STQA Project 2 - vrewb vr

computer engg (Dr. D.Y. Patil Institute of Engineering, Management and Research)

STQA MINI PROJECT - II

LABORATORY PRACTICE 2

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Online Cab Booking V-CAB

Title

Mini-Project 2:

Create a small web-based application by selecting relevant system environment/platform and programming languages. Narrate concise Test Plan consisting of features to be tested and bug taxonomy. Narrate scripts to perform regression tests. Identify the bugs using Selenium WebDriver , IDE and generate test reports encompassing exploratory testing.

Problem Definition

Perform Web testing and identify the bugs using Selenium WebDriver and IDE and generate test reports encompassing exploratory testing.

Prerequisite

Basic Concepts of Unit Testing, Test Cases Writing using selenium etc tool

Software Requirements

HTML, CSS, JAVA , SELENIUM ,PYTHON

Hardware Requirement

2GB RAM, 500 GB HDD, i5 Processor

Learning Objectives

We are going to learn how to Identify the bugs using Selenium WebDriver and IDE and generate test reports encompassing exploratory testing.

Theory

What is Selenium?

Selenium is a free (open source) automated testing suite for web applications across different browsers and platforms. Selenium is a suite of software tools to automate Web Browsers.• It is an Open-source suite of tools mainly used for Functional and Regression Test Automation. Selenium is a free (open source) automated testing suite for web applications across different browsers and platforms.

