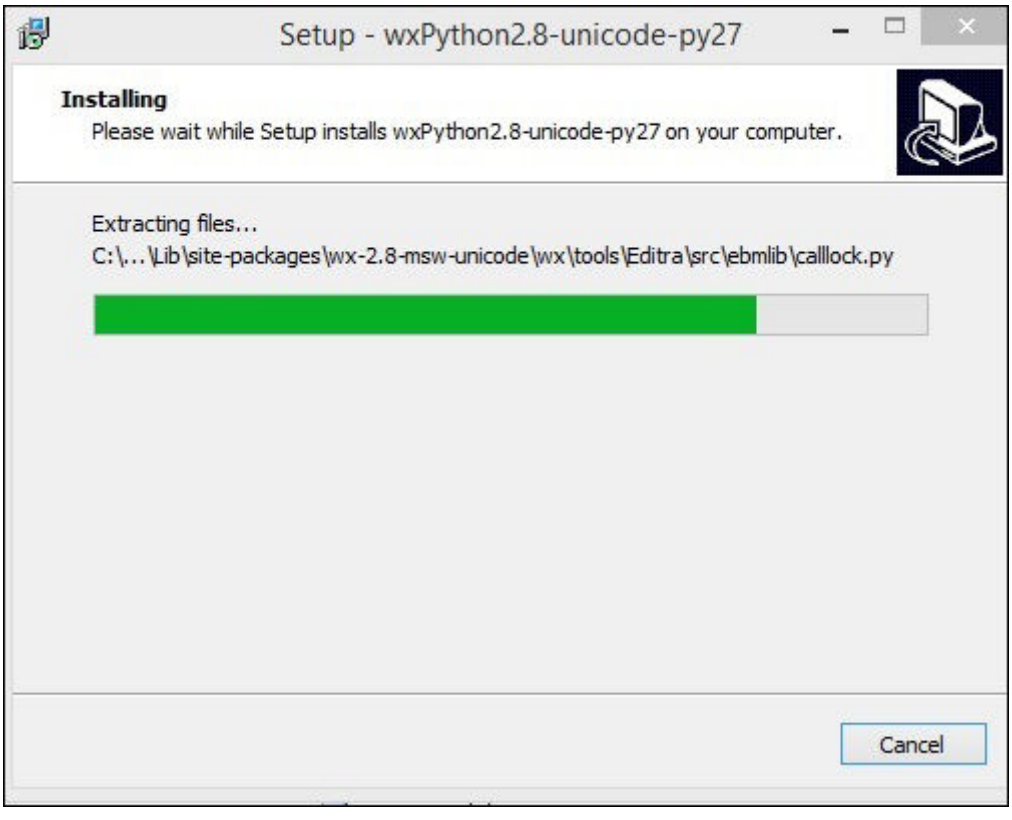
For windows to get the required download for wxPython, go to the following URL −

https://sourceforge.net/projects/wxpython/files/wxPython/2.8.12.1/

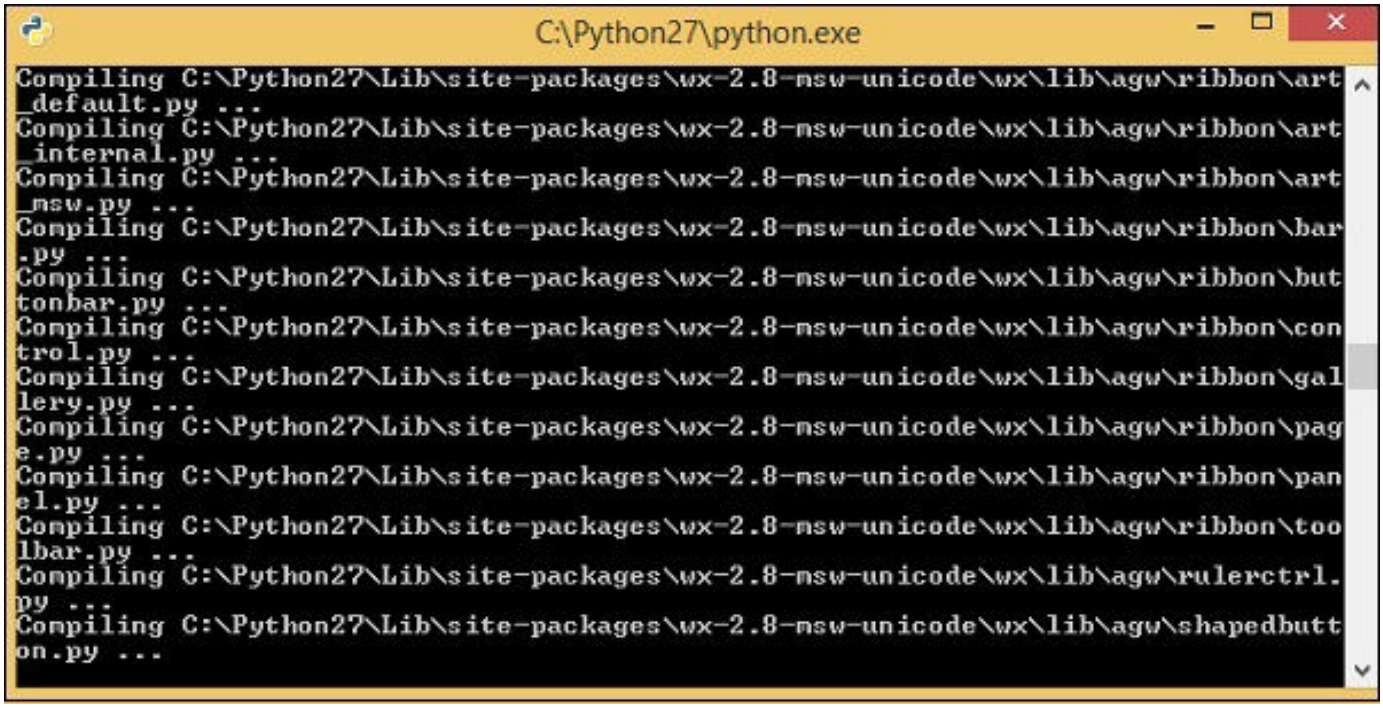
And, download 32 or 64-bit wxpython for windows as per your Windows Operating system.



Download the 32-bit wxPython and install the same.



Once the installation is done, it opens the command line and auto runs some commands as shown below −



wxPython is now installed.This module is required for the RIDE Ide to be used for Robot Framework which is the next step.

On Linux, you should be able to install wxPython with your package manager. For example, on Debian based systems such as Ubuntu running sudo apt-get install pythonwxgtk2.8 ought to be enough.

On OS X

, you should use wxPython binaries found from the wxPython download page. wxPython2.8 only has 32 bit build available, so Python must be run in 32-bit mode also. This can be done globally by running

```
> defaults write com.apple.versioner.python Prefer-32-Bit -bool yes
```

or, just for the RIDE execution −

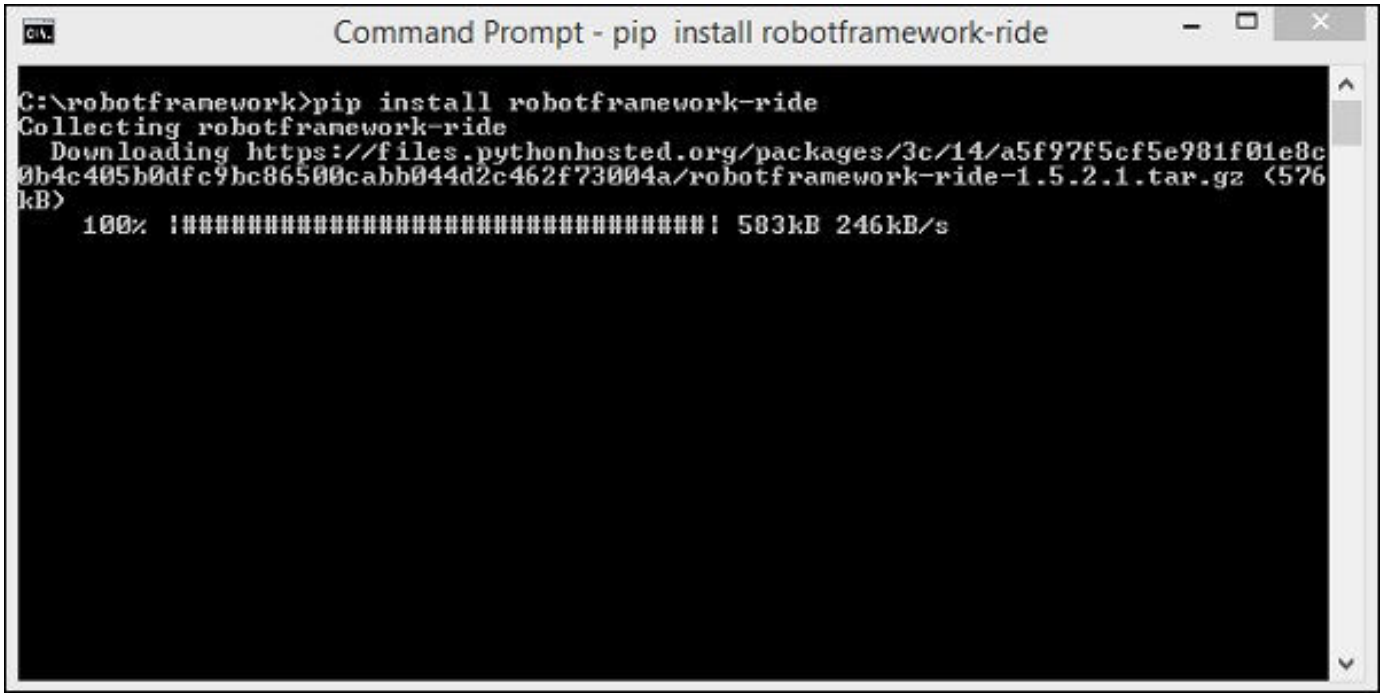
```
> VERSIONER_PYTHON_PREFER_32_BIT=yes ride.py
```

Install Ride

Ride is Robot Framework IDE. We can use pip to install it as shown below.

Command

```
pip install robotframework-ride
```

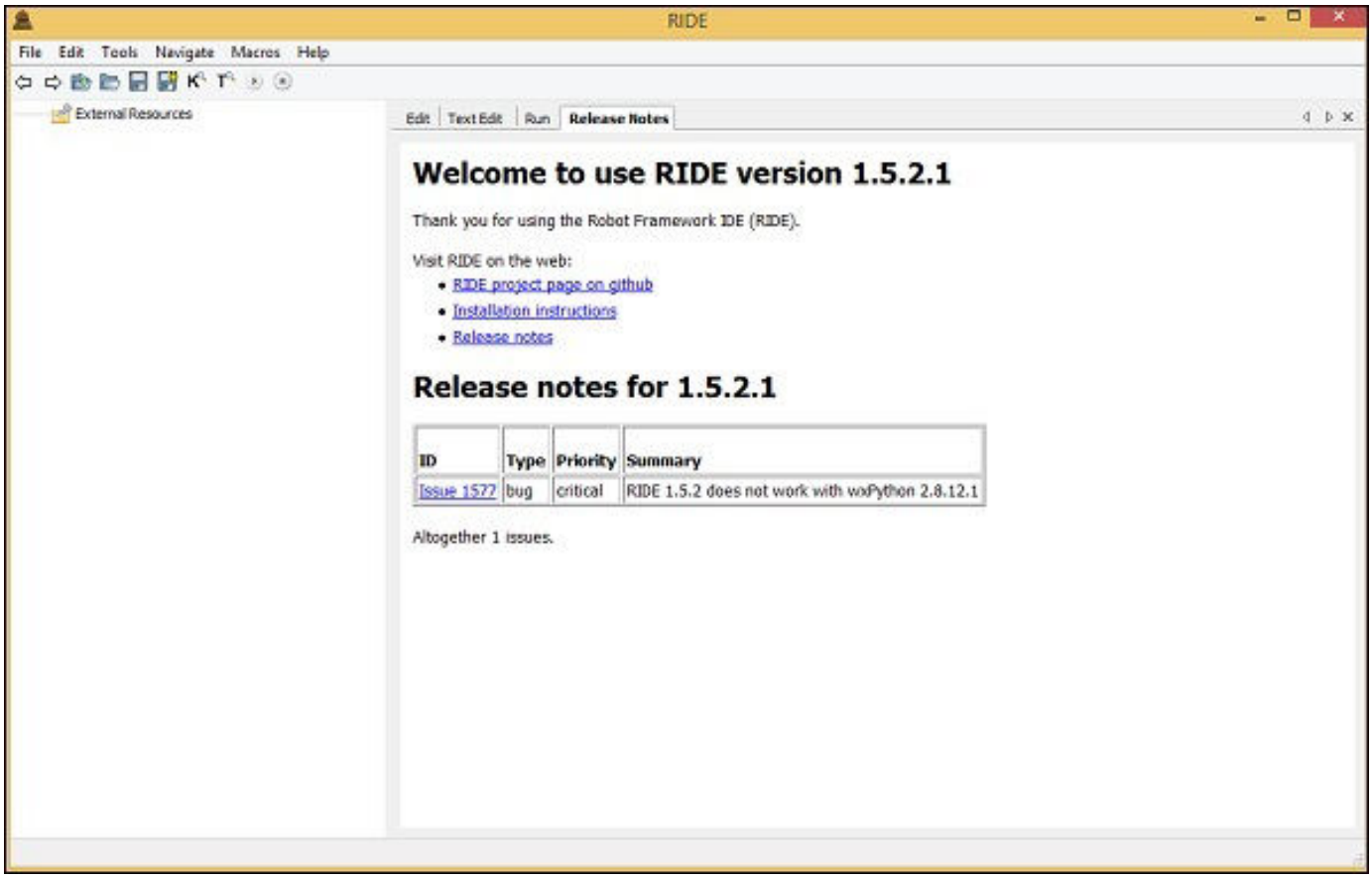


Once the installation is done, open the command prompt and type the following command to open the Ride-IDE.

Command

```
ride.py
```

The above command opens the IDE as follows −



So we are done with the installation of Robot Framework and can get started working with it.

Conclusion

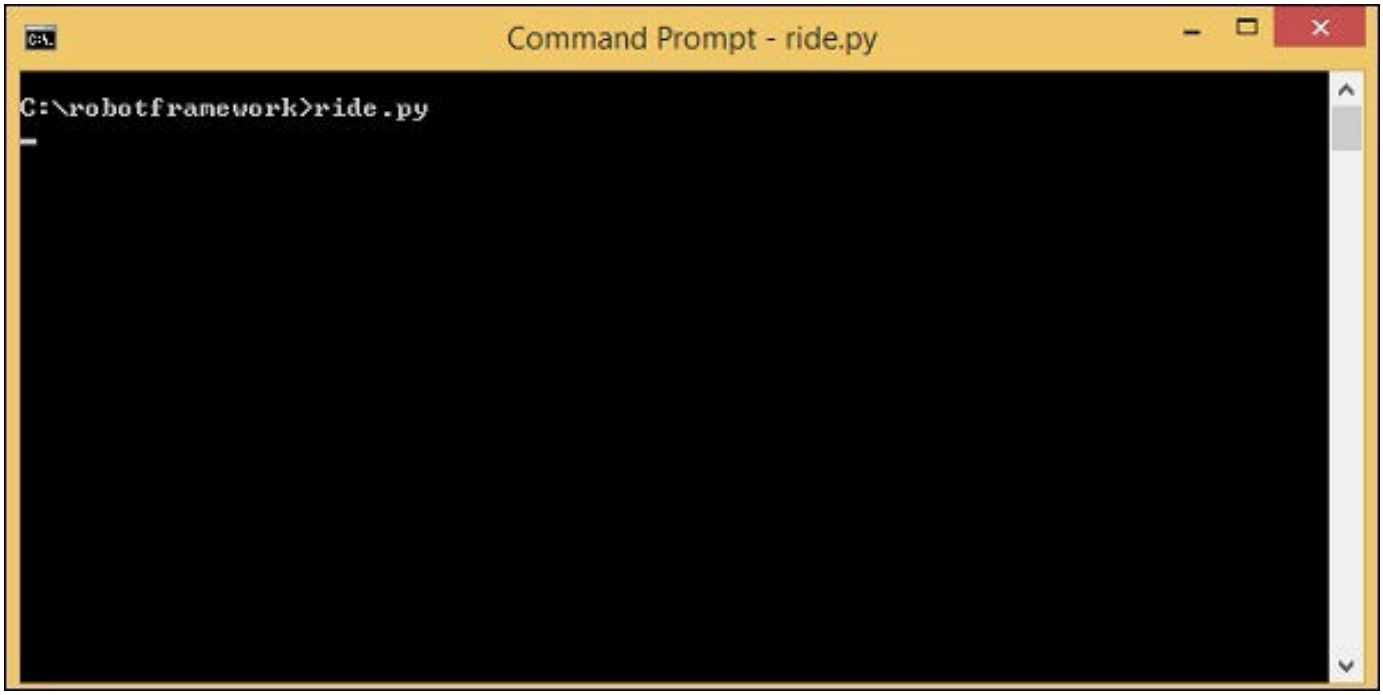
We now know how to install python, pip, robot framework and also get RIDE installed to work with test cases in robot framework.

Robot Framework - Introduction to Ride

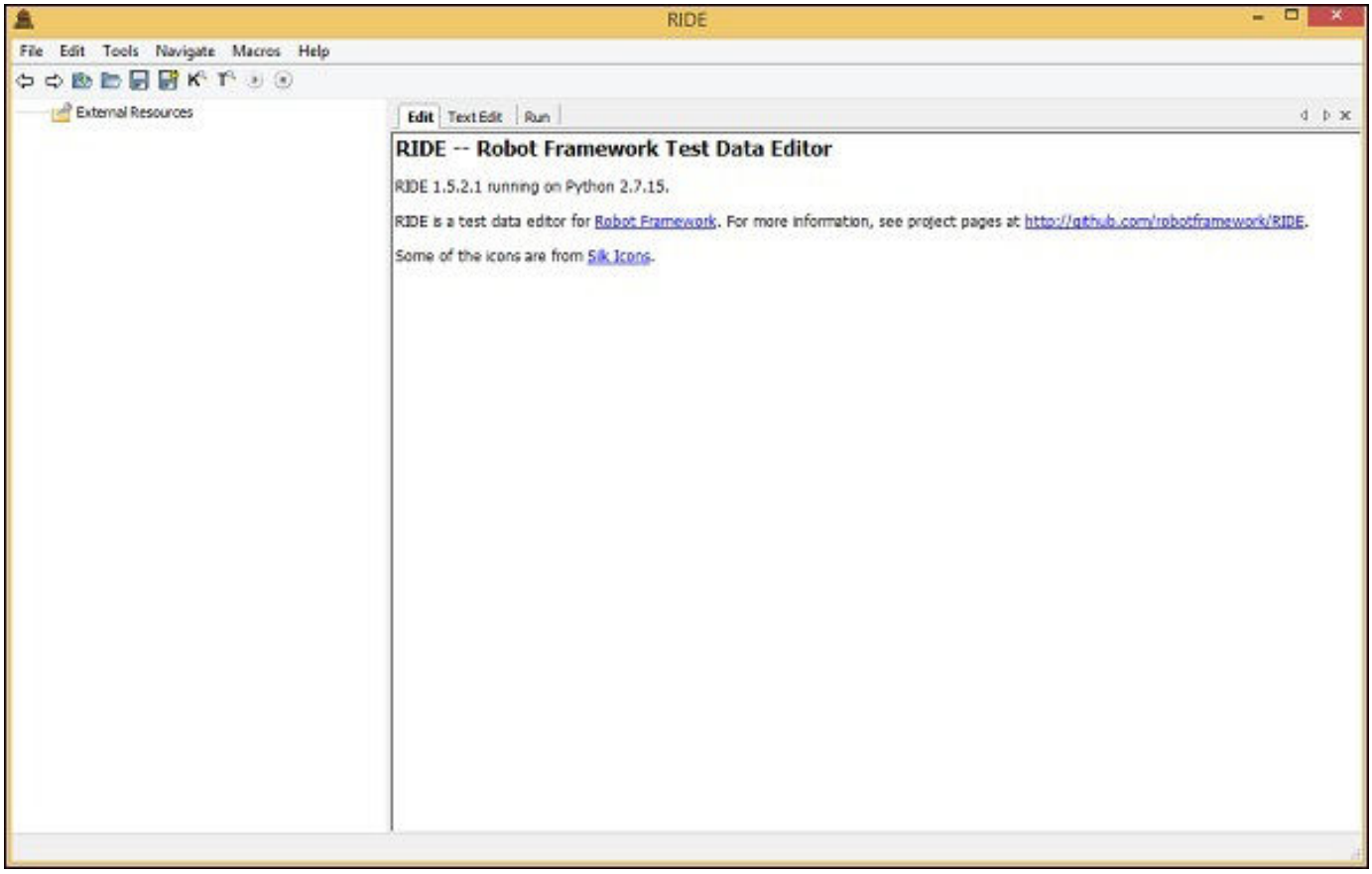
Ride is a testing editor for Robot Framework. Further, we will write test cases in Ride. To start Ride, we need to run the command shown below.

Command

```
ride.py
```



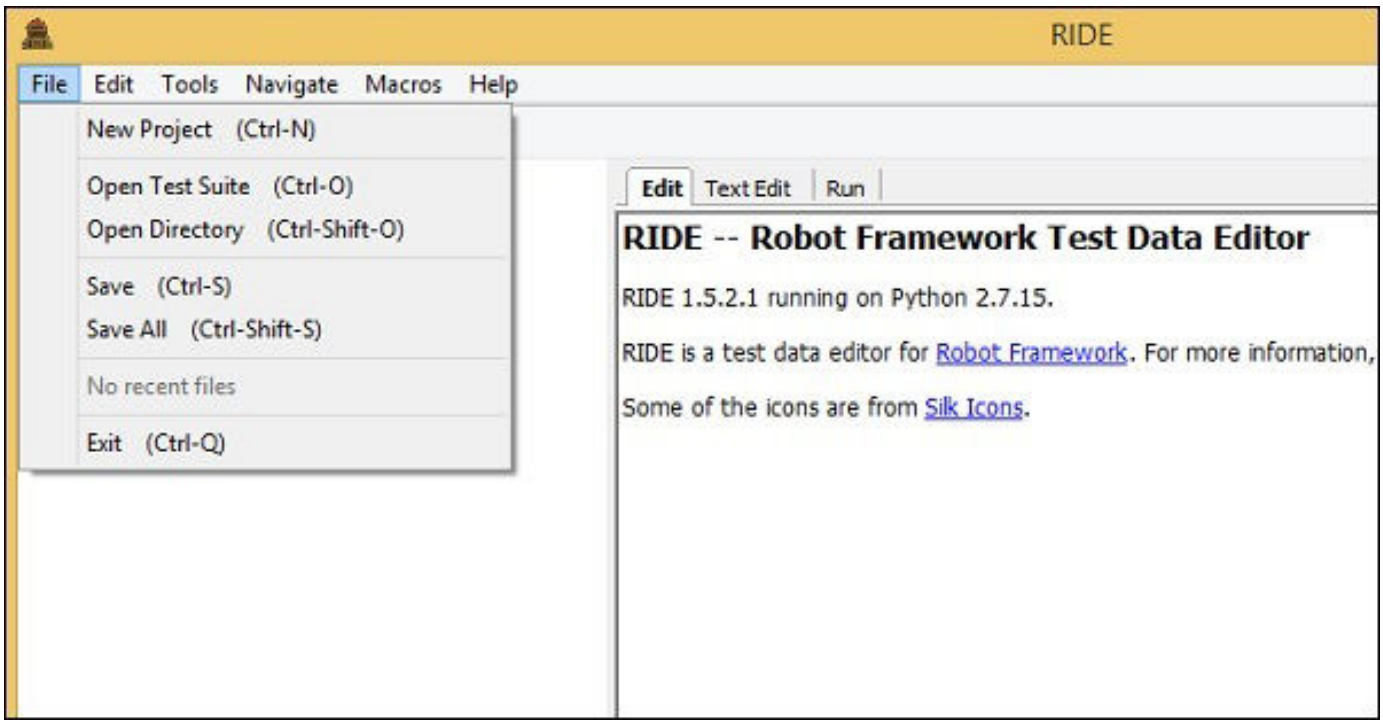
The above command will open the IDE as shown in the following screenshot −



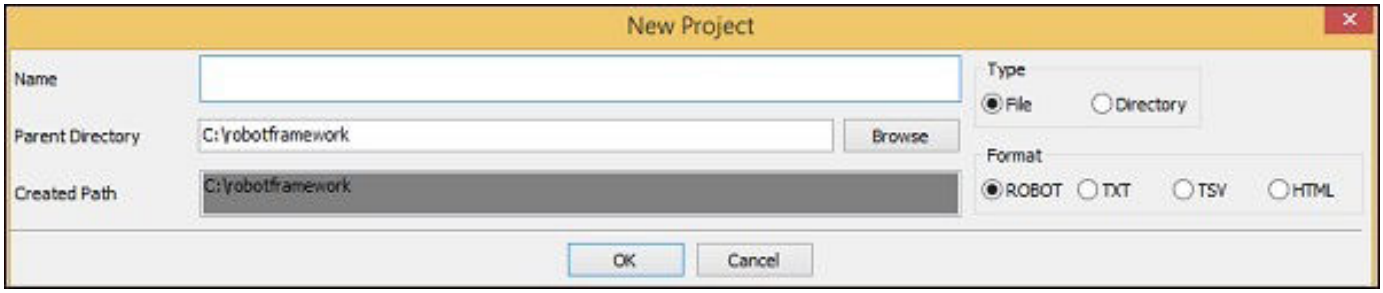
In this chapter, we will walk through the editor to see what options and features are available in the IDE. The options and features will help us in testing our project.

Create New Project

Go to File and click on New Project as shown below −

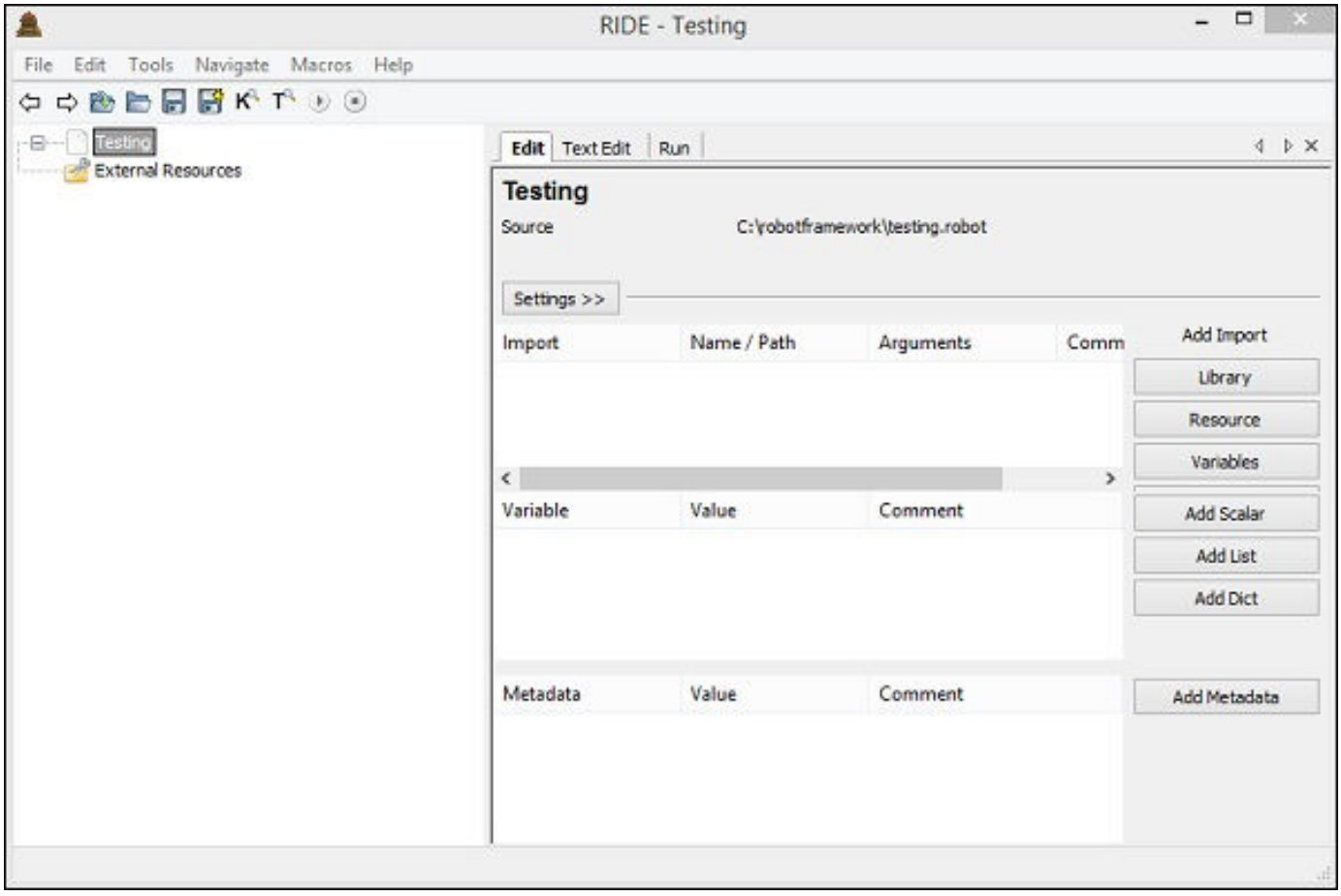


The following screen will appear when you click New Project.



Enter the name of the project. Created Path is the path where the project will get saved. You can change the location if required. The project can be saved as File or directory. You can also save the project in format like ROBOT, TXT, TSV or HTML. In this tutorial, we are going to use the format ROBOT and how to write and execute test-cases.

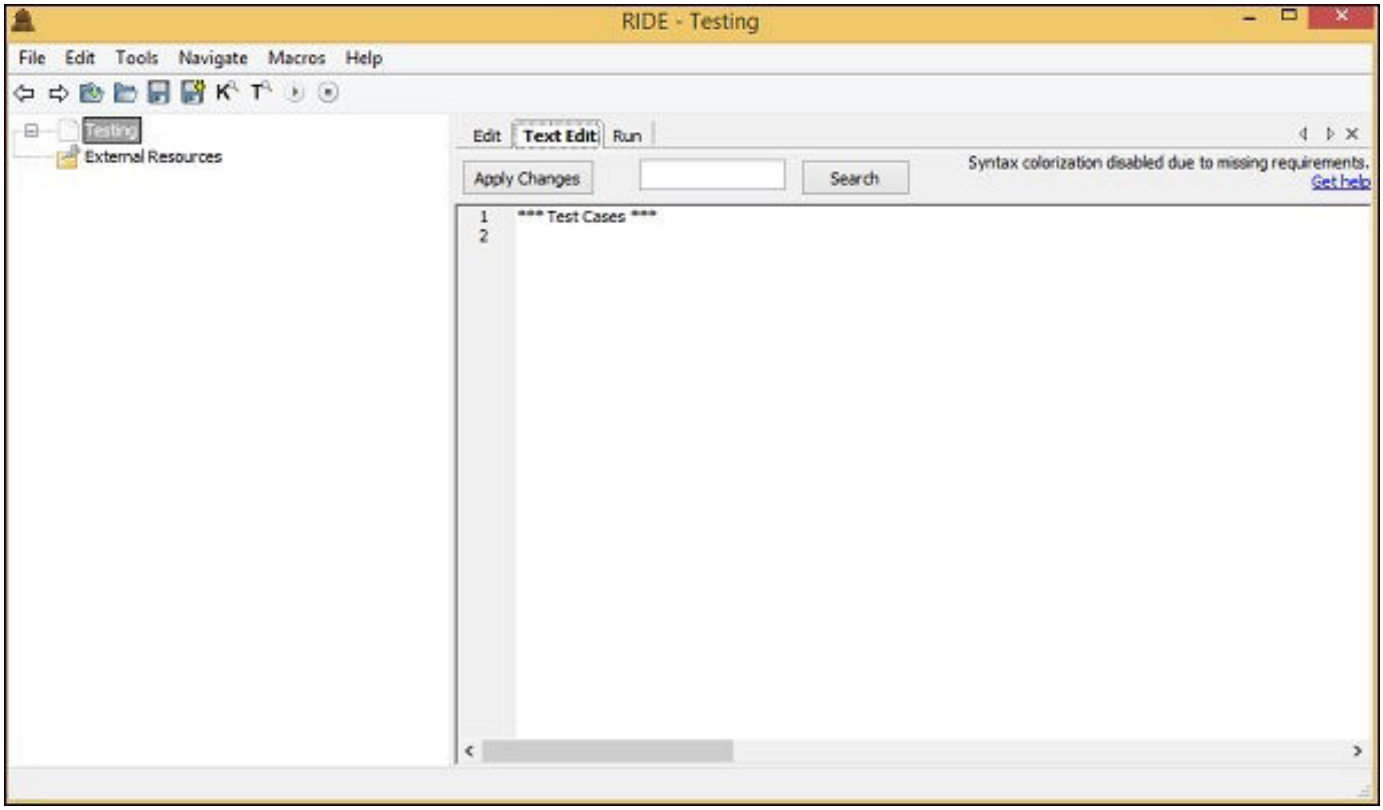
Now, we will add a project as a file the way it is shown below. The project is named Testing and the following screen sppears after the project is created.



The name of the project is shown on the left side and on the right side we can see three tabs Edit, TextEdit and Run.

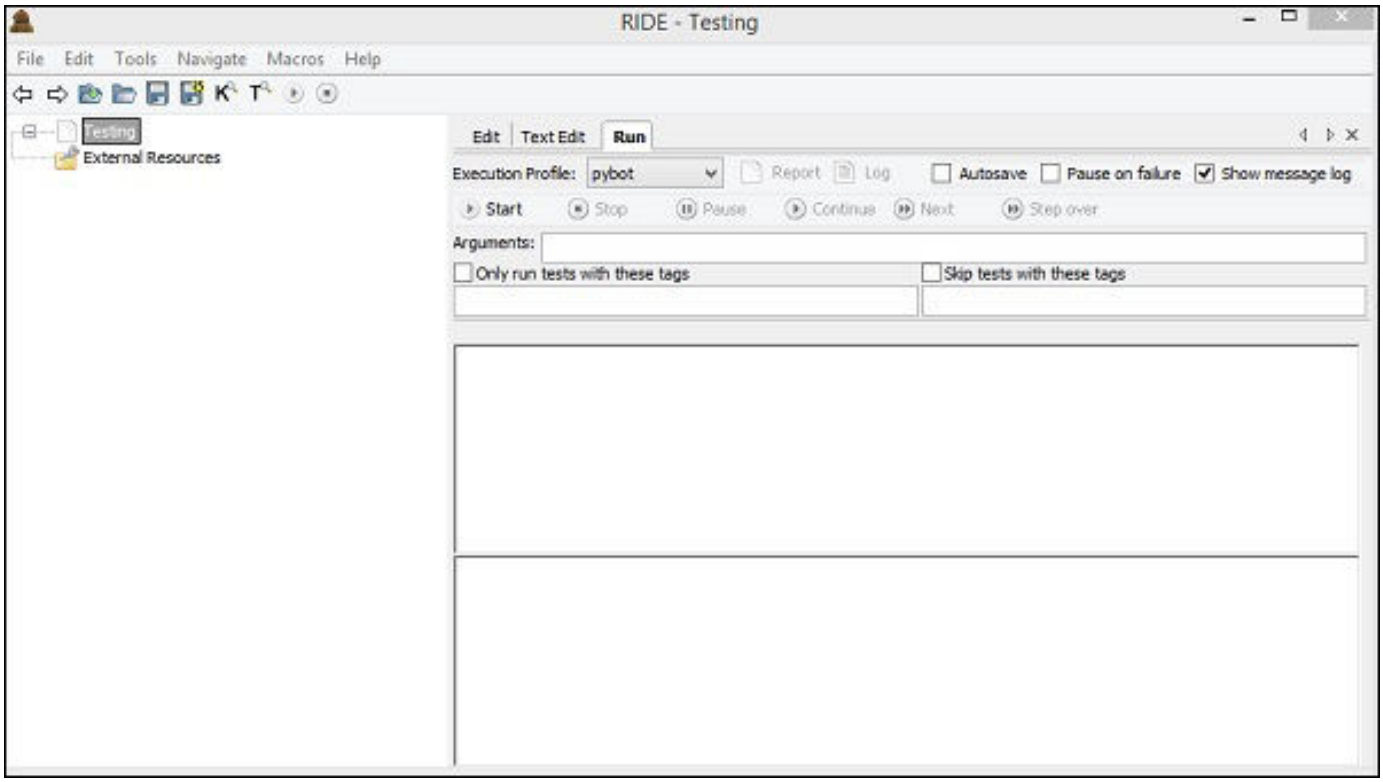
Edit has a lot of options on the UI as shown above. In this section, we can add data required to run our test cases. We can import Library, Resource, Variables, Add scalar, Add list, Add dict and Add Metadata.

The details added in the Edit section will be seen in the next tab, Text Edit. You can write the code here in text edit section.



If there is any change added in Textedit, it will be seen in the Edit section. Therefore, both the tabs Edit and TextEdit are dependent on each other and the changes done will be seen on both.

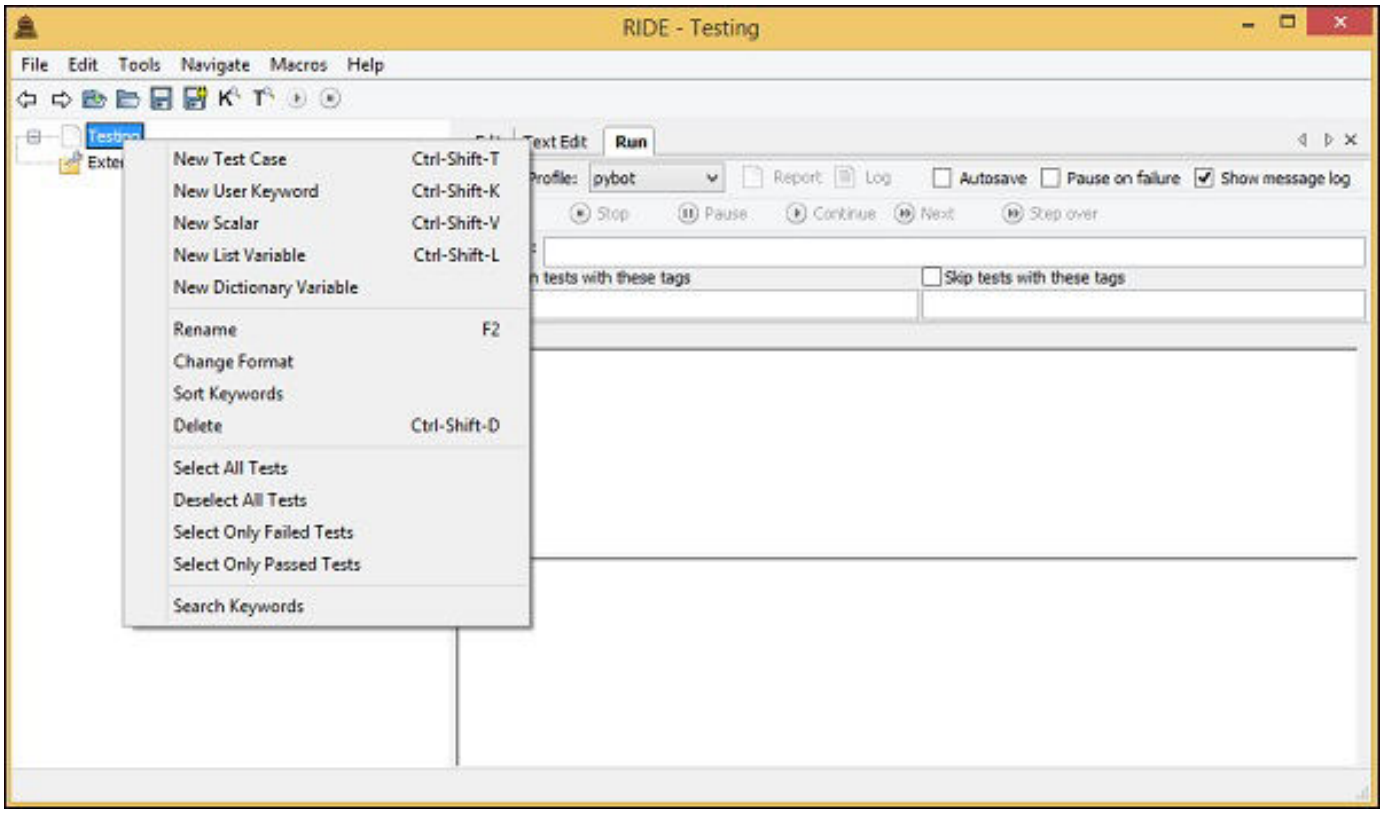
Once the test cases are ready, we can we use the third tab Run to execute them.



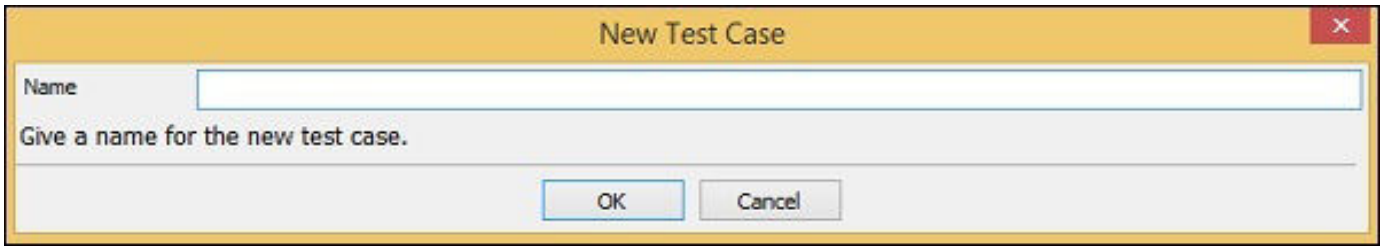
The Run UI is as shown above. It allows to run the test case and comes with options like start, stop, pause continue, next test case, step over, etc. You can also create Report, Log for the test cases you are executing.

To create a test case, we have to do the following −

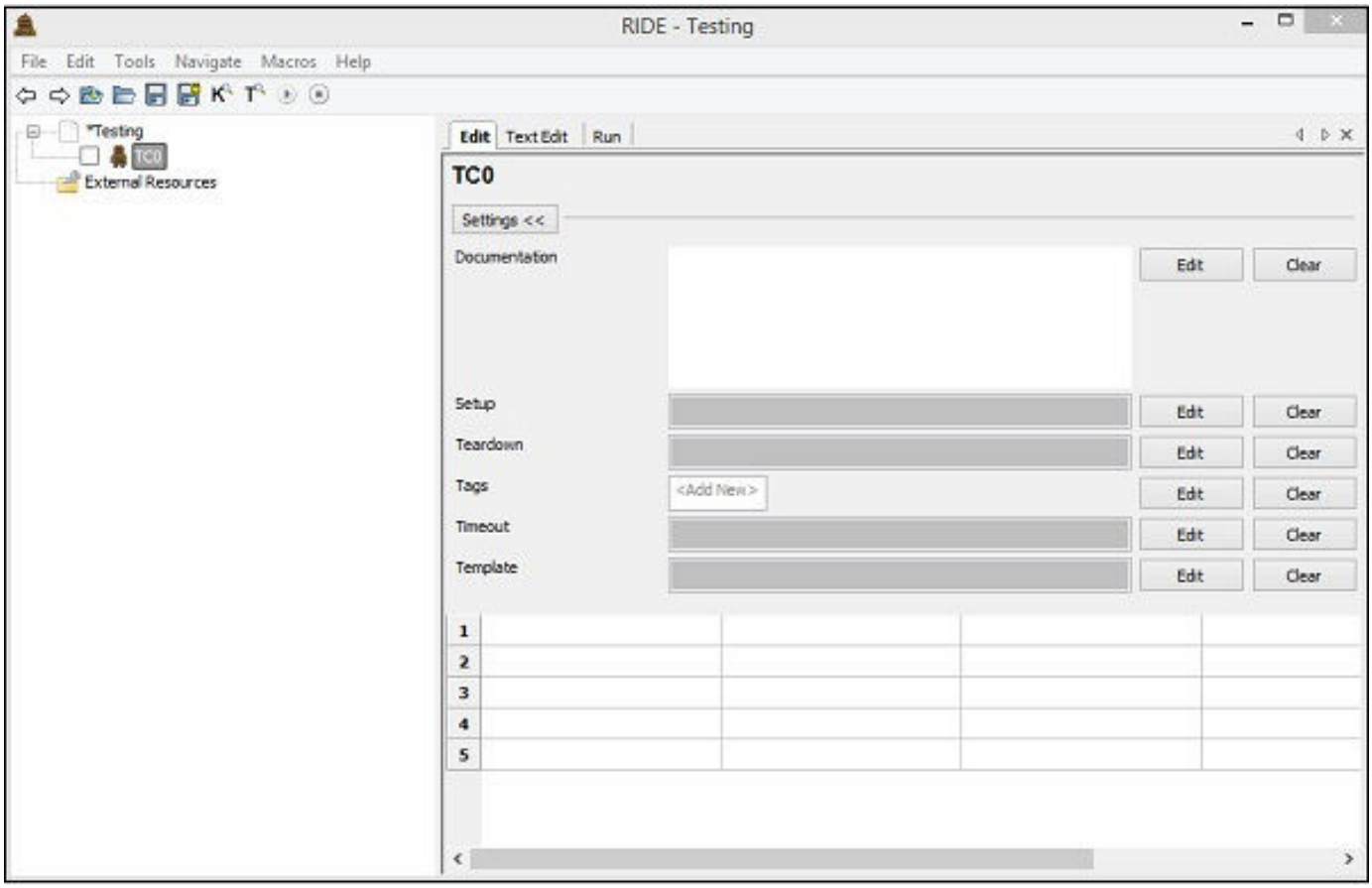
Right-click on the project created and click on new test case as shown below −



Upon clicking New Test Case, a screen appears as shown below −



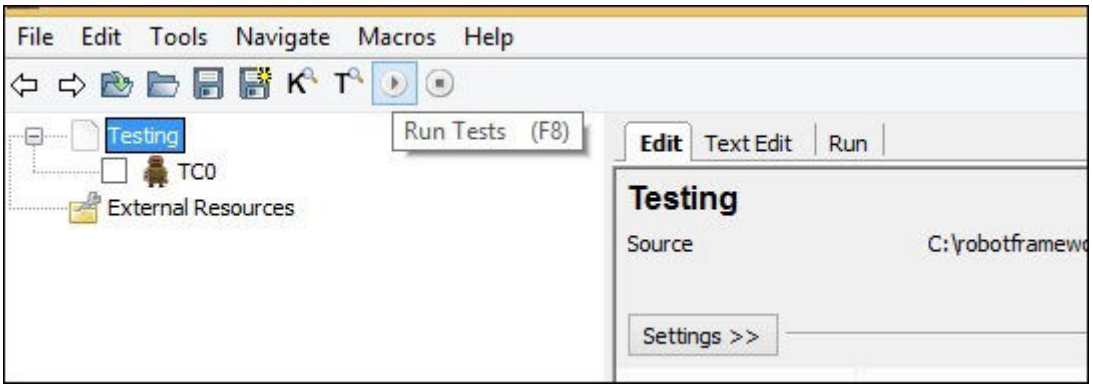
Enter the name of the test case and click *OK*. We have saved the test case as TC0. The following screen appears once the test case is saved.



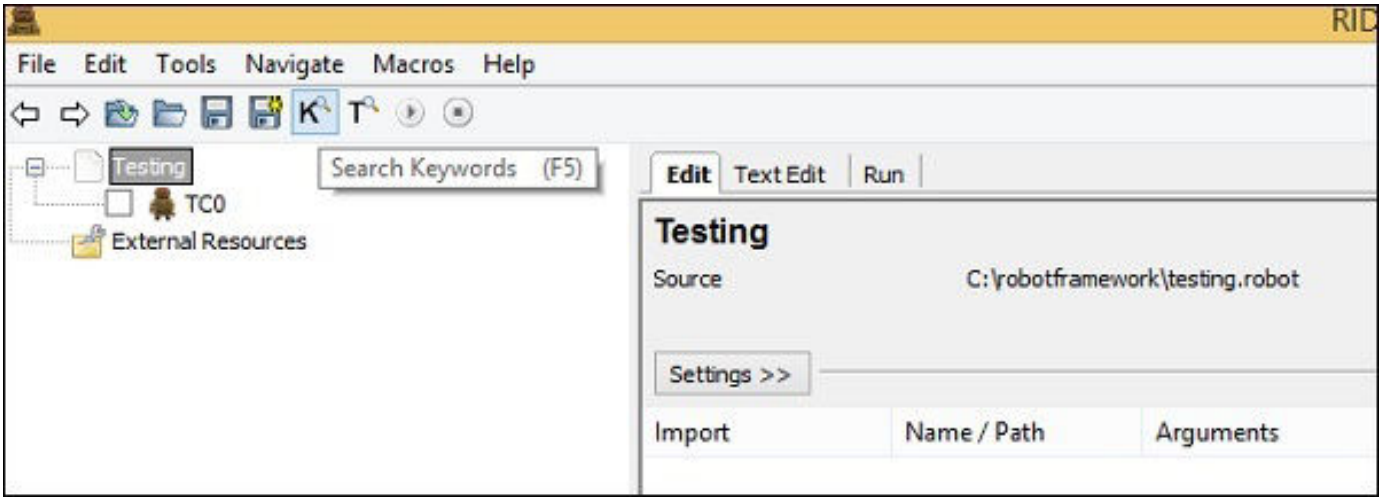
The test case has options like Documentation, setup, teardown, tags, timeout and Template. They have an edit button across it; upon clicking the button a screen appears wherein, you can enter the details for each option. We will discuss the various parameters of these details in our subsequent chapters.

The test cases can be written in tabular format as shown below. Robot framework test cases are keyword based and we can write the test-cases using built-in keywords or keywords imported from the library. We can also create user-defined keywords, variables, etc. in robot framework.

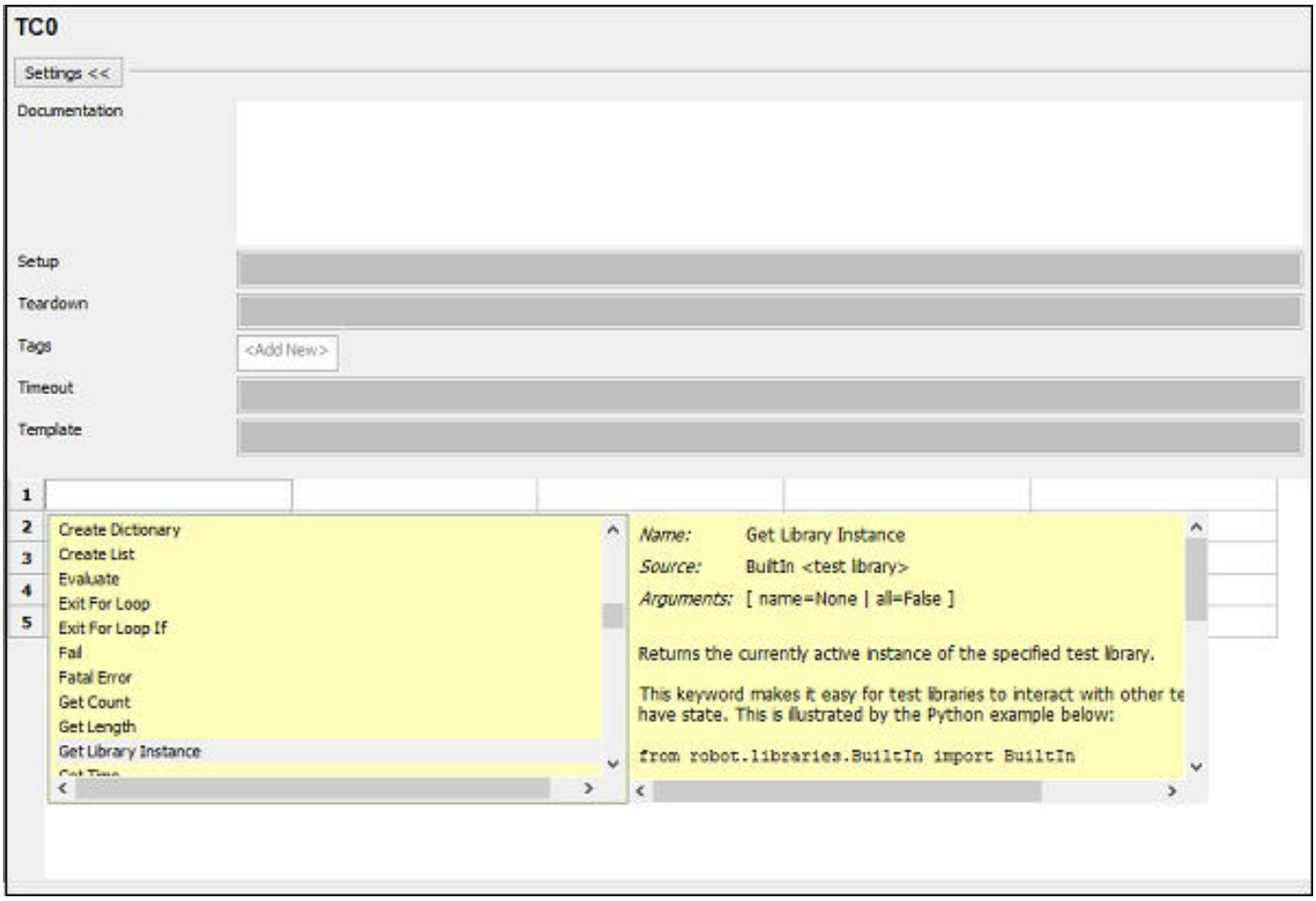
There are shortcuts available in the navigation bar to run/stop test case as shown below −



The search keyword option can be used as shown in the screenshot below −



To get the list of keywords available with robot framework, simple press ctrl+space in the tabular format as shown below and it will display all the keywords available −



In case, you cannot remember the keyword, this will help you get the details. We have the details available across each keyword. The details also show how to use the related keyword. In our next chapter, we will learn how to create our first test case in ride.

Conclusion

In this chapter, we have seen the features available with RIDE. We also learnt how to create test cases and execute them.

Robot Framework - First Test Case Using Ride

We will explore RIDE and work on our first test case.

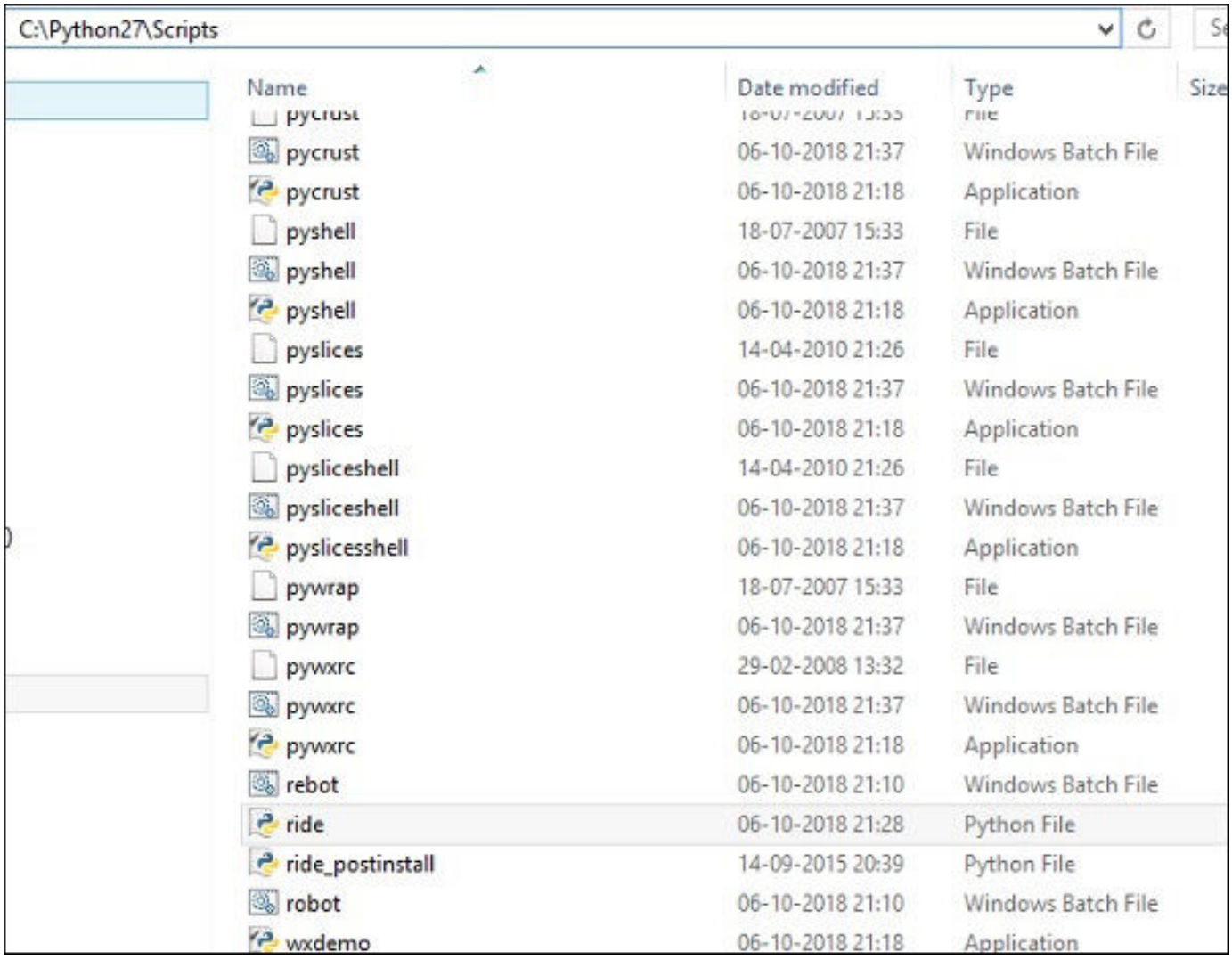
Open Ride from command prompt or you can create a shortcut of ride on your desktop.

From command line

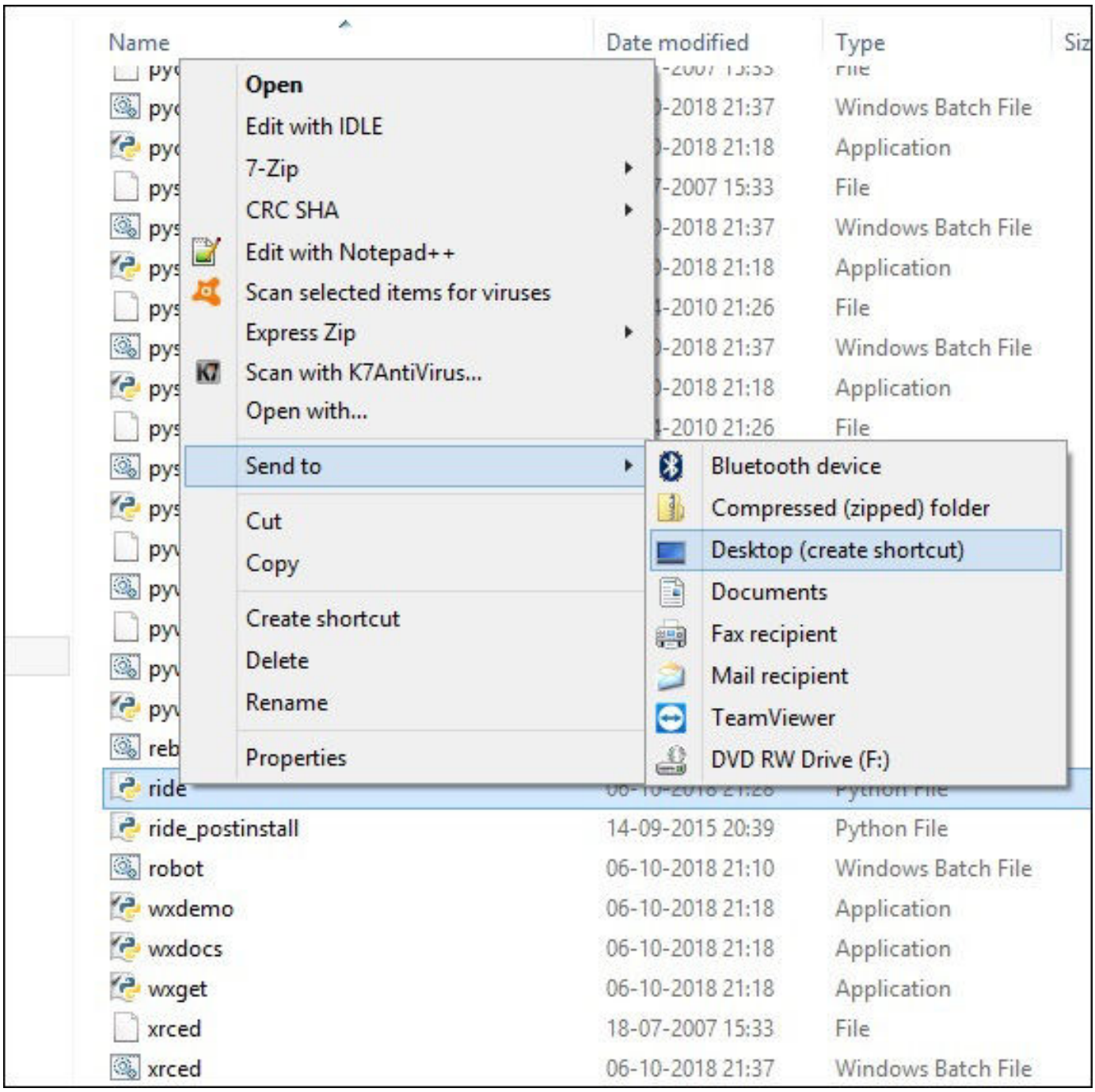
```
ride.py
```

From Desktop

Go to the path where ride is installed; for windows, it is **C:\Python27\Scripts**.

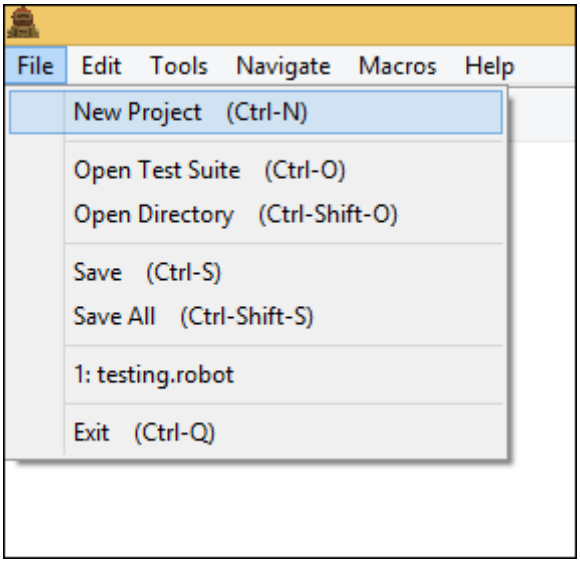


Right-click on ride.py and click **Send To -> Desktop** (create shortcut).

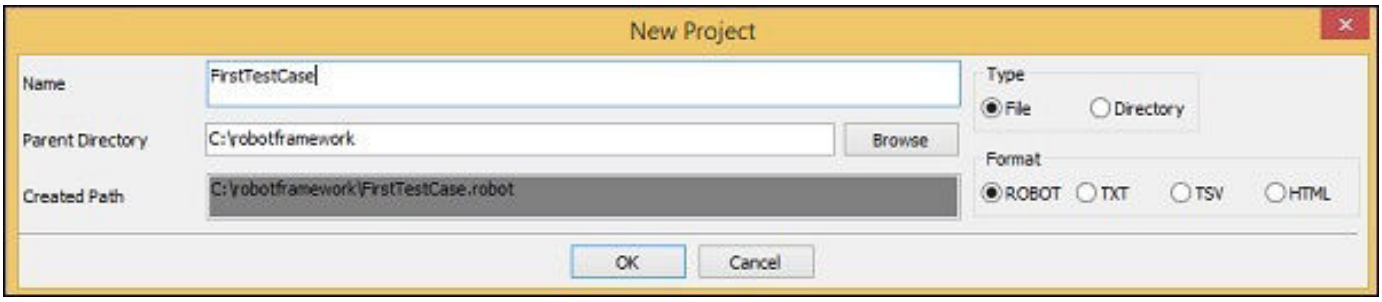


You will now see an icon of ride on your desktop. You can click on it to open the ride editor.

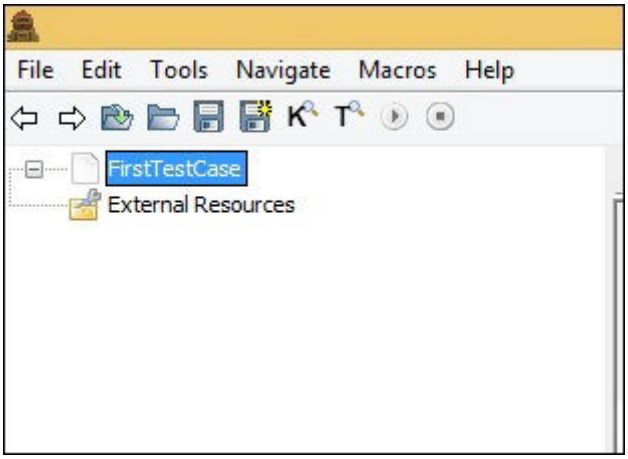
Let us start with our first test case in ride. Open the editor and click on File -> New Project.



Click on *New Project* and enter the name of the project.

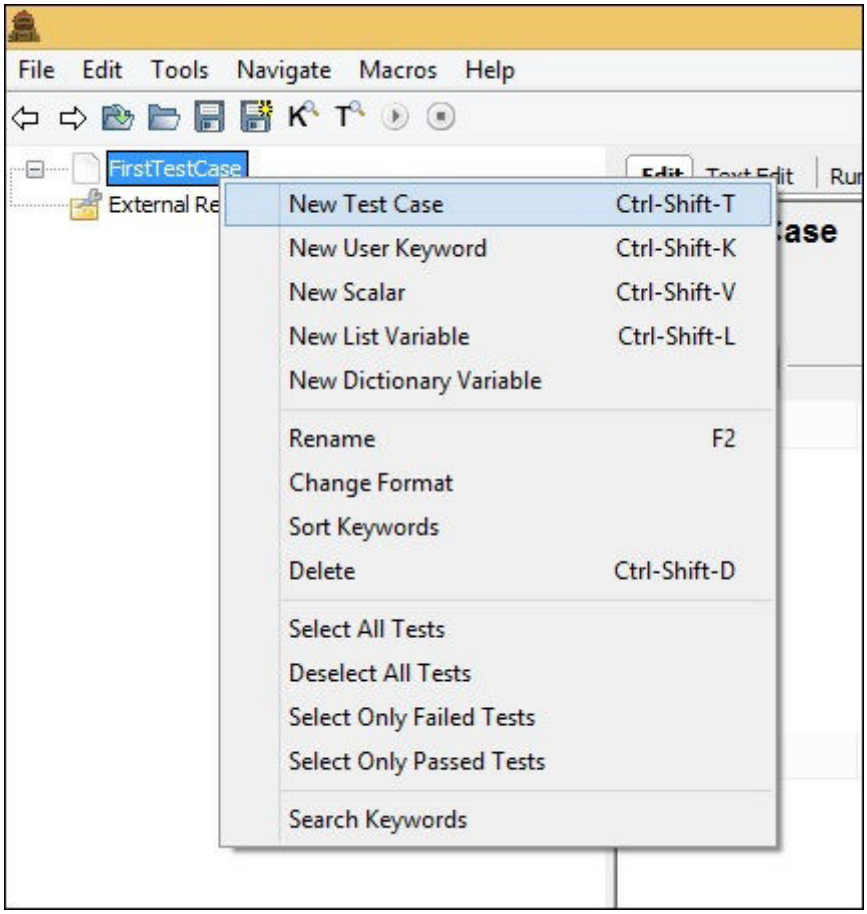


Parent Directory is the path where the project will be saved. You can change the path if required. I have created a folder called robotframework and will save all the files in that folder.

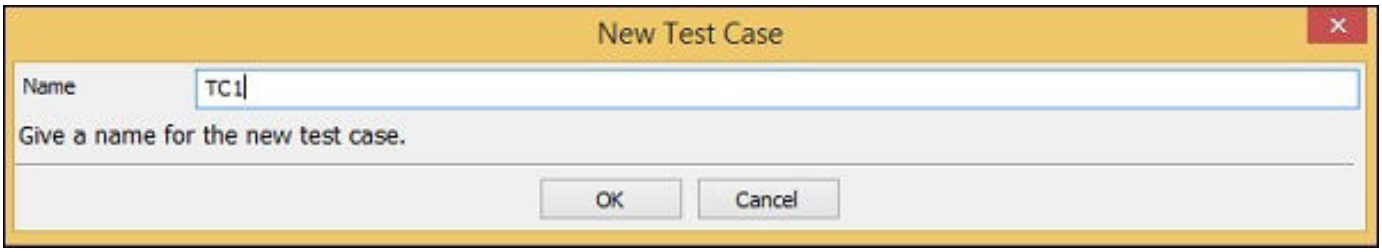


Project *FirstTestCase* is created.

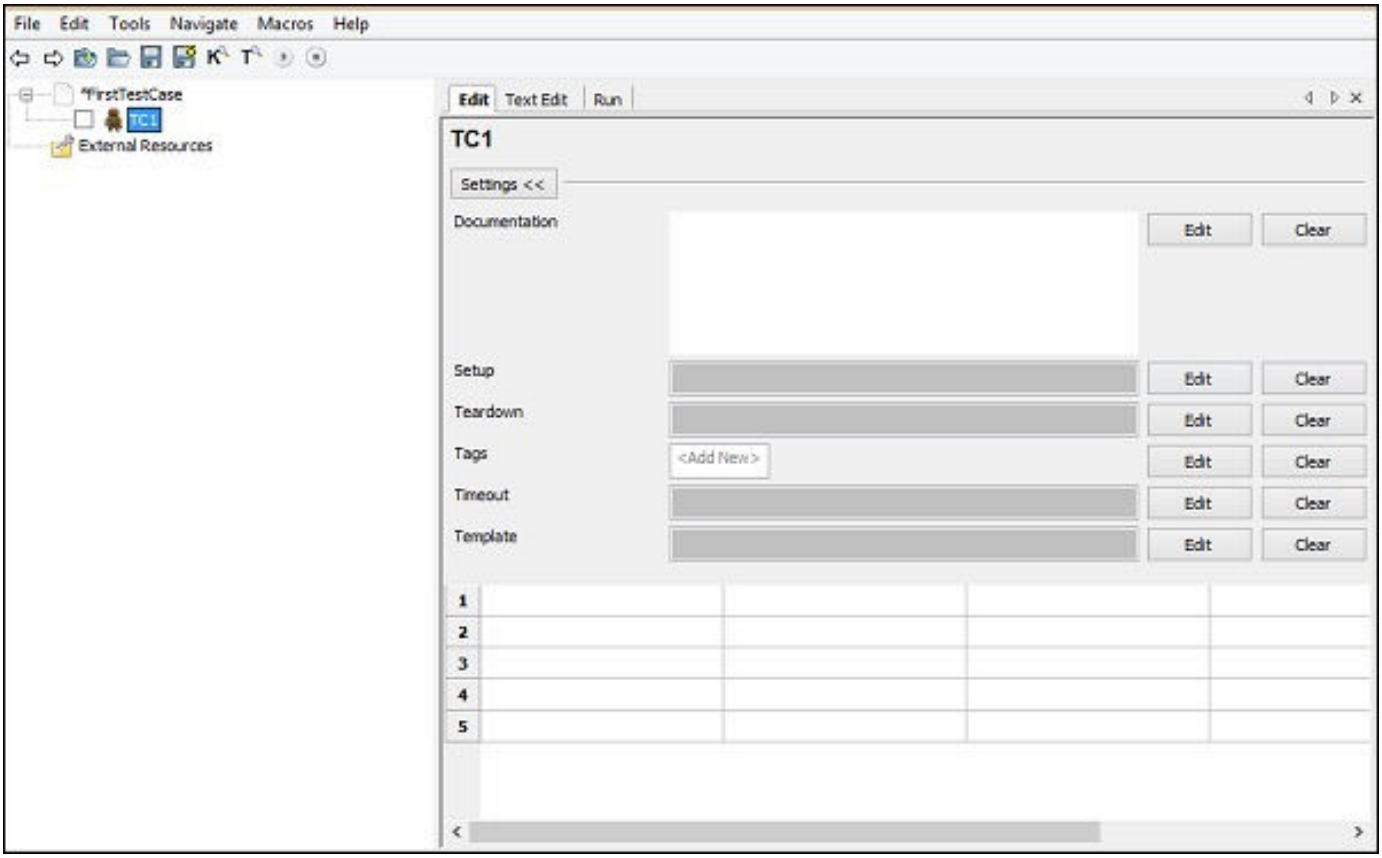
To create test case, right-click on the project.



Click *New Test Case*.



Enter the name of the test case and click OK.



There are 3 tabs shown for the test case created − *Edit, Text Edit and Run*.

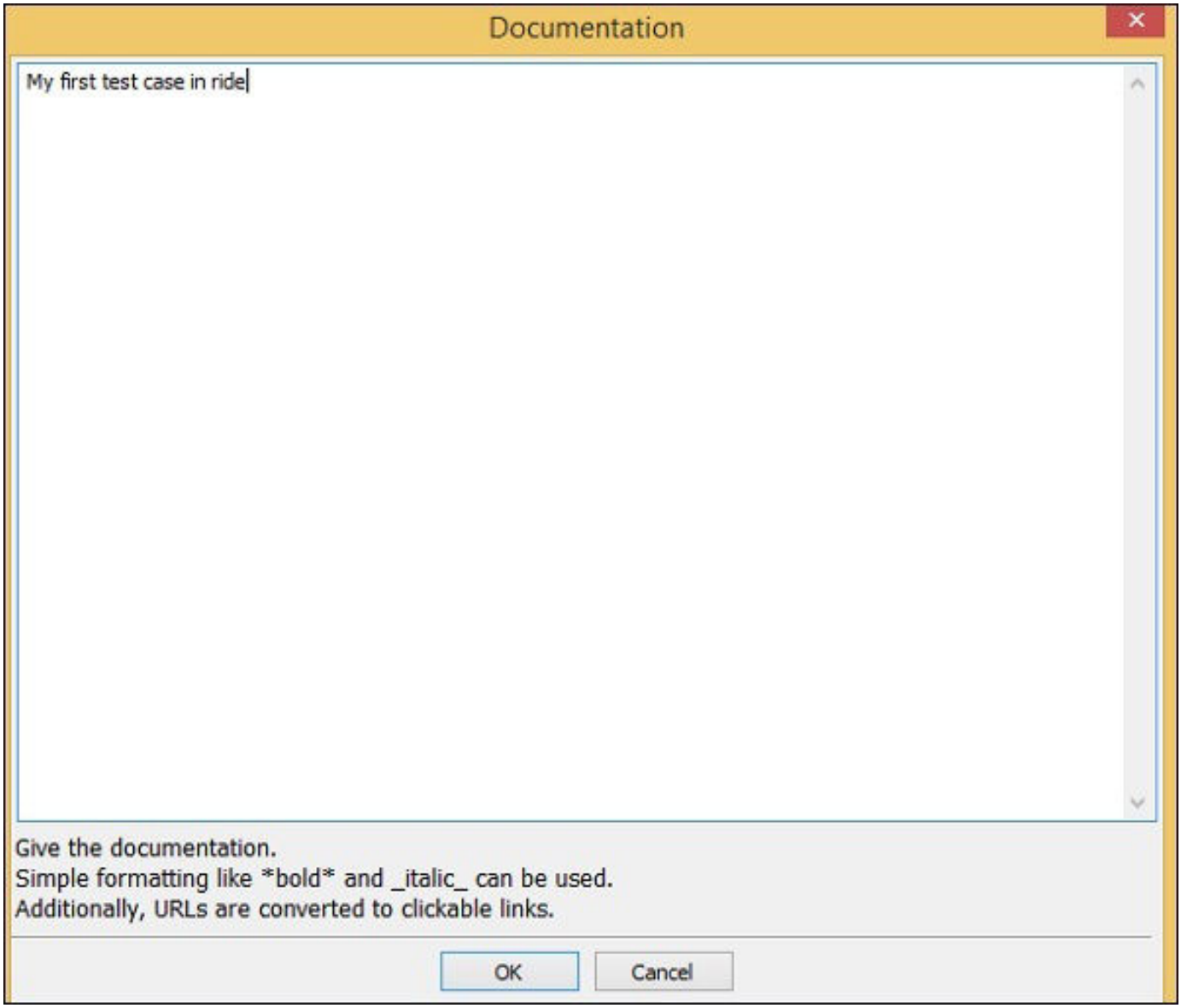
The Edit tab comes with two formats – Settings and Tabular. We will discuss the two formats in our subsequent sections.

The Settings Format

In Settings, we have documentation, setup, teardown, tags, timeout and template.

Documentation

You can add details about your test case so that it becomes easy for future reference.



Click OK to save the documentation.

Setup and Teardown

If there is a setup assigned to a test case, it will be executed before the test case execution and the test setup that will be executed after the test case is done for teardown. We will get into the details of this in our subsequent chapters. We do not need it now for our first test case and can keep it empty.

Tags

This is used for tagging test cases – to include, exclude specific test cases. You can also specify if any of the test cases is critical.

Timeout

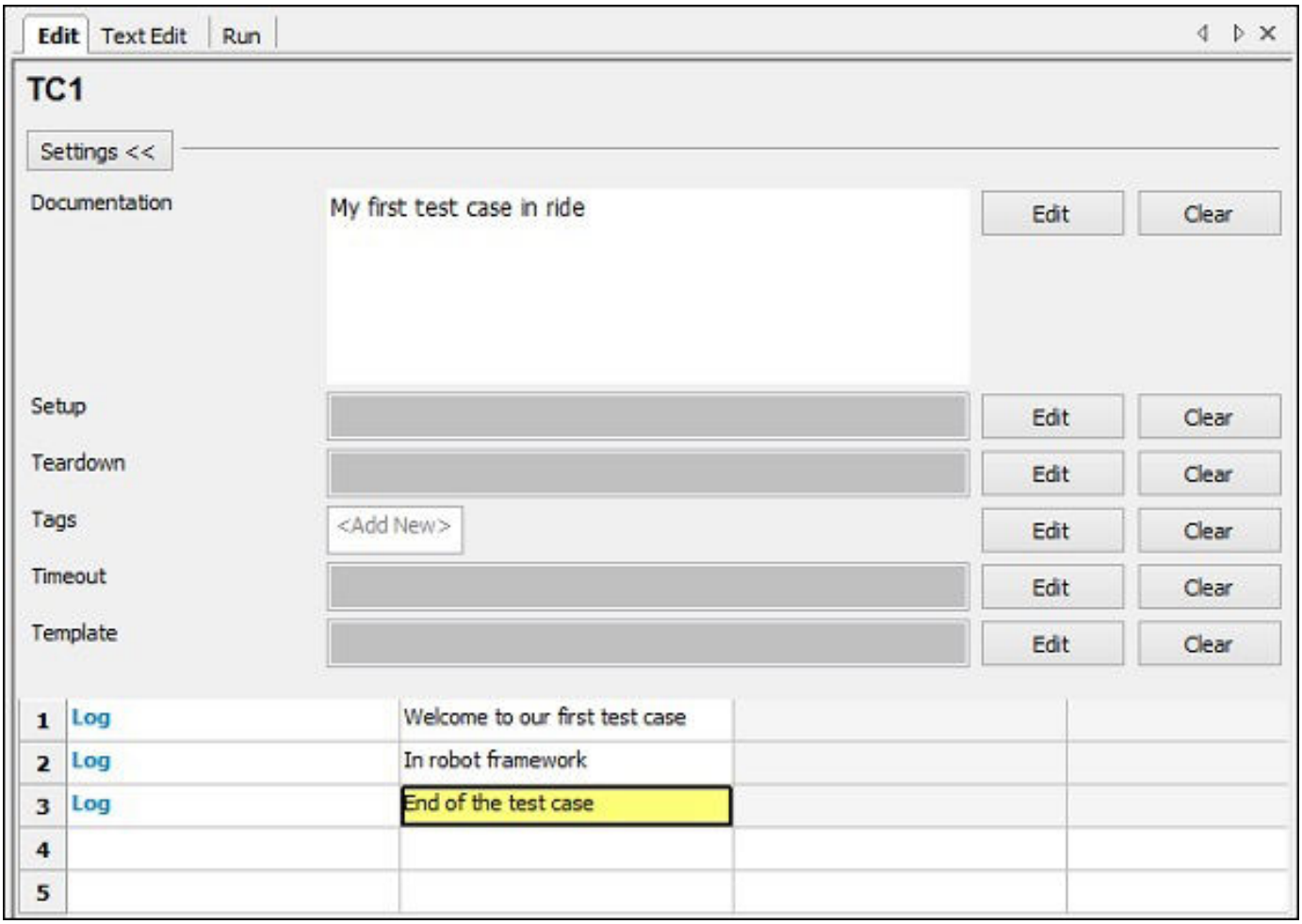
This is used to set a timeout on the test case. We will keep it empty for now.

Template

This will have the keywords to be used for the test case. It is mostly used for data driven test case. The high-level user-defined keyword is specified in the template and test cases are used to pass data to the keyword.

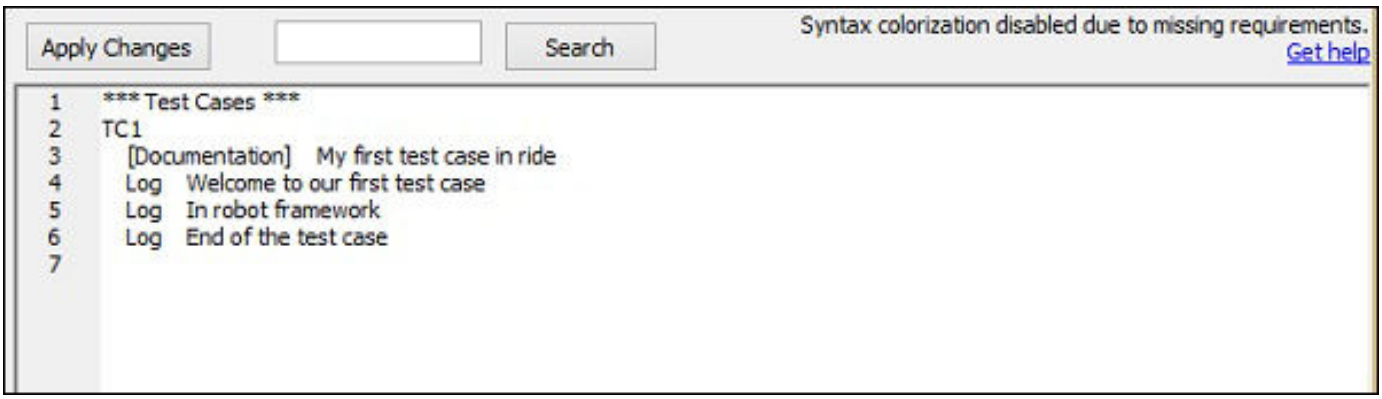
In the tabular format, we will write our first test case and execute the same to see the output.

In this test case, we are just going to add some logs and see the output of it. Consider the following screenshot to understand this −



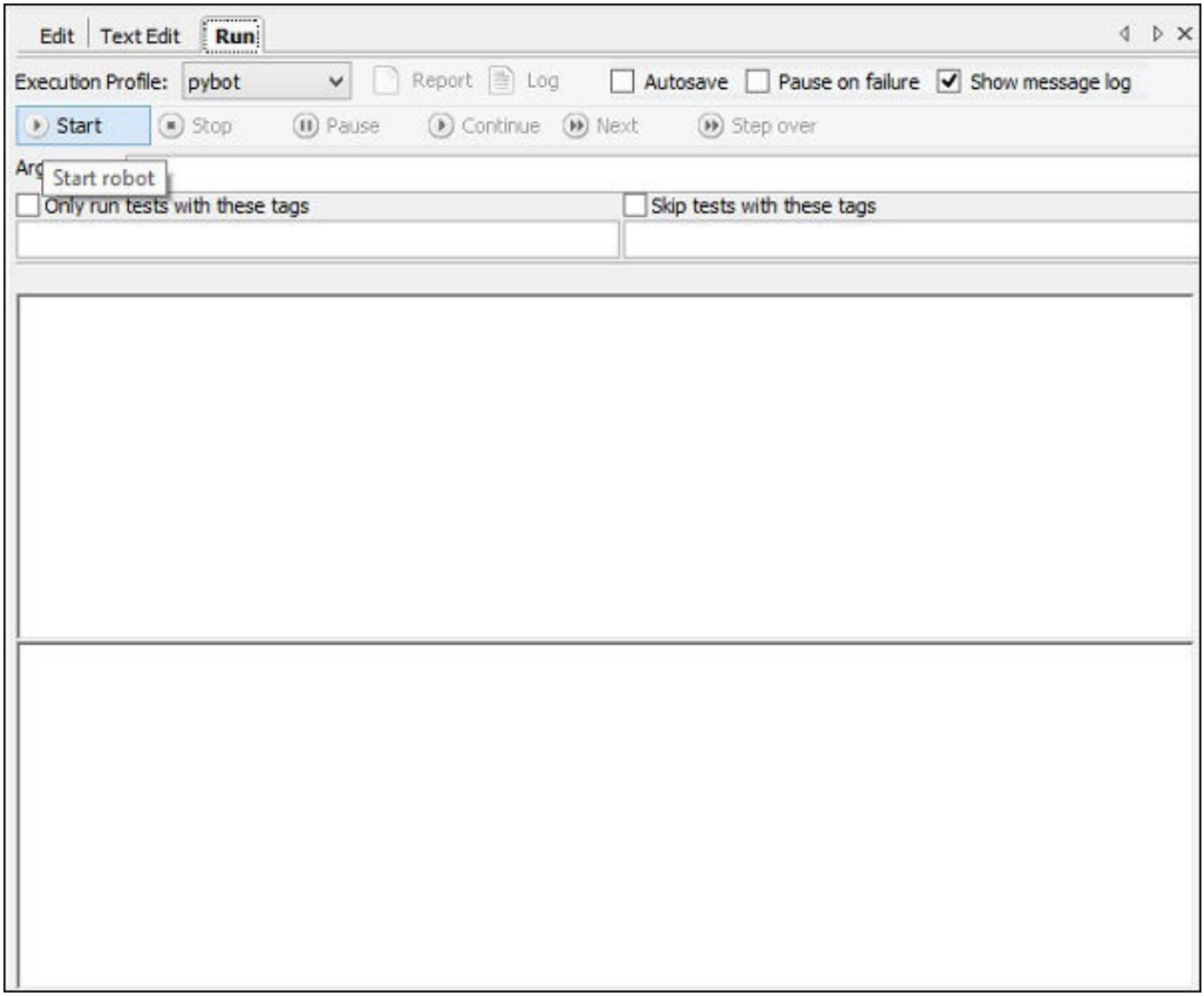
We have used the keyword *Log* to log messages as shown above.

Based on the keywords specified in Edit, we can get the code in Text Edit as shown below −

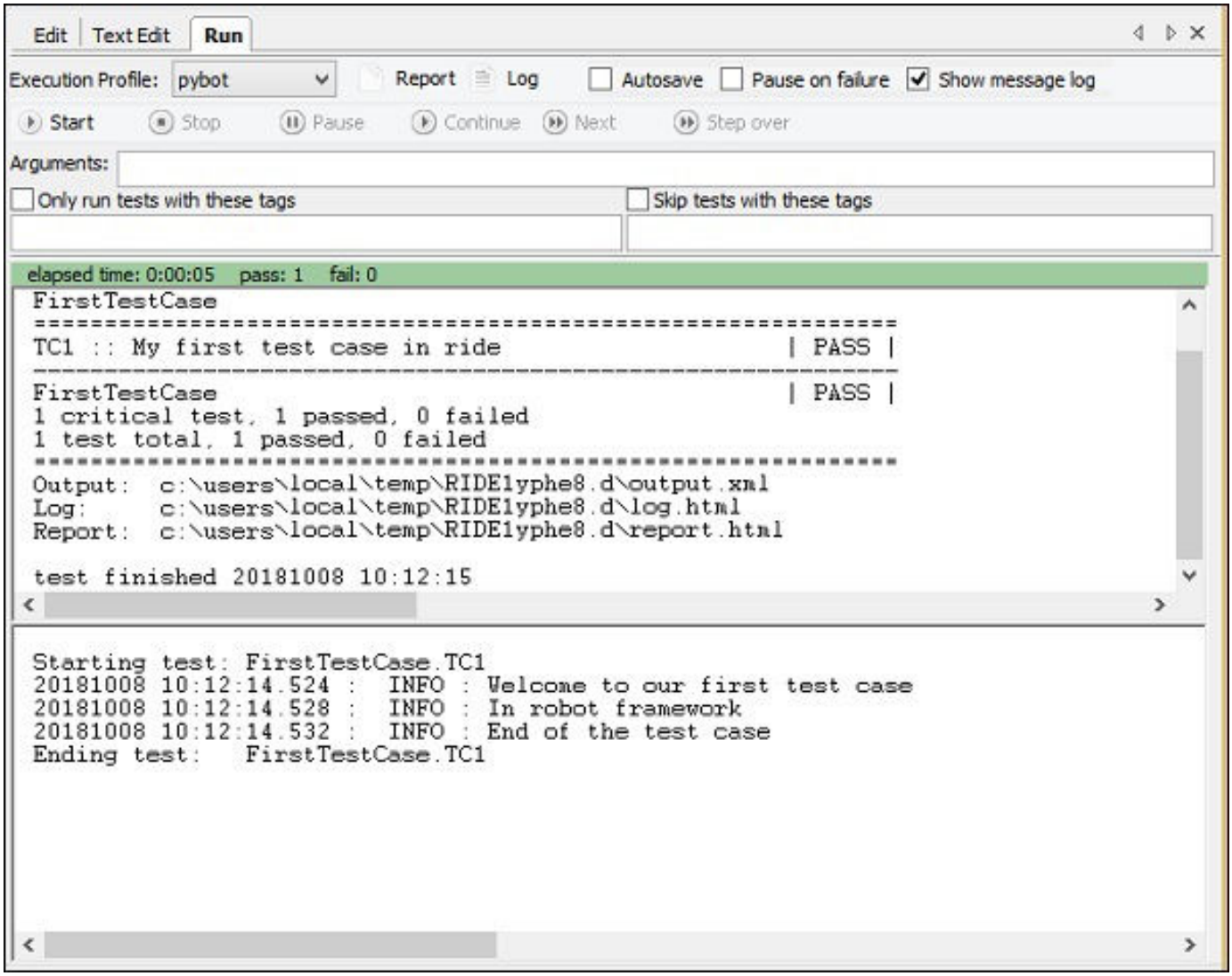


You may also write the test case in the Text Edit and the same will reflect in the tabular format. Now let us Run the test case and see the output.

To run the test case, we need to click on Start as shown below −



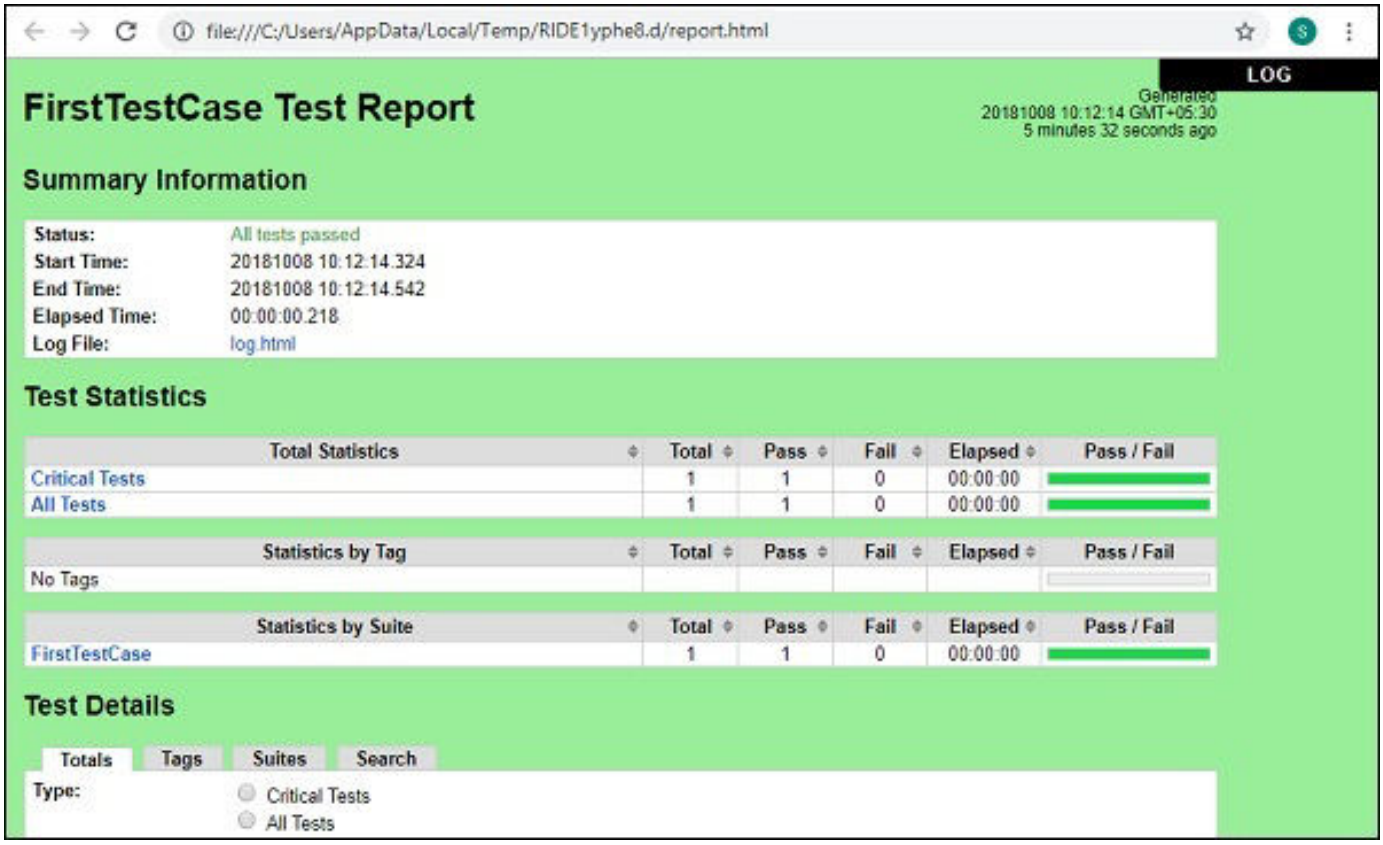
Click on start and here are is the output of the test case −



Our test case has executed successfully and the details are as shown above. It gives the status as *PASS*.

We can also see the details of the test case execution in Report and Log as highlighted below.

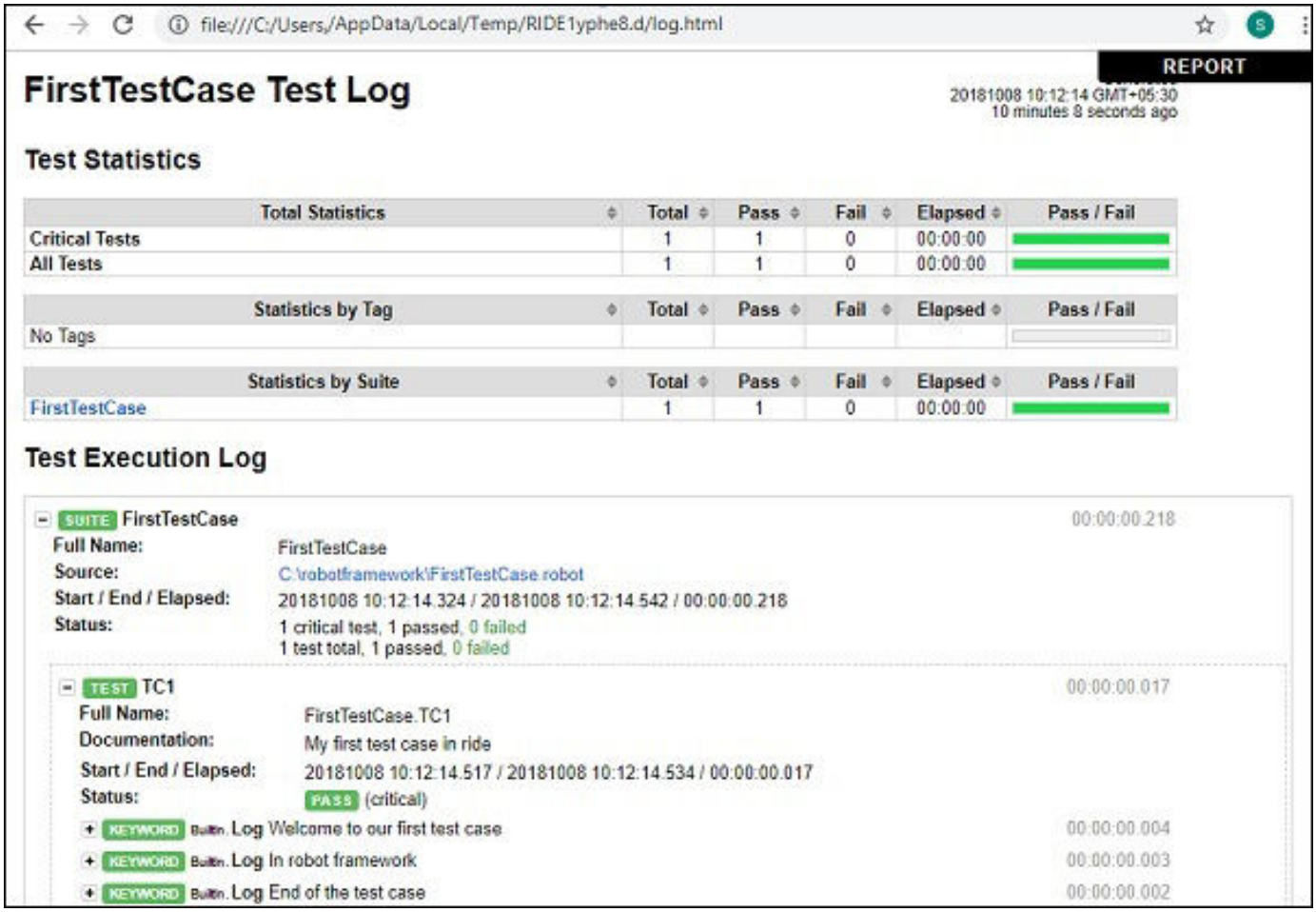
Click on Report and it opens the details in a new tab as follows



In Report, it gives the details like the start time, end time, path to the log file, status of the test case, etc.

Click on Log at the top right corner in report or from the Run screen.

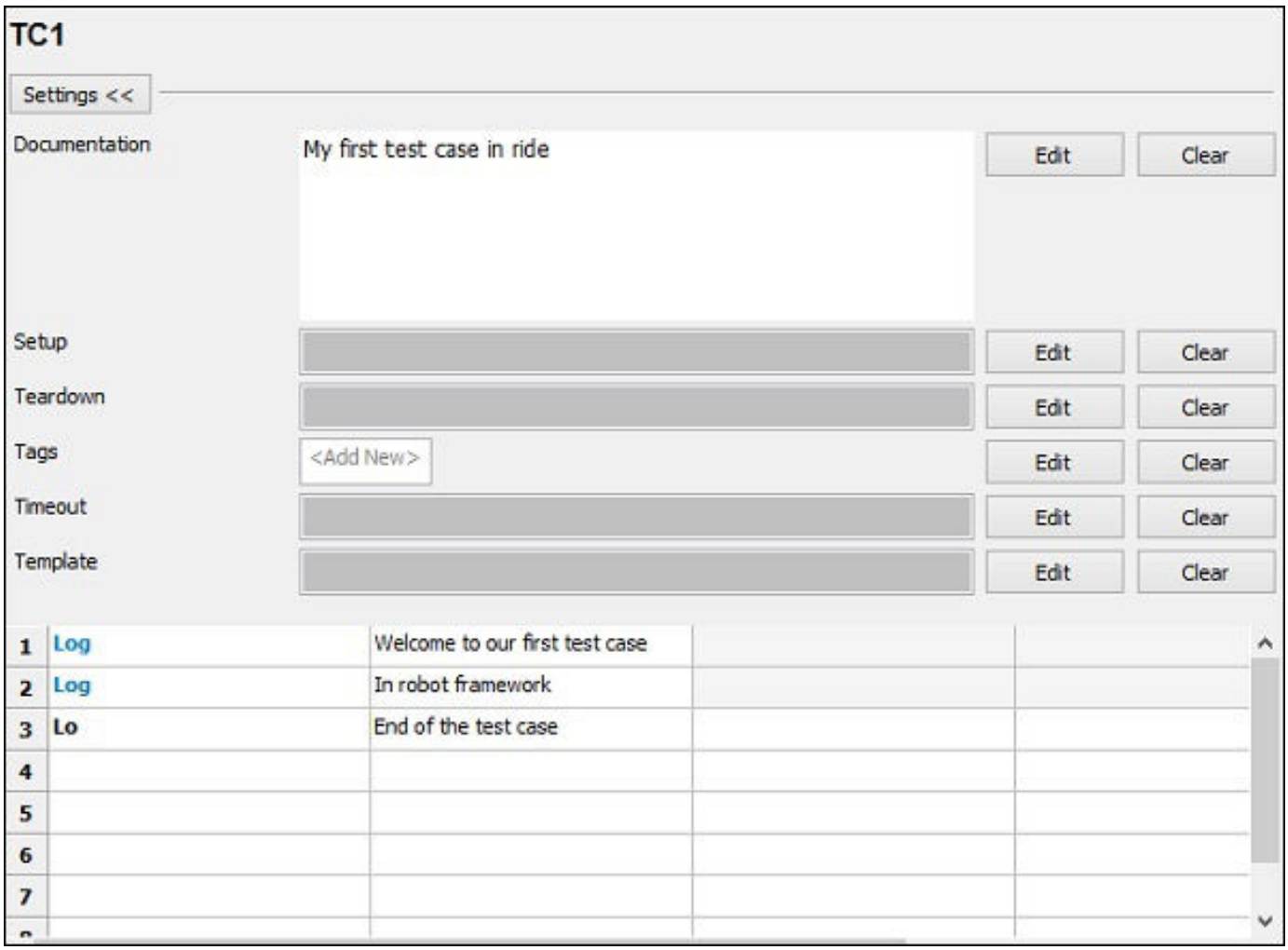
Here are the details of the log file −



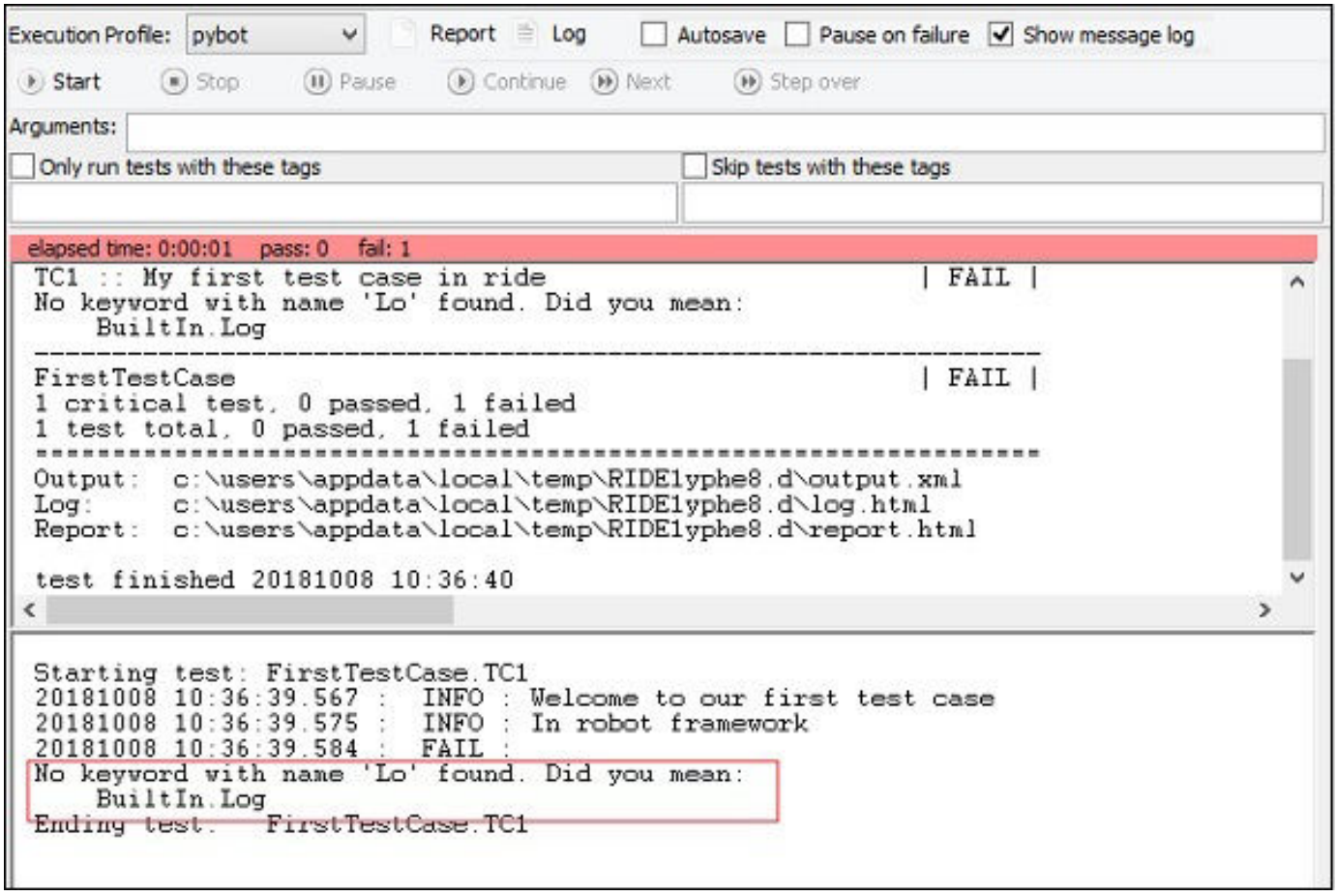
The Log file gives the details of the test execution and the details of keywords we gave for the test case.

In the report and the log file, we get green color for the status.

Let us now make some changes that will lead to the failure of the test case fail and see the output.

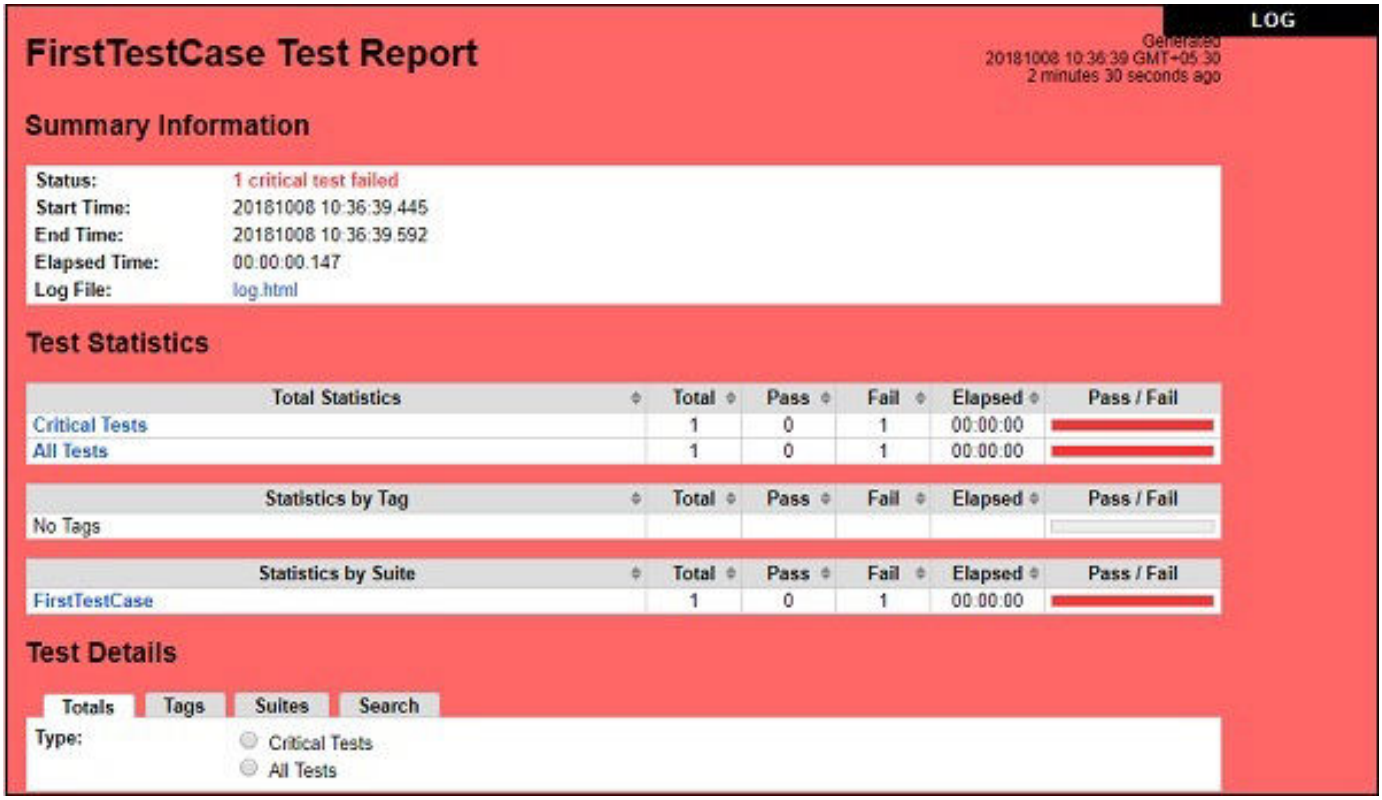


In the above test case, the Log keyword is wrong. We will run the test case and see the output −

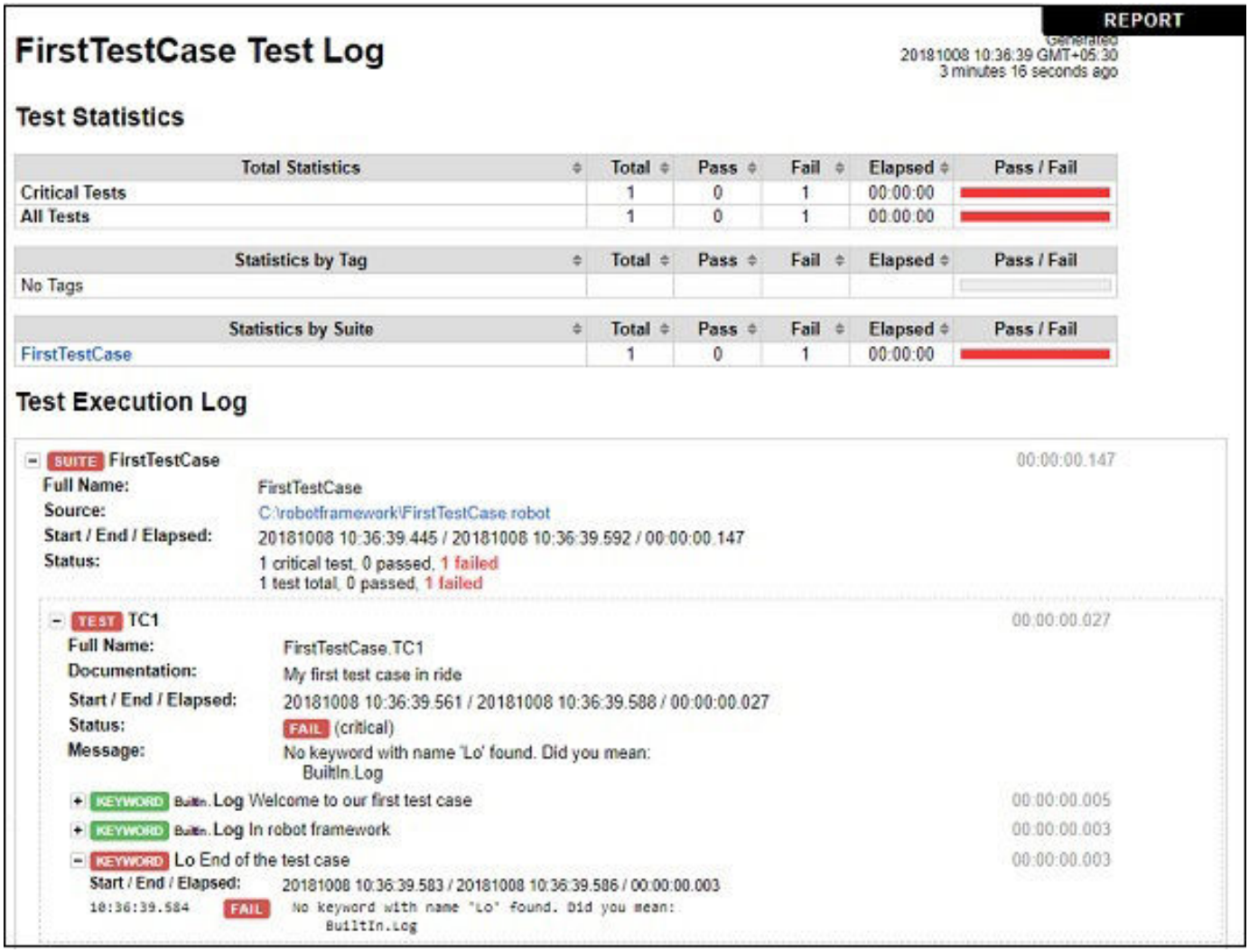


We see that the test case has failed. I have highlighted the error that it tells about the test case.

Now will see the report and log output.From Report −



From Log



When the test case fails, the color is changed to Red as shown above.

Conclusion

In this chapter, we covered a simple test case and the results seen during execution are shown. The reports and logs show the details of test case execution.

Writing and Executing Test Cases

In this chapter, we will learn how to write and execute test cases. We would cover the following areas in this chapter −

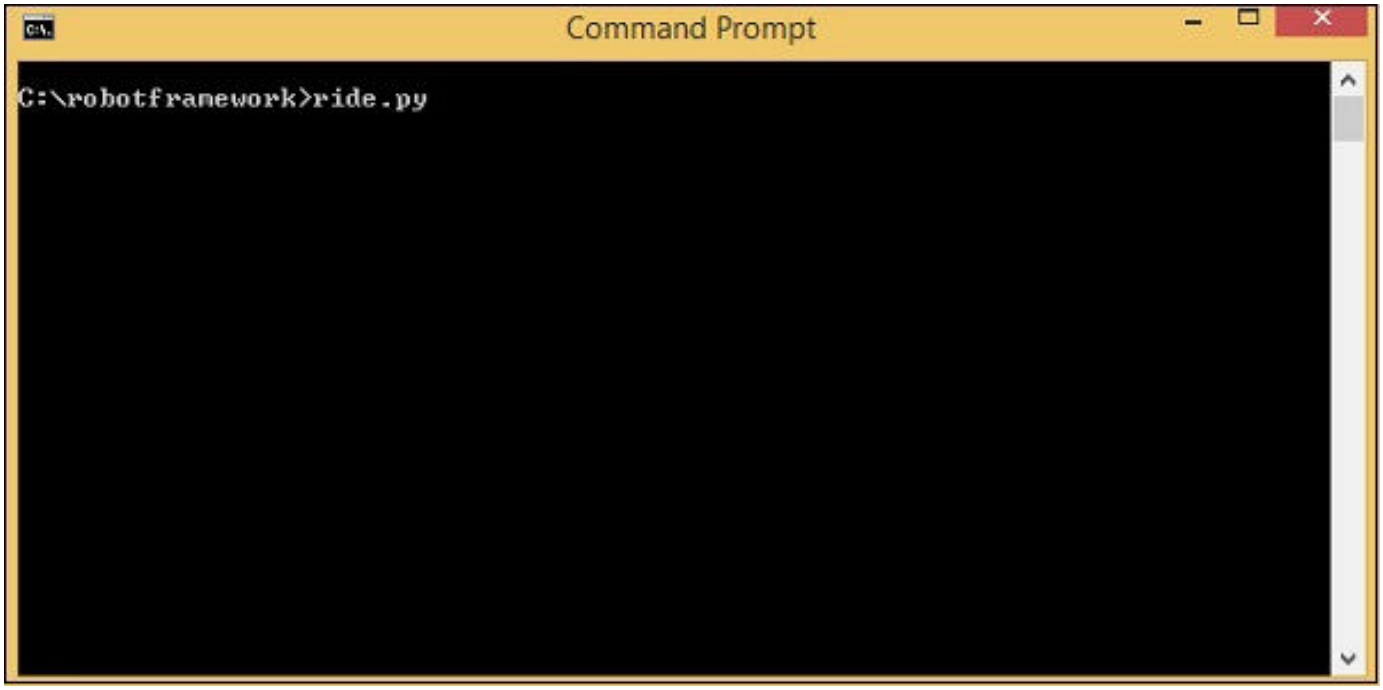
- Project Setup
- Importing Libraries
- Write test case in tabular format
- Using Tags for Executing Test Case
- Use Resource Files for Test Case

Project Setup

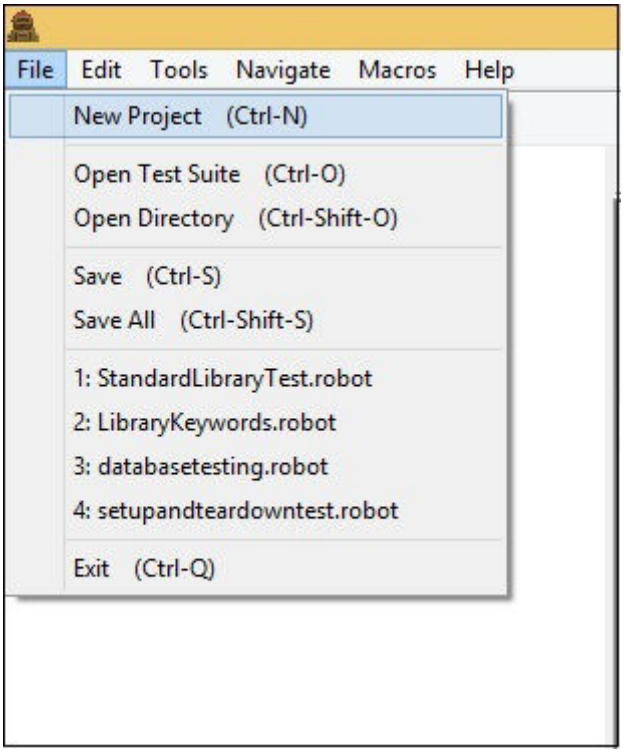
Run the command ride.py to start RIDE IDE.

Command

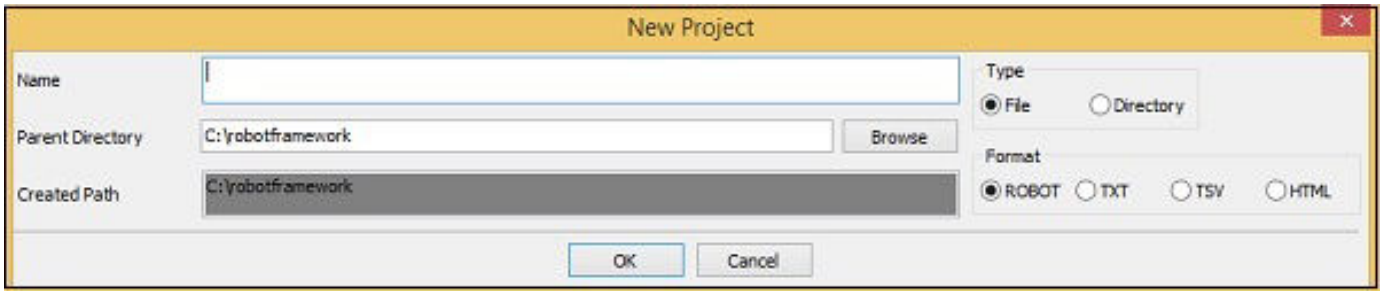
```
ride.py
```



Click on **File -> New Project** as shown below −

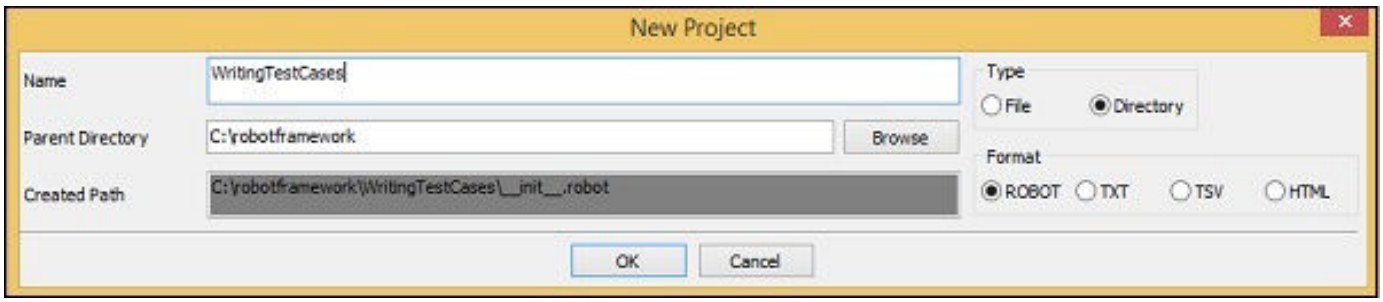


Upon clicking New Project, the screen will appear as shown below −

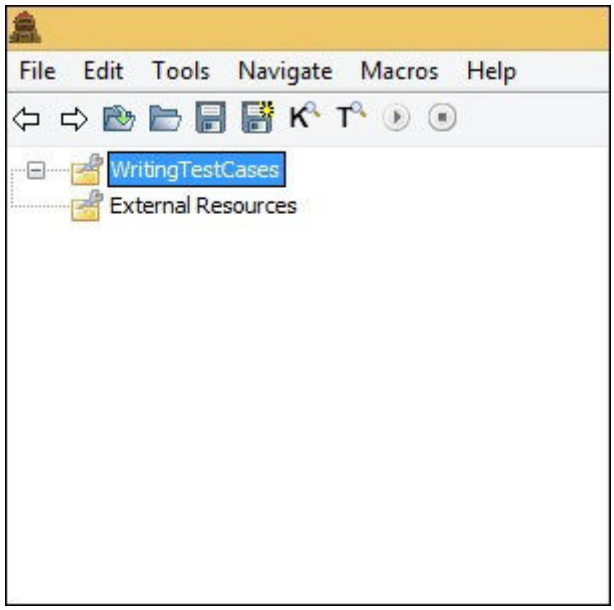


New Project shows the type as file or directory. By default, File is selected. We will click on Directory to create test suite, which can have many test suites in that directory. Each suite will have test−cases.

We will use the ROBOT format for now.

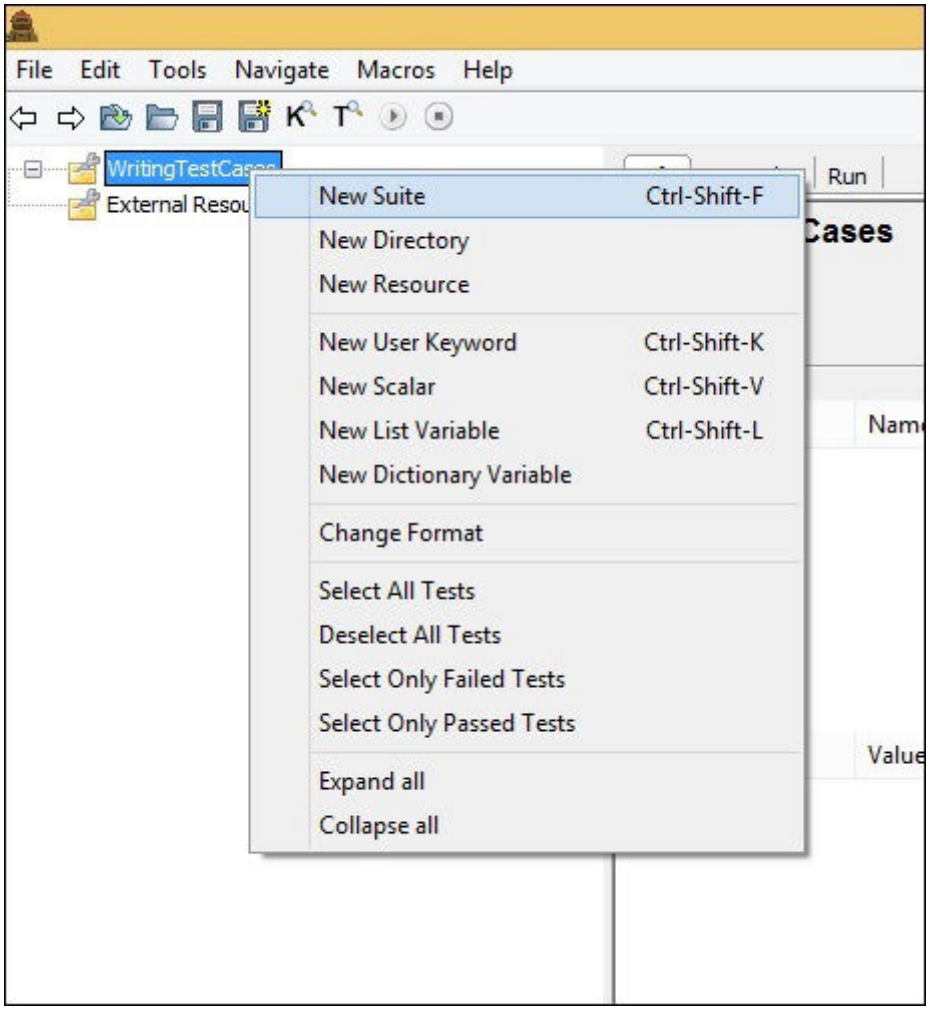


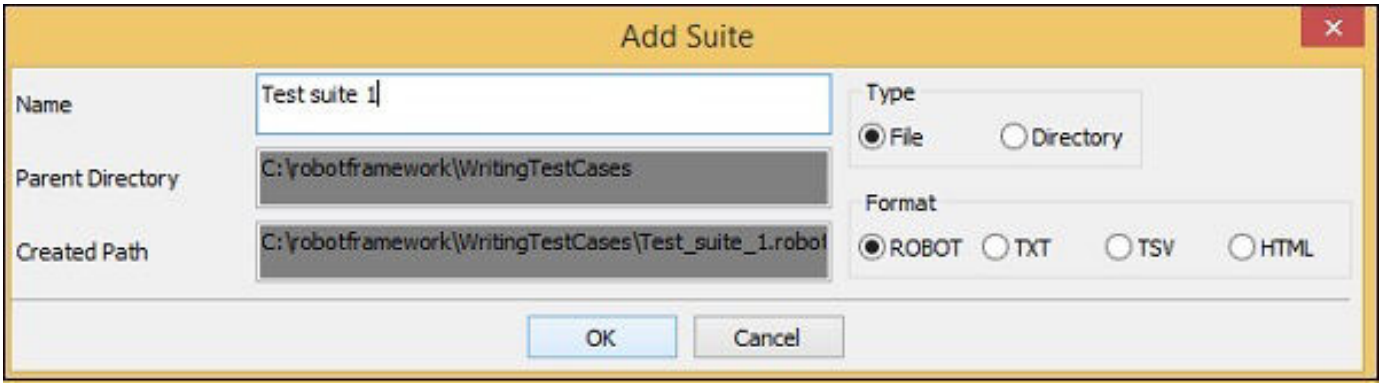
The Parent-Directory is the path where the *WritingTestCases* directory will be created. Click OK to save the test suite directory.



Right-click on the directory created and click on *New Suite*. You can also create sub directories with test suites in that.

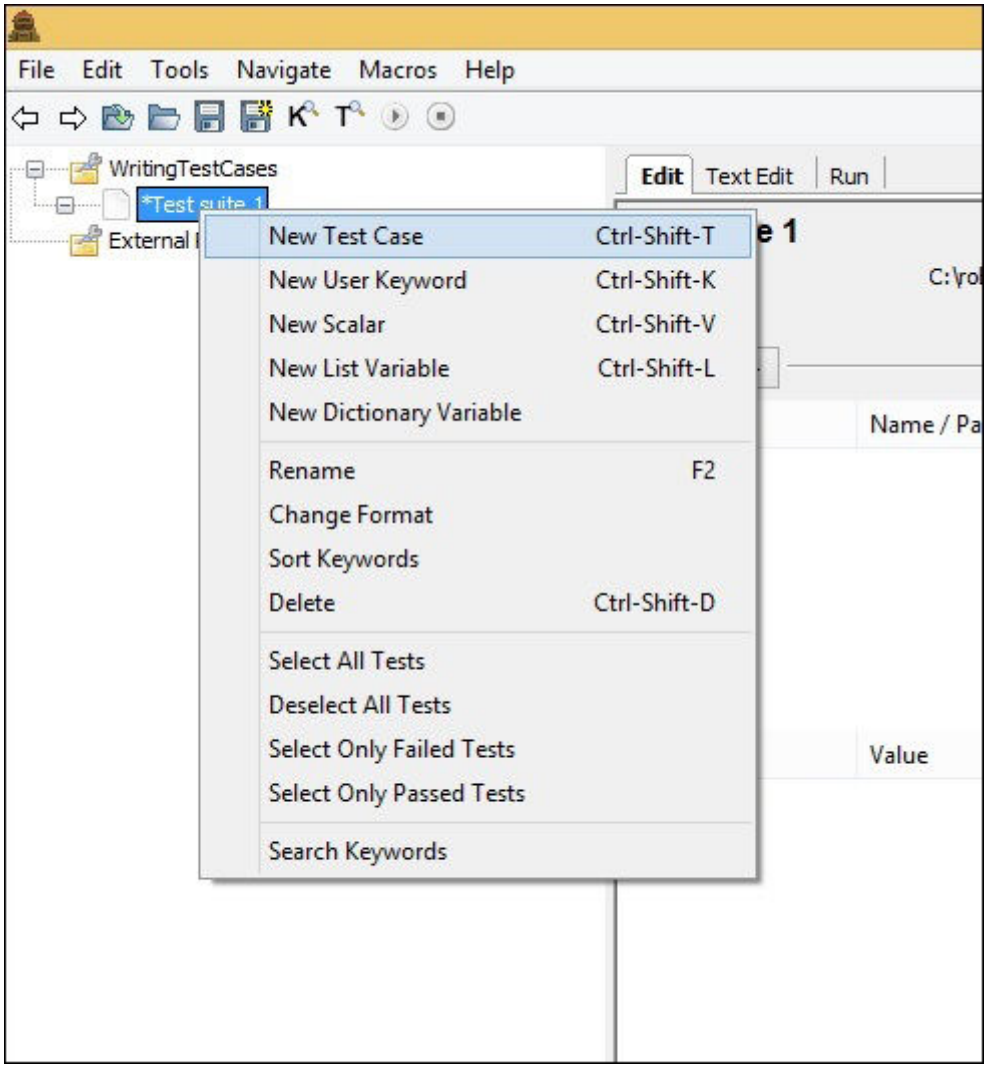
For now, we will start with Test Suite creation as shown below −



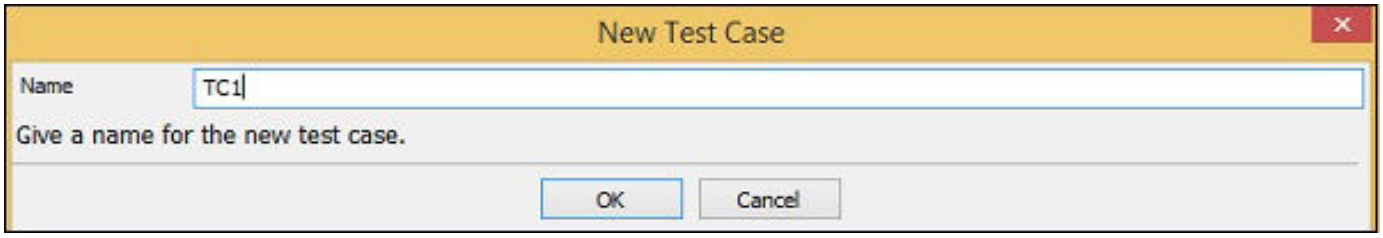


Click OK to save the Test suite.

Now you can add test case to the suite. Right-click on the Test suite created as shown below −



Click *New Test Case*. It will display the screen to add name of the test case as shown below −



Click OK to save the test case. We have the project setup ready.

Importing Libraries

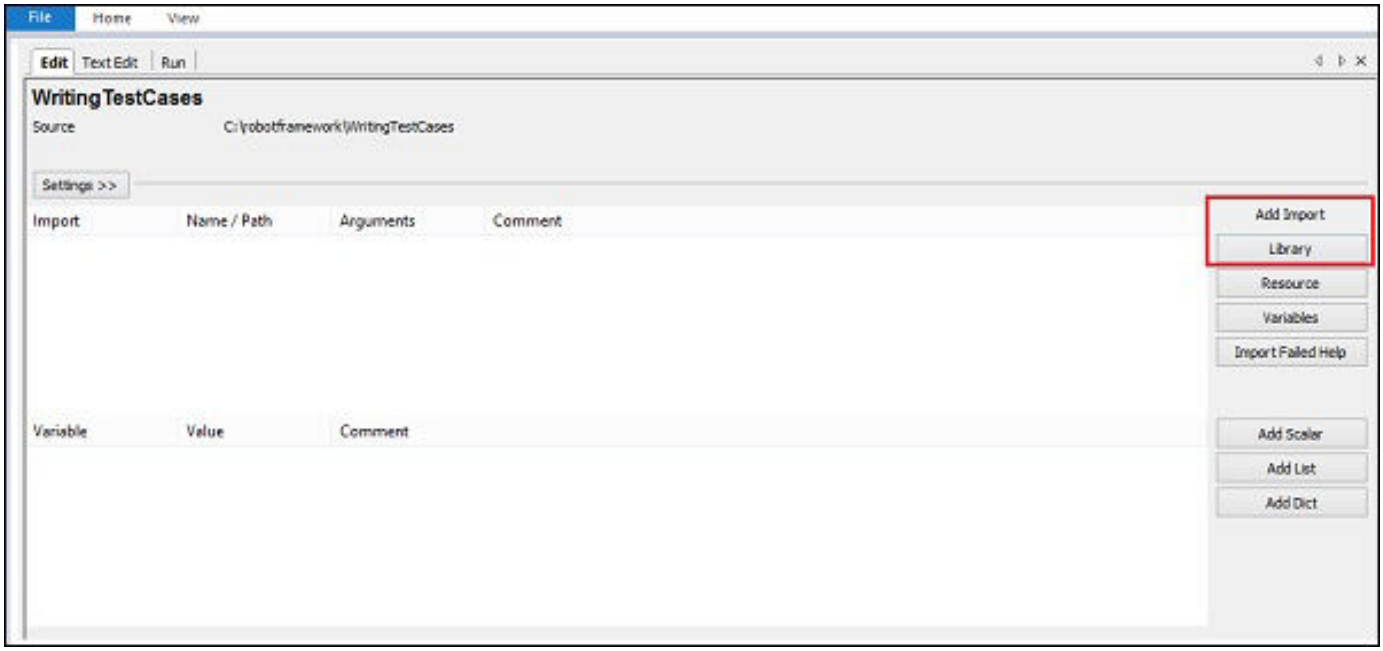
Robot Framework has its own built-in library, which need not be imported. But we need to interact with the browsers, databases, etc. To interact, we need to import the libraries.

The list of external libraries supported by robot framework are listed on robot framework official site as shown below −

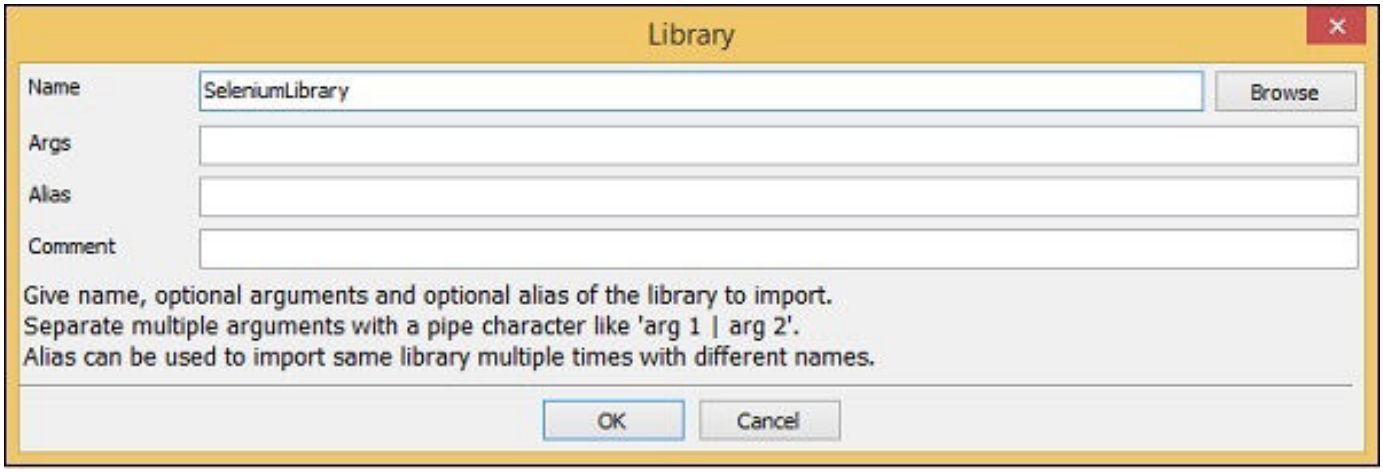
Android library Library for all your Android automation needs. It uses Calabash Android internally.	**AnywhereLibrary** Library for testing Single-Page Apps (SPA). Uses Selenium Webdriver and Appium internally.	**AppiumLibrary** Library for Android- and iOS-testing. It uses Appium internally.
Archive library Library for handling zip- and tar-archives.	**AutoItLibrary** Windows GUI testing library that uses AutoIt freeware tool as a driver.	**CncLibrary** Library for driving a CNC milling machine.
Database Library (Java) Java-based library for database testing. Usable with Jython. Available also at **Maven central**.	**Database Library (Python)** Python based library for database testing. Works with any Python interpreter, including Jython.	**Debug Library** A debug library for RobotFramework, which can be used as an interactive shell(REPL) also.
Diff Library Library to diff two files together.	**Django Library** Library for **Django**, a Python web framework.	**Eclipse Library** Library for testing Eclipse RCP applications using SWT widgets.
robotframework-faker Library for **Faker**, a fake test data generator.	**FTP library** Library for testing and using FTP server with Robot Framework.	**HTTP library (livetest)** Library for HTTP level testing using livetest tool internally.
HTTP library (Requests) Library for HTTP level testing using Request internally.	**HttpRequestLibrary (Java)** Library for HTTP level testing using Apache HTTP client. Available also at **Maven central**.	**iOS library** Library for all your iOS automation needs. It uses Calabash iOS Server internally.
ImageHorizonLibrary	**JavaFXLibrary**	**MongoDB library**

For working with browsers and web application, we are going to import Selenium Library. The installation is discussed in the chapter **Working with Browsers using Selenium Library.**

To import a library, we need to click main project. To the right, the setting will display the Add Import option as shown below −

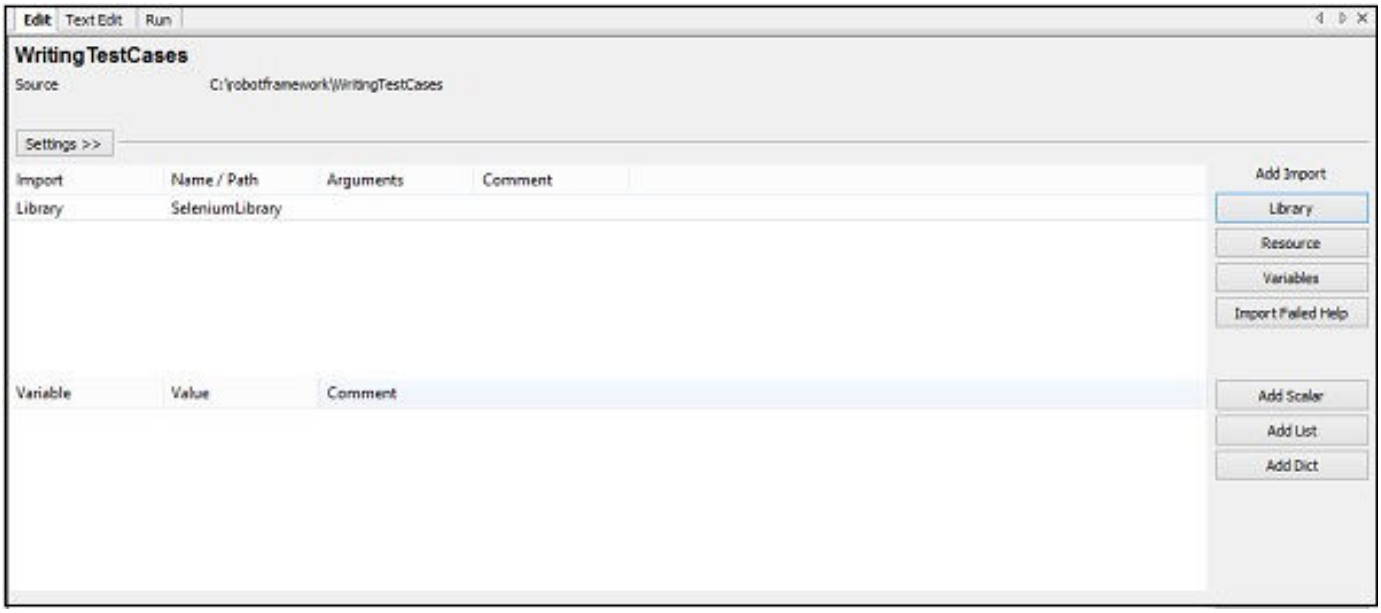


Click Library and enter the name of the library as shown below −

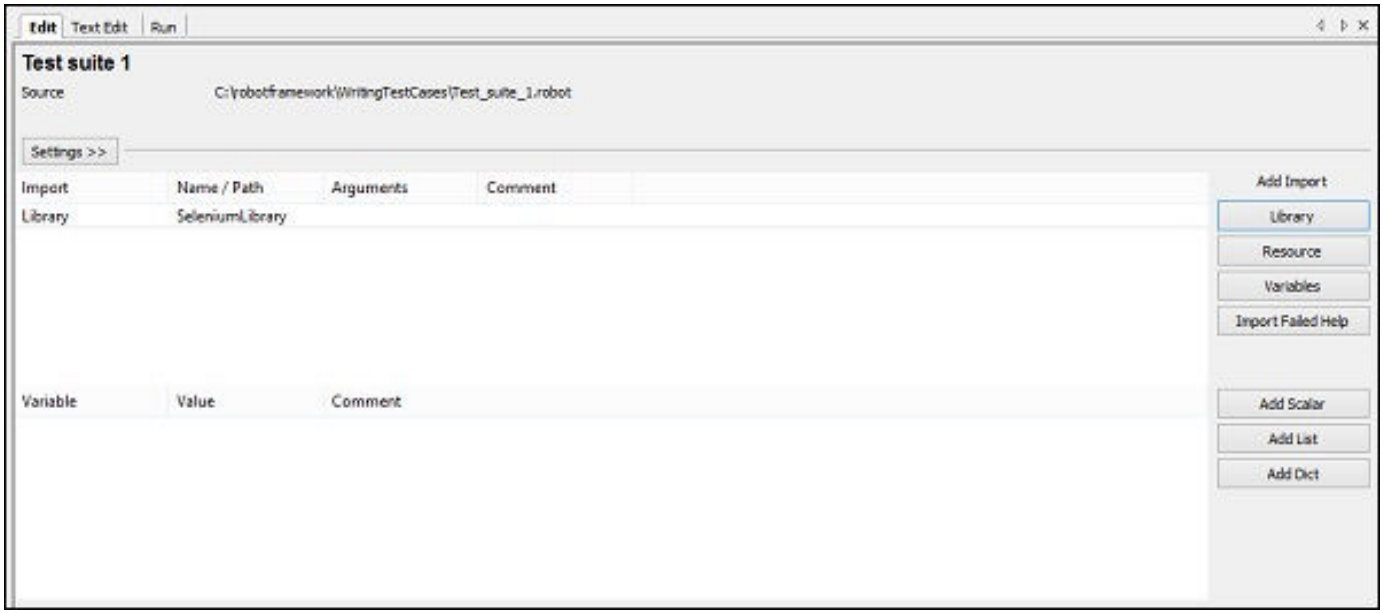


Click Ok to save the library.

The settings will be displayed in the settings as shown below −



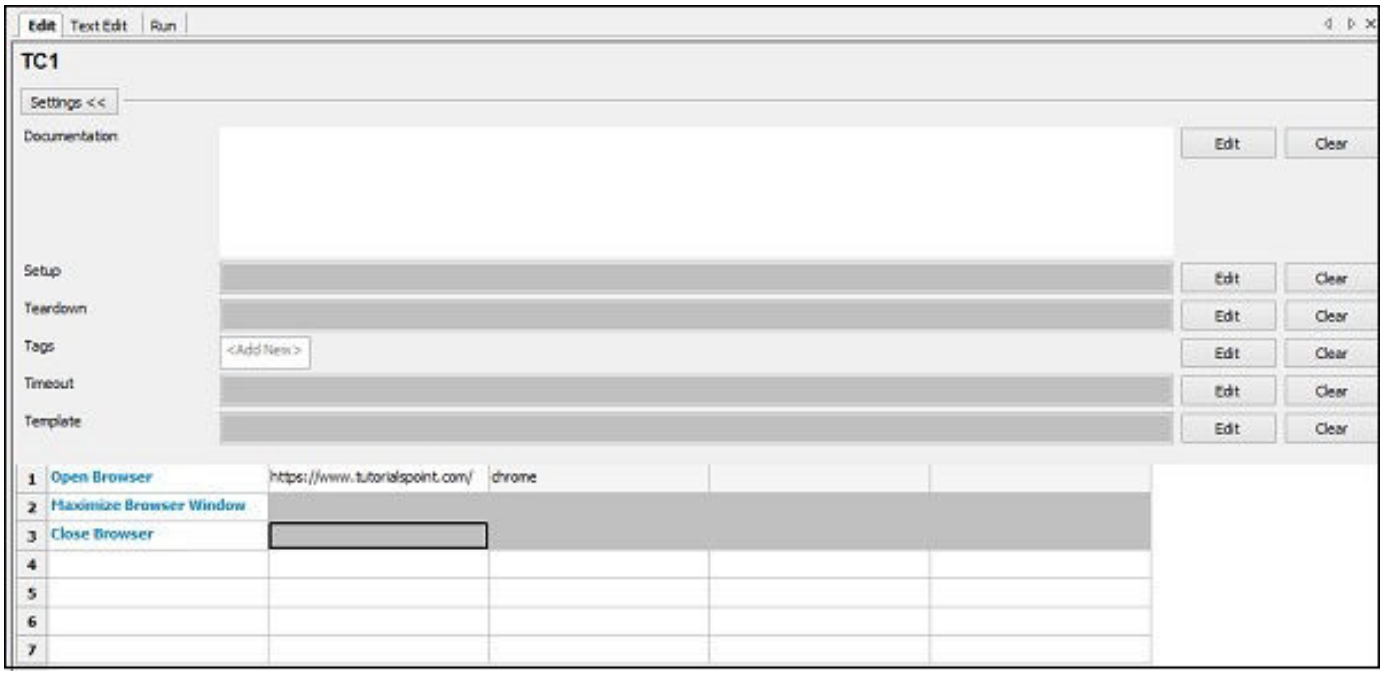
We need to repeat the same step and add library for the test suite created. Click on the test suite created and import the library as shown below −



When you click on the test case on the left side, it will display the tabular format where you can enter the keywords. Now, you can use the built-in keywords and the keywords available from the selenium library.

Write test case in tabular format

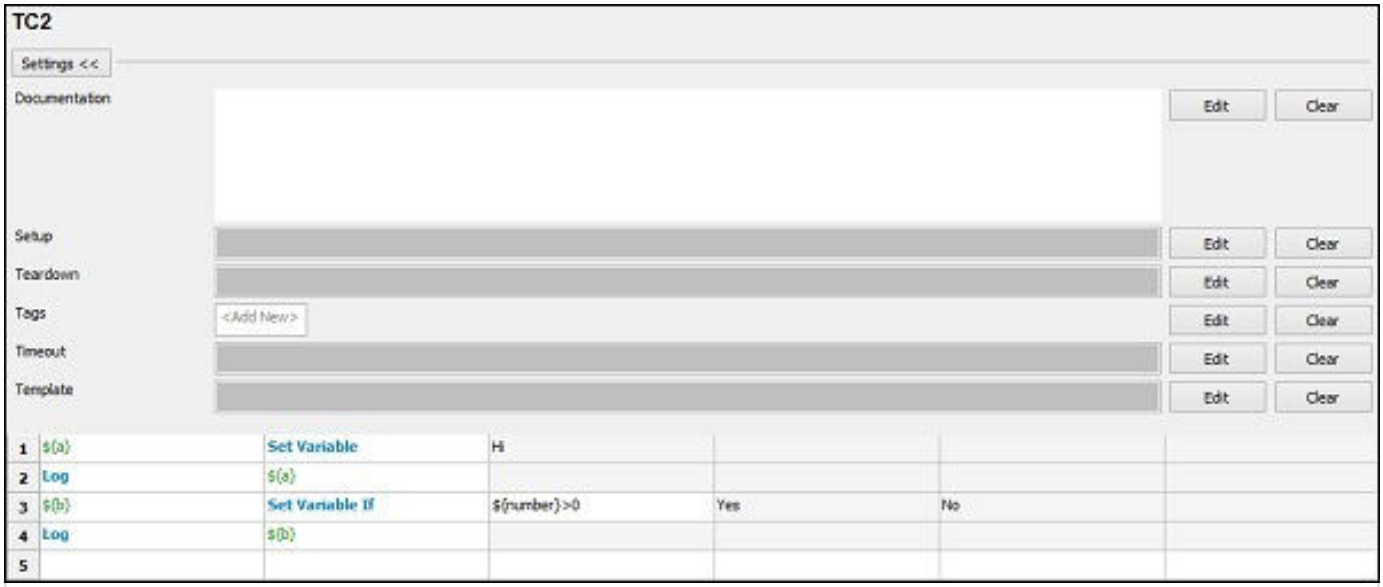
Here is a simple test case, which opens the URL in chrome browser.



The following shows the details of the test cases −

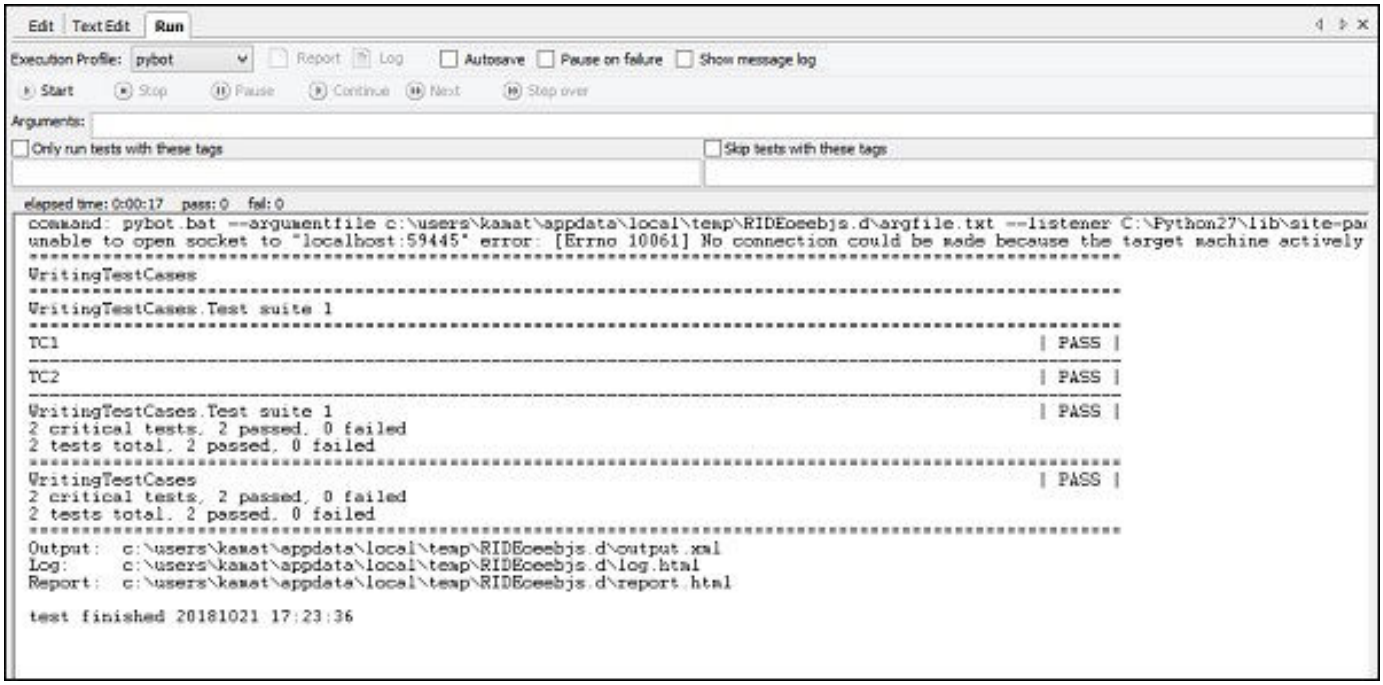
```
*** Settings ***
Library SeleniumLibrary

*** Test Cases ***
TC1
   Open Browser https://www.tutorialspoint.com/ chrome
   Maximize Browser Window
   Close Browser
```

We will add one more test case: TC2 in the same project.



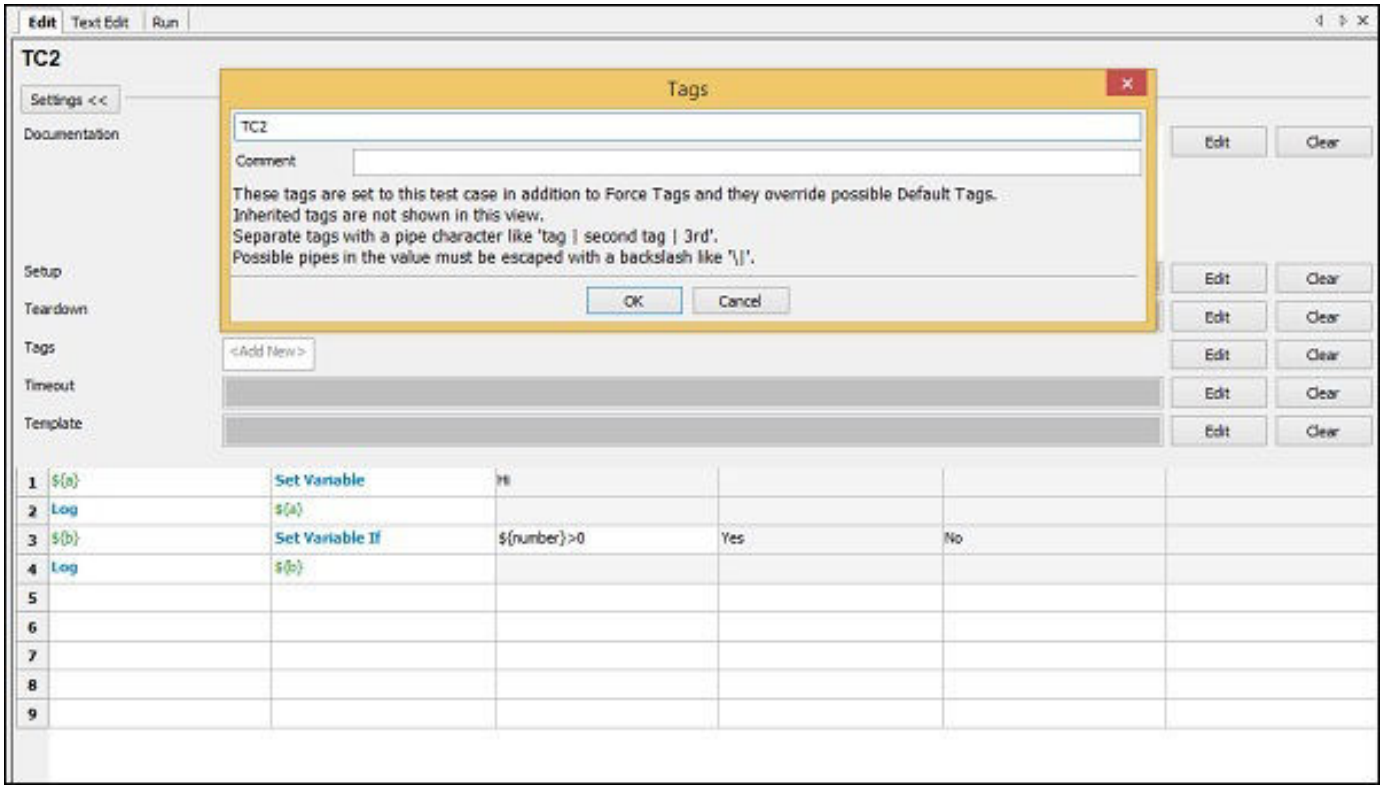

```
*** Settings ***
Library SeleniumLibrary

*** Variables ***
${number} 100

*** Test Cases ***
TC1
   Open Browser https://www.tutorialspoint.com/ chrome
   Maximize Browser Window
   Close Browser

TC2
   ${a} Set Variable Hi
   Log ${a}
   ${b} Set Variable If ${number}>0 Yes No
   Log ${b}
```

We can add multiple test cases under the test suite created. Click Run to execute the test cases. The execution will take place based on the number of test cases added −

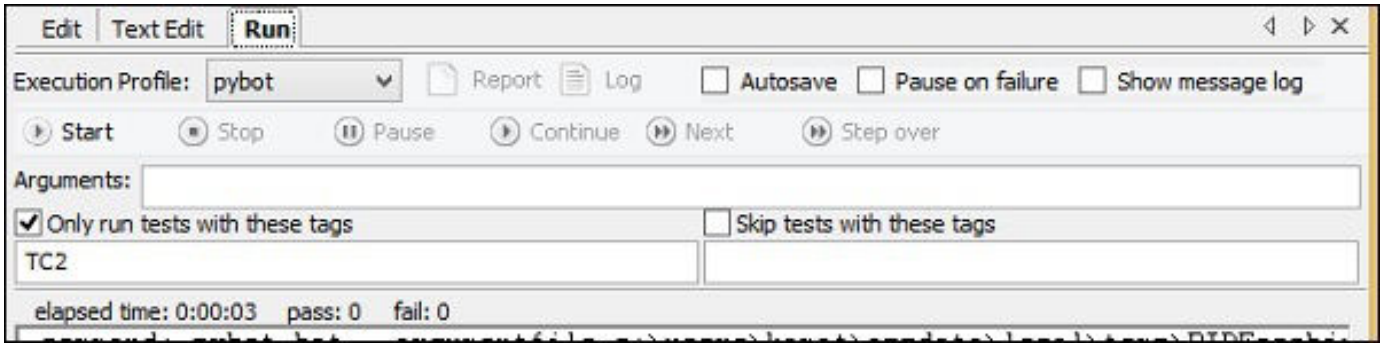


Using Tags for Executing Test Case

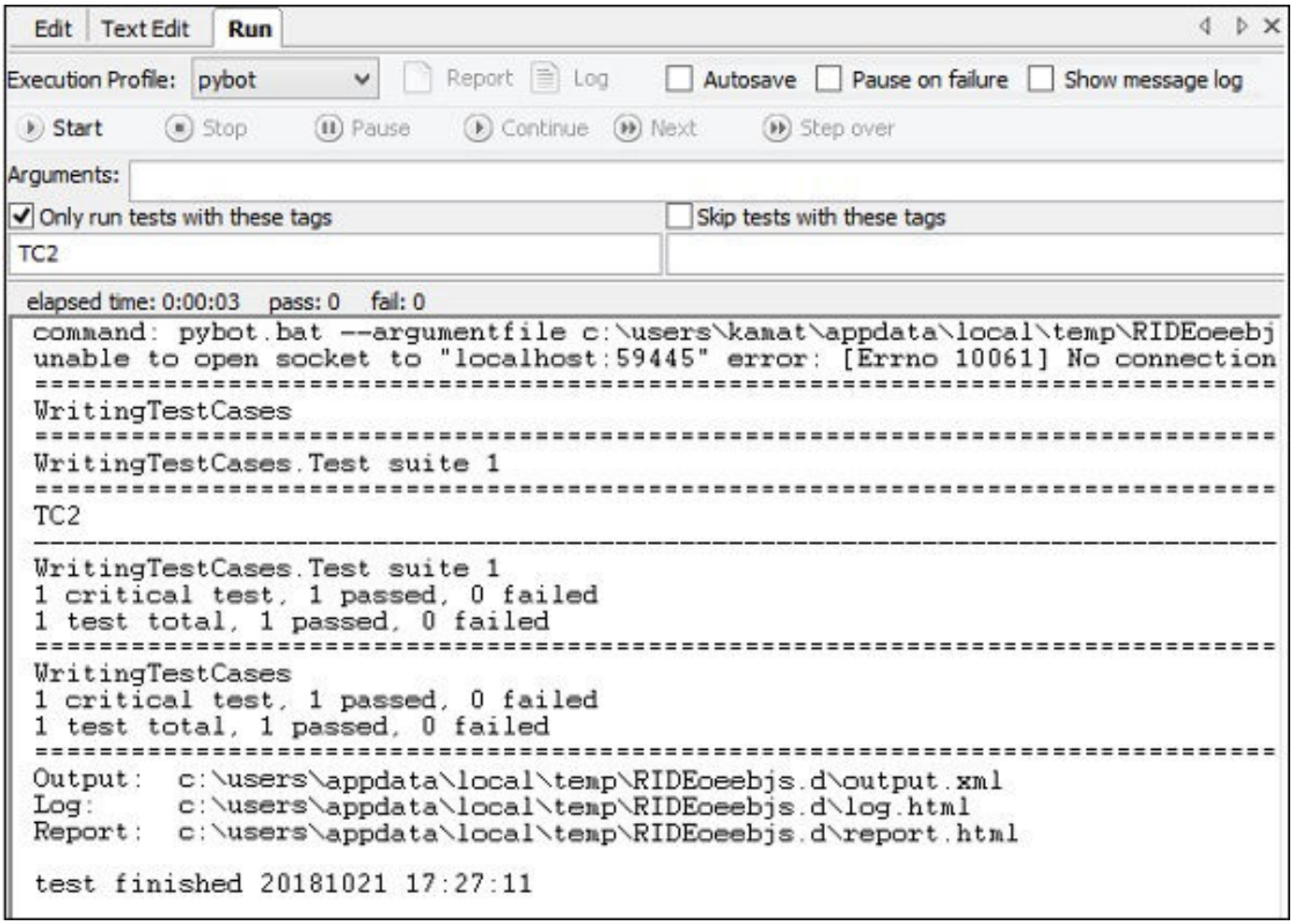
In case you want to run only test case TC2, you can tag the same. Click on the test case and click Edit across Tags as shown below −



Click Ok to save the tag. Add the tag name in Run as shown below −



We have selected option -> **Only run tests with these tags** and added tag name in it. Now, it will run only those test cases that have tag names. You can give any name and group the test cases based on tag name and run the same. You can also use tag to skip the test case.



Now we can see only TC2 running when executed.

Use Resource Files for Test Case

Robot framework has option for resource, where you can import robot files to be used with the test cases.

Test case TC1 that we have created uses the following keywords −

1	Open Browser	https://www.tutorialspoint.com/	chrome		
2	Maximize Browser Window				
3	Close Browser				
4					
5					
6					
7					
8					

We have used Keywords like −

- Open Browser
- Maximize Browser Window
- Close Browser

We will use a user-defined keyword for the above test case. The user-defined keyword will be available in the robot file which will be used as a resource.

We will create a file in the same directory and write our keyword as follows −

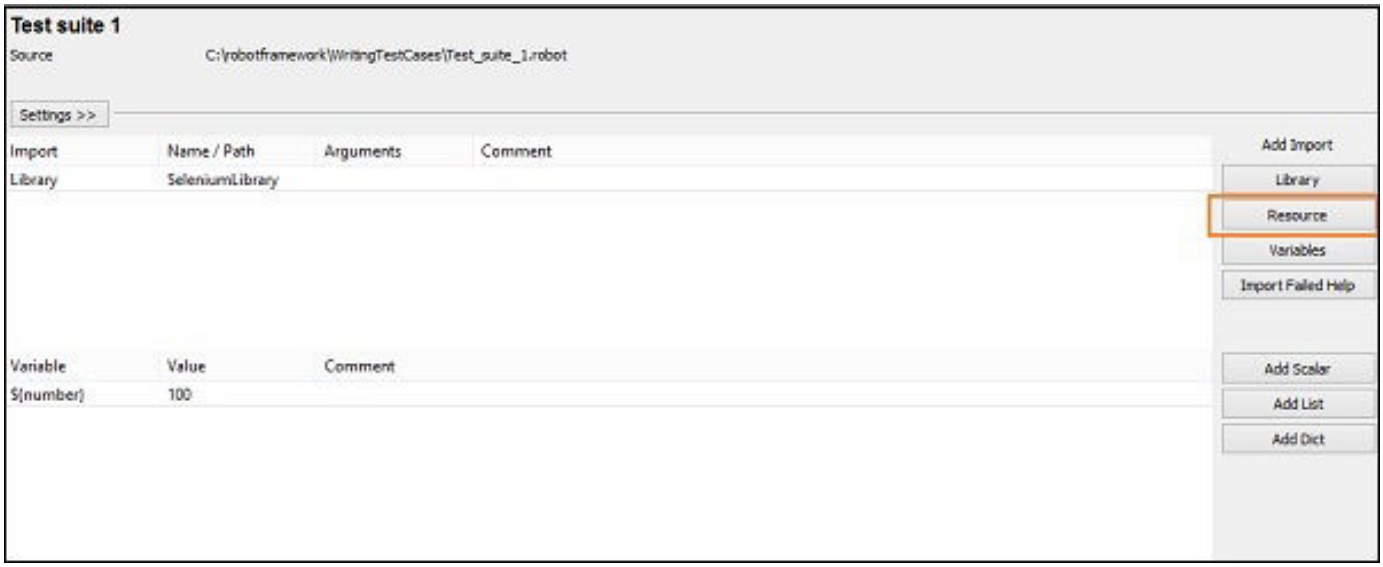
Please note details of keywords, i.e., how to create user-defined keywords are explained in *Robot Framework − Working with Keywords* chapter.

We have created a user−defined keyword called **Test Browser** as shown in the browseropen.robot file −

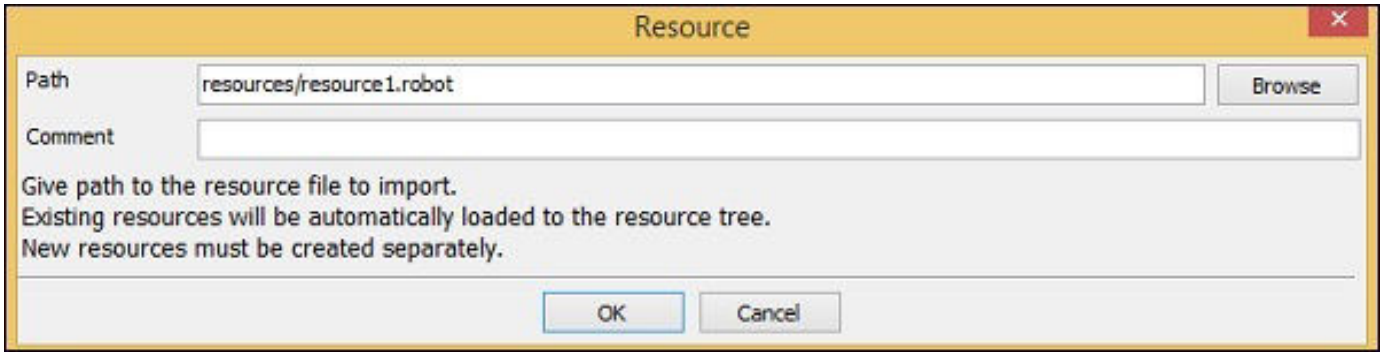
```
*** Settings ***
Library SeleniumLibrary

*** Variables ***
${url} https://www.tutorialspoint.com/
${browser} chrome

*** Keywords ***
Test Browser
   Open Browser ${url} ${browser}
   Maximize Browser Window
```

The file contains various options such as Settings, Variables, and Keywords. Please note, we cannot write test case inside the file to be used as resource. We will upload the above file as resource for the test suite as shown below.

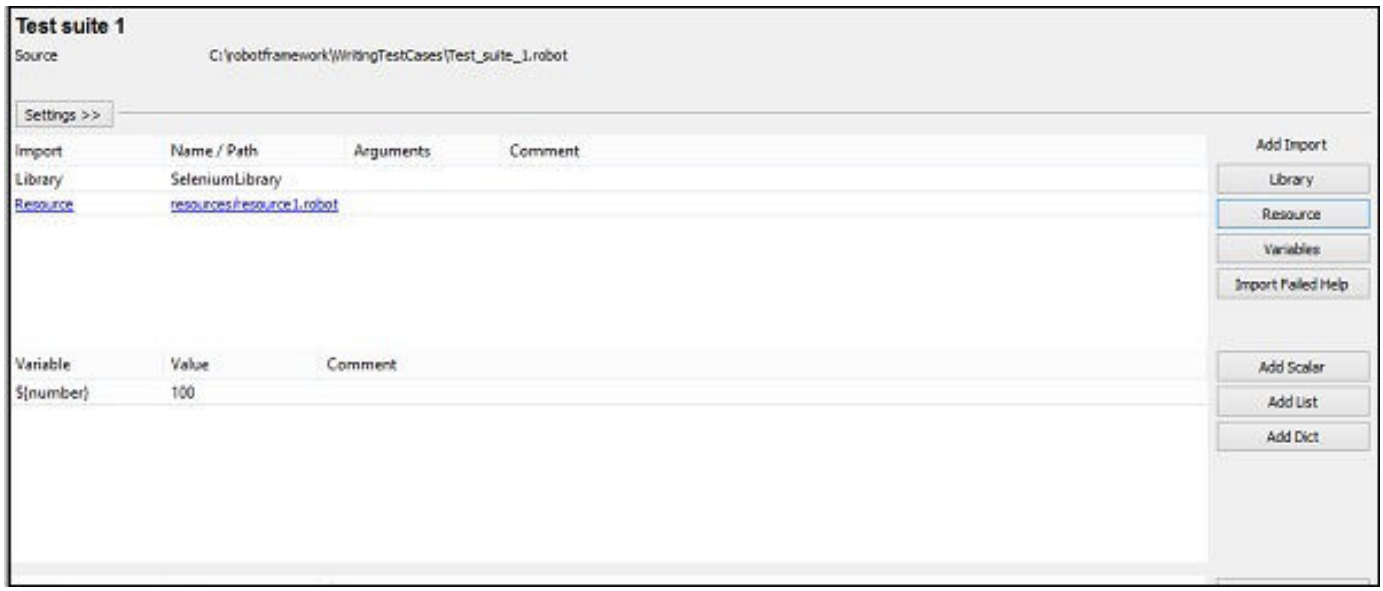
Select the test suite. On the left side, click on resource option as shown below −



Click on Resource and it will ask the path to import robot file −



Mention the path where the file is stored as shown above and click OK to add resource. It will be displayed as shown below −



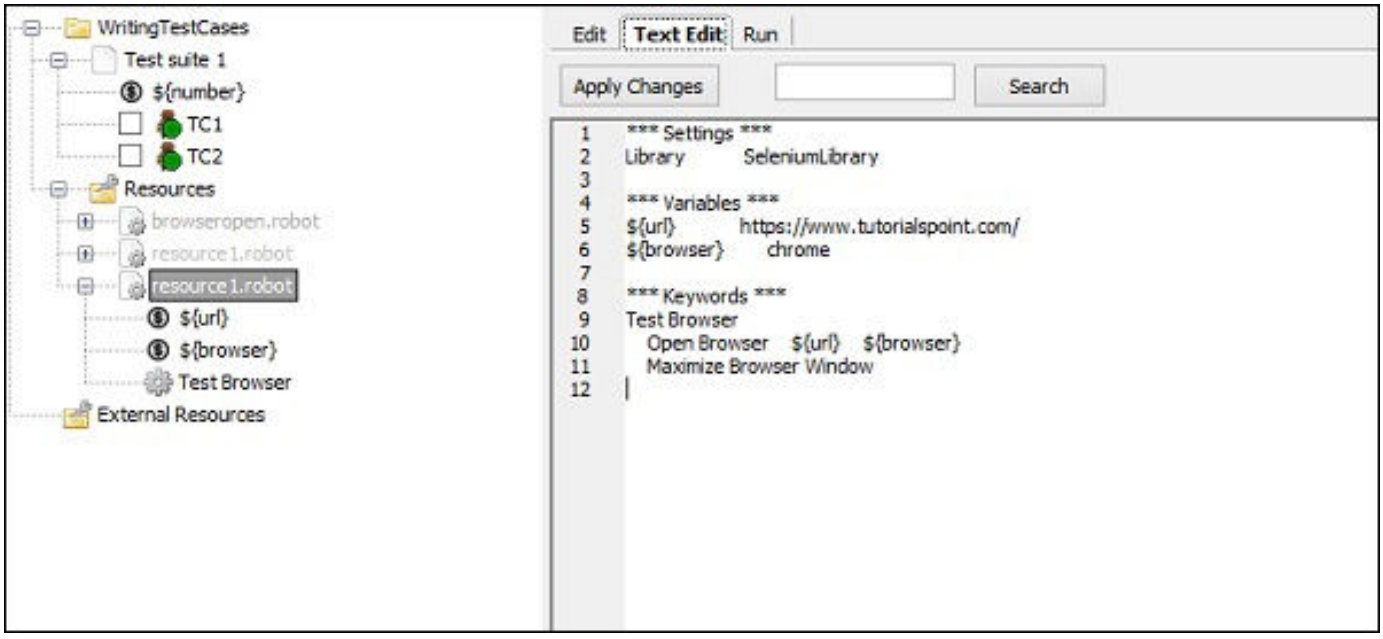
Now, we will change test case TC1 which has keywords as shown below −

1	Open Browser	https://www.tutorialspoint.com/	chrome		
2	Maximize Browser Window				
3	Close Browser				
4					
5					
6					
7					
8					

We will add the user-defined keyword to TC1 from the resource file, i.e., Test Browser keyword −

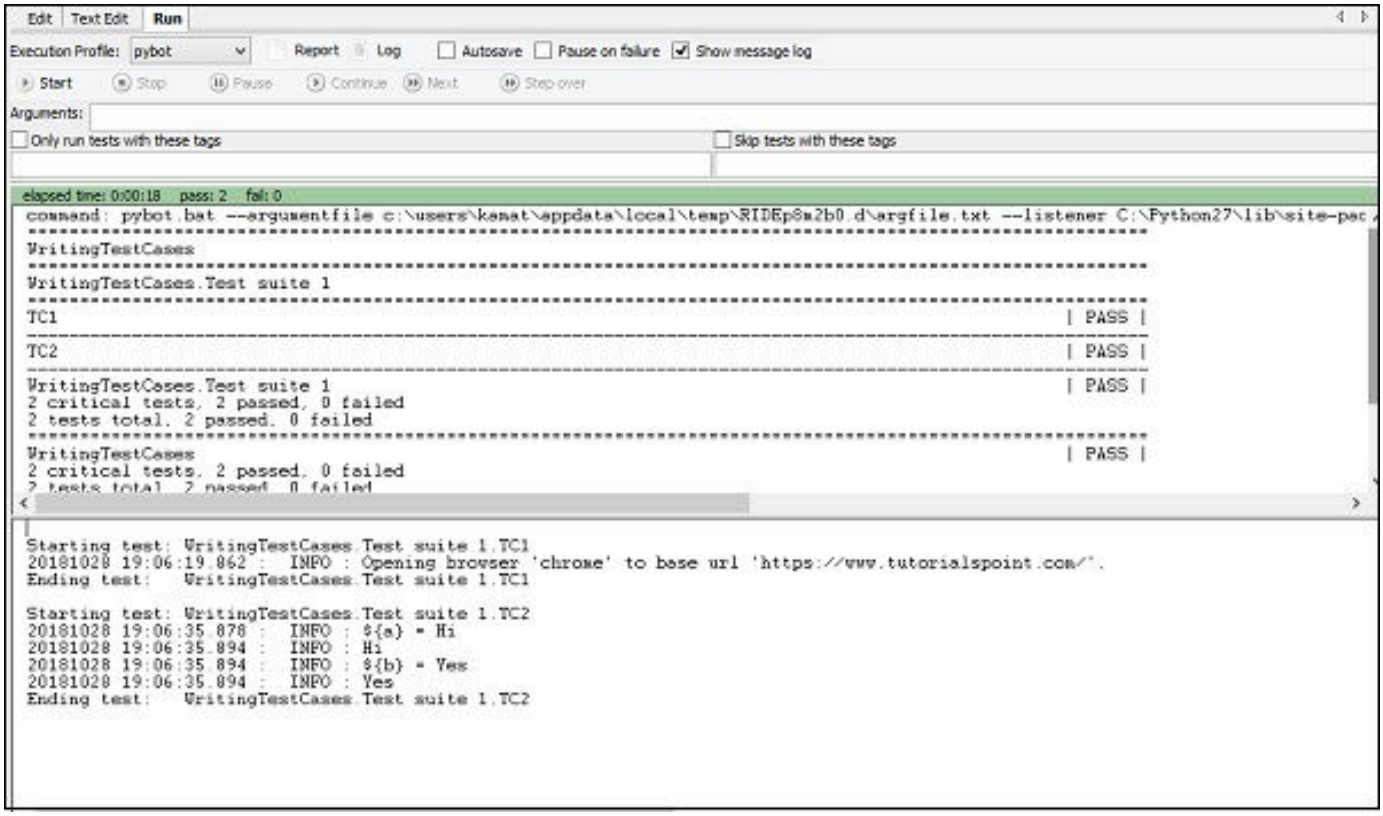
1	Test Browser				
2	Close Browser				
3					
4					
5					
6					
7					

The resource file uploaded is as shown below −



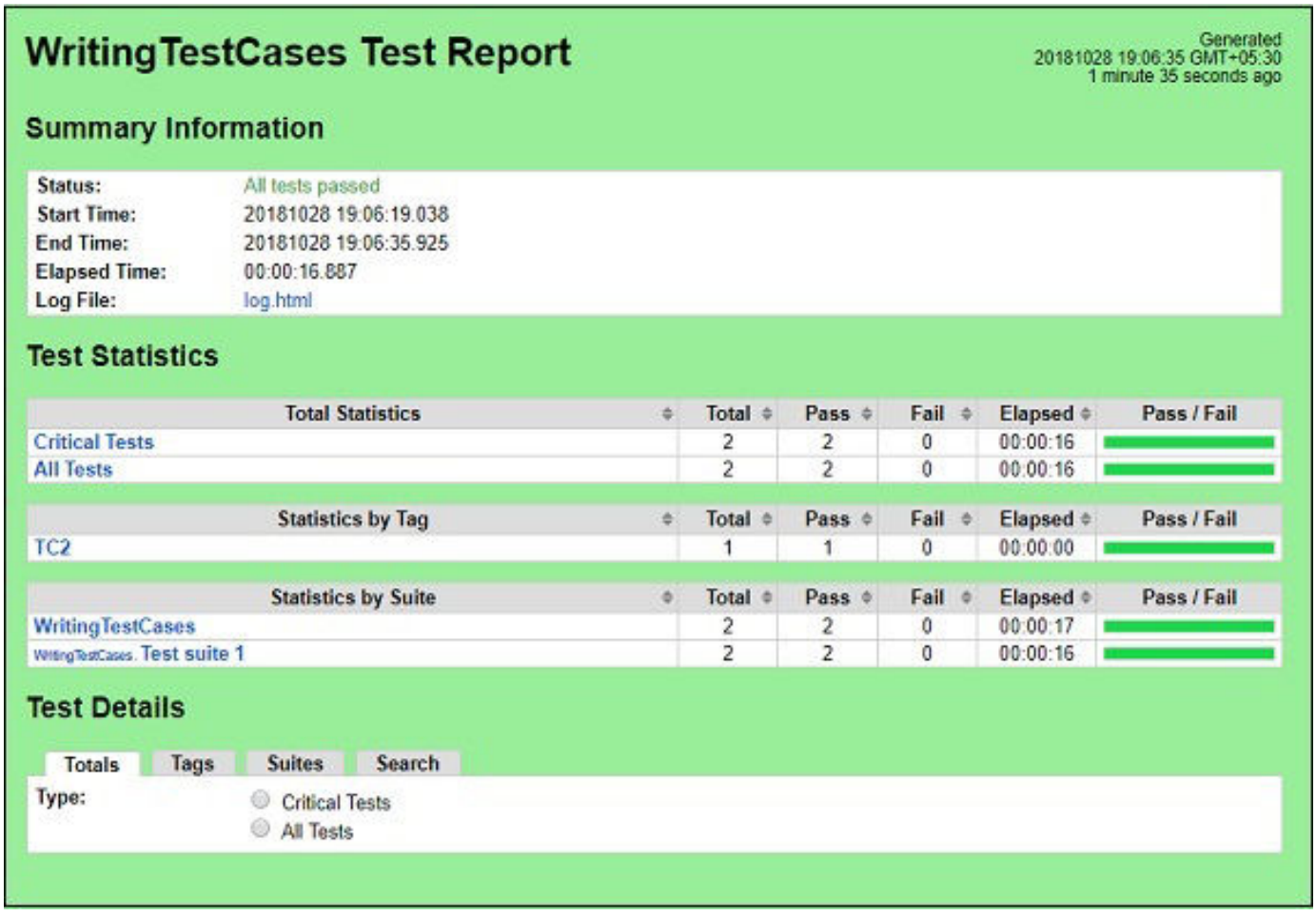
The user-defined Keyword is used in test case TC1.

We will now execute the test case −

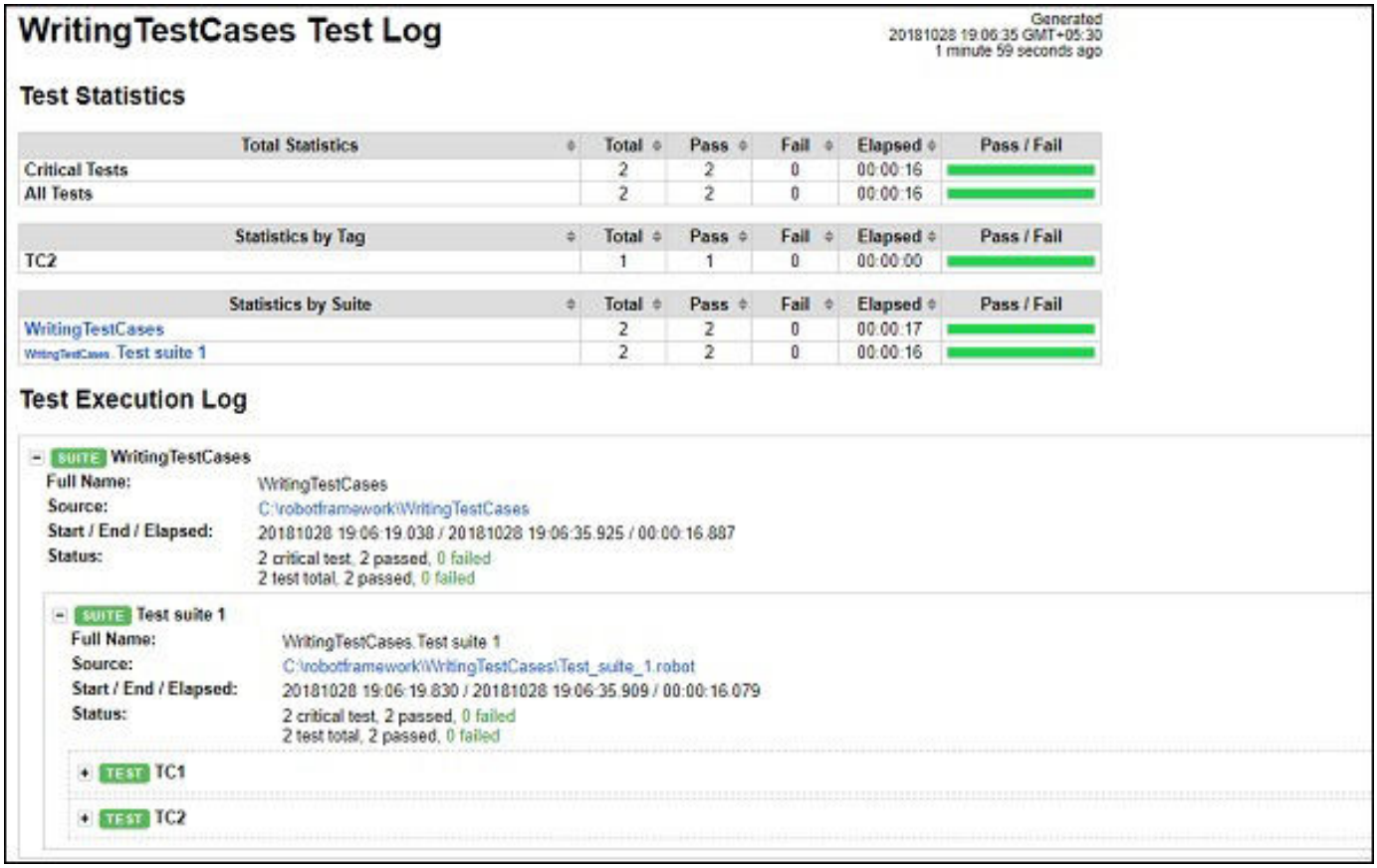


We have both test cases being passed. Let us now see the report and log details.

Report



Log



WritingTestCases Test Log

Generated
20181028 19:06:35 GMT+05:30
1 minute 59 seconds ago

Test Statistics

Total Statistics	Total	Pass	Fail	Elapsed	Pass / Fail
Critical Tests	2	2	0	00:00:16	
All Tests	2	2	0	00:00:16	

Statistics by Tag	Total	Pass	Fail	Elapsed	Pass / Fail
TC2	1	1	0	00:00:00	

Statistics by Suite	Total	Pass	Fail	Elapsed	Pass / Fail
WritingTestCases	2	2	0	00:00:17	
WritingTestCases.Test suite 1	2	2	0	00:00:16	

Test Execution Log

SUITE WritingTestCases
Full Name: WritingTestCases
Source: C:\robotframework\WritingTestCases
Start / End / Elapsed: 20181028 19:06:19.038 / 20181028 19:06:35.925 / 00:00:16.887
Status: 2 critical test, 2 passed, 0 failed
2 test total, 2 passed, 0 failed

SUITE Test suite 1
Full Name: WritingTestCases.Test suite 1
Source: C:\robotframework\WritingTestCases\Test_suite_1.robot
Start / End / Elapsed: 20181028 19:06:19.830 / 20181028 19:06:35.909 / 00:00:16.079
Status: 2 critical test, 2 passed, 0 failed
2 test total, 2 passed, 0 failed

TEST TC1

TEST TC2

Conclusion

This chapter gives details on how to write test case, execute it, how to tag a test-case, use resources, etc.

Keyword and Data Driven Test Cases

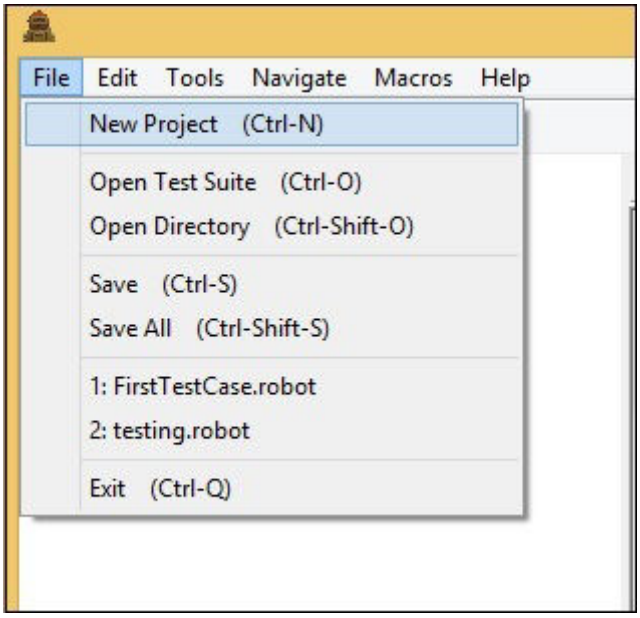
The workflow of a test-case can be tested using keyword or data driven style. In case you want to test the workflow with different inputs, the same can be done using data driven test cases. We will work on an example to go through the following test case approaches −

- Keyword Driven style
- Data Driven style

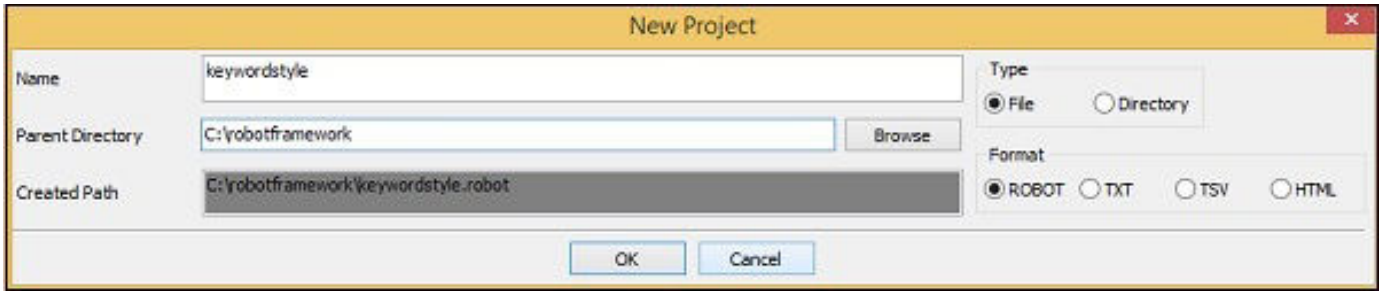
Keyword Driven Style

We will do a project setup to show the working of Keyword driven style.

Open ride using **ride.py** from the command line.

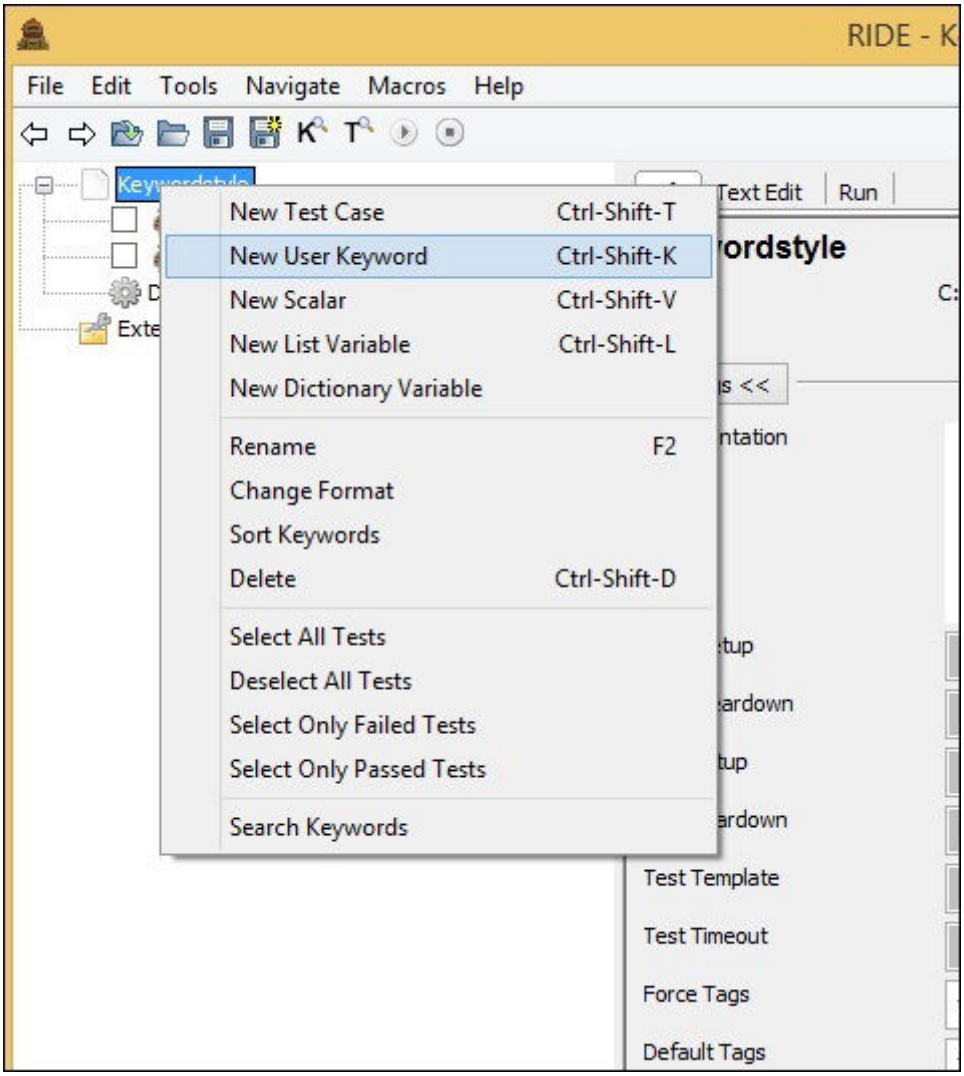


Click on New Project and give a name to your project.

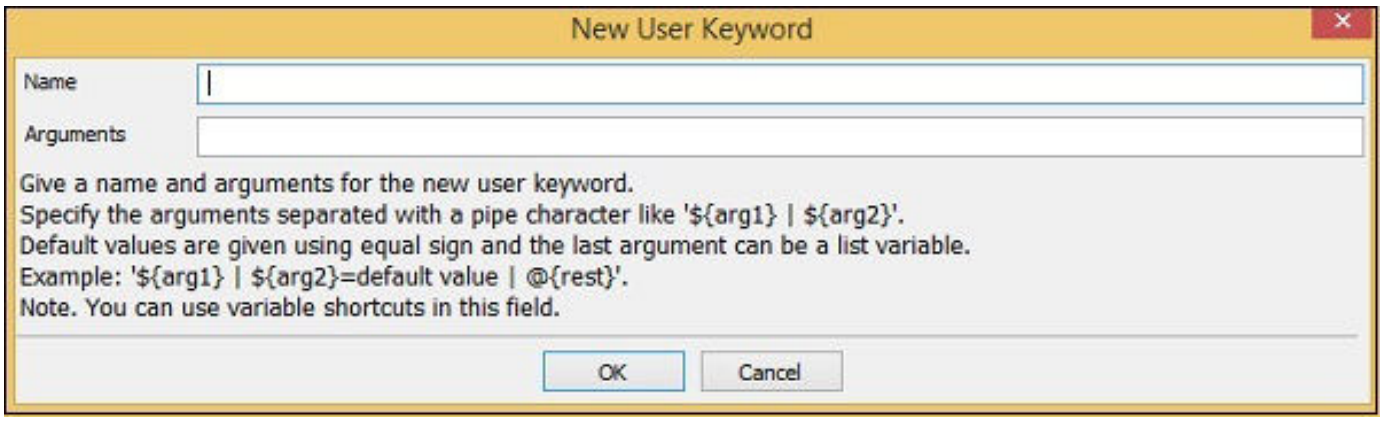


The name given to the project is *keywordstyle. Click OK* to save the project. In this project, we will create a user keyword as shown below.

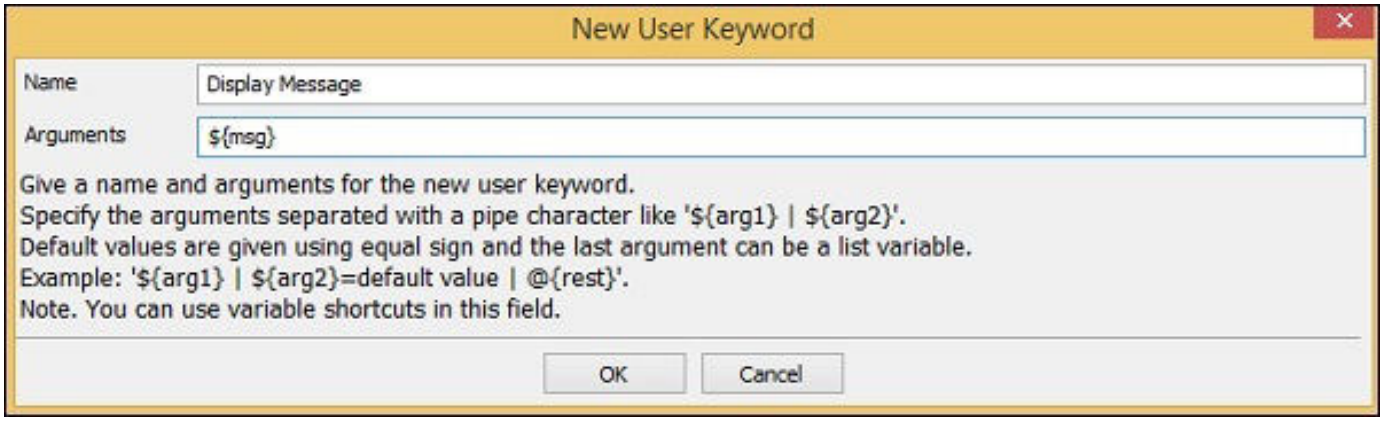
Right-click on the name of the project and click on *New User Keyword* as shown below



It will display screen as follows −

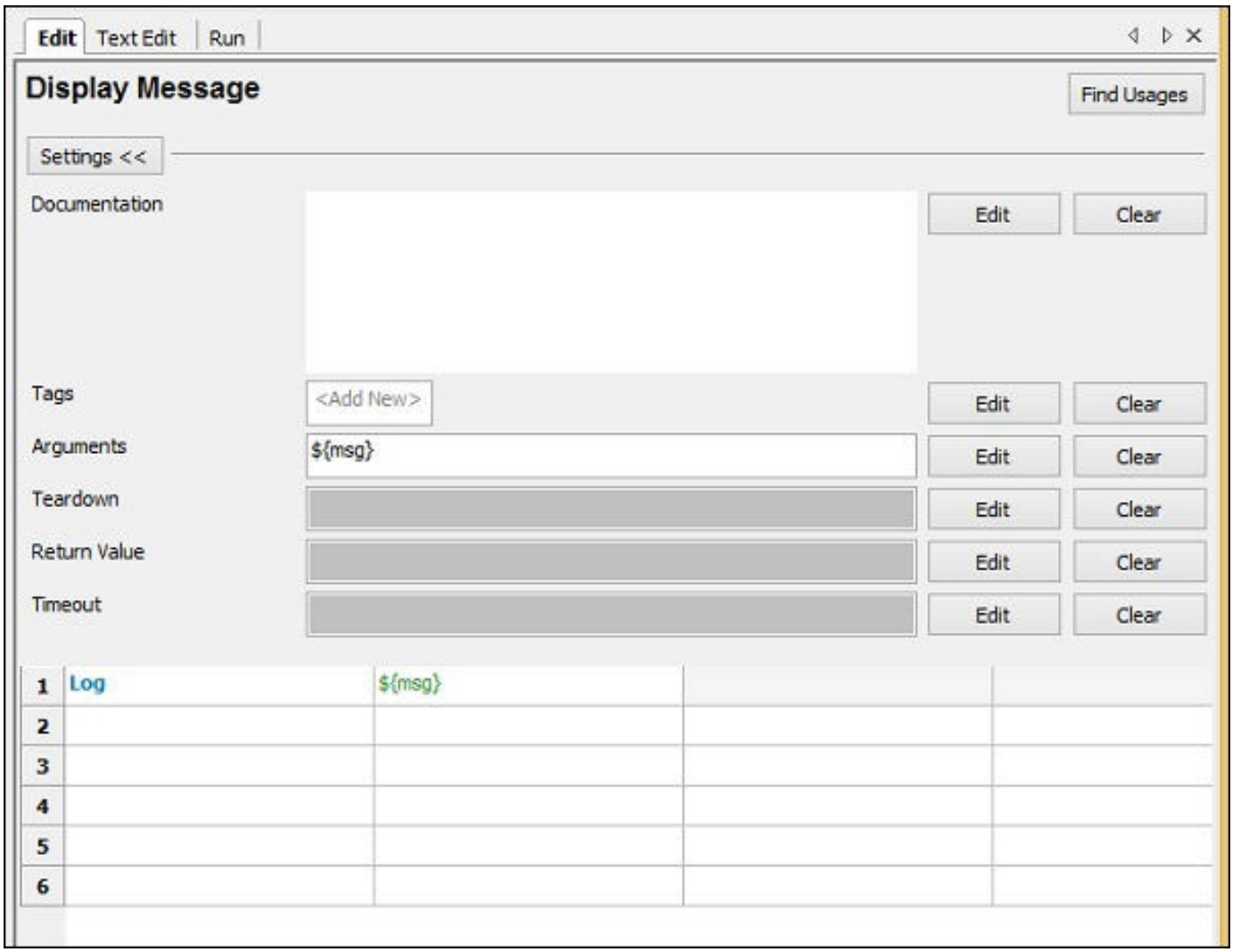


Enter the name of the keyword and the arguments it will take. Here we will give name of the keyword as Display Message. The role of Keyword Display Message is, when it is called, it will log a message. So we need to give an argument to it. Therefore, in the above example the argument will be a scalar variable ${msg}.

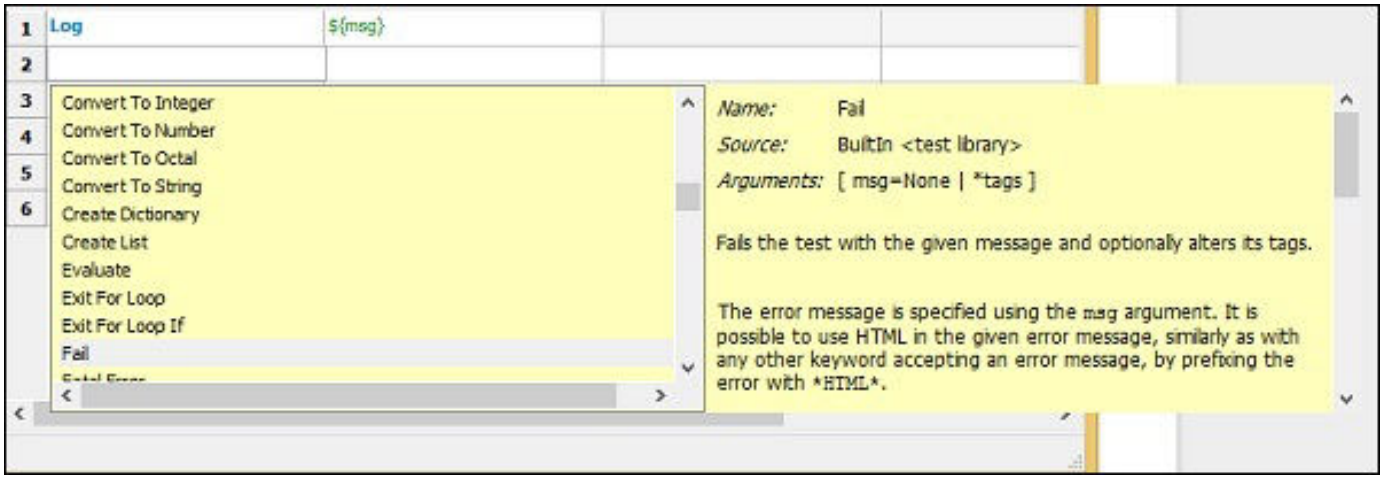


Click OK to save the user keyword. Now we need to write the action the keywords need to do. So, it will have tabular format as shown below where we can give the Library keywords or built-in keywords available with Robot Framework.

Here, we will use a simple Log keyword available with Robot Framework as shown below −

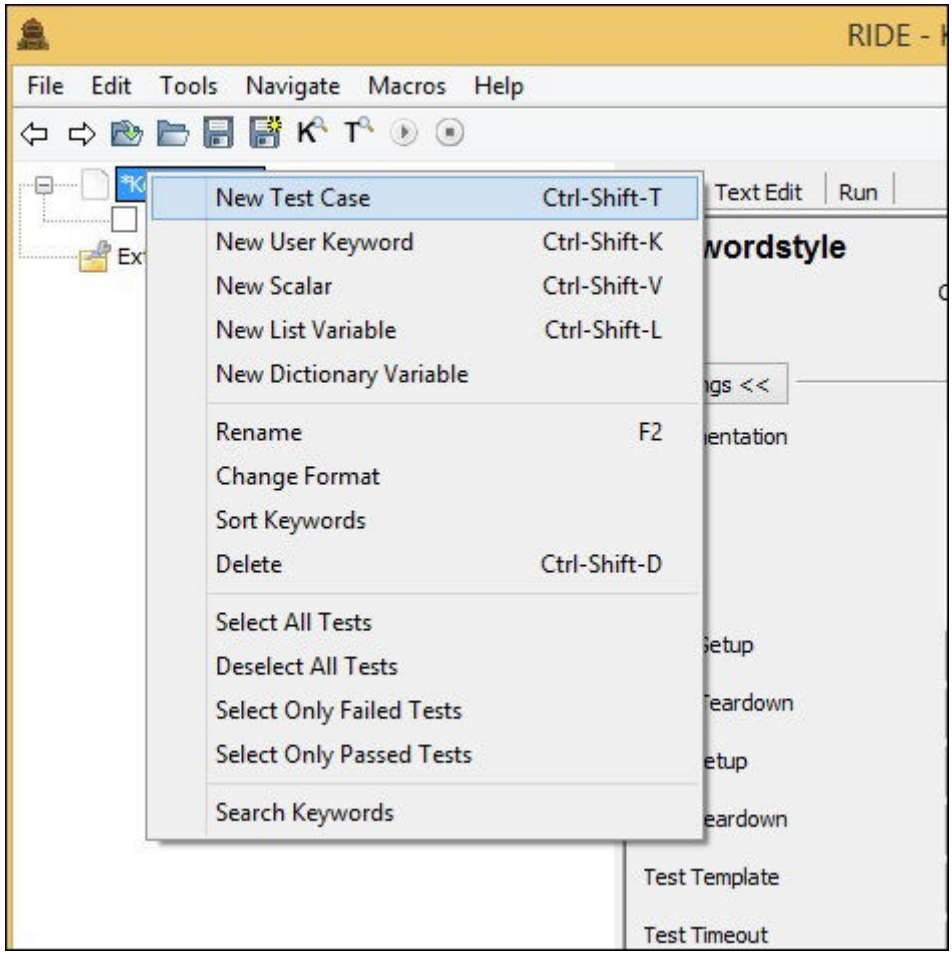


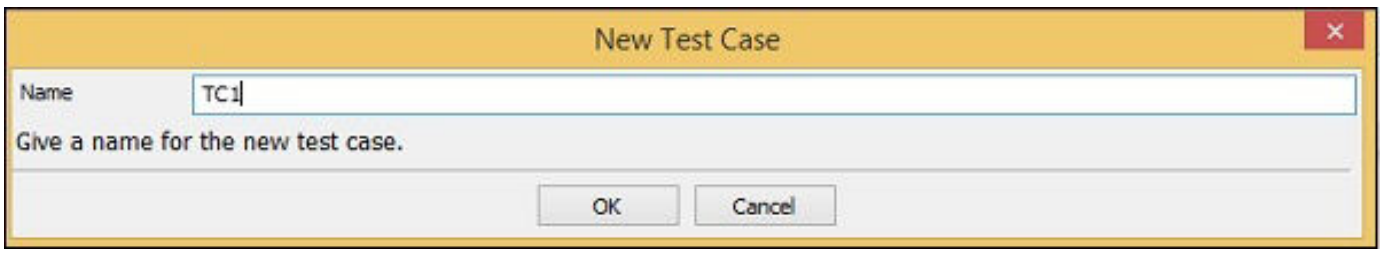
To get more keywords available with Robot framework, press ctrl + space bar in the table column as shown below −



So the keyword we want to use with our testcase is ready. The name of the user keyword is *Display Message* and it takes one argument called **${msg}**.

Let us now use this keyword in simple keyword driven style test-case. To do that we need to create test case. Right-click on the name of the project created. Now, click New Test Case −

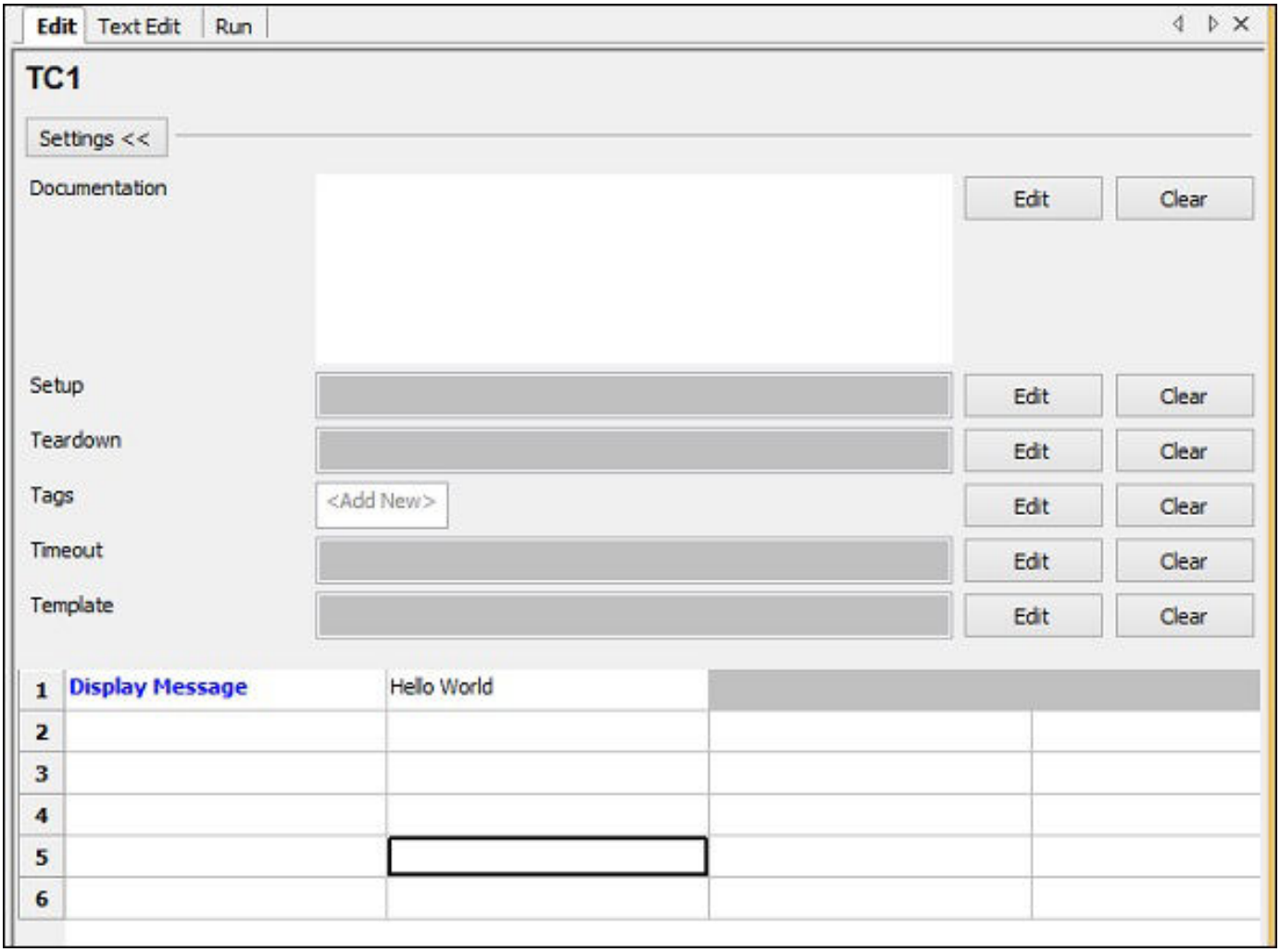




Give name to the test case and click OK.

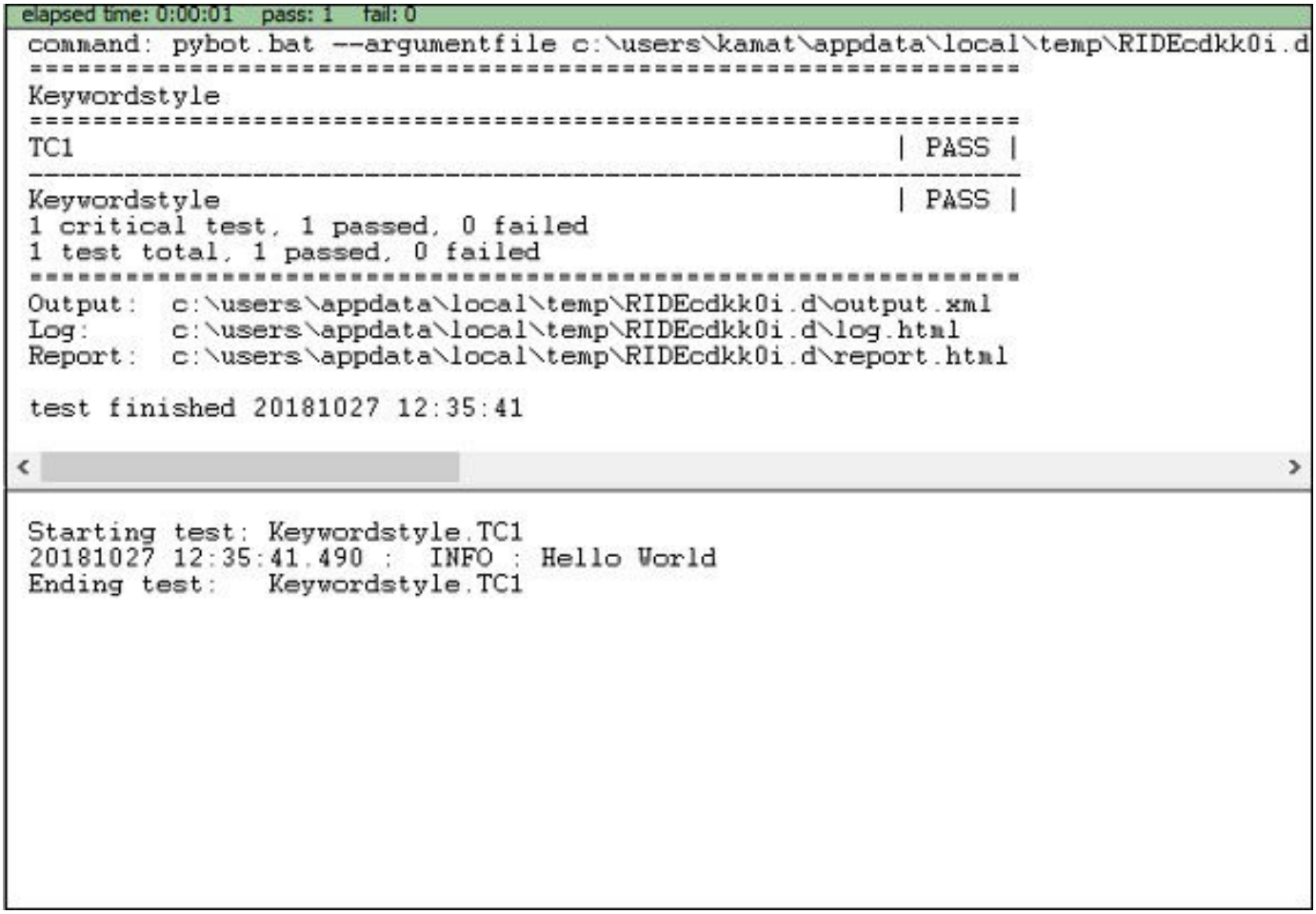
We are done with the project setup and now will write test cases for the keyword driven style.

In the test case, we have used the user-defined keyword Display Message in the tabular format as shown below −



We have used the keyword we have created as shown above and passed the value Hello World.

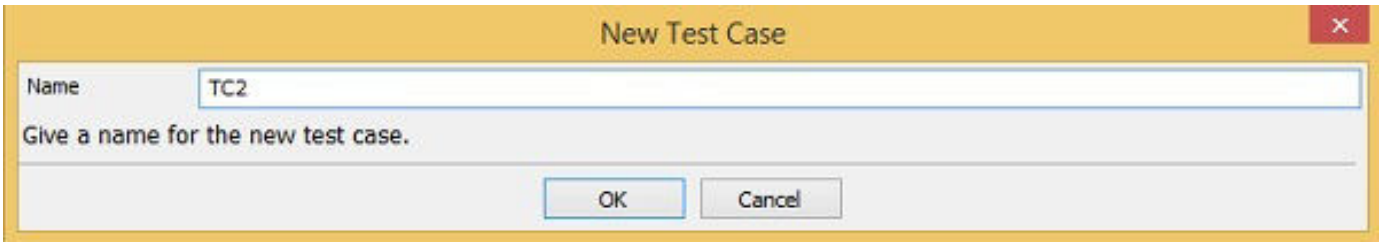
We will execute the test case TC1 and check the output −



In the above example, we have written a simple test-case which logs message and the test case is executed with output *Hello World*. We can see the output Hello World printed in the log. The test case is also passed here.

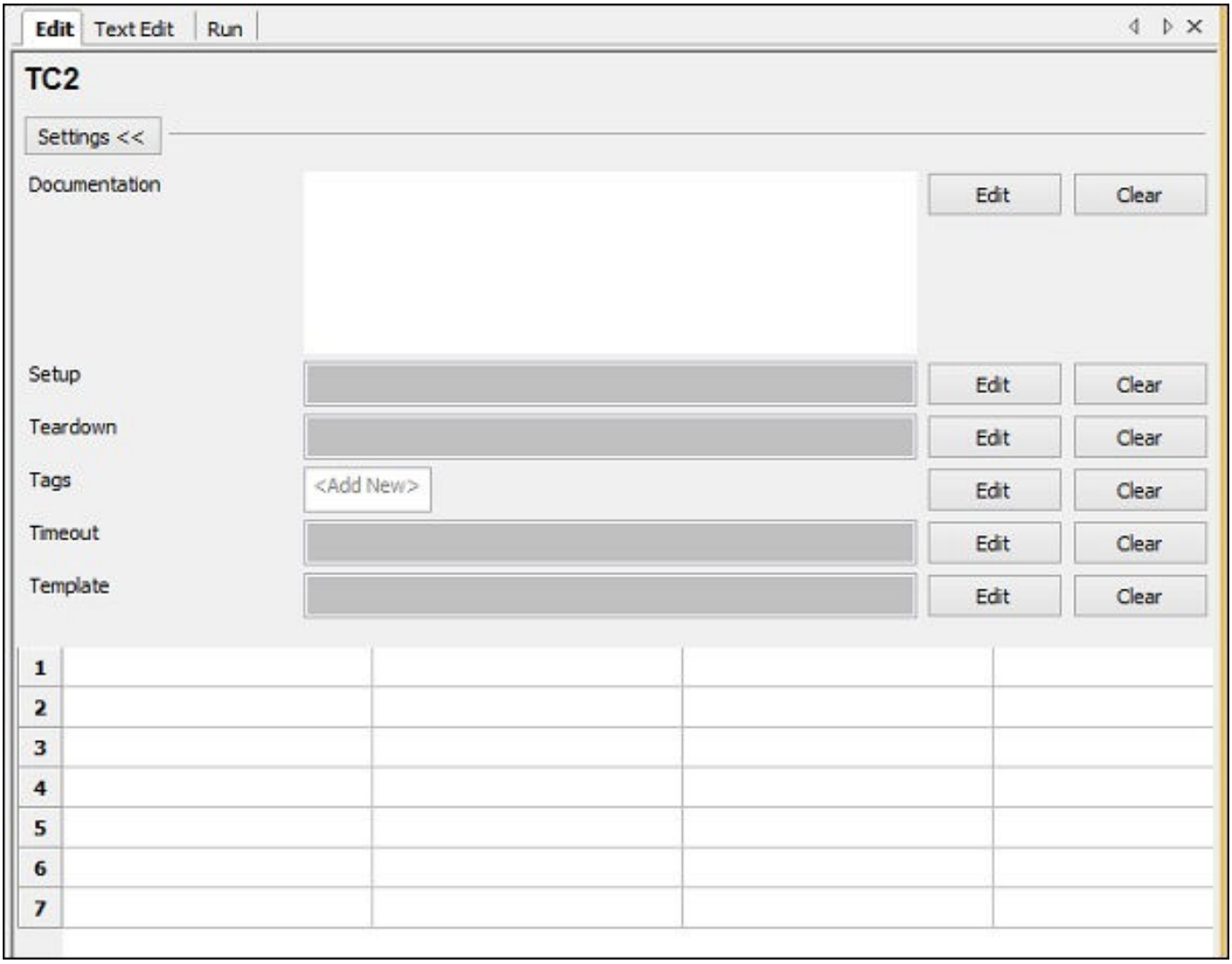
Data Driven Style

We will create one more test case in the same project. We will give the name of the test-case as TC2.



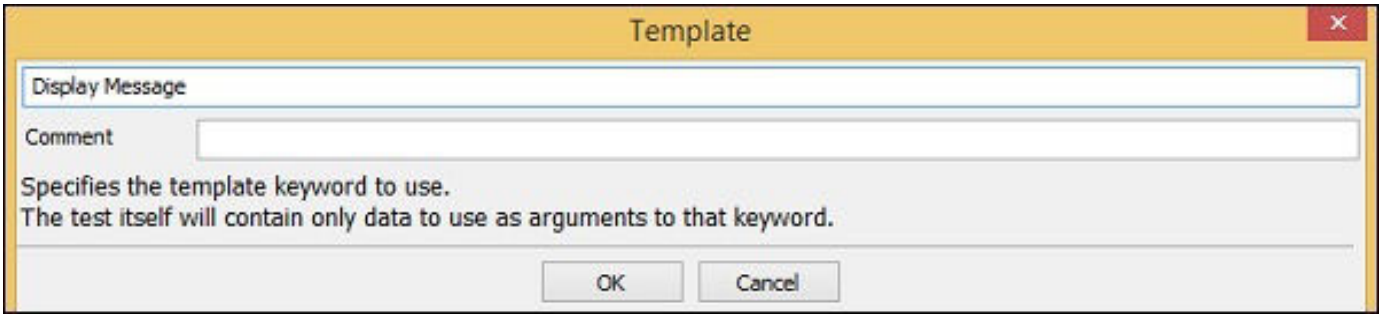
To work with data driven style, we need to create template. Template will take the name of the high level keyword, which is a user-defined keyword like the one we created at the start called Display Message. The arguments to that template will be sent in the form of test-cases. We can pass different values to that template keyword. The data driven approach is mostly used when you want to test the scenario with different data to it.

Once the test case is saved. Click on the test case and the display will be as follows −



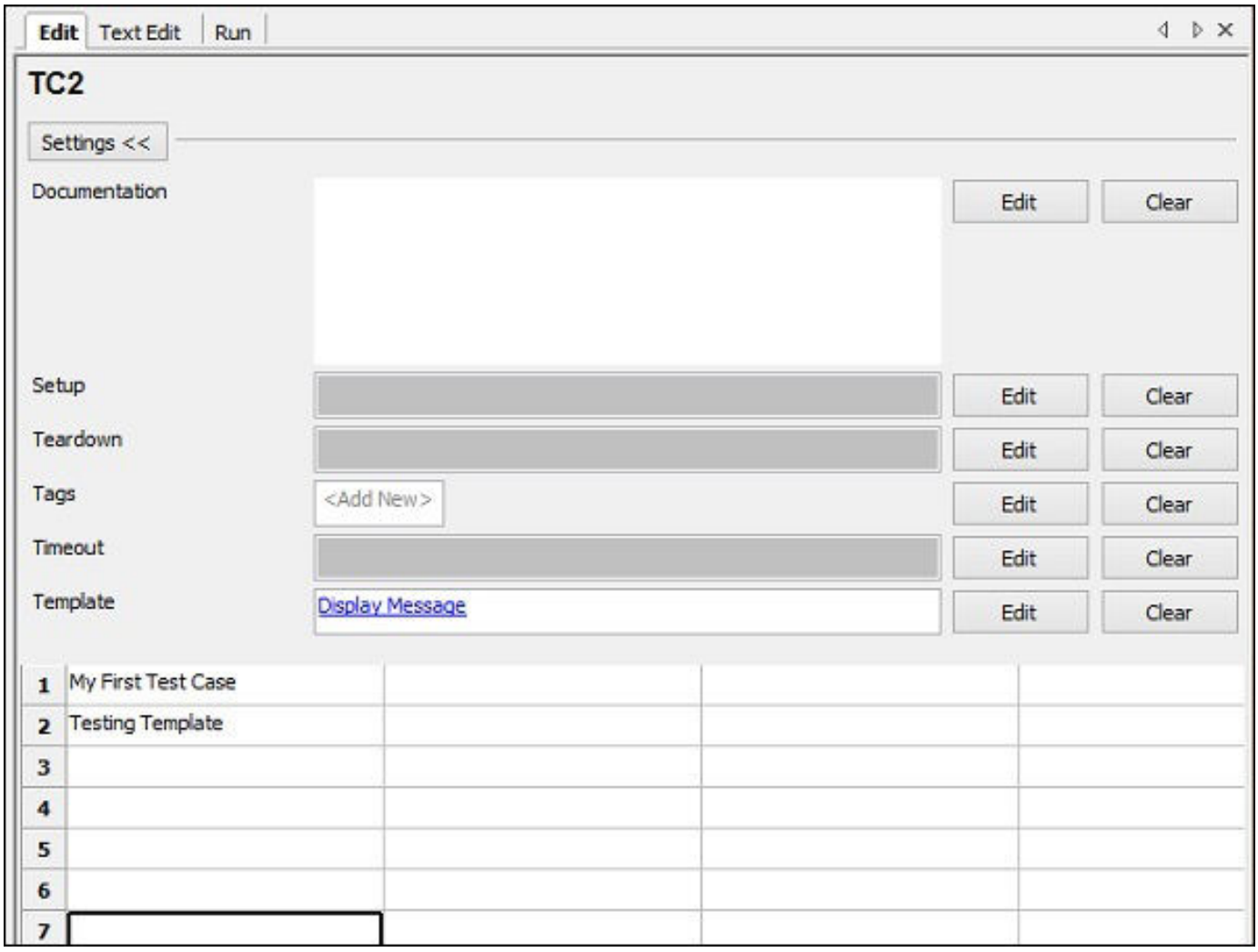
Click on Edit button for Template and add the user-defined keyword.

Enter the user keyword for the template and click OK to save the template.



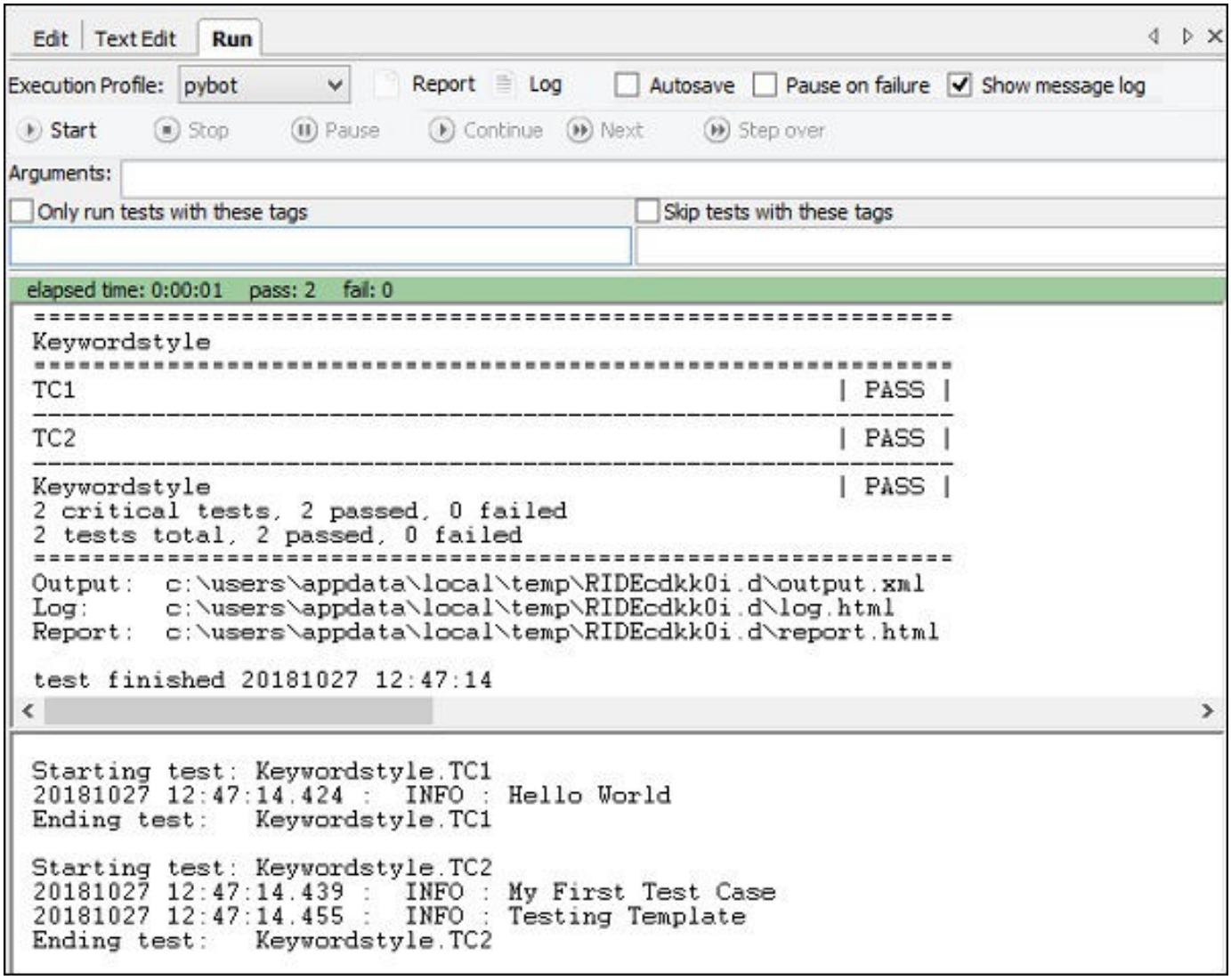
Display Message keyword takes one argument called ${msg}. This is a scalar variable. The details passed in this test case will act as arguments to the user-defined keyword Display

Message.



In TC2, we have added Template Display Message (user-defined keyword). We have given messages in the tabular format.

Let us now execute the test case.



We can see Run executes both the Test Cases. The output shown for TC1 is Hello World. This was the message we had given to the User Keyword Display Message.

For TC2, we used Display Message as a Template. We passed *My First Test Case* and *Testing Template* as values in TC2. As the user keyword Display Message uses internally Log Keyword, it displays the message in the log as shown above.

Conclusion

We have used keyword style and data driven style in this chapter and seen the working of both. Data Driven style takes high-level user-defined keyword as a template and all the test cases act as values to the template.

Working With Browsers Using Selenium Library

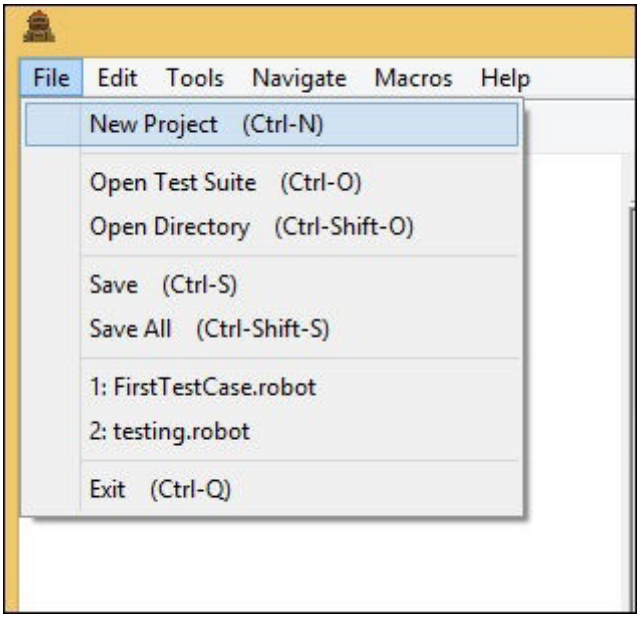
In this chapter, we will learn how to work with browsers using Robot Framework and Selenium Library in ride.

- Project setup in Ride
- Import Selenium Library
- Test case using Chrome Browser

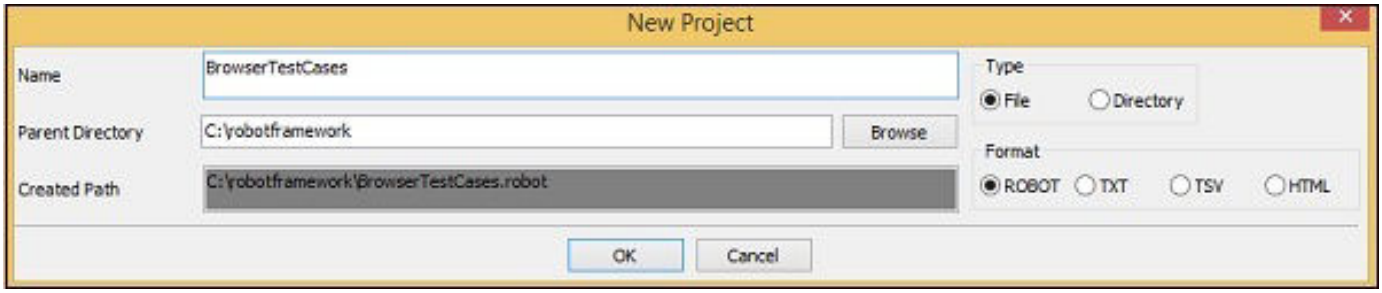
- Test case using Firefox Browser

Project Setup In Ride

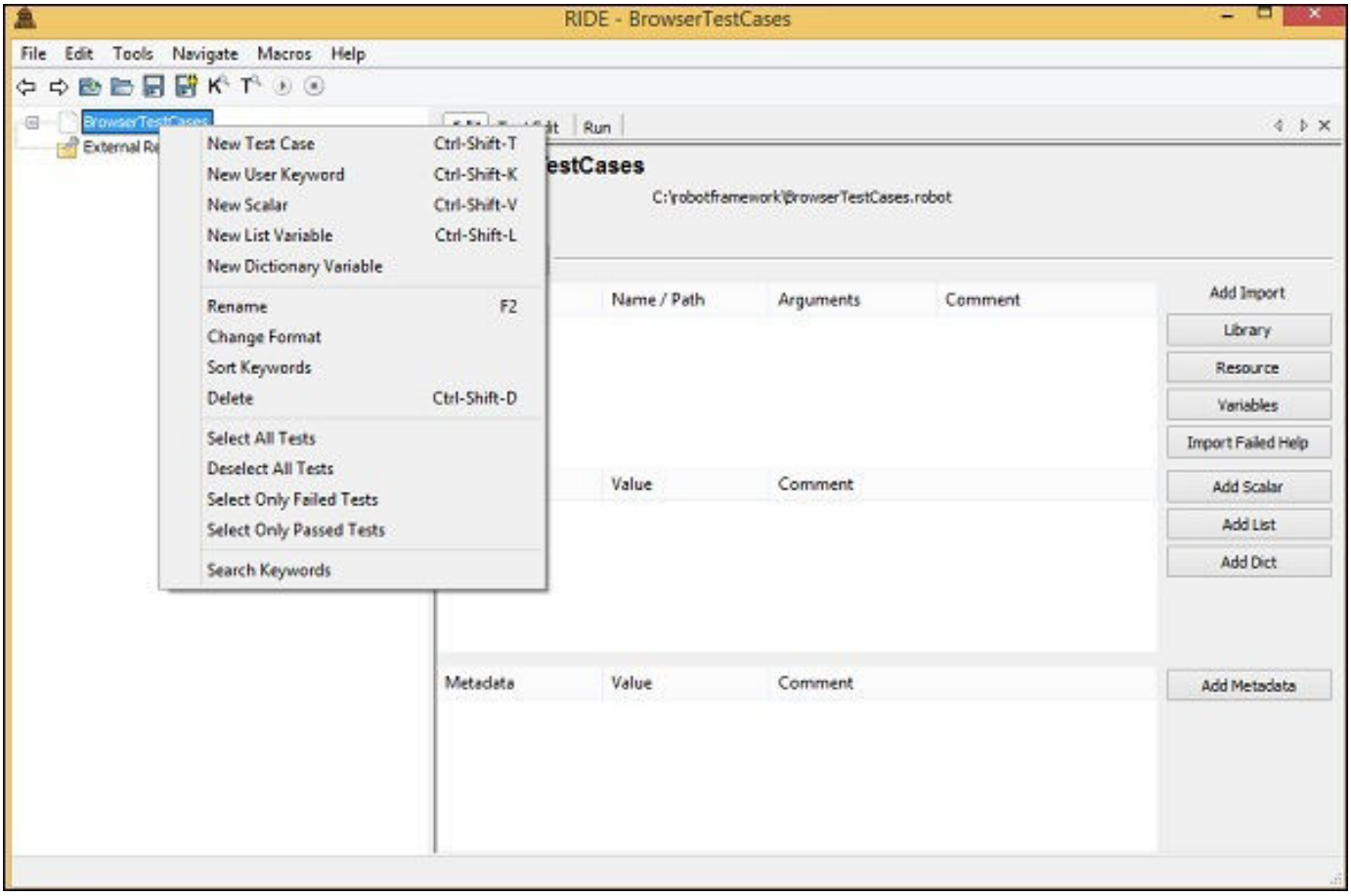
We will first create a project in Ride to work with browsers. Open ride using ride.py from the command line.

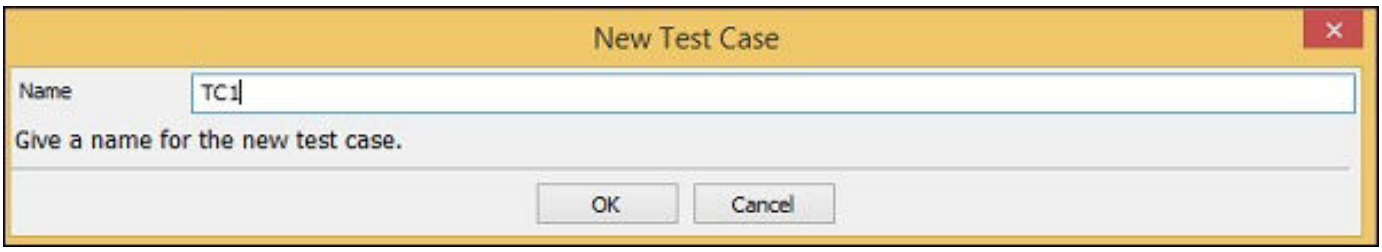


Click on *New Project* and give name to your project.

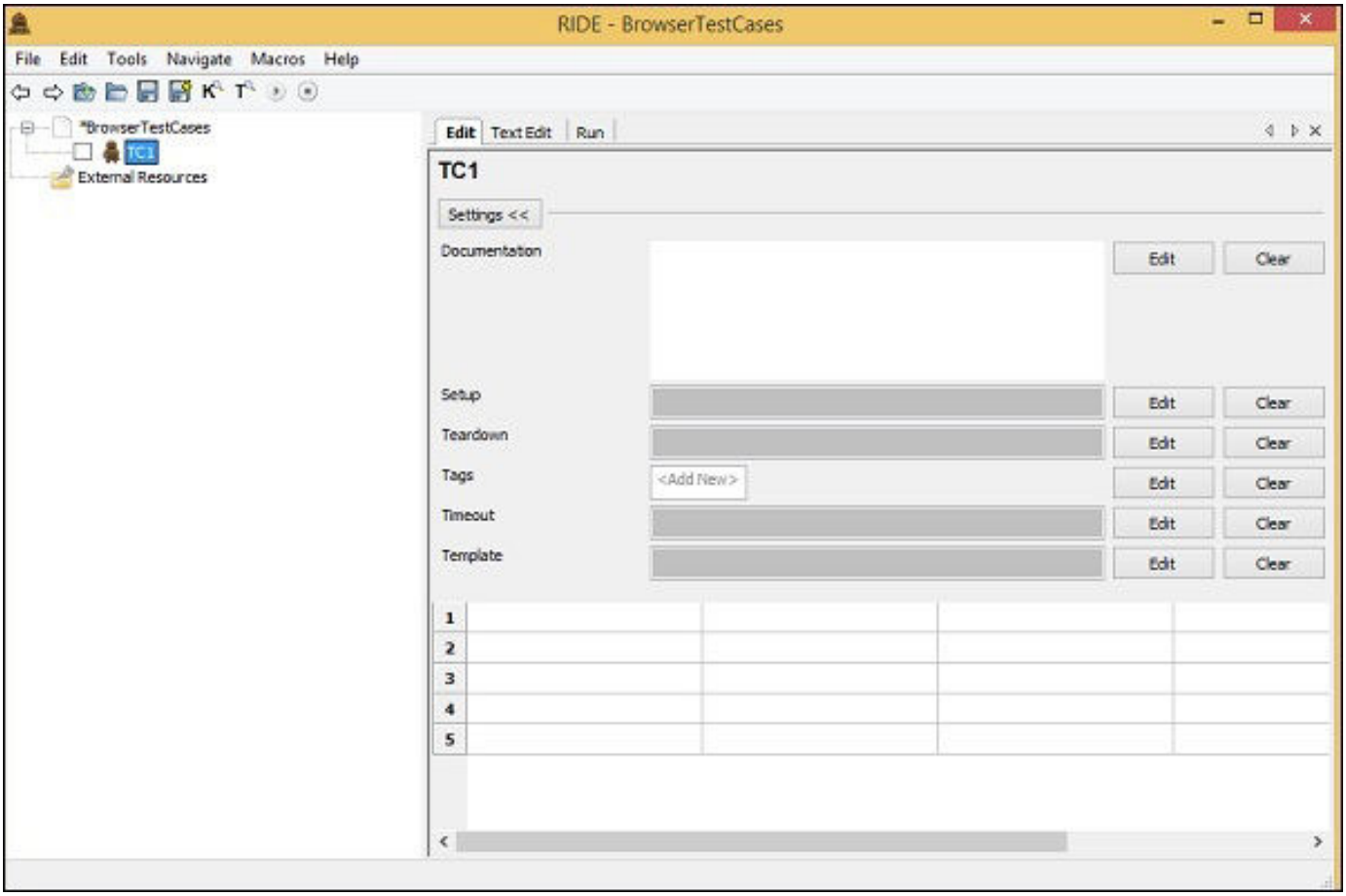


The name given is BrowserTestCases. Click OK to save the project. Right-click on the name of the project created and click on *New Test Case* −





Give name to the test case and click OK.

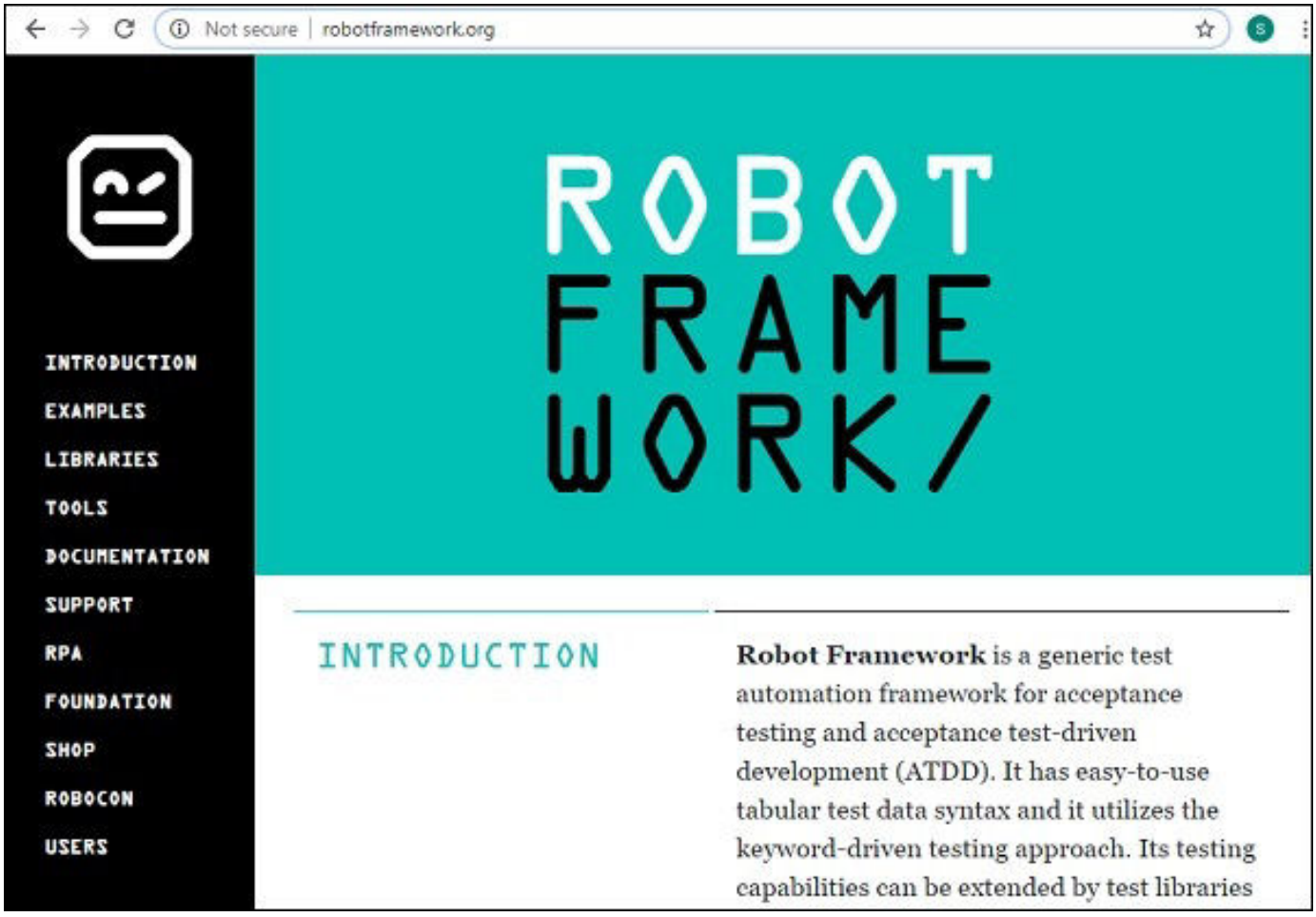


We are done with the project setup. Now, we will write test cases for the browser.

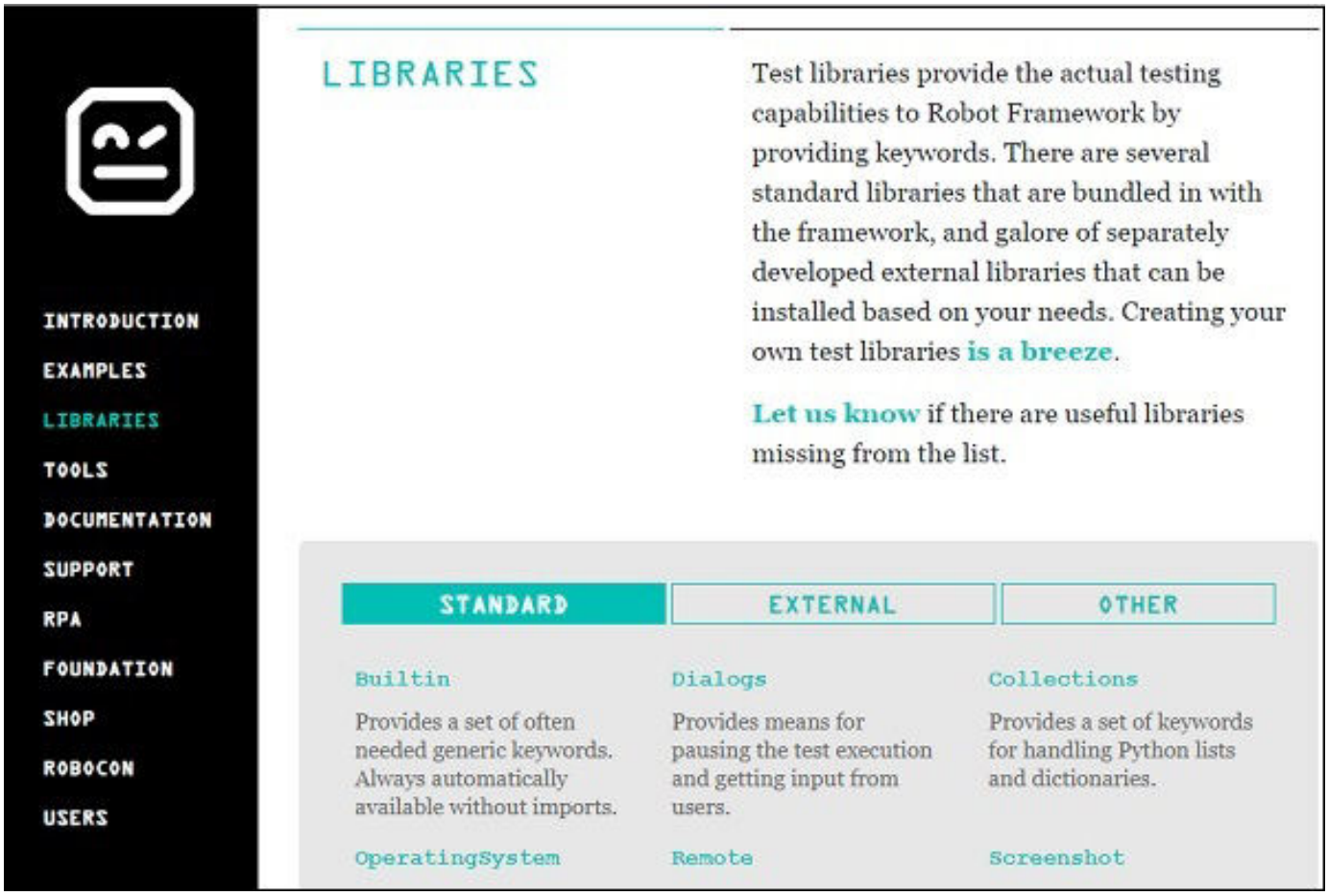
Import Selenium Library

To work with browsers, we need selenium library to be imported in robot. We can do that as follows −

Go to https://robotframework.org/



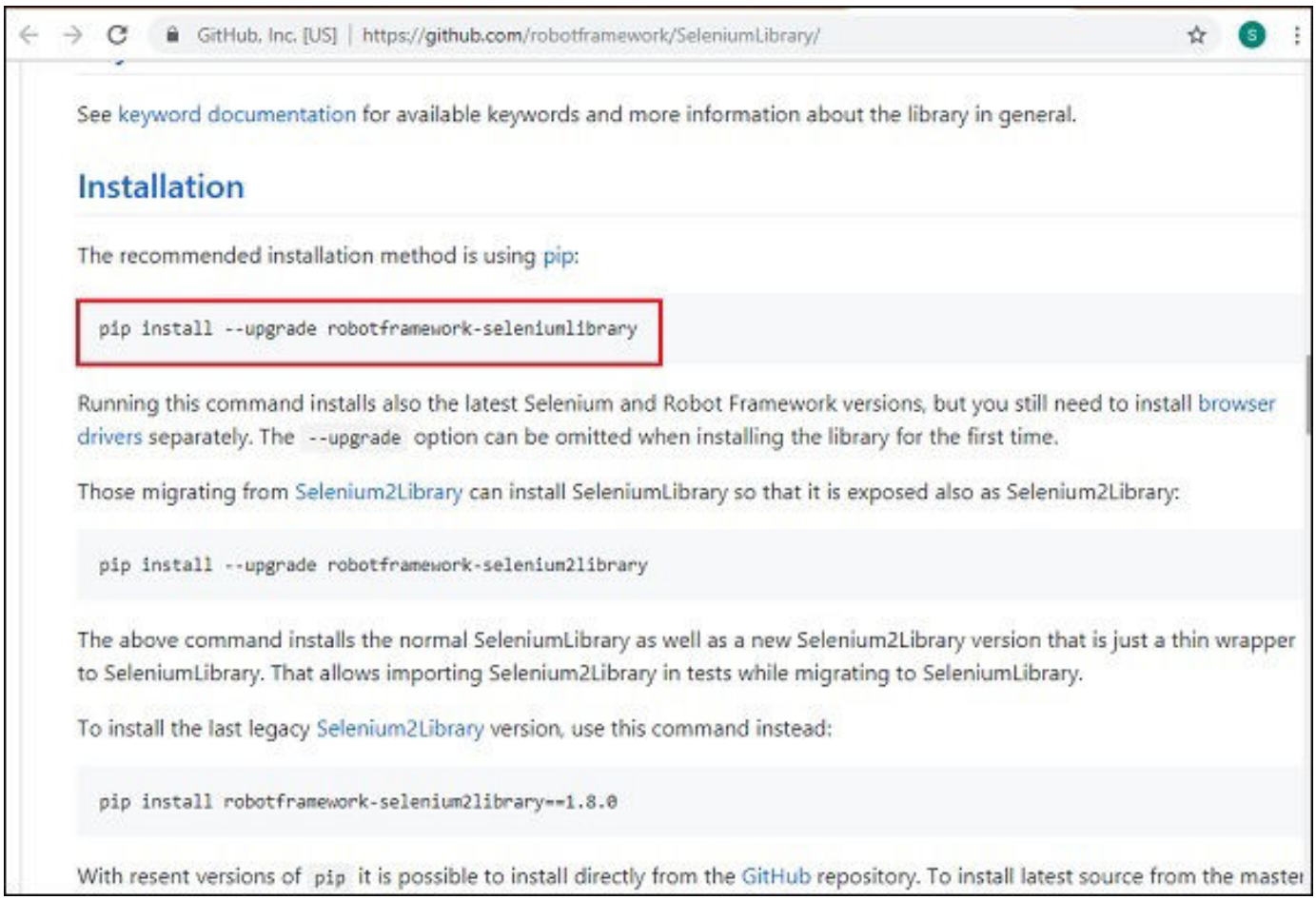
On the left side, select the LIBRARIES option.



Select External option from above and it will list you all the libraries available to be used.

Click SeleniumLibrary.

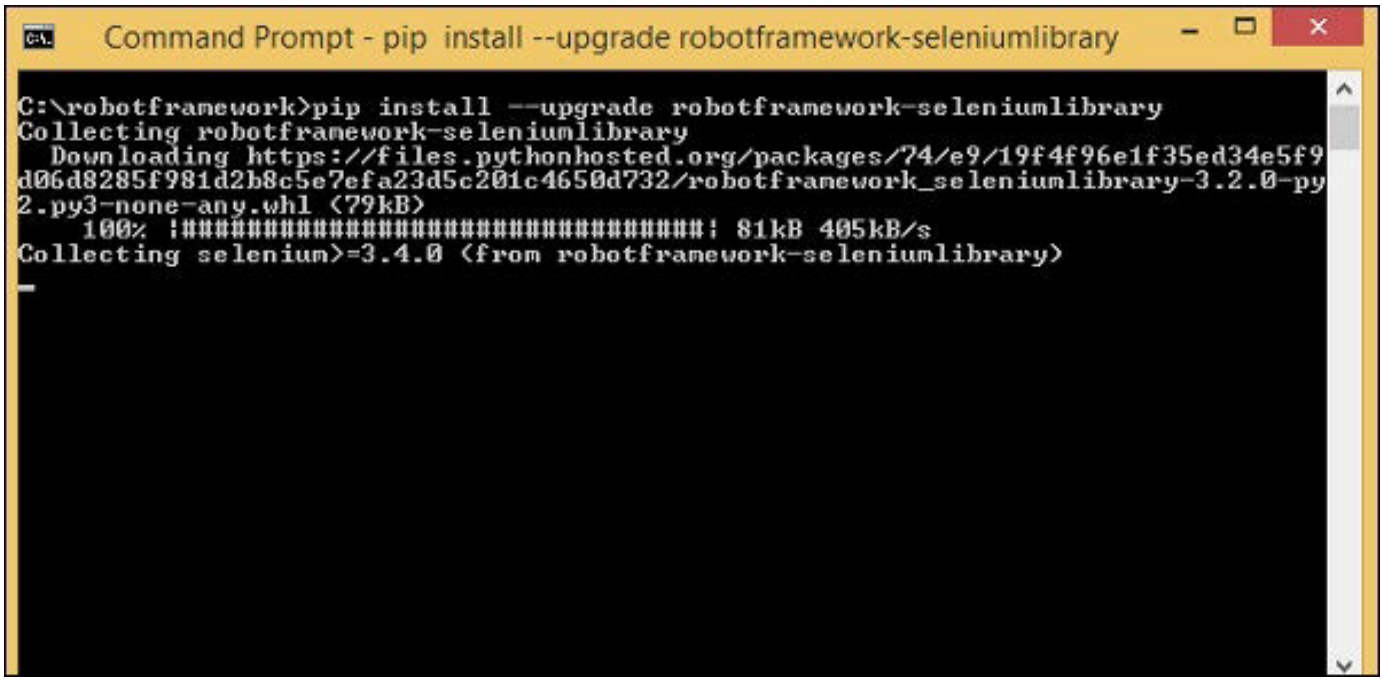
You will be redirected to the github repo as shown below −



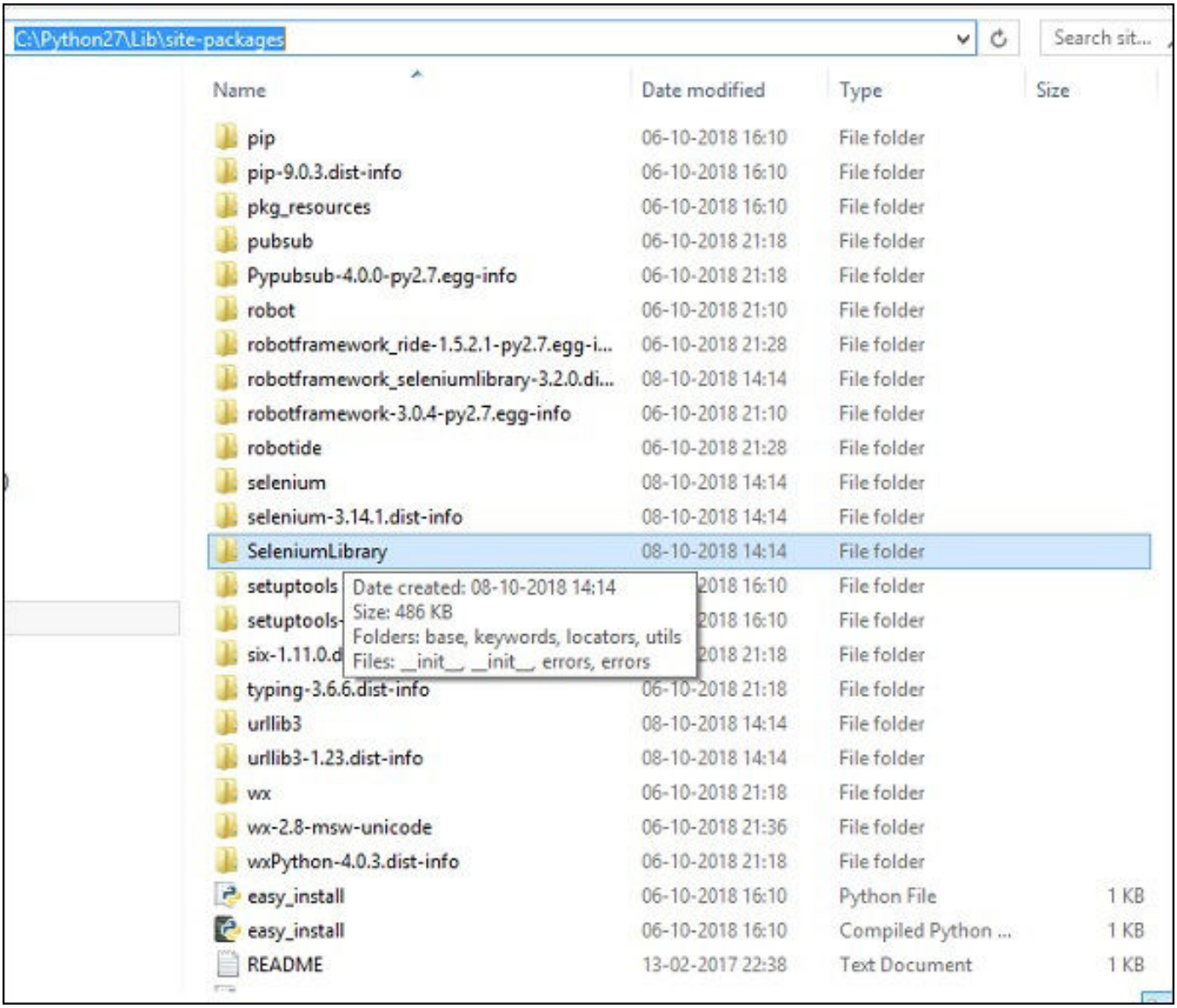
For Installation of seleniumlibrary, we can use the command from the github and install it using pip.

Command

```
pip install --upgrade robotframework-seleniumlibrary
```

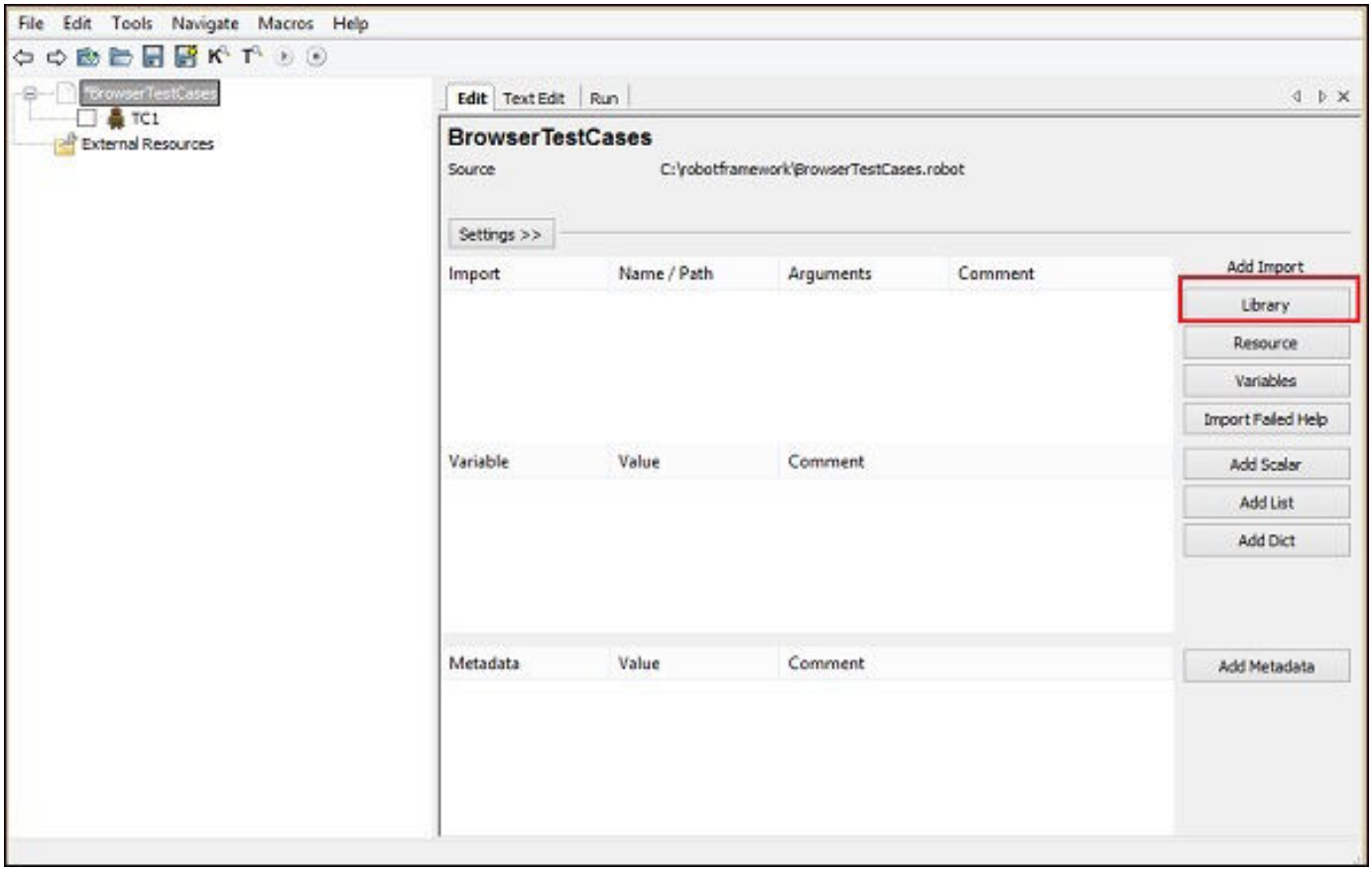


Selenium library gets installed inside the lib folder in python as follows −

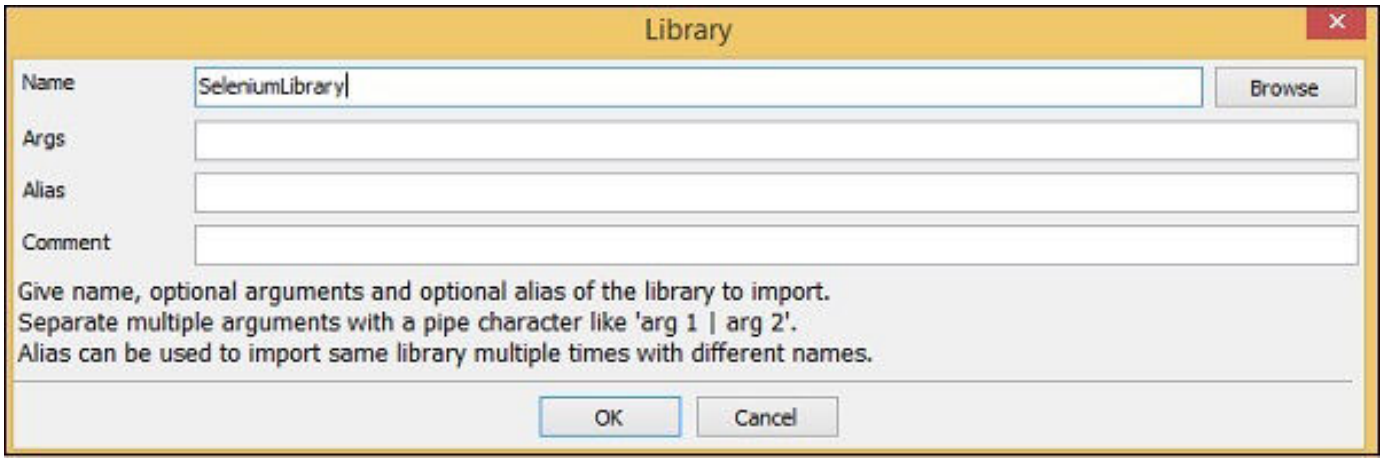


Once the installation is done, we have to import the library in Ride as shown in the below steps.

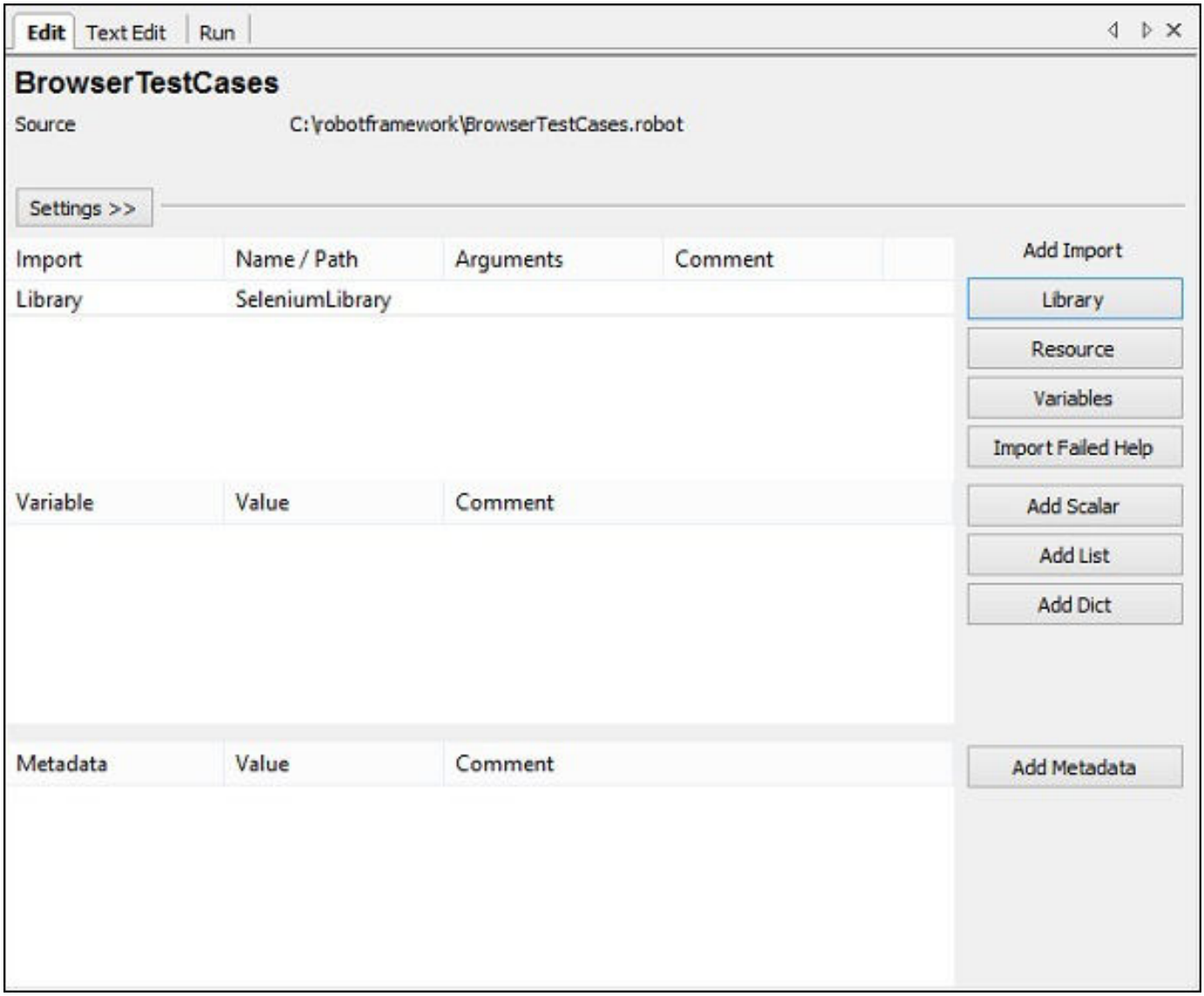
Click on your project on the left side and use Library from Add Import −



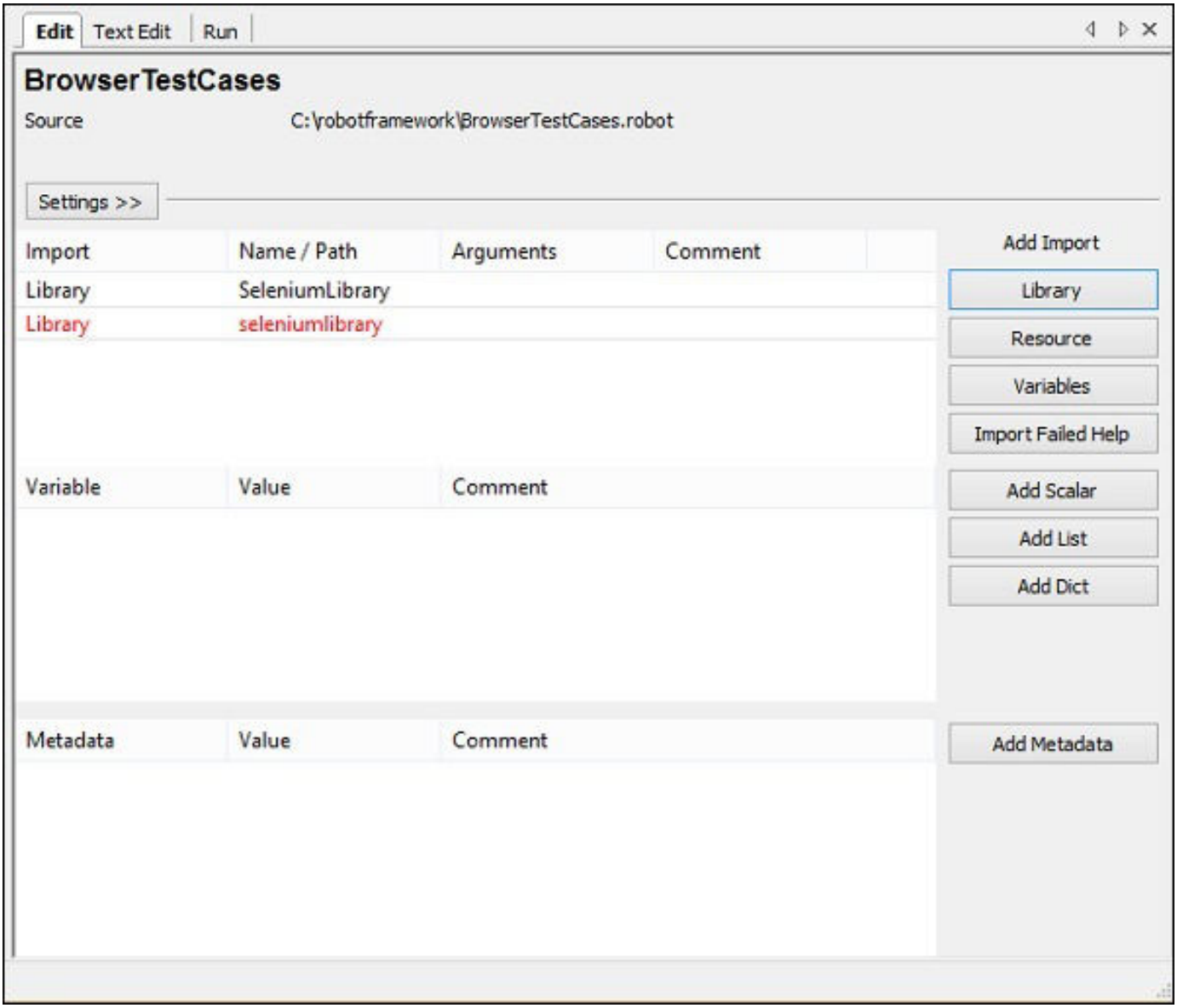
Upon clicking Library, a screen will appear wherein you need to enter the library name −



Click OK and the library will get displayed in the settings.



The name given has to match with the name of the folder installed in site-packages. In case the names do not match, the library name will be in red as shown below −



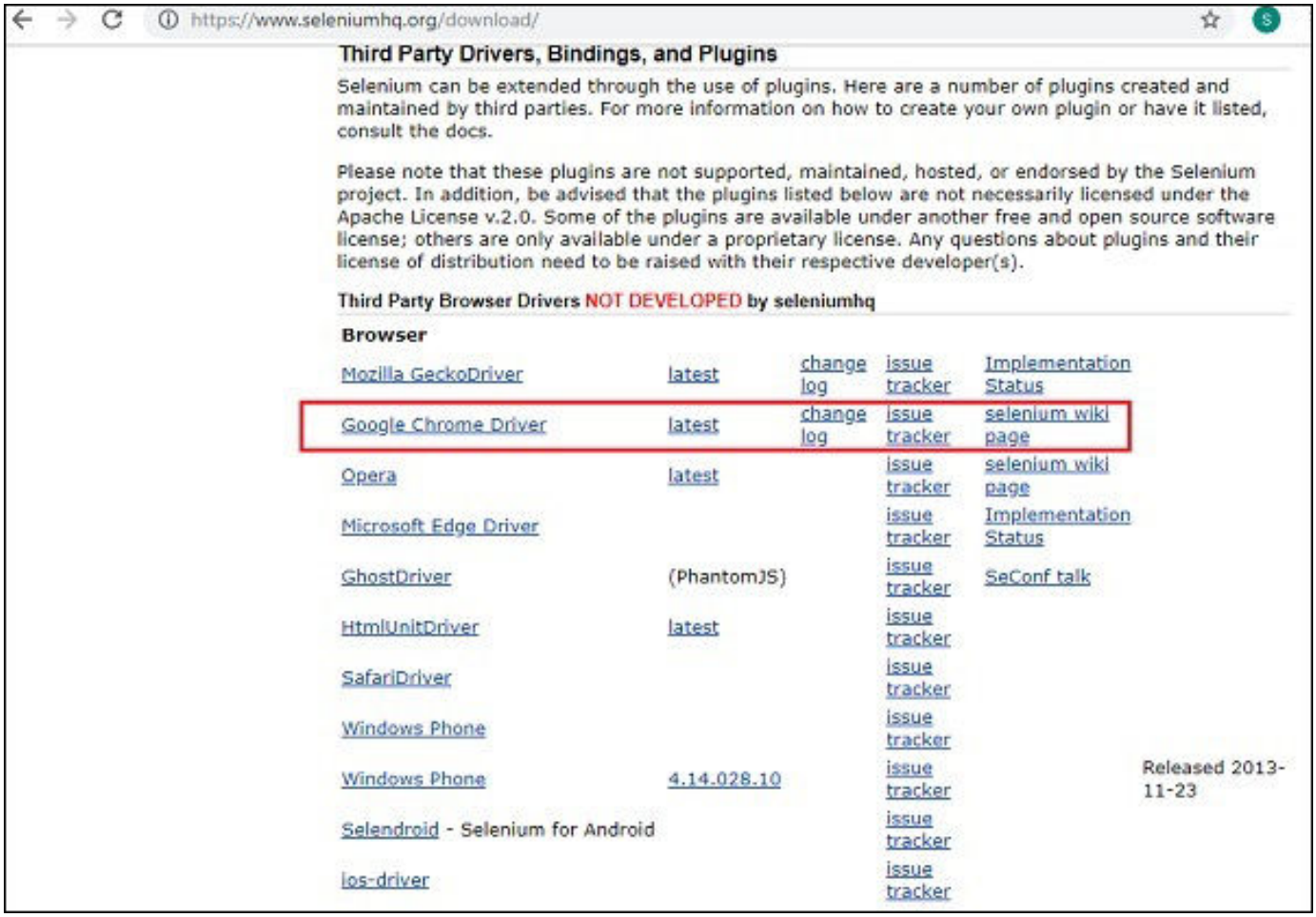
Library import in red is as good as the library does not exist inside python. Now, we have completed selenium library import.

Test Case Using Chrome Browser

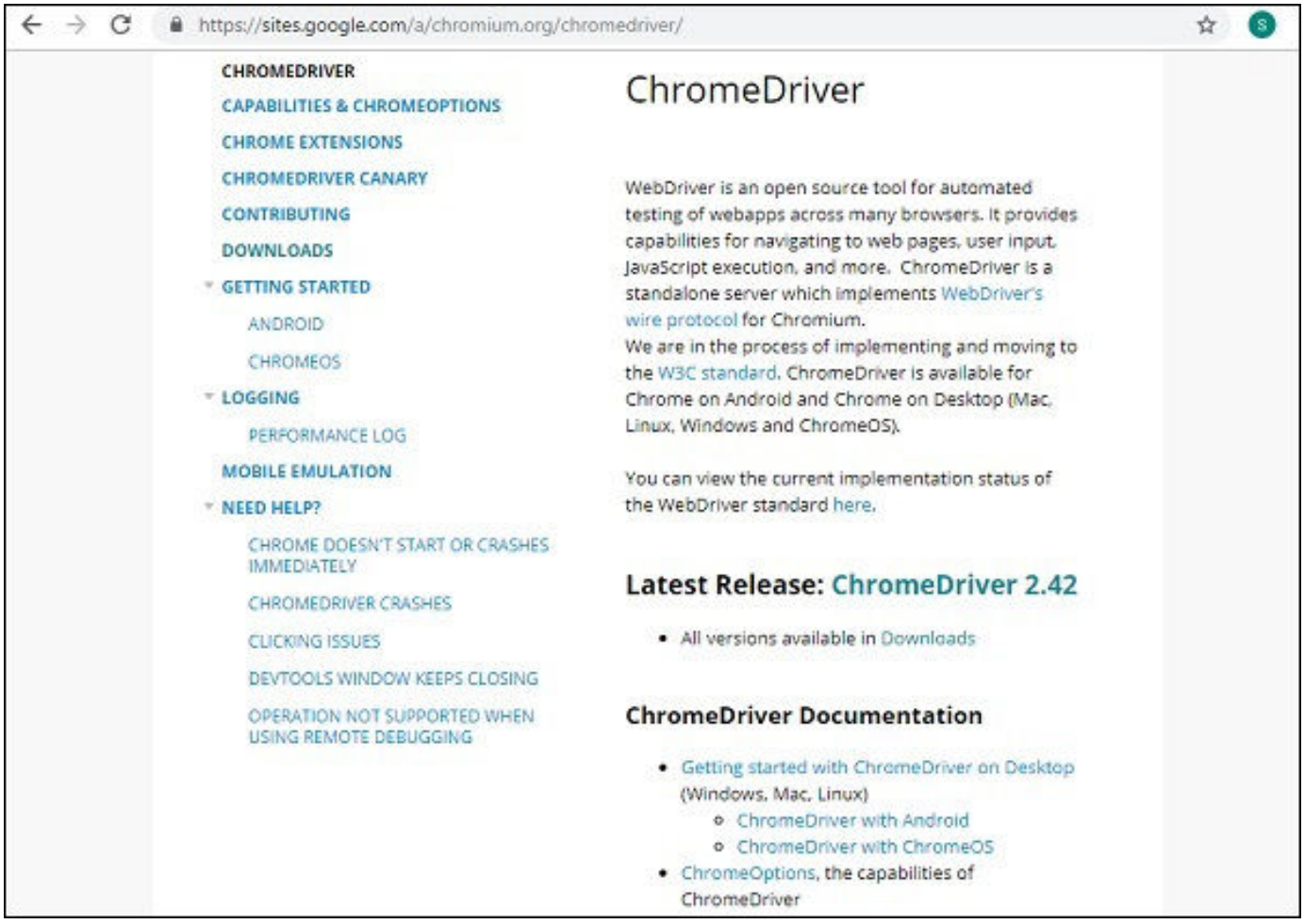
To work with Chrome browser in Robot, we need to first install the drivers for chrome to work with Selenium. The drives are available on Selenium site − https://www.seleniumhq.org/ .

Click *Download Selenium* as in the above screenshot.

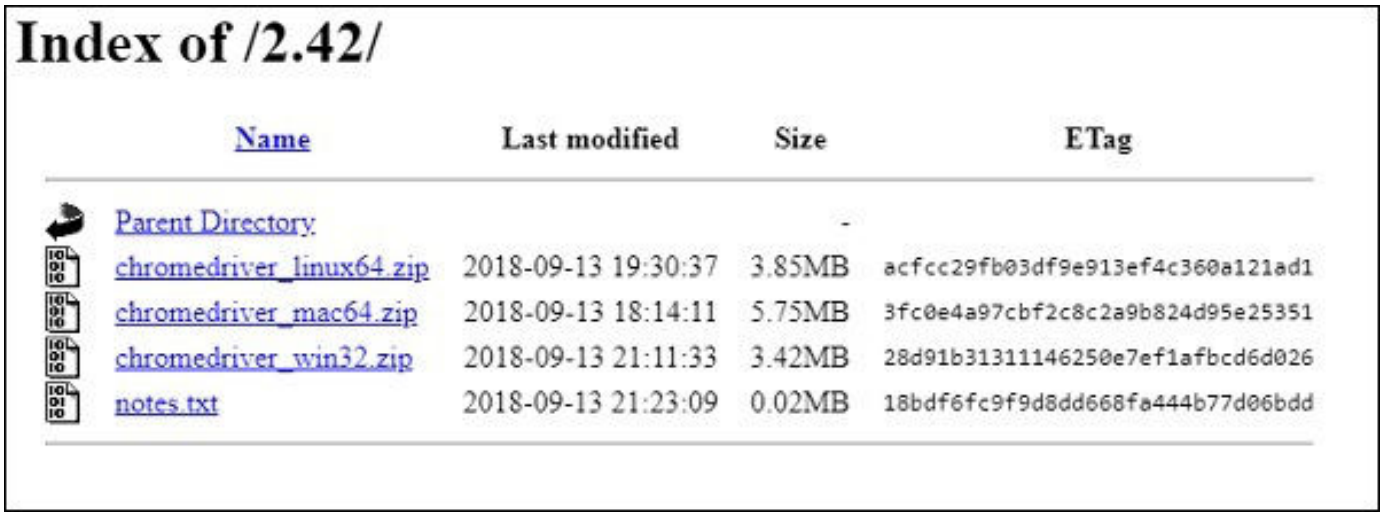
In download section, go to Third *Party Browser Drivers NOT DEVELOPED by seleniumhq* and select Google Chrome driver as shown in highlighted section below



Here we have a list of the various drivers available for browsers. For Chrome, *click Google Chrome Driver* and download the latest driver as per you operating system.

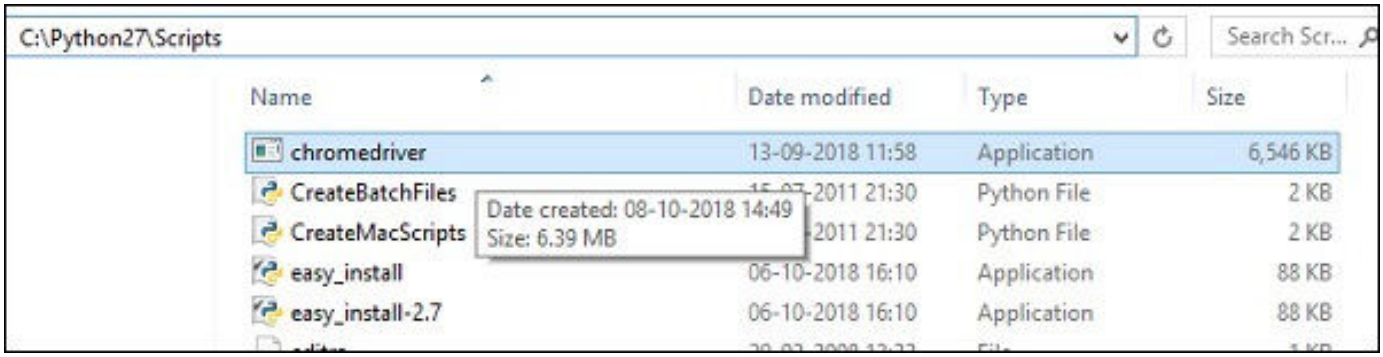


Click on the latest release. It will display the downloads as per the operating system – windows, linux and mac.



Download the version as per your operating system from the above list. It downloads the zip file. Once the file downloads, unzip it and copy the .exe driver file to python folder.

We are copying the file to **C:\Python27\Scripts**.

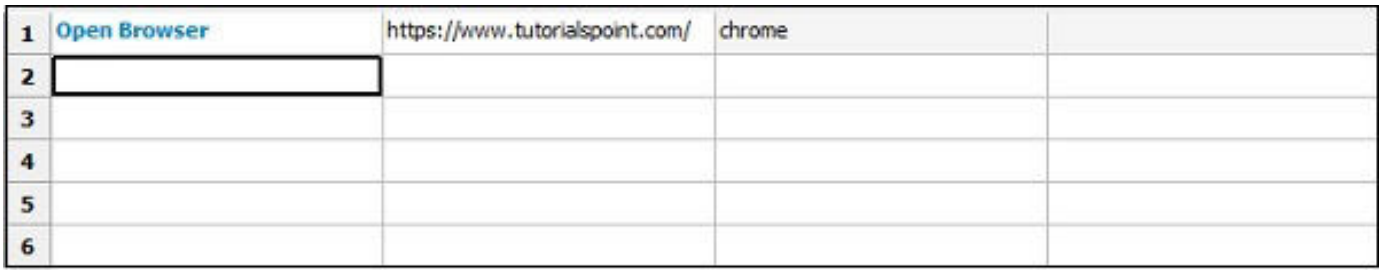


Now we are done installing the driver for chrome. We can get started with writing test case that will open browser and close browser.

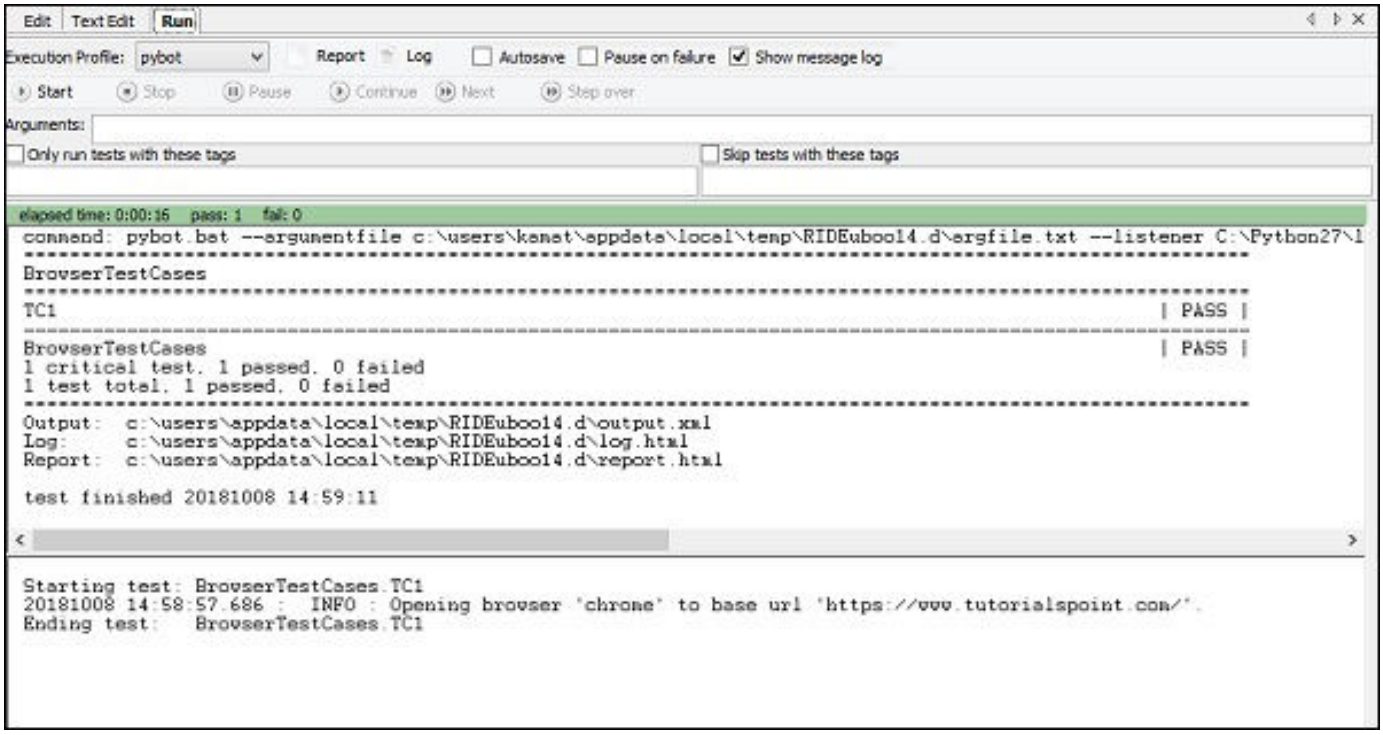
Go back to ride and enter the keywords for opening the browser.

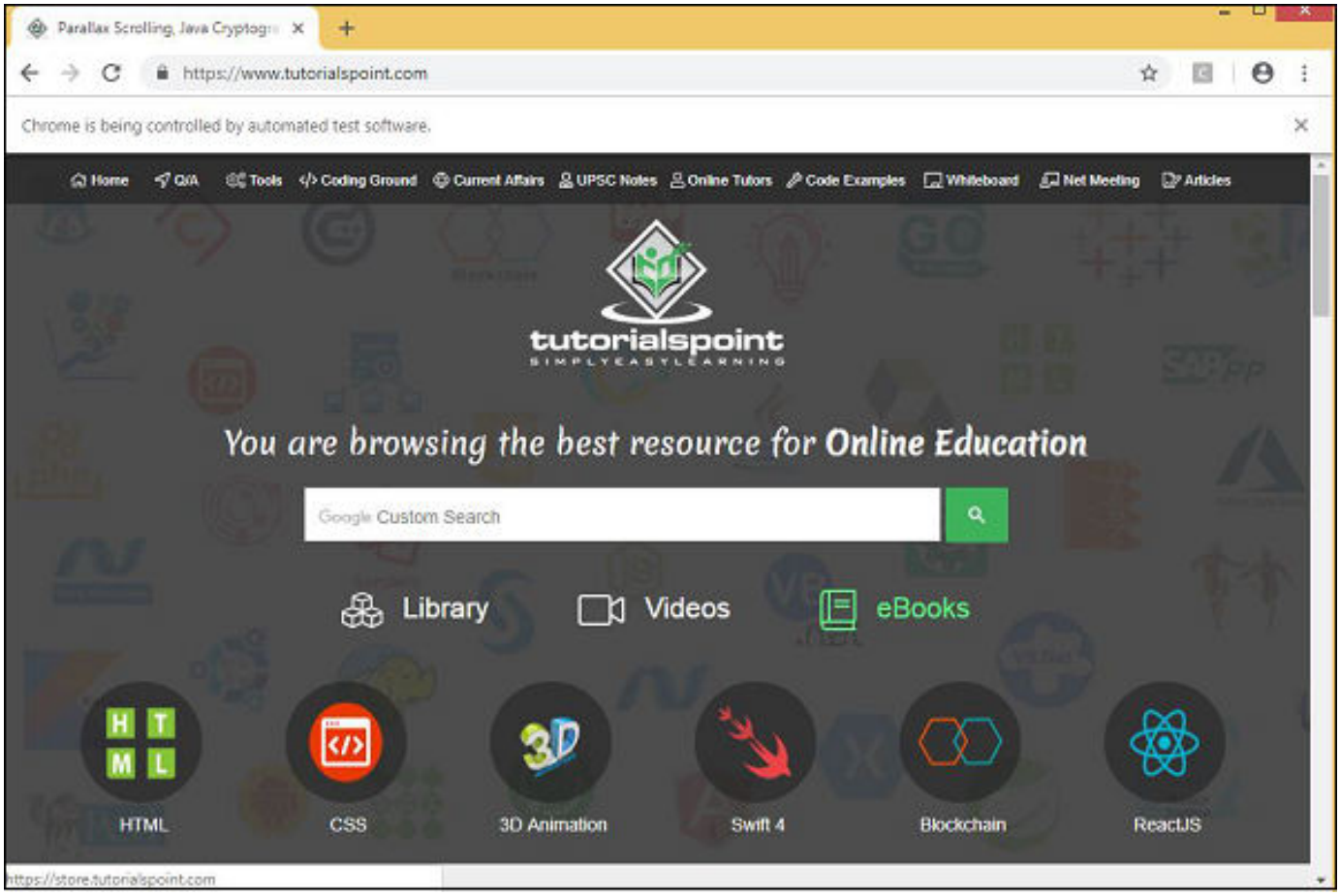
Ride helps you with keywords to be used with its built-in tool. Enter the command and press **ctrl+spacebar**. You will get all the details of the command as shown below

It gives the details of the command and also examples on how to use it. In the test case, we will open the site https://www.tutorialspoint.com/ in chrome and the test case details will be as follows −



Let us now run this test case to see the output −





The test case has passed; we can see the site is opened in chrome browser.

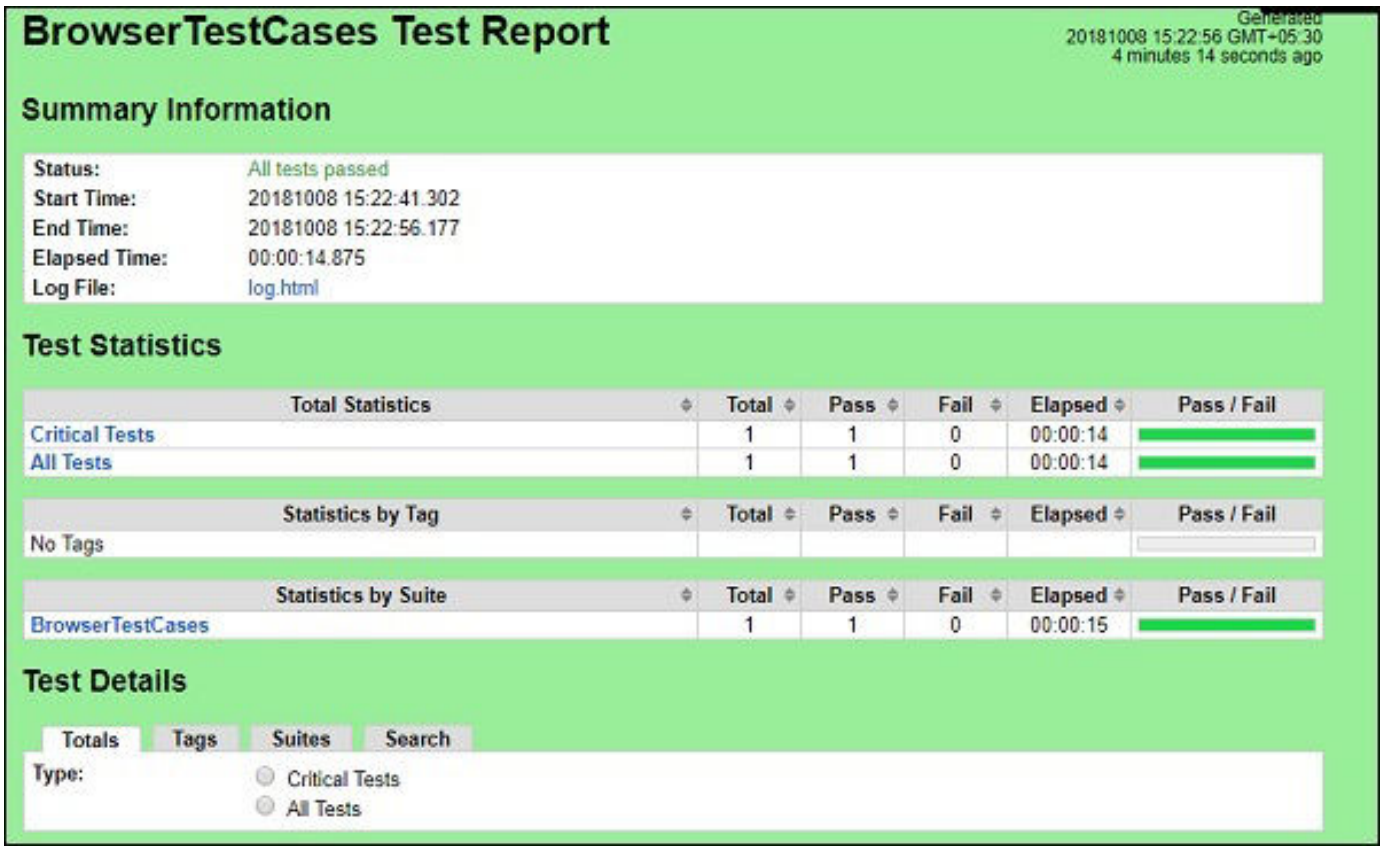
We will add more test cases as follows −

1	Open Browser	https://www.tutorialspoint.com/	chrome		
2	Capture Page Screenshot	page.png			
3	close browser				
4					
5					
6					
7					
8					

- Open Browser − URL − https://www.tutorialspoint.com/ in Chrome browser
- Capture Page Screenshot − name of the image is page.png
- Close browser

Here are the details of the report and log for above test cases executed.

Report



BrowserTestCases Test Report

Generated
20181008 15:22:56 GMT+05:30
4 minutes 14 seconds ago

Summary Information

Status:	All tests passed
Start Time:	20181008 15:22:41.302
End Time:	20181008 15:22:56.177
Elapsed Time:	00:00:14.875
Log File:	log.html

Test Statistics

Total Statistics	Total	Pass	Fail	Elapsed	Pass / Fail
Critical Tests	1	1	0	00:00:14	
All Tests	1	1	0	00:00:14	

Statistics by Tag	Total	Pass	Fail	Elapsed	Pass / Fail
No Tags					

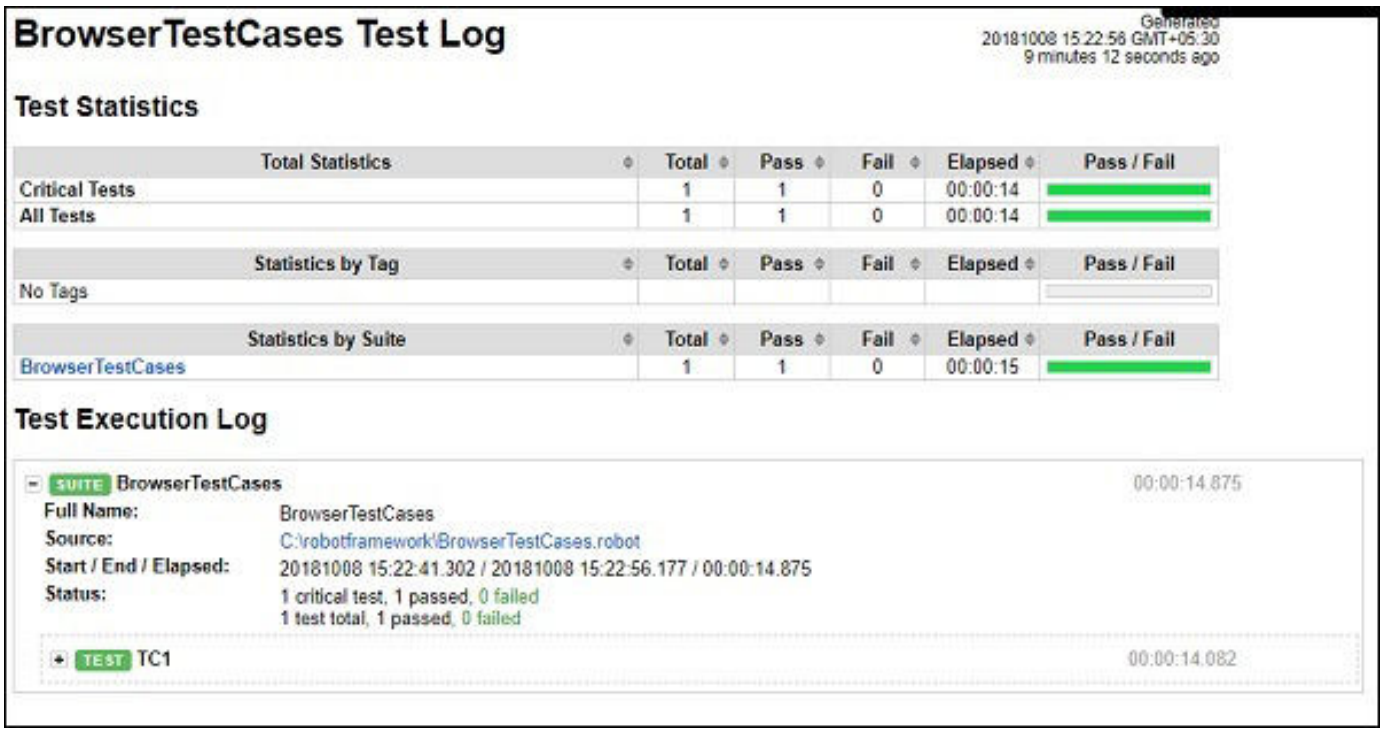
Statistics by Suite	Total	Pass	Fail	Elapsed	Pass / Fail
BrowserTestCases	1	1	0	00:00:15	

Test Details

Totals | Tags | Suites | Search

Type: Critical Tests / All Tests

Log



BrowserTestCases Test Log

Generated
20181008 15:22:56 GMT+05:30
9 minutes 12 seconds ago

Test Statistics

Total Statistics	Total	Pass	Fail	Elapsed	Pass / Fail
Critical Tests	1	1	0	00:00:14	
All Tests	1	1	0	00:00:14	

Statistics by Tag	Total	Pass	Fail	Elapsed	Pass / Fail
No Tags					

Statistics by Suite	Total	Pass	Fail	Elapsed	Pass / Fail
BrowserTestCases	1	1	0	00:00:15	

Test Execution Log

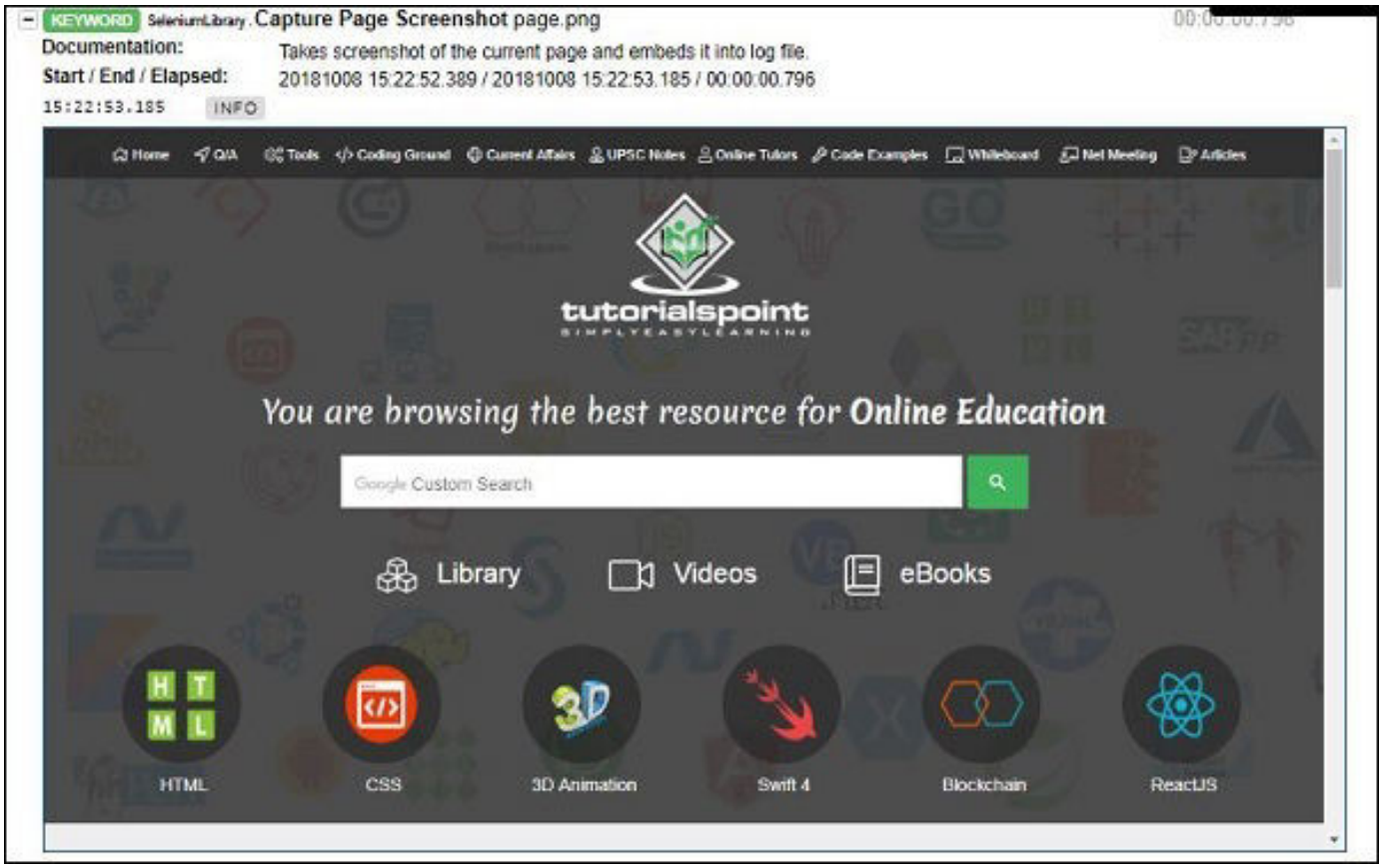
SUITE BrowserTestCases 00:00:14.875

Full Name: BrowserTestCases
Source: C:\robotframework\BrowserTestCases.robot
Start / End / Elapsed: 20181008 15:22:41.302 / 20181008 15:22:56.177 / 00:00:14.875
Status: 1 critical test, 1 passed, 0 failed
1 test total, 1 passed, 0 failed

TEST TC1 00:00:14.082

Details of test cases from log

KEYWORD SeleniumLibrary . Open Browser https://www.tutorialspoint.com/, chrome
Documentation: Opens a new browser instance to the given `url`.
Start / End / Elapsed: 20181008 15:22:42.095 / 20181008 15:22:52.386 / 00:00:10.291
15:22:42.095 INFO Opening browser 'chrome' to base url 'https://www.tutorialspoint.com/'.



KEYWORD SeleniumLibrary . Close Browser

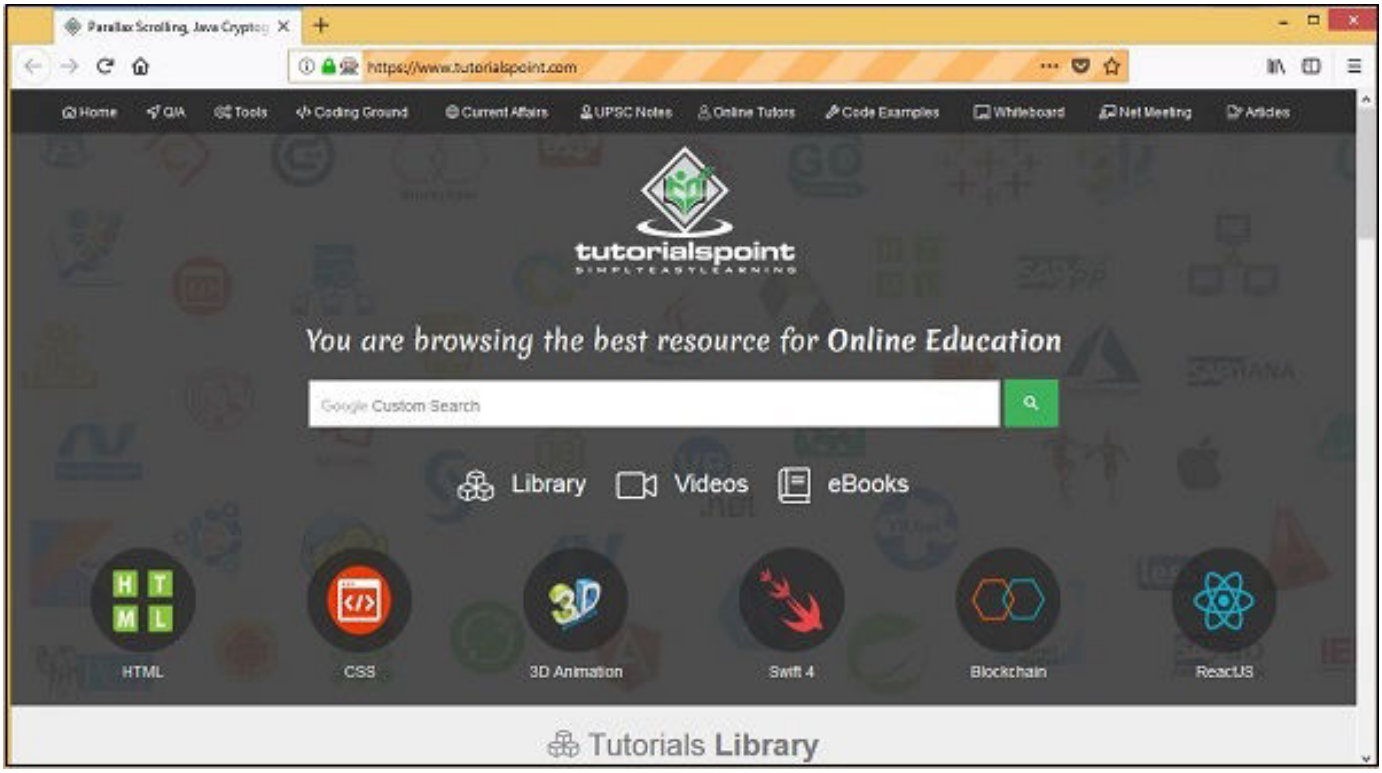
Documentation:	Closes the current browser.
Start / End / Elapsed:	20181008 15:22:53.185 / 20181008 15:22:56.177 / 00:00:02.992

Test Case Using Firefox Browser

Install the driver for Firefox and save it in python scripts folder.

Test case for Firefox

1	Open Browser	https://www.tutorialspoint.com/	firefox		
2					
3					
4					
5					
6					



Conclusion

We have seen how to install Selenium library and the browser drivers to work with browsers in Robot framework. Using the selenium library keywords, we can open any given link in the browsers and interact with it. The details of the test-case execution are available in the form of reports and logs, which give the time taken for execution.

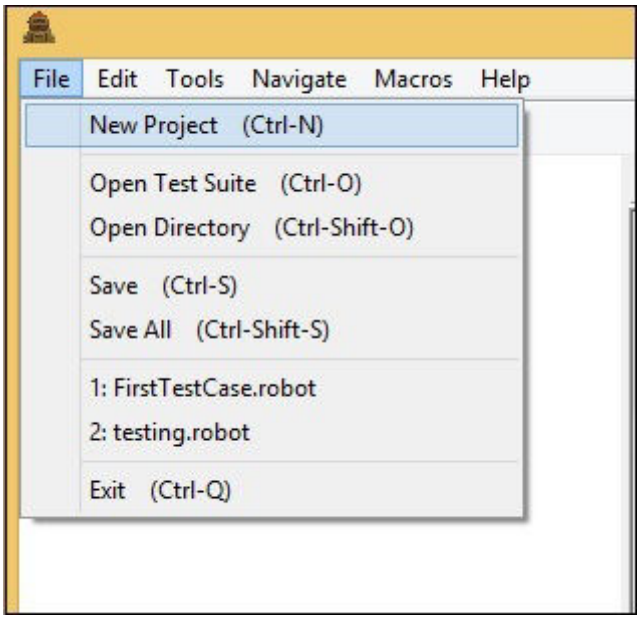
For testing, it becomes important to understand how to interact with the browser and locate the html elements. It is very easy to work with input fields with robot framework. In this chapter, we will learn how to work with textbox using Selenium Library. To work with input field – textbox, we need the locator, which is the main unique identifier for that textbox and it can be id, name, class, etc.

In this chapter, we will discuss the following areas −

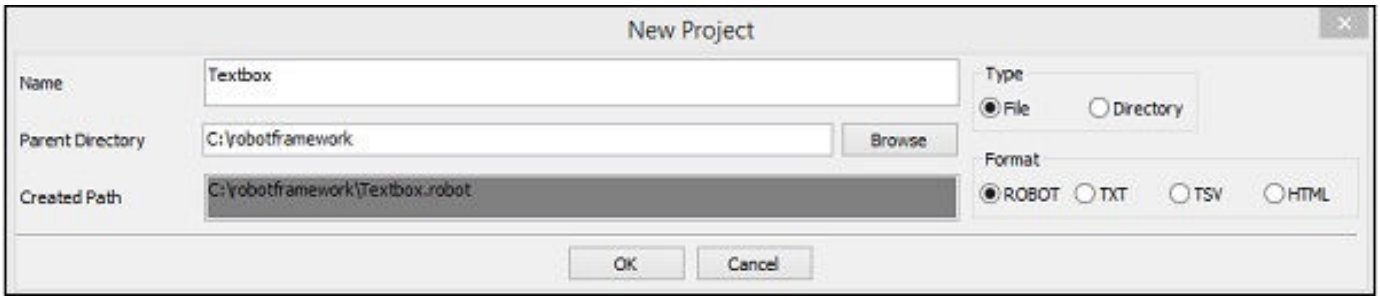
- Project Setup for Textbox Testing
- Enter Data in Search Textbox
- Click on Search Button

Project Setup for Textbox Testing

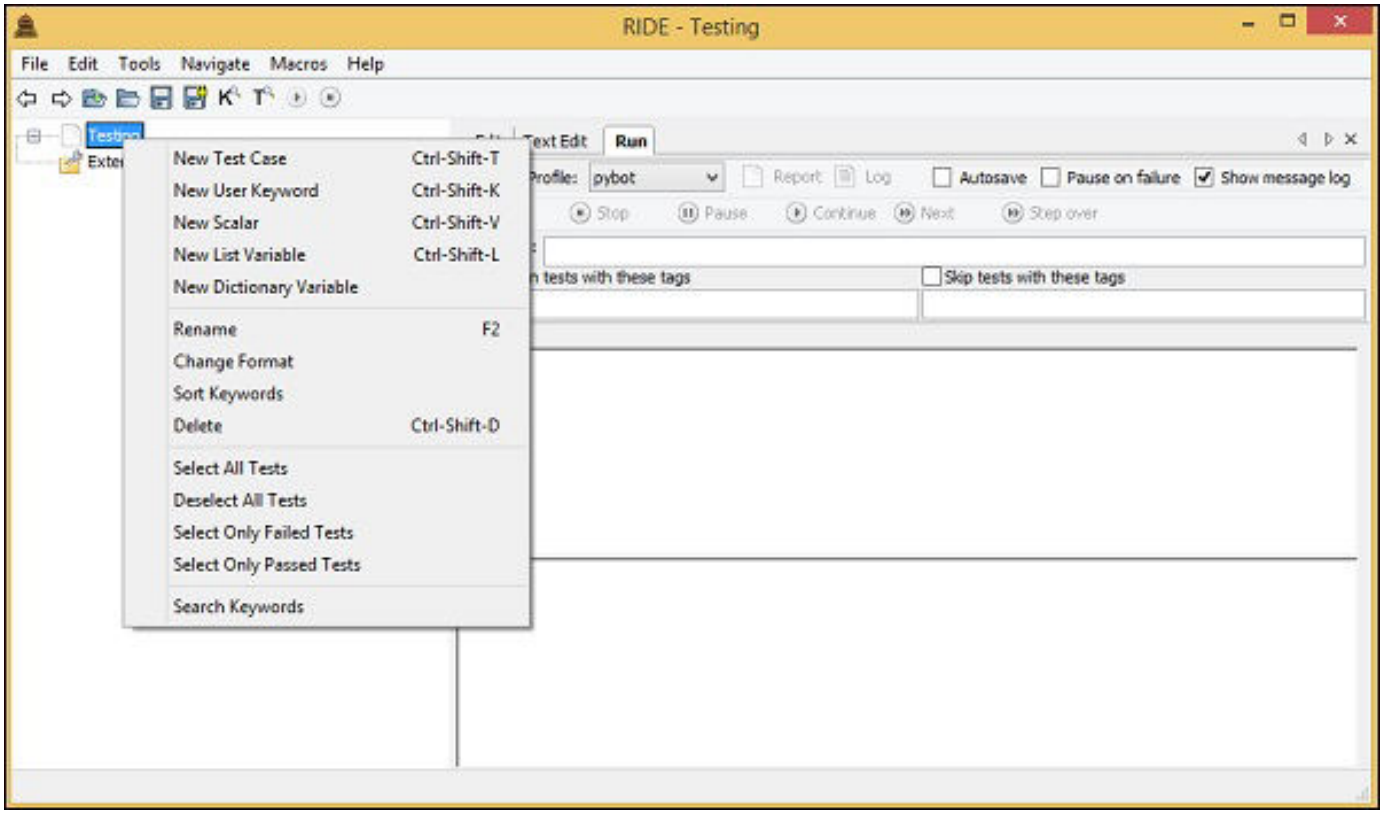
We will first create a project in Ride to work with browsers. Open ride using ride.py from the command line.

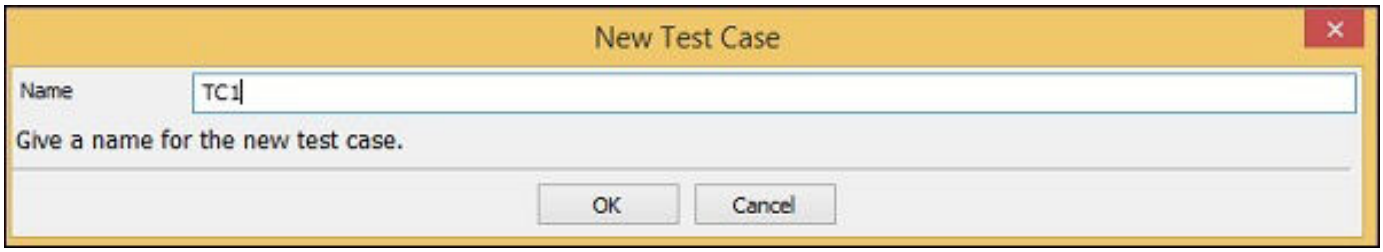


Click *New Project* and enter *Name* of your project as shown below.



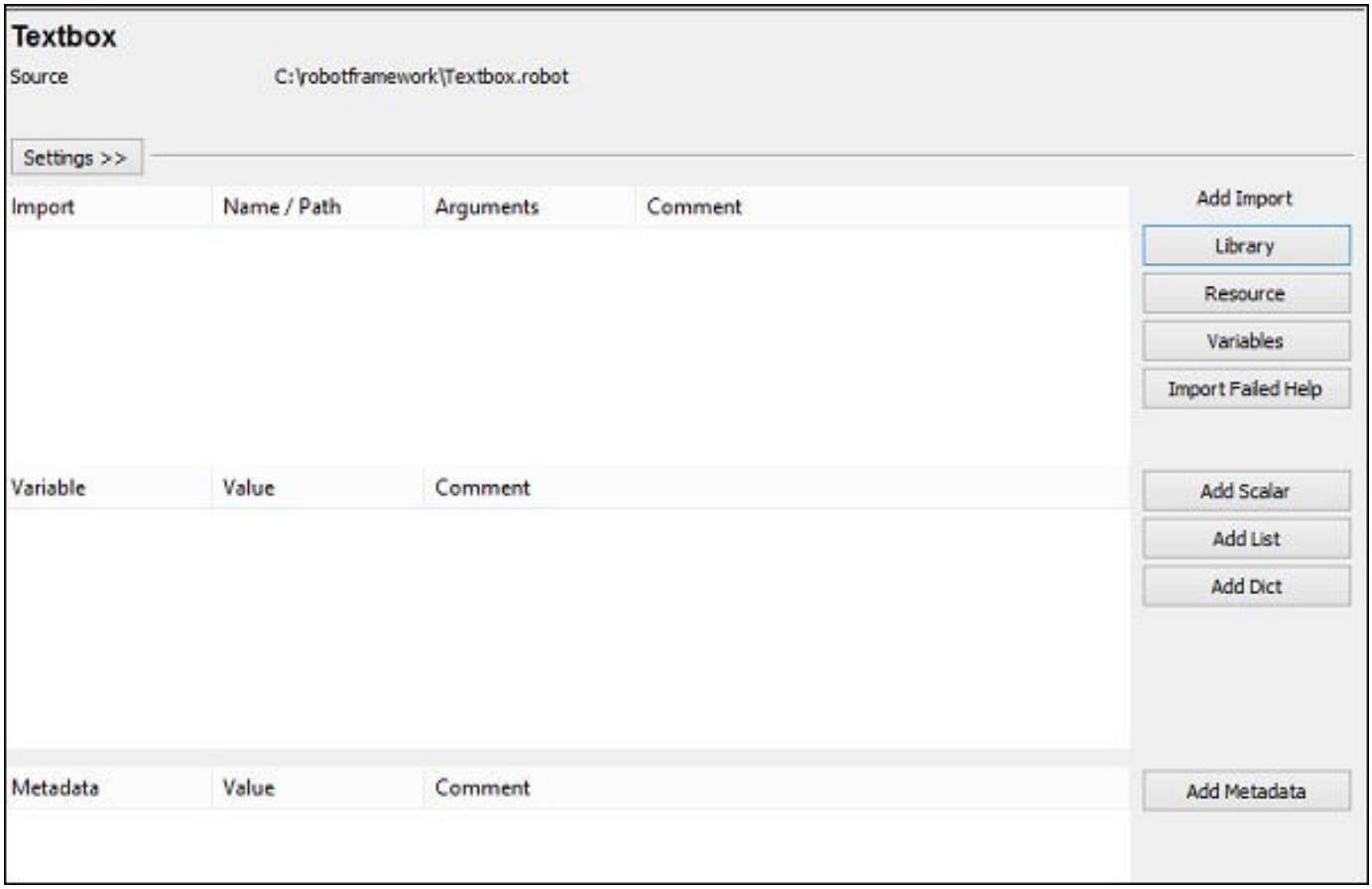
The name given for the project is *Textbox*. Click OK to save the project. Right-click on the name of the project created and click on *New Test Case* −



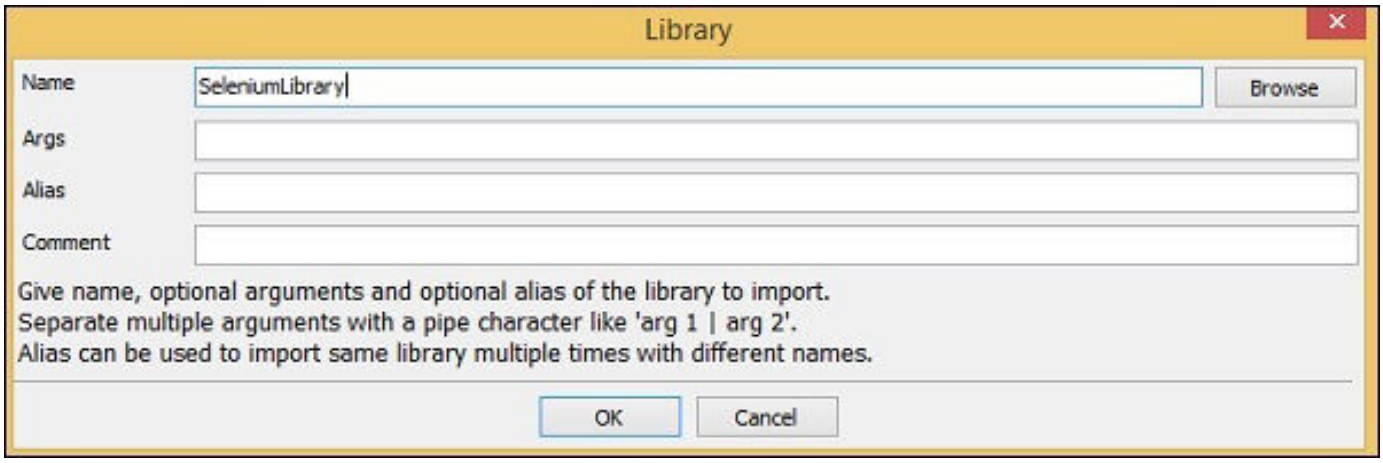


Name your test case and click OK to save it. We are now done with the project setup. Further, we will write test cases for the textbox. Since we need Selenium library, we need to import the same in our project.

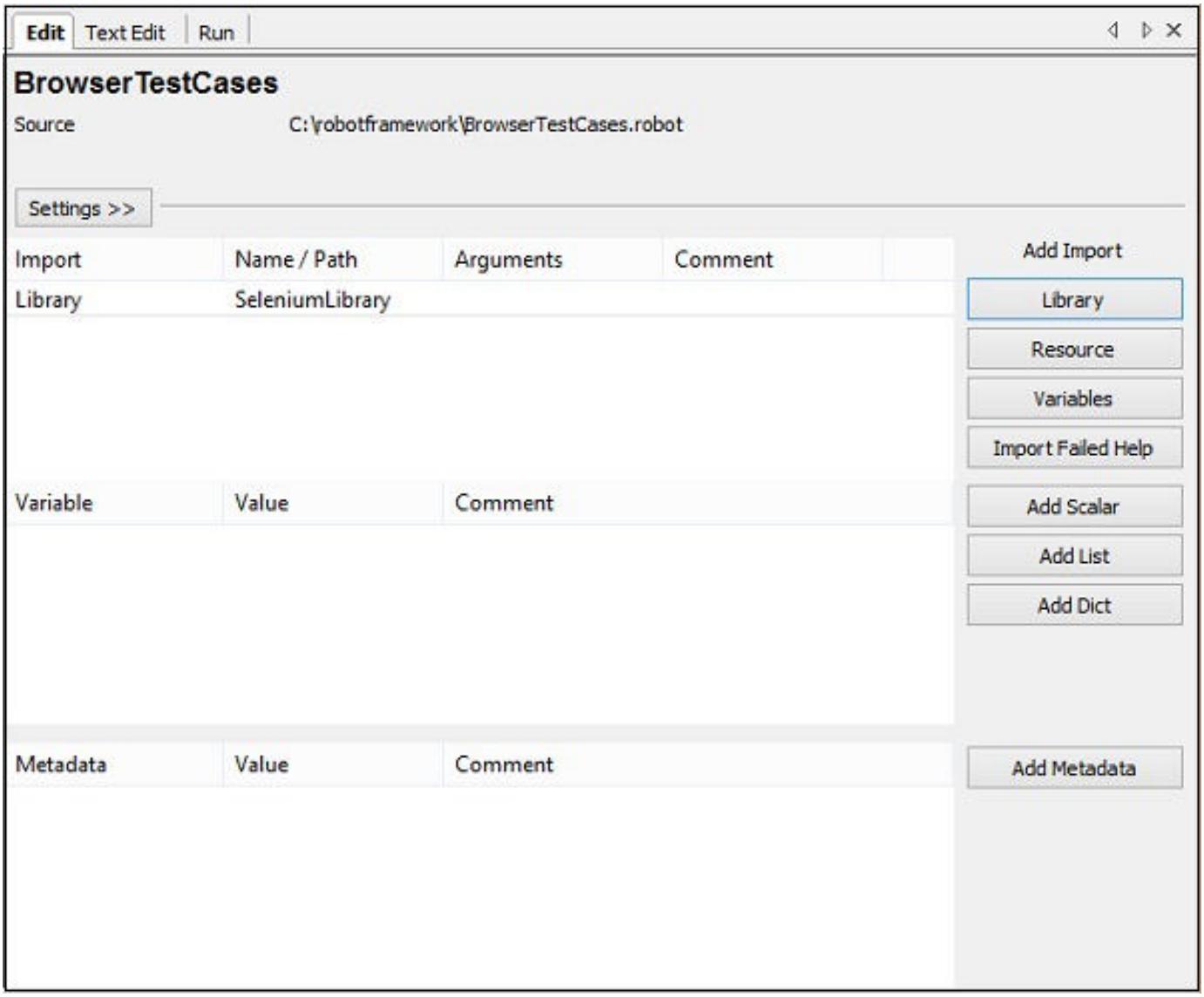
Click on your project on the left side and use Library from Add Import.



Upon clicking Library, a screen will appear where you need to enter the library name −

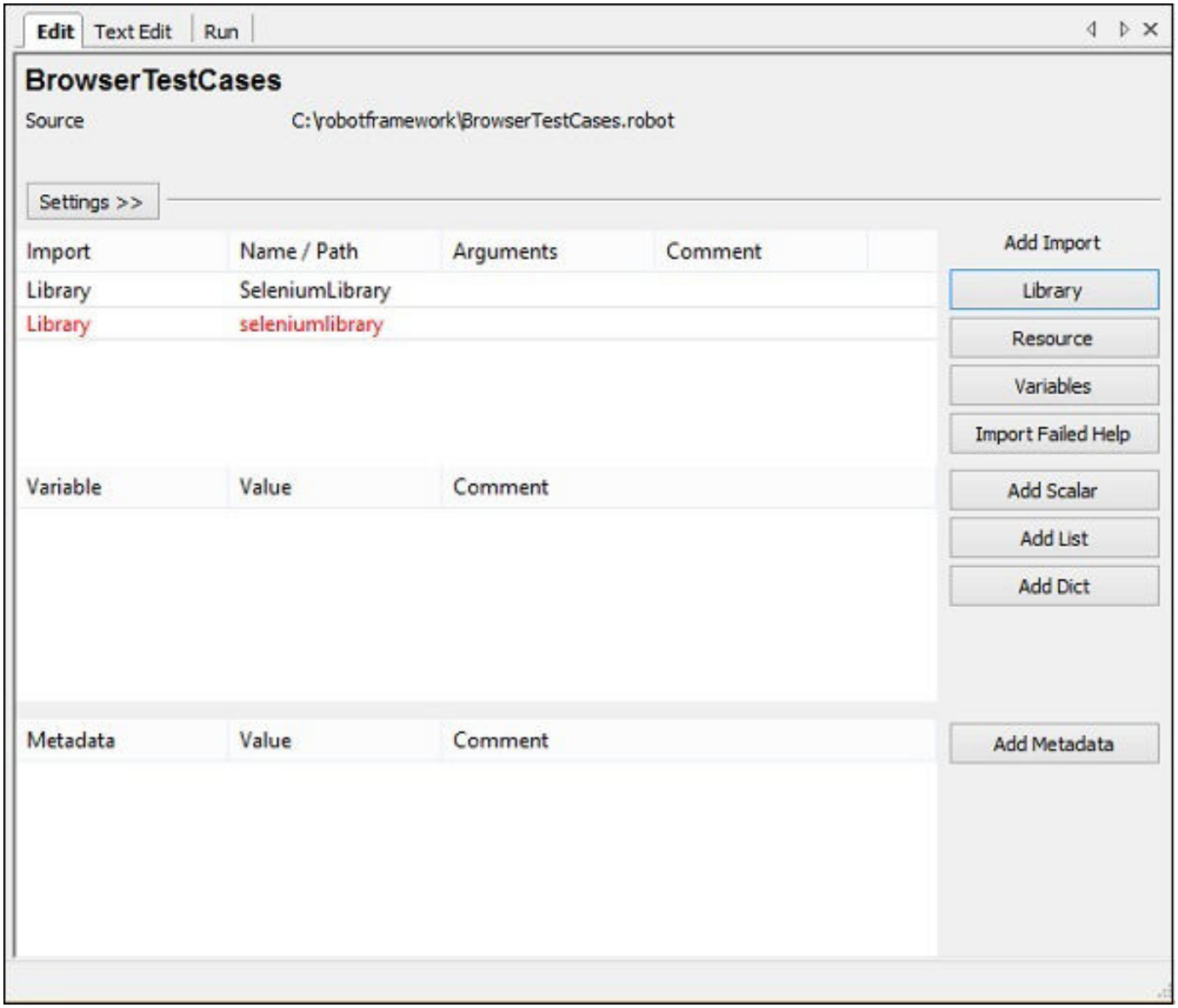


Click OK and the library will get displayed in the settings.



The name given has to match with the name of the folder installed in site-packages.

In case the names do not match, the library name will show in red as in the following screenshot –



Enter Data in Textbox

We are now going to write test cases. The test case details will be as follows −

- Open browser − URL − https://www.tutorialspoint.com/ in Chrome
- Enter data in the search textbox in https://www.tutorialspoint.com/
- Click Search

To work with textbox, we need a locator. A locator is the identifier for the textbox like id, name, class, etc. For example, if you are using the −

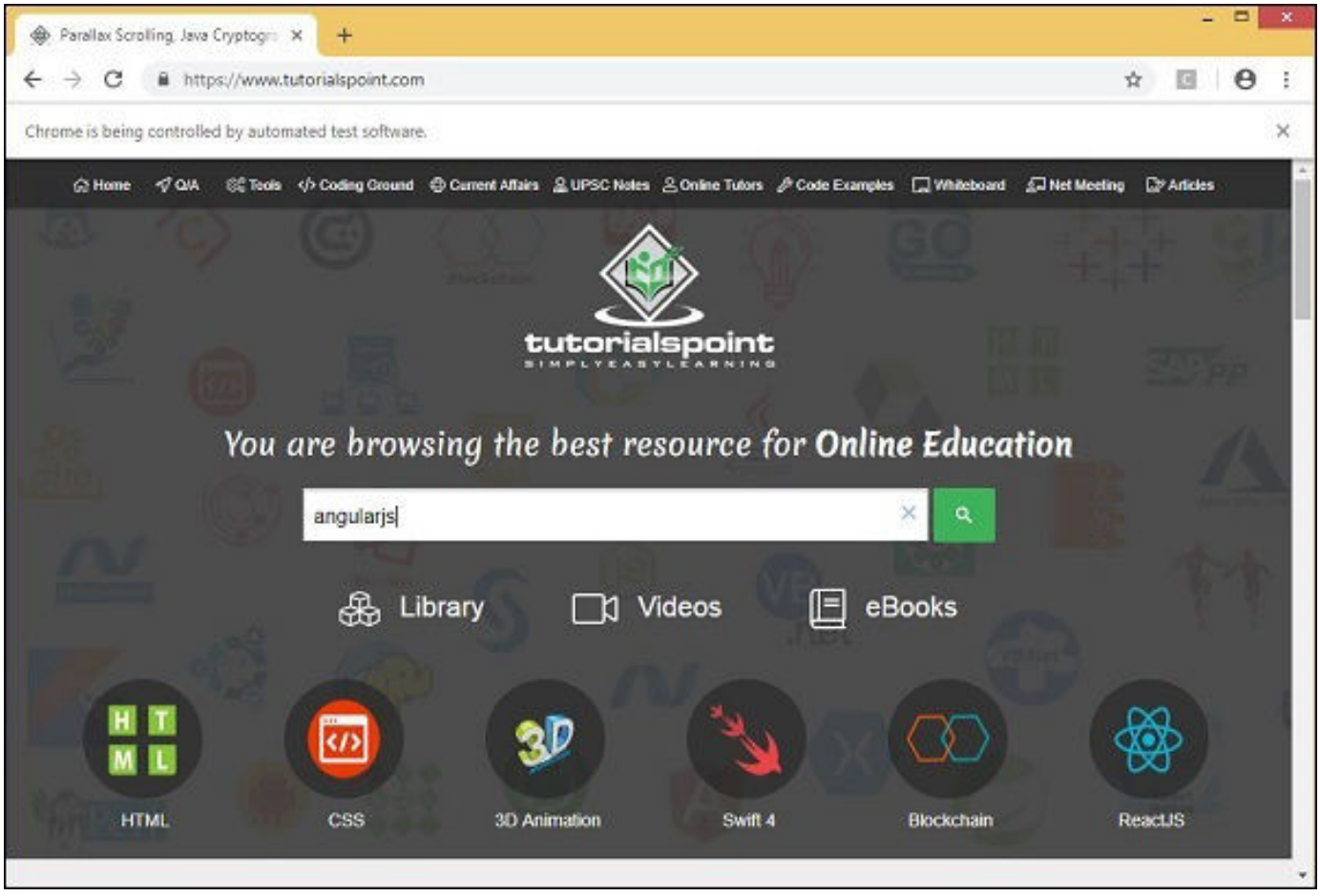
- **name** attribute of the textbox, it has to be name − Nameofthetextbox or name=Nameofthetextbox
- **id** of the textbox, it will be id:idoftextbox or id=idoftextbox
- **class** of the textbox, it will be class − classfortextbox or class=classfortextbox

Now, we will add the details of the test case for textbox in ride. Here are the keywords entered for textbox test case −

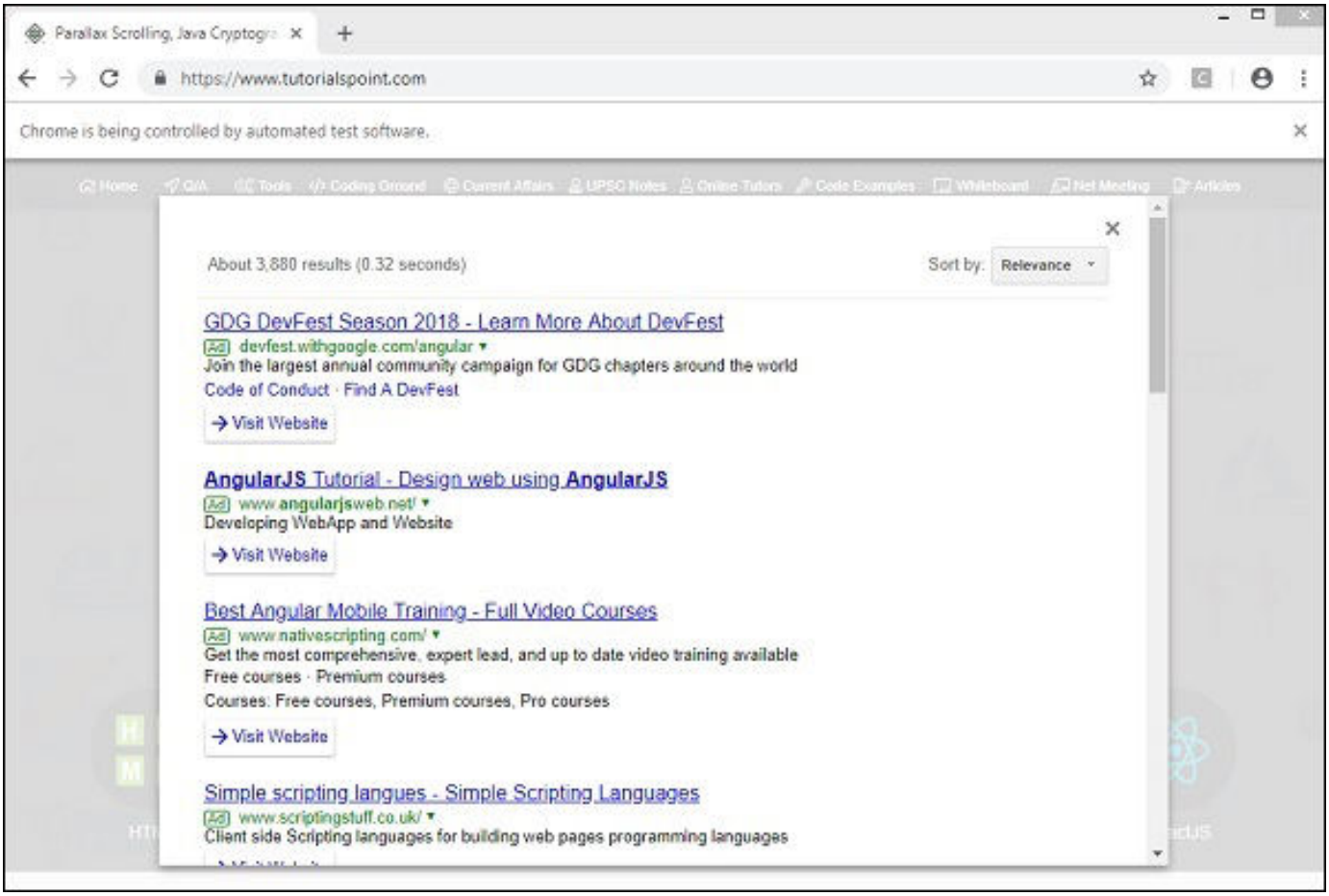
1	Open Browser	https://www.tutorialspoint.com/	chrome		
2	Input Text	name:search	angularjs		
3	Click Button	class:gsc-search-button-v2			
4					
5					

- **Open Browser** − The keyword opens the browser for the given URL and the browser specified.
- **Input Text** − This keyword works on the input type and will look for the locator name:search on the site https://www.tutorialspoint.com/ and angularjs is the value we want to type in the textbox.
- **Click button** is used to click on the button with location class:gsc-search-button-v2.

We will now execute the same −



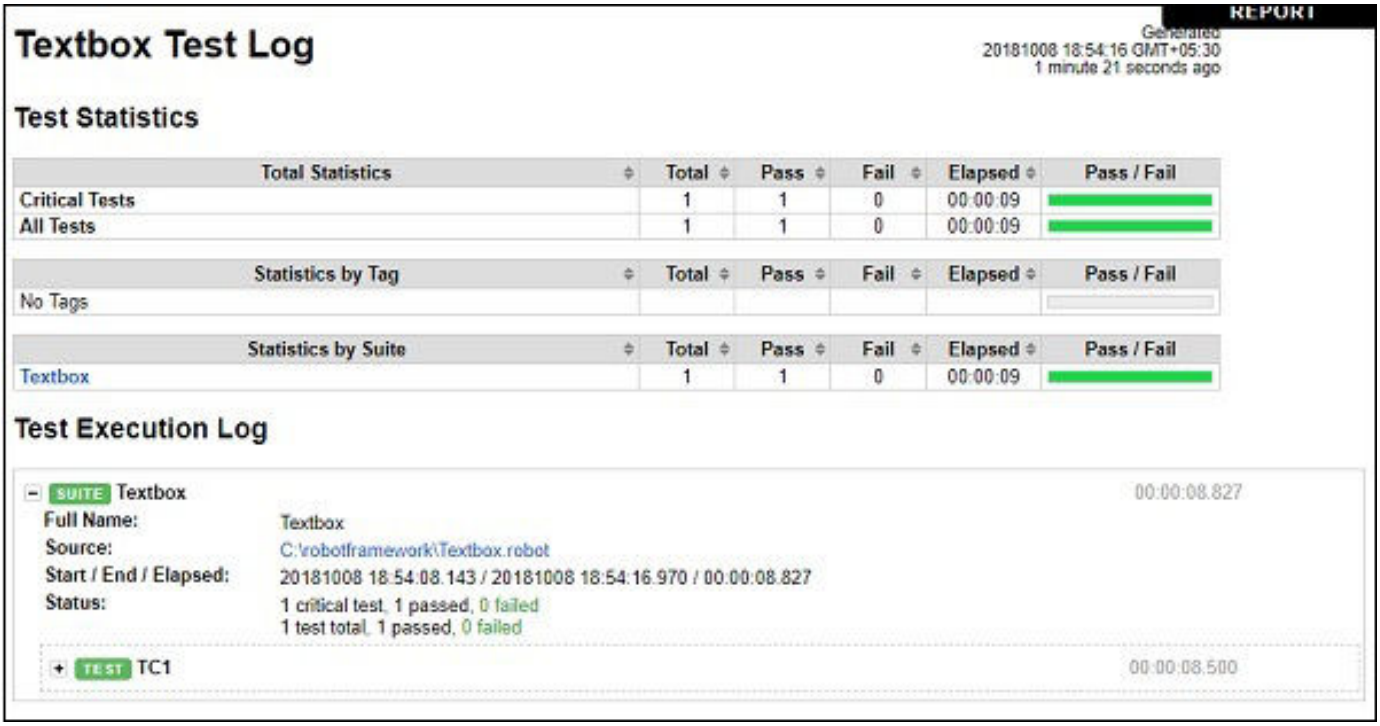
Upon clicking the Search icon, a screen will appear as shown in the following screenshot −



Let us now see the reports and the log details −

Report

Log



Textbox Test Log

REPORT

Generated
20181008 18:54:16 GMT+05:30
1 minute 21 seconds ago

Test Statistics

Total Statistics	Total	Pass	Fail	Elapsed	Pass / Fail
Critical Tests	1	1	0	00:00:09	
All Tests	1	1	0	00:00:09	

Statistics by Tag	Total	Pass	Fail	Elapsed	Pass / Fail
No Tags					

Statistics by Suite	Total	Pass	Fail	Elapsed	Pass / Fail
Textbox	1	1	0	00:00:09	

Test Execution Log

SUITE Textbox 00:00:08.827
Full Name: Textbox
Source: C:\robotframework\Textbox.robot
Start / End / Elapsed: 20181008 18:54:08.143 / 20181008 18:54:16.970 / 00:00:08.827
Status: 1 critical test, 1 passed, 0 failed
1 test total, 1 passed, 0 failed

TEST TC1 00:00:08.500

TEST TC1 00:00:08.500
Full Name: Textbox.TC1
Start / End / Elapsed: 20181008 18:54:08.468 / 20181008 18:54:16.968 / 00:00:08.500
Status: PASS (critical)

KEYWORD SeleniumLibrary . Open Browser https://www.tutorialspoint.com/, chrome 00:00:07.499
Documentation: Opens a new browser instance to the given url.
Start / End / Elapsed: 20181008 18:54:08.483 / 20181008 18:54:15.982 / 00:00:07.499
18:54:08.483 INFO Opening browser 'chrome' to base url 'https://www.tutorialspoint.com/'.

KEYWORD SeleniumLibrary . Input Text name:search, angularjs 00:00:00.217
Documentation: Types the given text into text field identified by locator.
Start / End / Elapsed: 20181008 18:54:15.982 / 20181008 18:54:16.199 / 00:00:00.217
18:54:15.983 INFO Typing text 'angularjs' into text field 'name:search'.

KEYWORD SeleniumLibrary . Click Button class:gsc-search-button-v2 00:00:00.768
Documentation: Clicks button identified by locator.
Start / End / Elapsed: 20181008 18:54:16.200 / 20181008 18:54:16.968 / 00:00:00.768
18:54:16.200 INFO Clicking button 'class:gsc-search-button-v2'.

Conclusion

We have seen how to interact with the textbox using selenium library in robot framework.Using the keywords available with robot framework and the library imported we can locate the textbox and enter data and test the same.

Robot Framework - Working With Radio Button

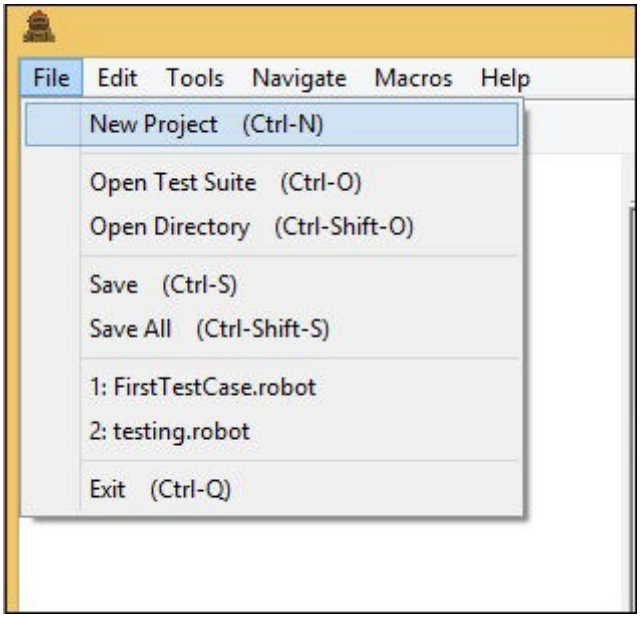
For testing, it becomes important to understand how to interact with the browser and locate the html elements. It is very easy to work with input fields with robot framework. In this chapter, we will learn how to work with radio button using Selenium Library. To work with radio button, we need the locator − the main unique identifier for that radio button.

We are going to discuss the following over here −

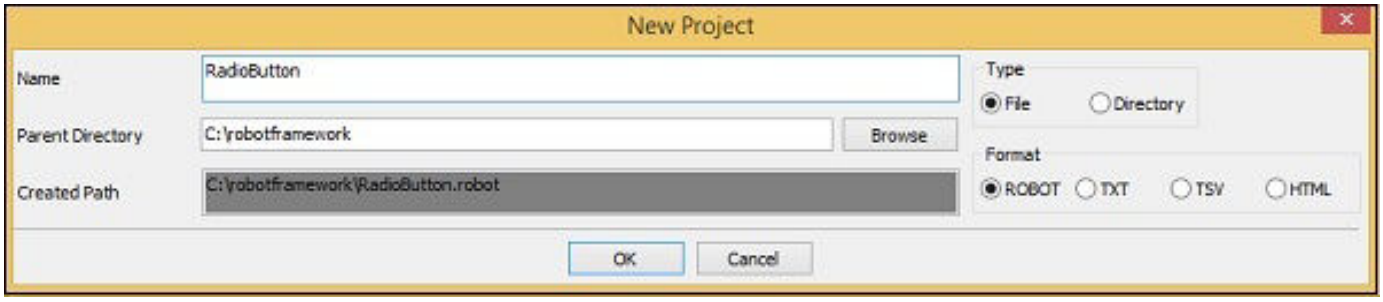
- Project Setup for Radio Button Testing
- Test case for Radio Button

Project Setup For Radio Button Testing

We will first create a project in Ride to work with browsers. Open ride using ride.py from the command line.

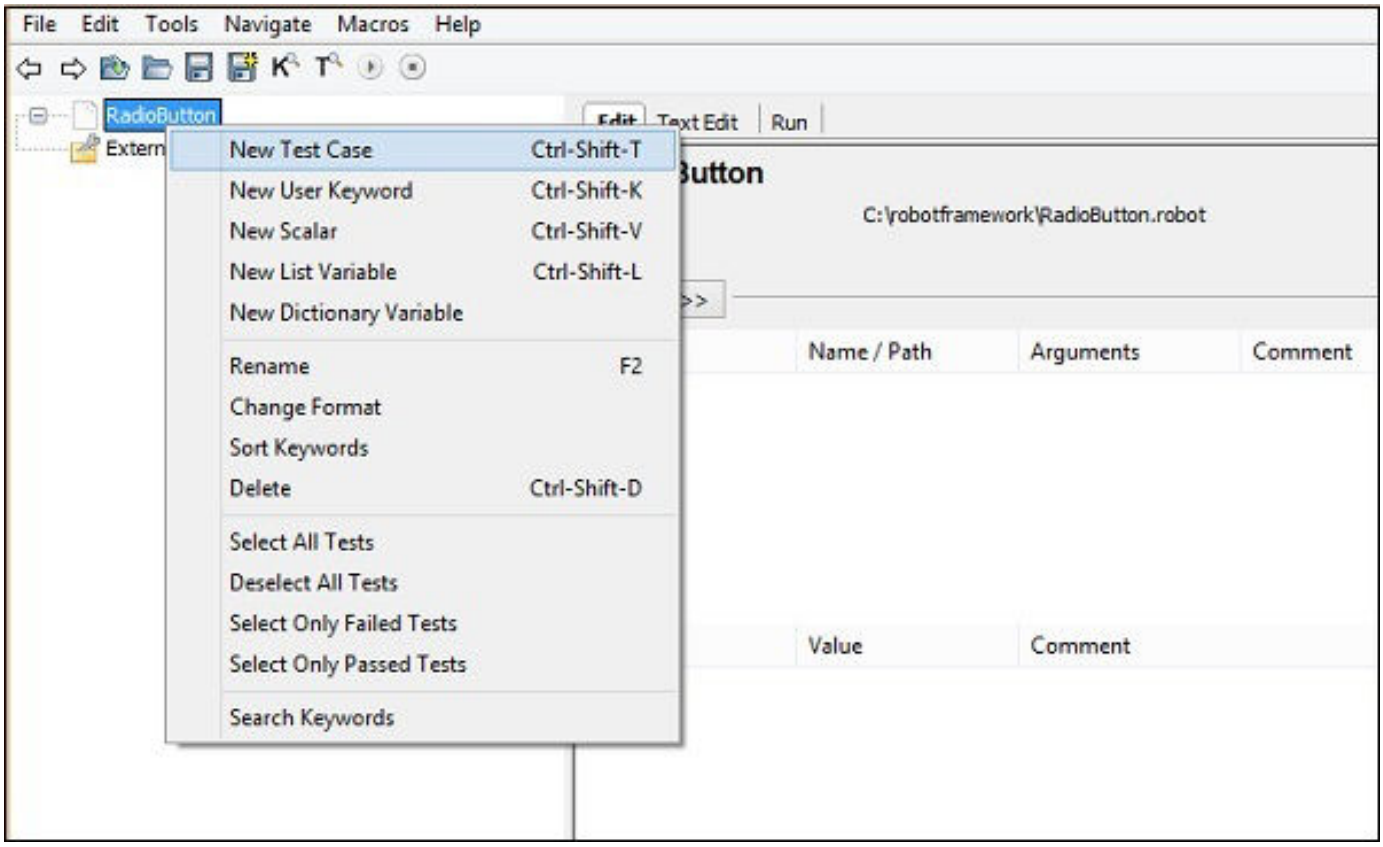


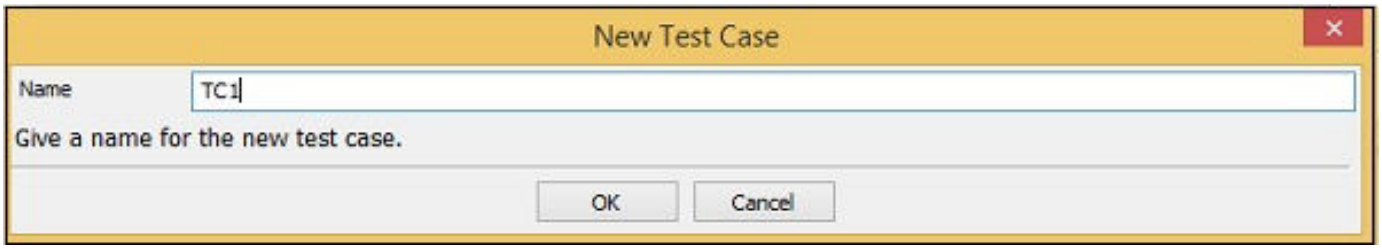
Click *New Project* and enter *Name* of your project as shown in the screenshot below.



The name given is RadioButton. Click on OK button to save the project.

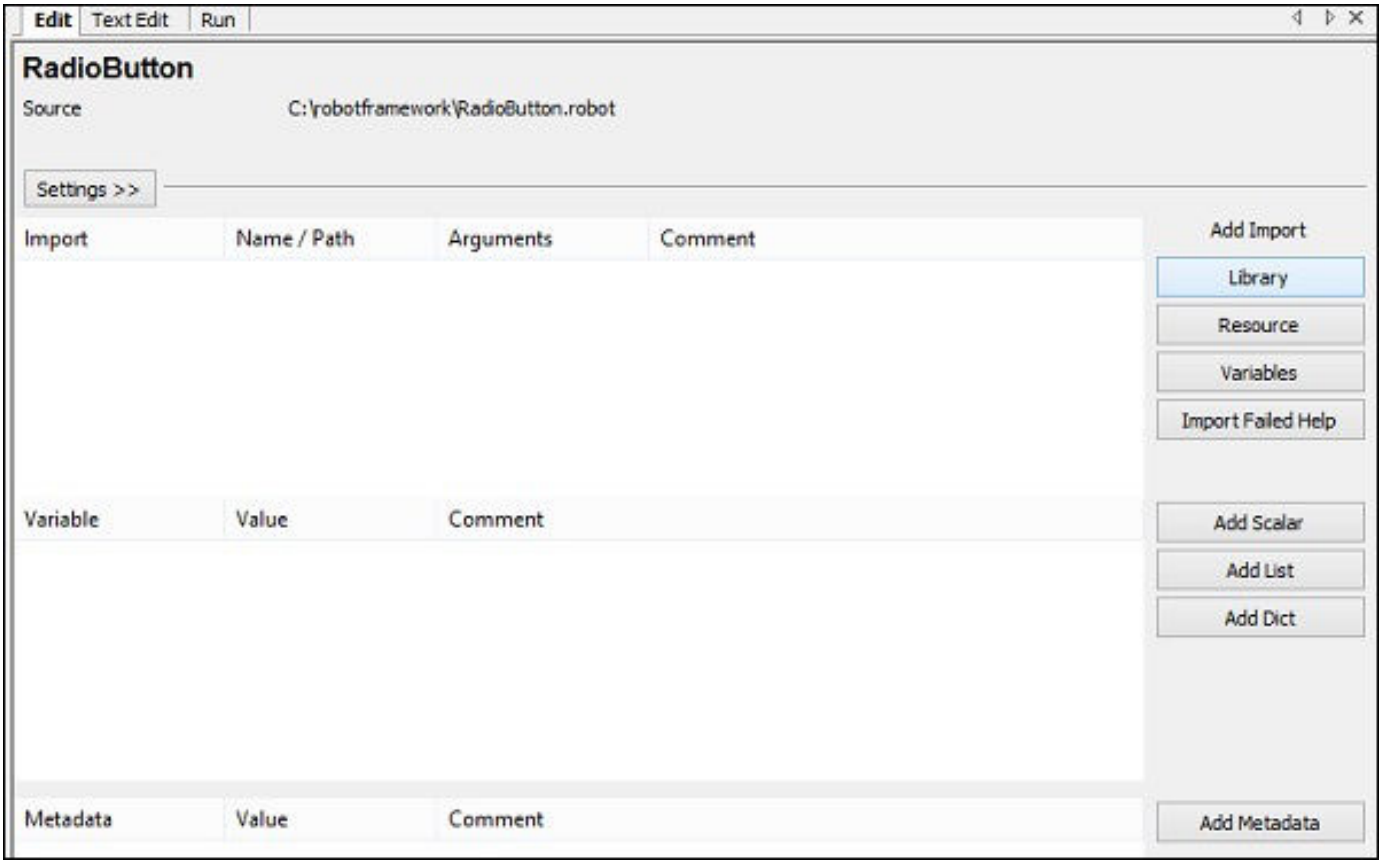
Right-click on the name of the project created and click on *New Test Case* −



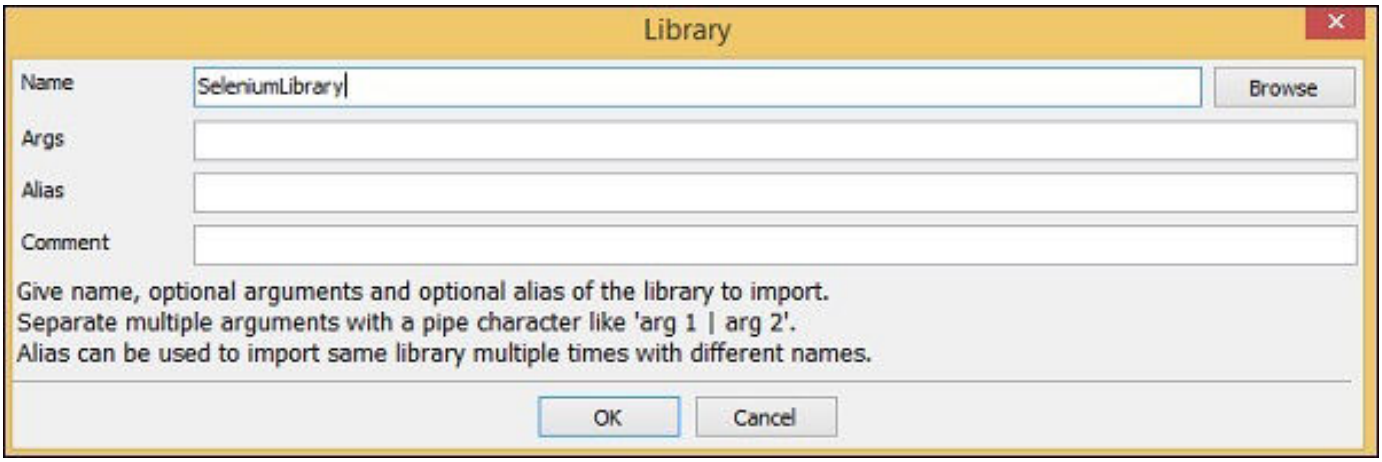


Give name to the test case and click OK to save it. We are done with the project setup and now will write test cases for the radio button. Since we need Selenium library, we need to import the same in our project.

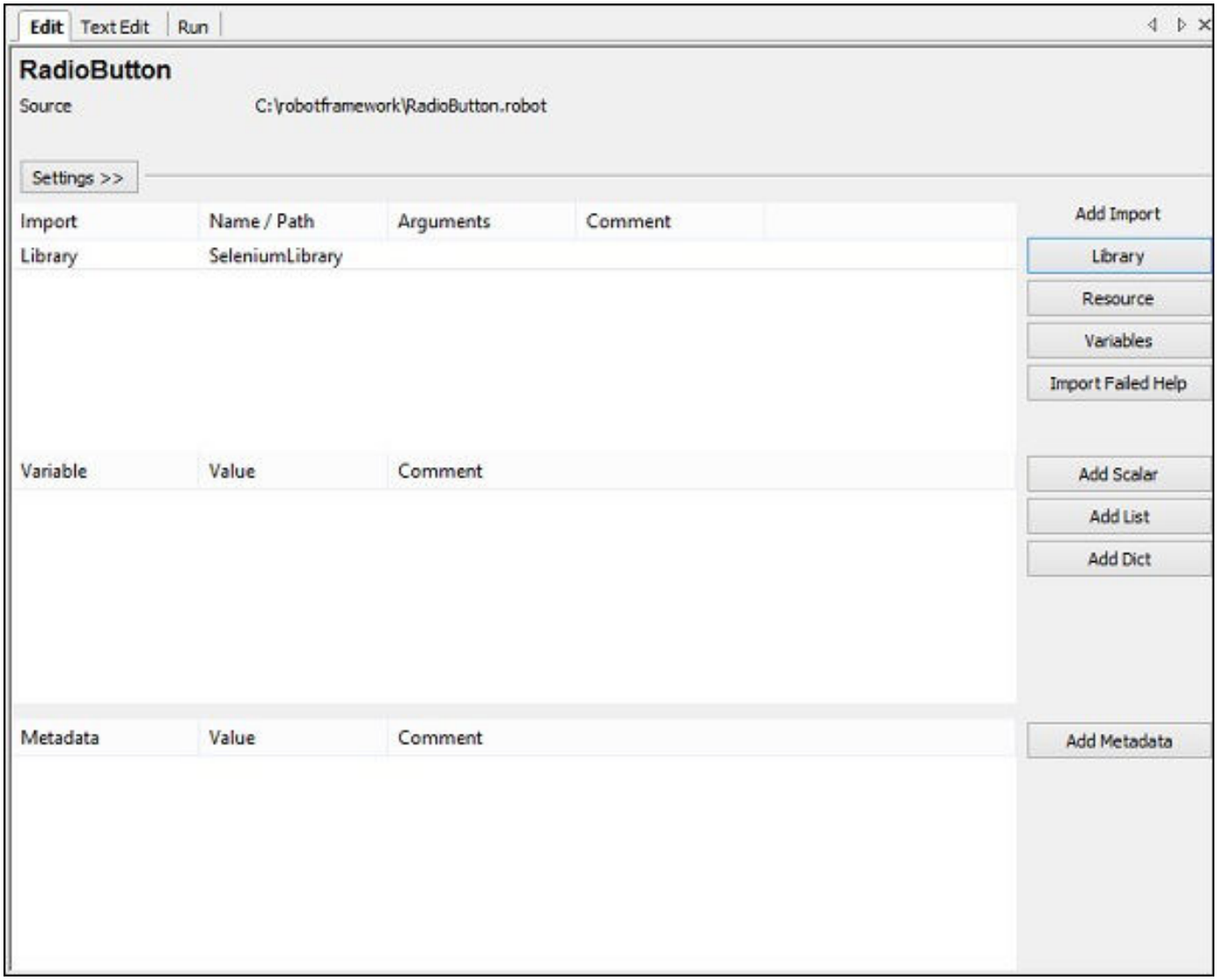
Click on your project on the left side and use *Library* from *Add Import*.



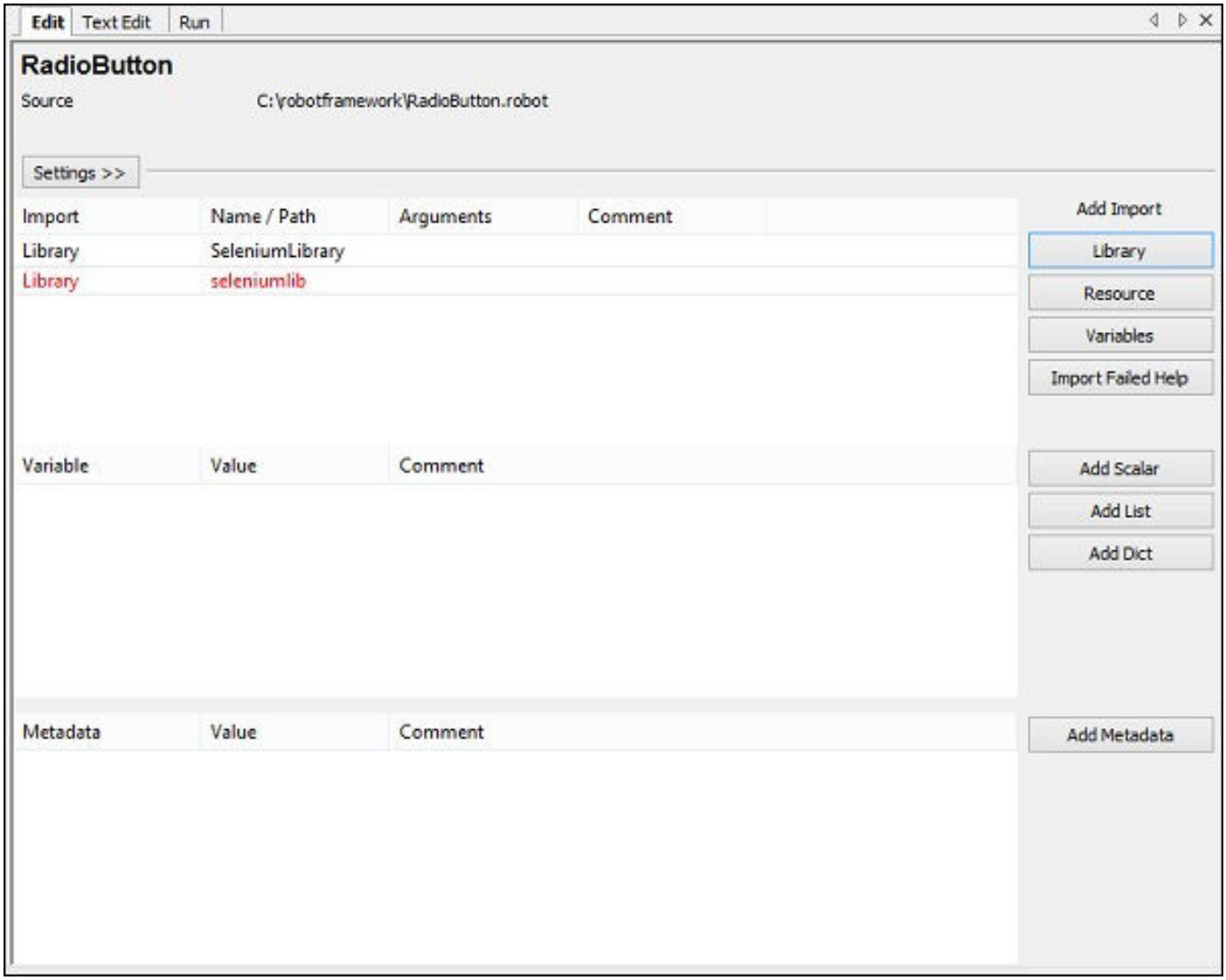
Upon clicking Library, a screen will appear where you need to enter the library name −



Click OK and the library will be displayed in the settings.



The name given has to match with the name of the folder installed in site-packages. If the name does not match, it will be in red as shown below −



Test Case for Radio Button

The radio button test case will select a radio button, with the help of a locator.

Consider the following html display for radio button −

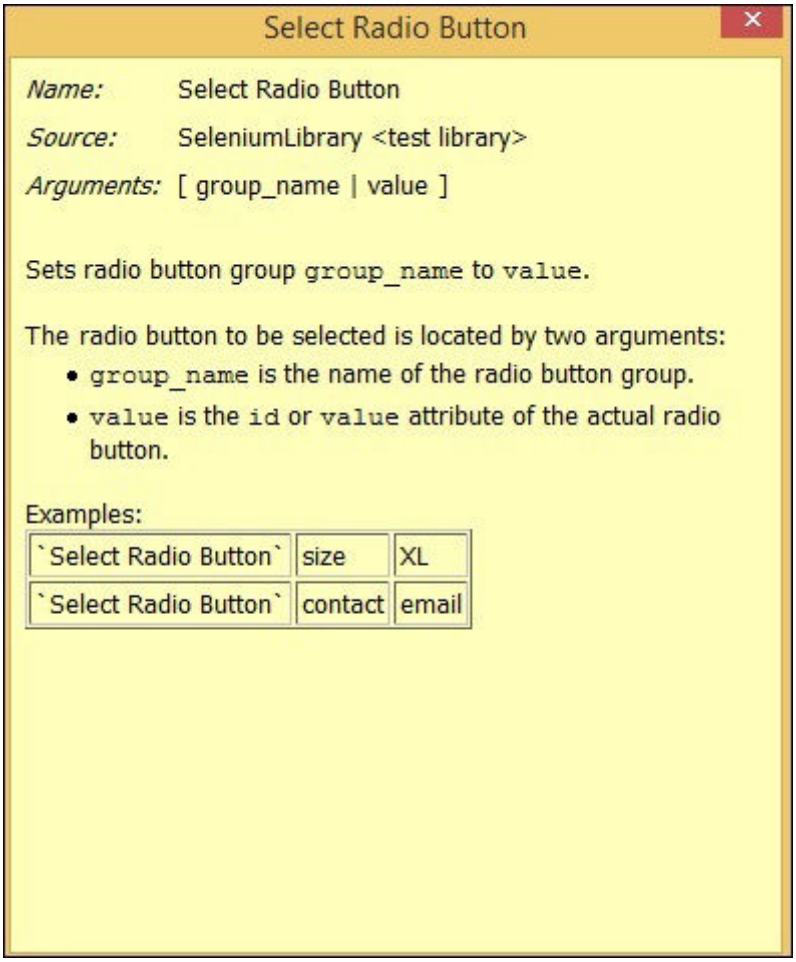
```
<input type="radio" name="gender" value="male" checked> Male<br/>
<input type="radio" name="gender" value="female"> Female<br/>
```

For radio button, *name* is the locator. In the above example, the *name is gender*. We also need the value so that we can select the radio button we want. The values in the above example are *Male and Female*.

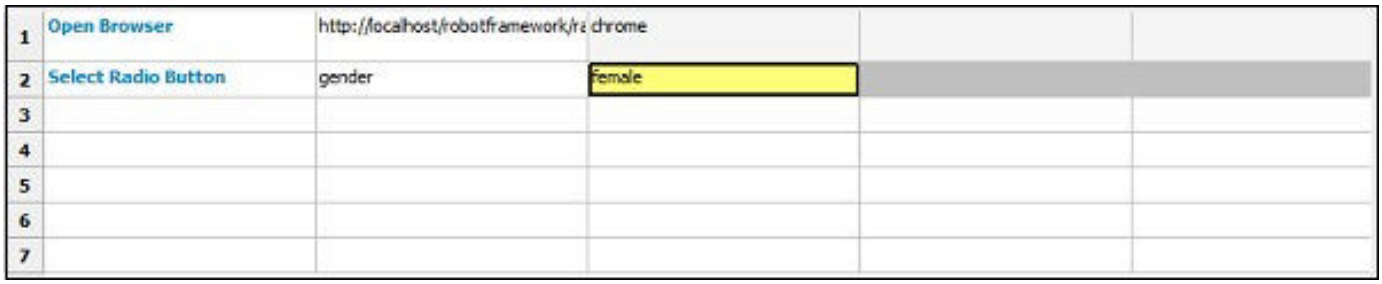
Now, we will create a test-page with radio button and open the same in the browser. Now, select the value of the radio button. The test case details will be as follows −

- Open browser − URL − **http://localhost/robotframework/radiobutton.html** in chrome
- Enter details of radio button
- Execute the test case

While writing the keyword for test cases, press Ctrl + Spacebar. You will get the details of the command.Details of Radio button



For the radio button, the arguments are group name and value. Here are the details of the test case for Radio button selection −



Following is the Test Page for radio button −

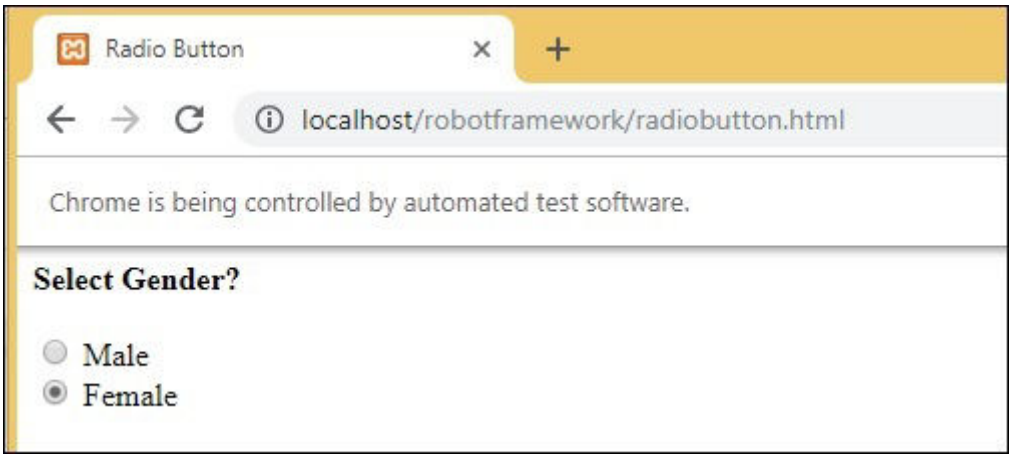
Html code for Radiobutton.html

```
<html>
   <head>
      <title>Radio Button</title>
```

```
   </head>
   <body>
      <form name="myform" method="POST">
         <b>Select Gender?</b>
         <div><br/>
            <input type="radio" name="gender" value="male" checked> Male<br/>
            <input type="radio" name="gender" value="female"> Female<br/>
         </div>
      </form>
   </body>
</html>
```

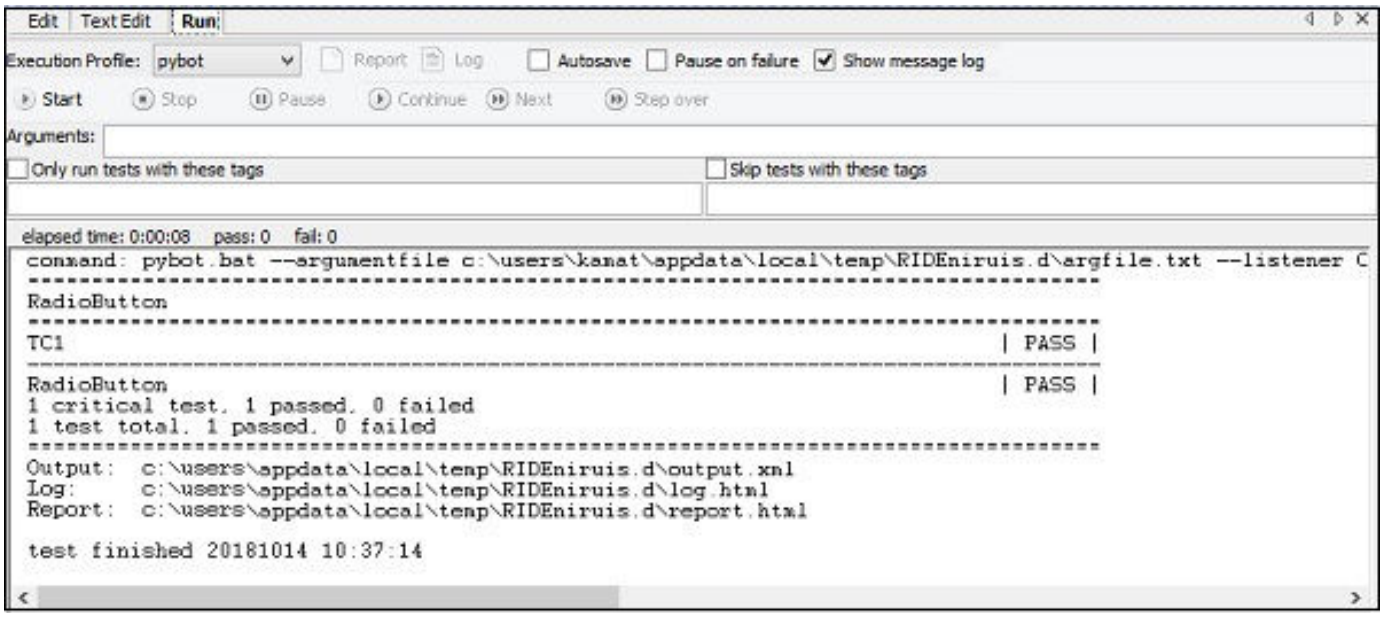
In the above form, we are planning to select female, which is a radio button. The name and value are given in the test case. Now, we will execute the test case and check the selection of the checkbox for the above form.

Let us execute the test case and see the display in the browser −



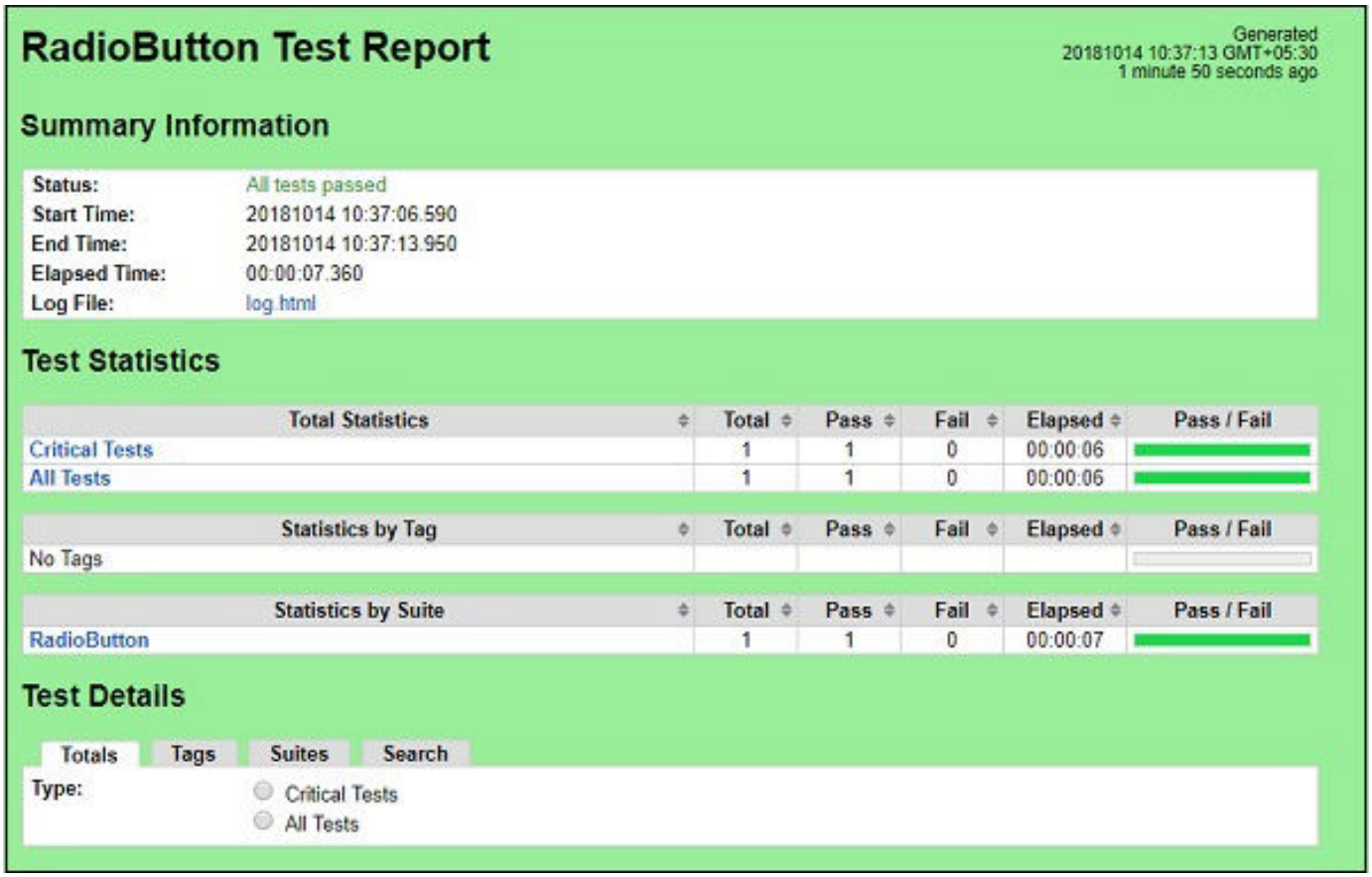
When the test case is executed, it opens the URL **http://localhost/robotframework/radiobutton.html** and selects the Female radio button whose name and value we have given in the test case.

Here are the execution details in Ride −



Let us now look at Report and Log for more details.

Report Details



RadioButton Test Report

Generated
20181014 10:37:13 GMT+05:30
1 minute 50 seconds ago

Summary Information

Status:	All tests passed
Start Time:	20181014 10:37:06.590
End Time:	20181014 10:37:13.950
Elapsed Time:	00:00:07.360
Log File:	log.html

Test Statistics

Total Statistics	Total	Pass	Fail	Elapsed	Pass / Fail
Critical Tests	1	1	0	00:00:06	
All Tests	1	1	0	00:00:06	

Statistics by Tag	Total	Pass	Fail	Elapsed	Pass / Fail
No Tags					

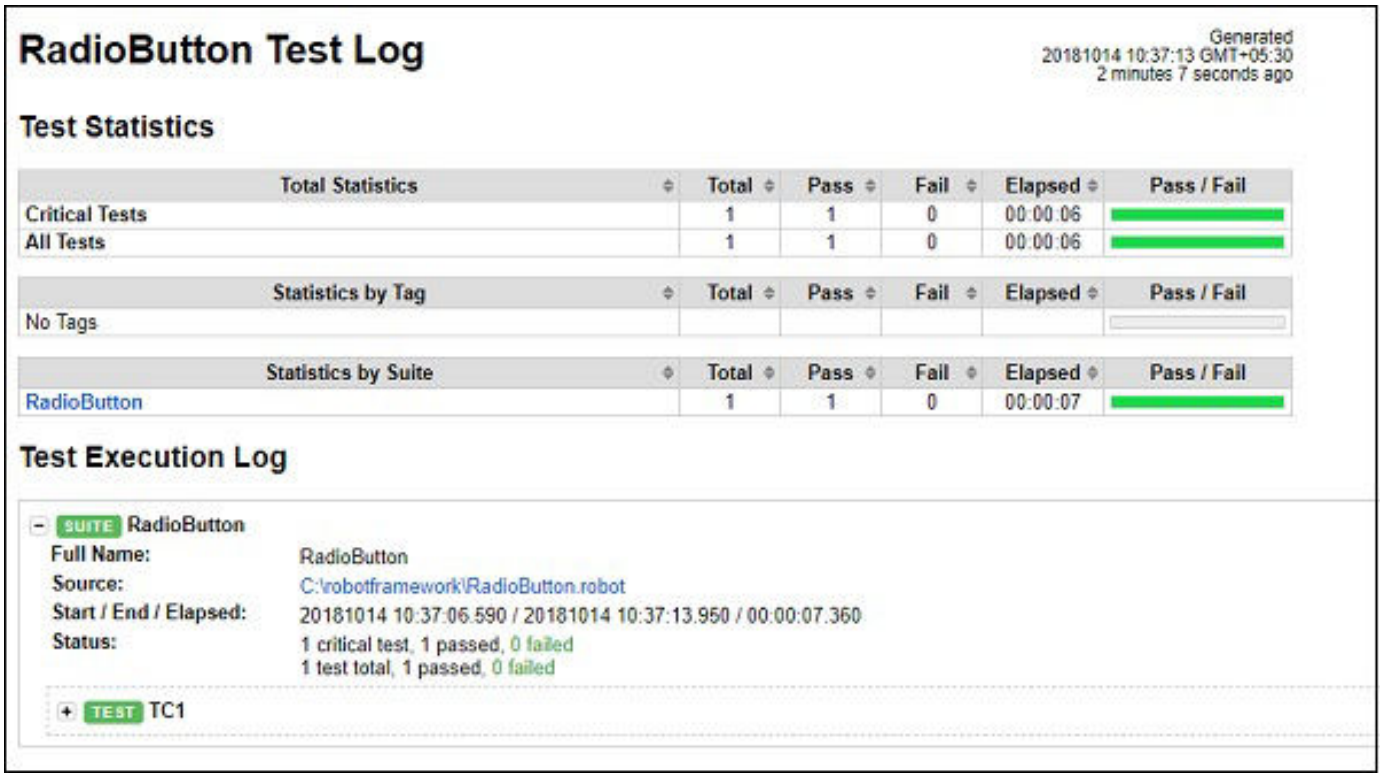
Statistics by Suite	Total	Pass	Fail	Elapsed	Pass / Fail
RadioButton	1	1	0	00:00:07	

Test Details

Totals | Tags | Suites | Search

Type: Critical Tests / All Tests

Log Details



RadioButton Test Log

Generated
20181014 10:37:13 GMT+05:30
2 minutes 7 seconds ago

Test Statistics

Total Statistics	Total	Pass	Fail	Elapsed	Pass / Fail
Critical Tests	1	1	0	00:00:06	
All Tests	1	1	0	00:00:06	

Statistics by Tag	Total	Pass	Fail	Elapsed	Pass / Fail
No Tags					

Statistics by Suite	Total	Pass	Fail	Elapsed	Pass / Fail
RadioButton	1	1	0	00:00:07	

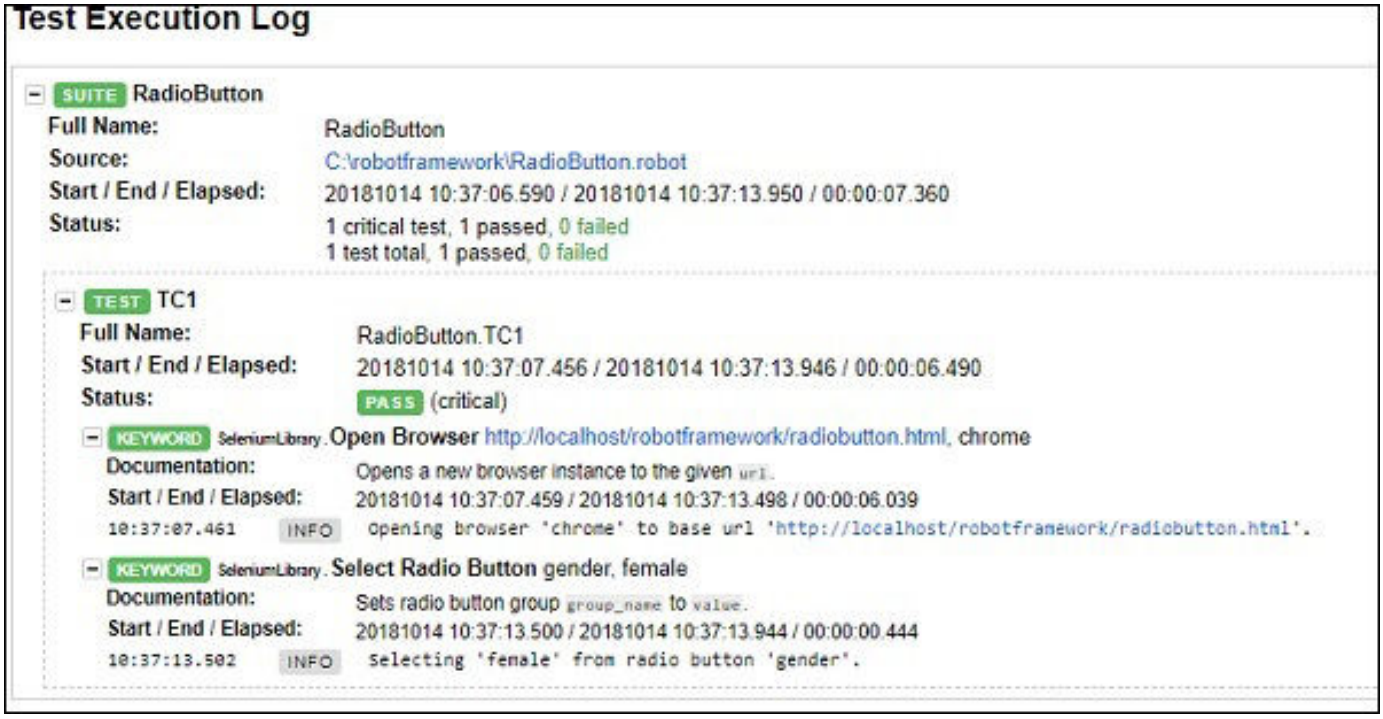
Test Execution Log

SUITE RadioButton

Full Name:	RadioButton
Source:	C:\robotframework\RadioButton.robot
Start / End / Elapsed:	20181014 10:37:06.590 / 20181014 10:37:13.950 / 00:00:07.360
Status:	1 critical test, 1 passed, 0 failed 1 test total, 1 passed, 0 failed

TEST TC1

Details of test cases



Conclusion

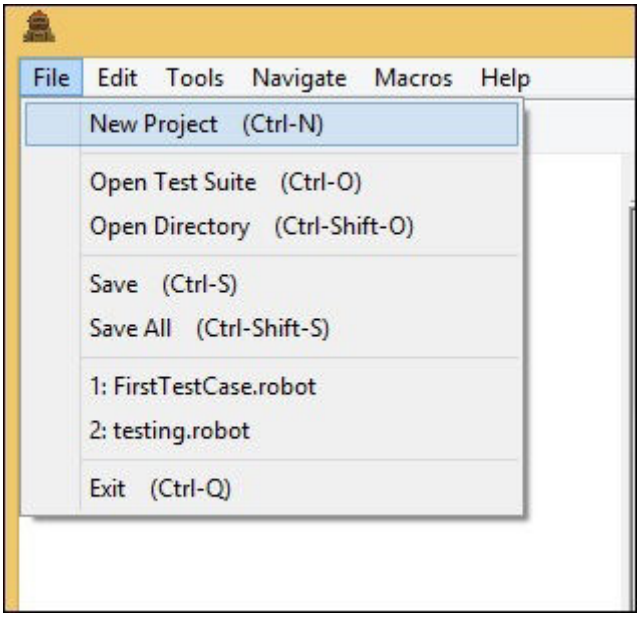
We have seen how to select value of radio button by giving the group name of the radio button to the test case. Using the keywords available with robot framework and the library imported, we can locate the radio button and select the value of the radio button. We do get the details of the test-case executed using robot framework logs and report.

Robot Framework - Working With Checkbox

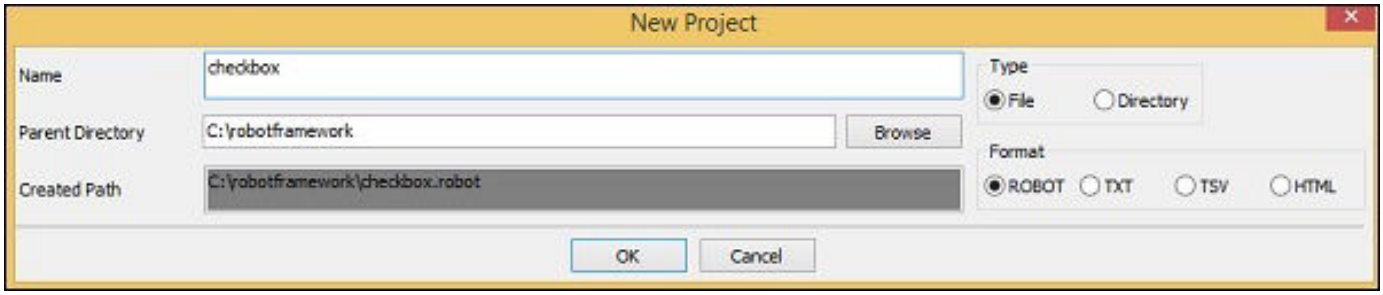
For testing, it becomes important to understand how to interact with the browser and locate the html elements. It is very easy to work with input fields with robot framework. In this chapter, we will learn how to work with checkbox using Selenium Library. To work with checkbox, we need the locator, which is the main unique identifier for that checkbox. The locator can be id, name, class, etc.

Project Setup for Checkbox Testing

We will first create a project in Ride to work with browsers. Open ride using **ride.py** from the command line.

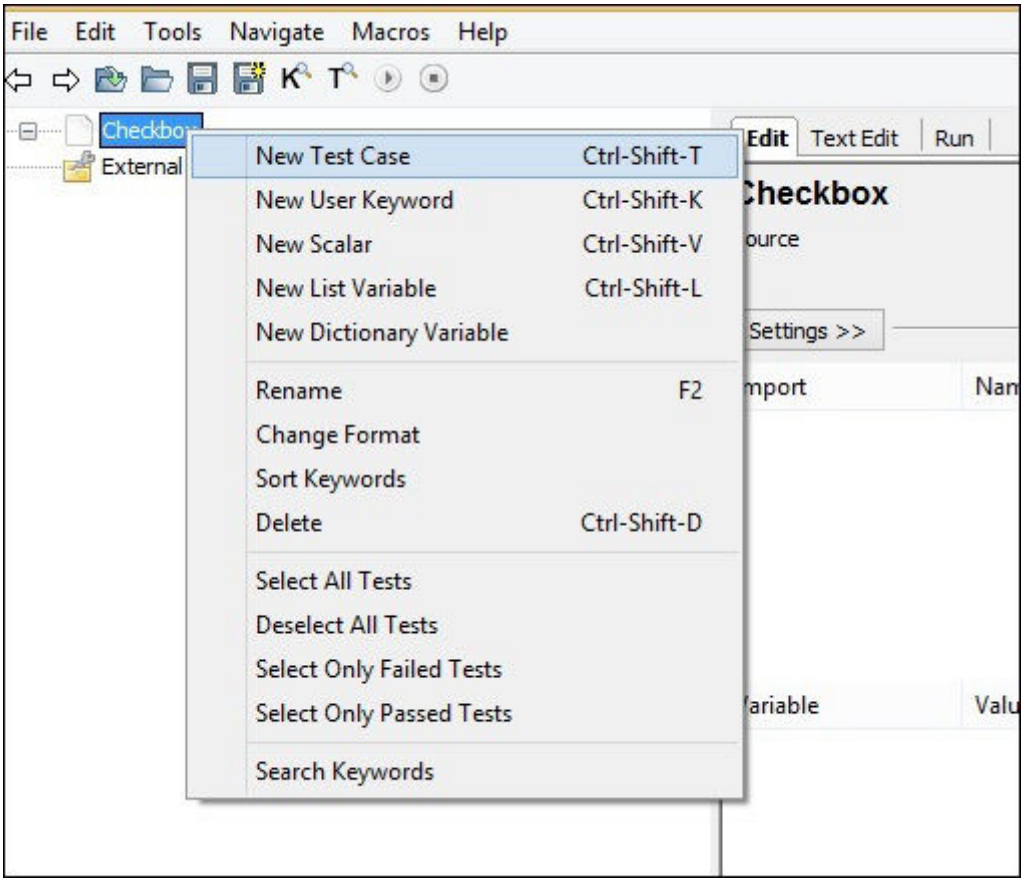


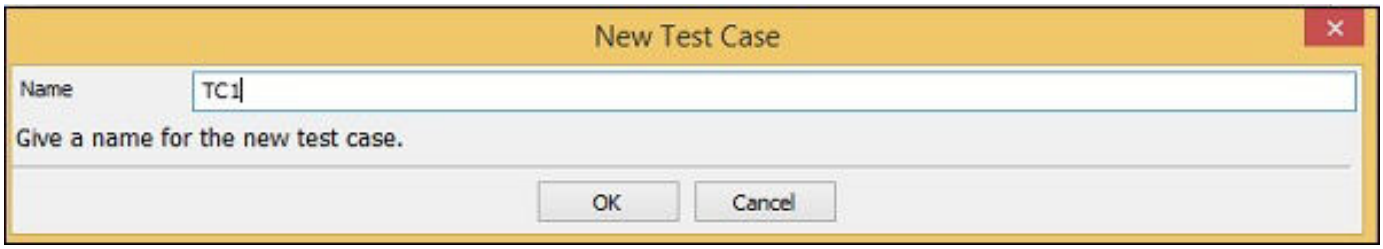
Click on *New Project* and enter *Name* of your project as shown in the screenshot below.



The name given for the project is Checkbox. Click OK to save the project.

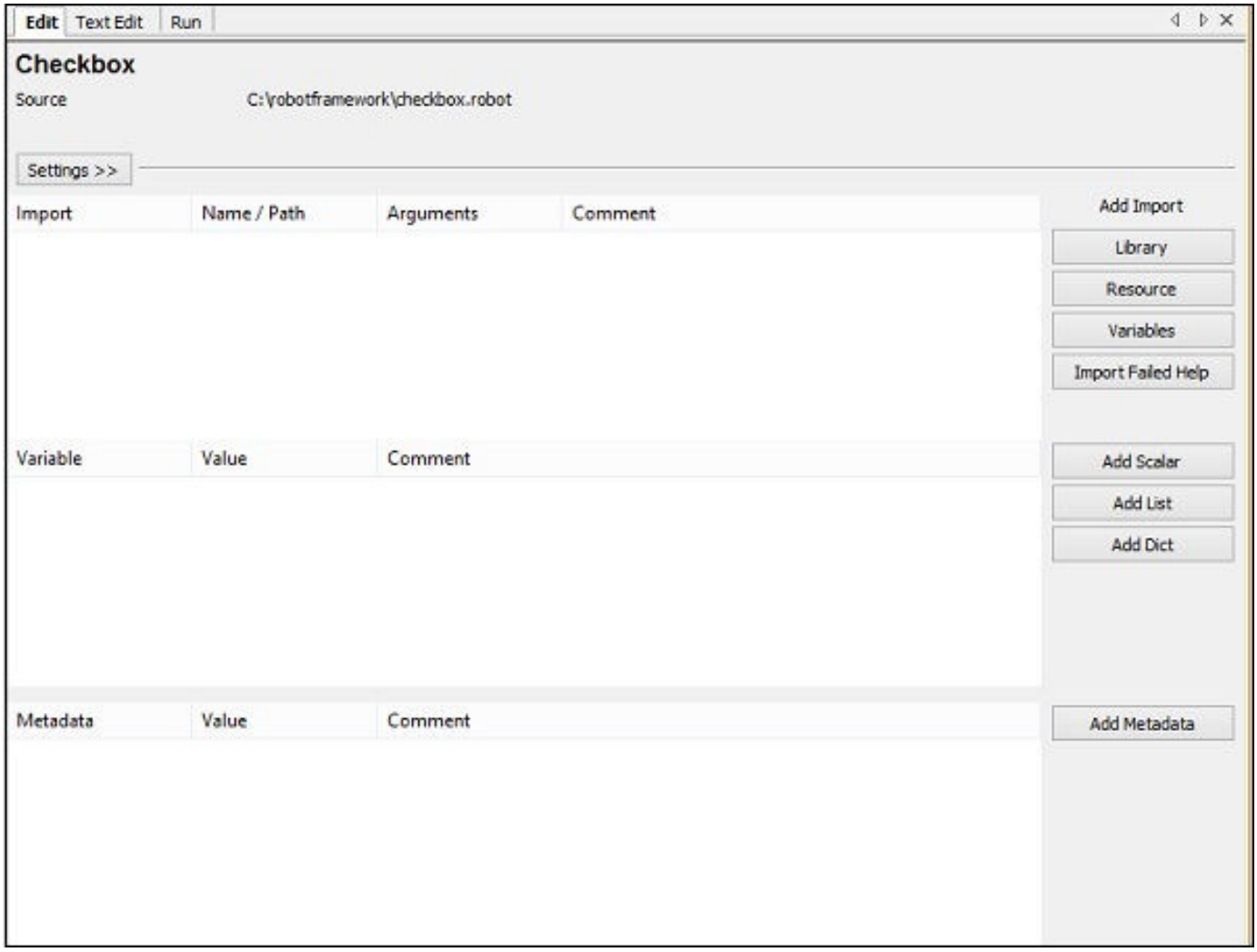
Right-click on the name of the project created and click *New Test Case* −



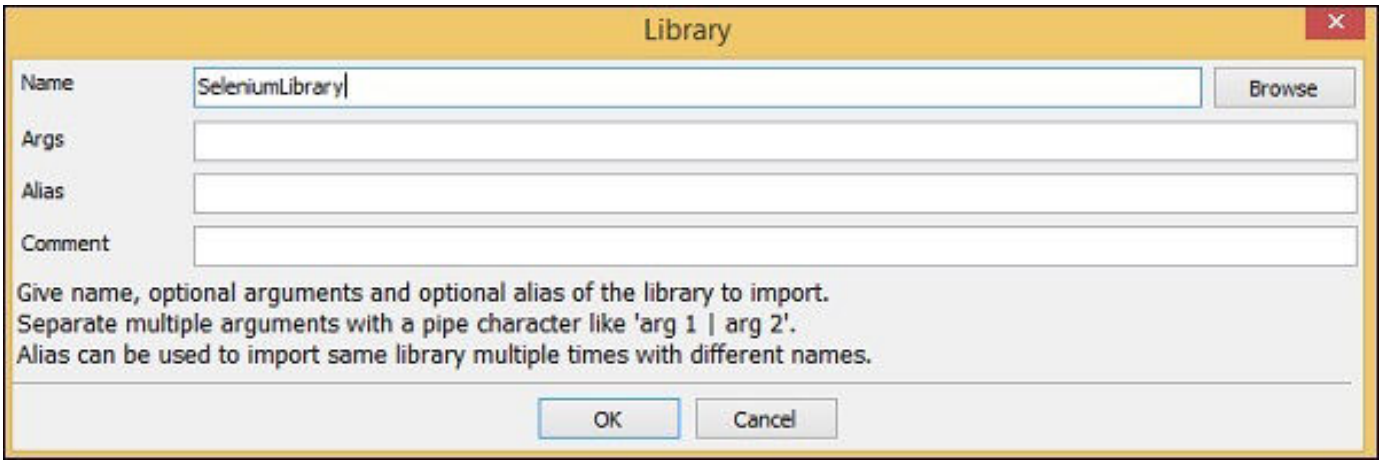


Give name to the test case and click OK. We are done with the project setup. Now we will write test cases for checkbox. Since we need Selenium library, we need to import the same in our project.

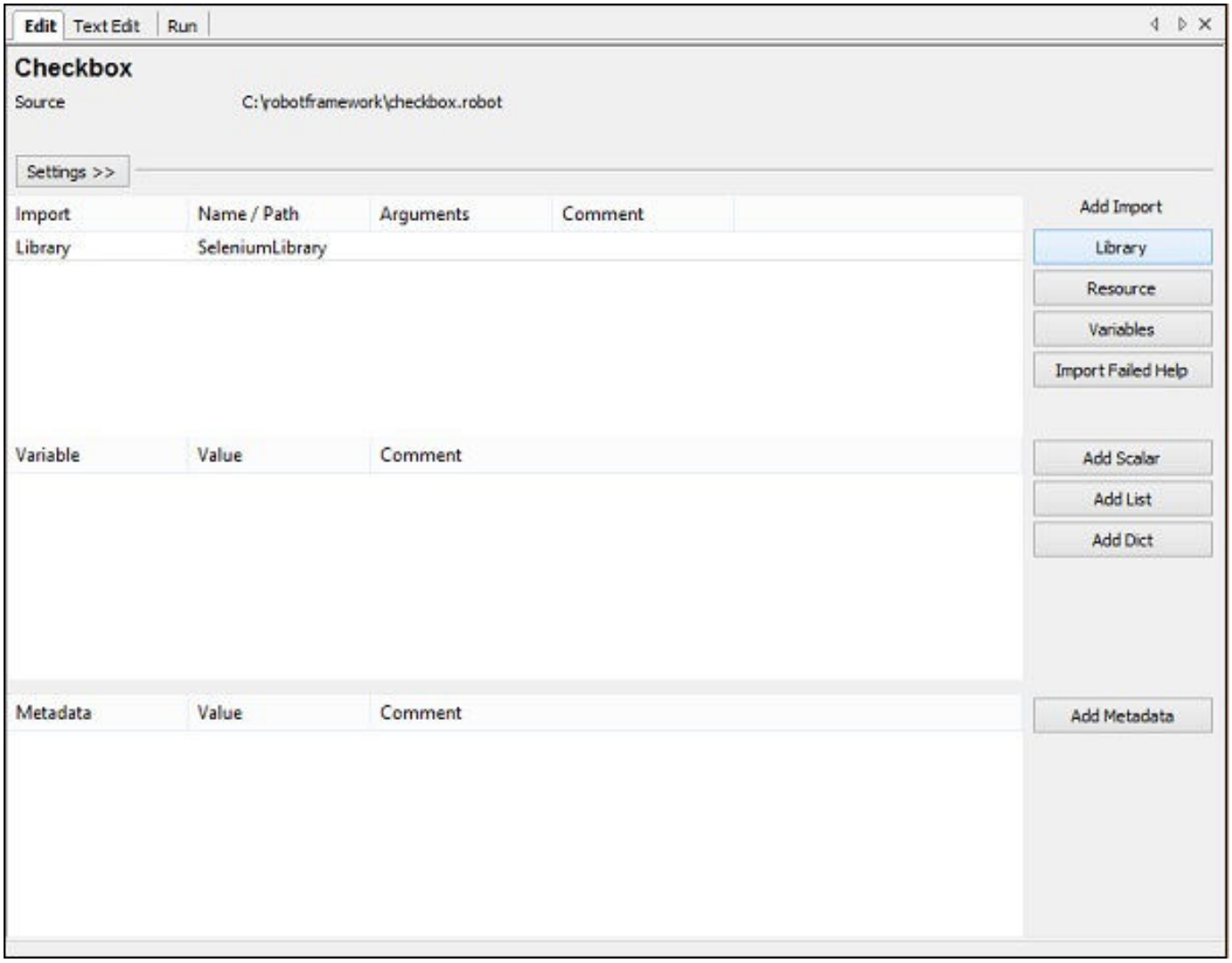
Click on your project on the left side and use *Library* from *Add Import*.



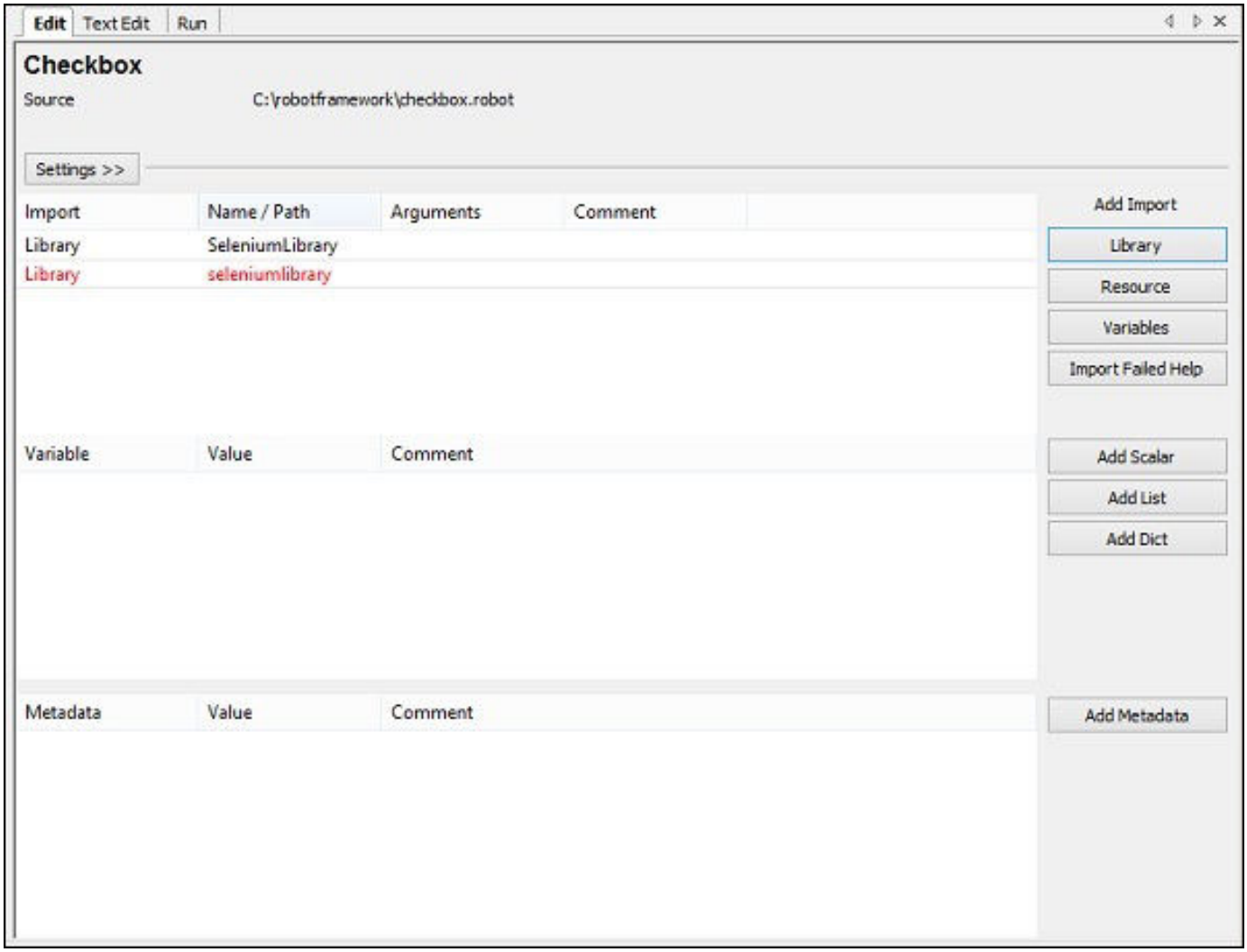
Now, click Library. A screen will appear where you need to enter the library name −



Click OK and the library will get displayed in the settings.



The name given has to match with the name of the folder installed in site-packages. If the names do not match, the library name will show in red −



Test Case for Checkbox

In the test case, we will select the checkbox. To select the checkbox, we need the identifier locator.

Now consider the following html display for checkbox −

```
<input type="checkbox" name="option1" value="Car"> Car
```

For checkbox, we have the *name* as the locator. In the above example, the *name* is *option1*. We also need the value so that we can select the same. **Car** holds the value in the above example.

Now, we will create a test page with checkbox. Open the checkbox in the browser and select the value.

The test case details will be as follows −

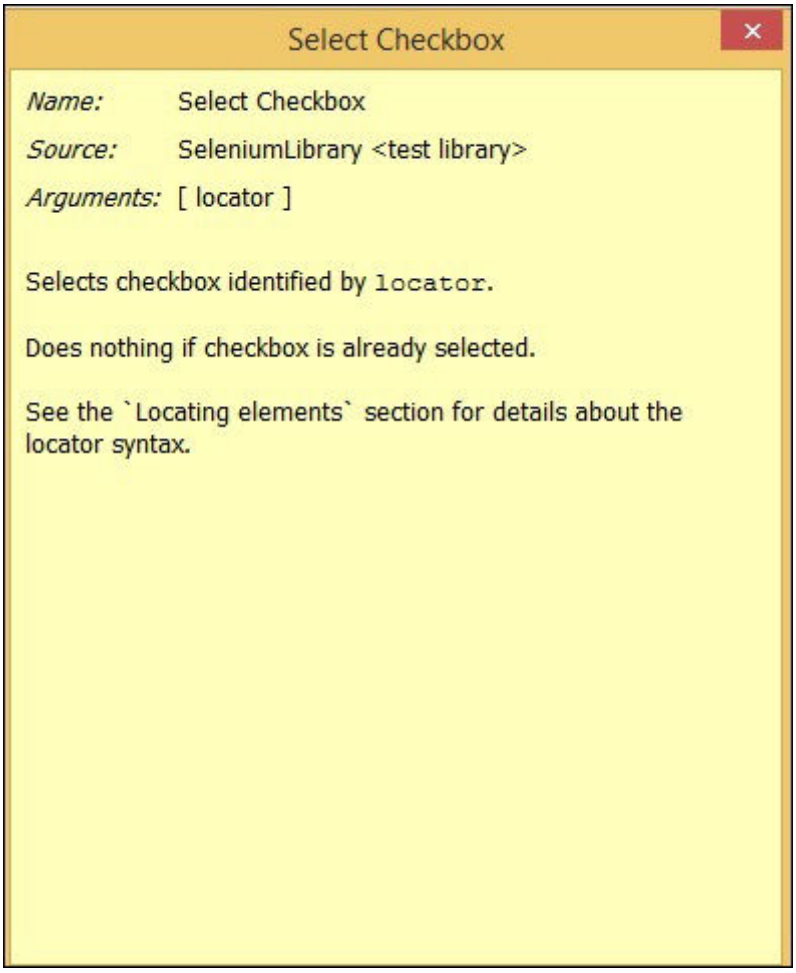
- Open browser − URL – **http://localhost/robotframework/checkbox.html** in Chrome
- Enter details of checkbox.
- Execute the test case.

While writing the keyword for test cases, press Ctrl + Spacebar. It gives all the details of the command.Details of checkbox.

The keywords to be used for checkbox is −

```
Select checkbox name:nameofcheckbox value
```

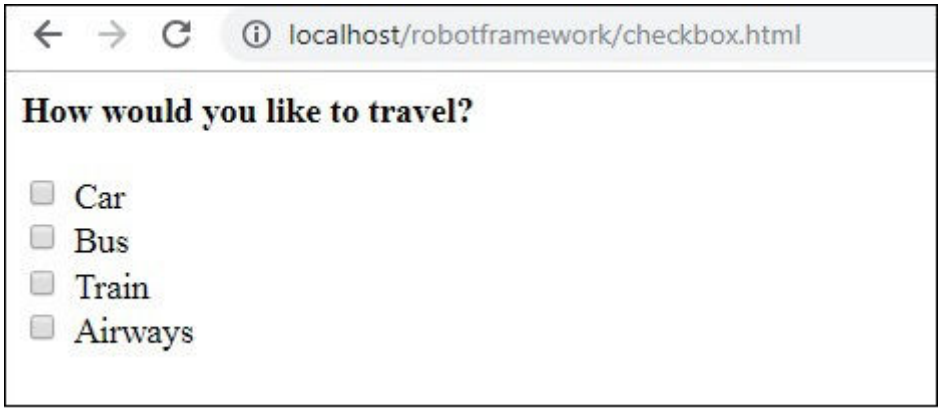
The command details from ride is as follows −



So, arguments is the locator for the checkbox. Here are the details of the test case for Checkbox selection −

1	Open Browser	http://localhost/robotframework/cl	chrome		
2	Select Checkbox	name:option1			
3					
4					
5					
6					
7					

This is how the URL is −



checkbox.html

```
<html>
   <head>
      <title>Checkbox Test Page>/title>
   </head>
   <body>
      <form name="myform" method="POST">
         <b>How would you like to travel?</b>
         <div><br>
            <input type="checkbox" name="option1" value="Car"> Car<br>
            <input type="checkbox" name="option2" value="Bus"> Bus<br>
            <input type="checkbox" name="option3" value="Train"> Train<br>
            <input type="checkbox" name="option4" value="Air"> Airways<br>
            <br>
         </div>
      </form>
   </body>
</html>
```

In the above form, we are planning to select Car, which is a checkbox. The details are given in the test case. Now, we will execute the test case and check the selection of the checkbox for the above form.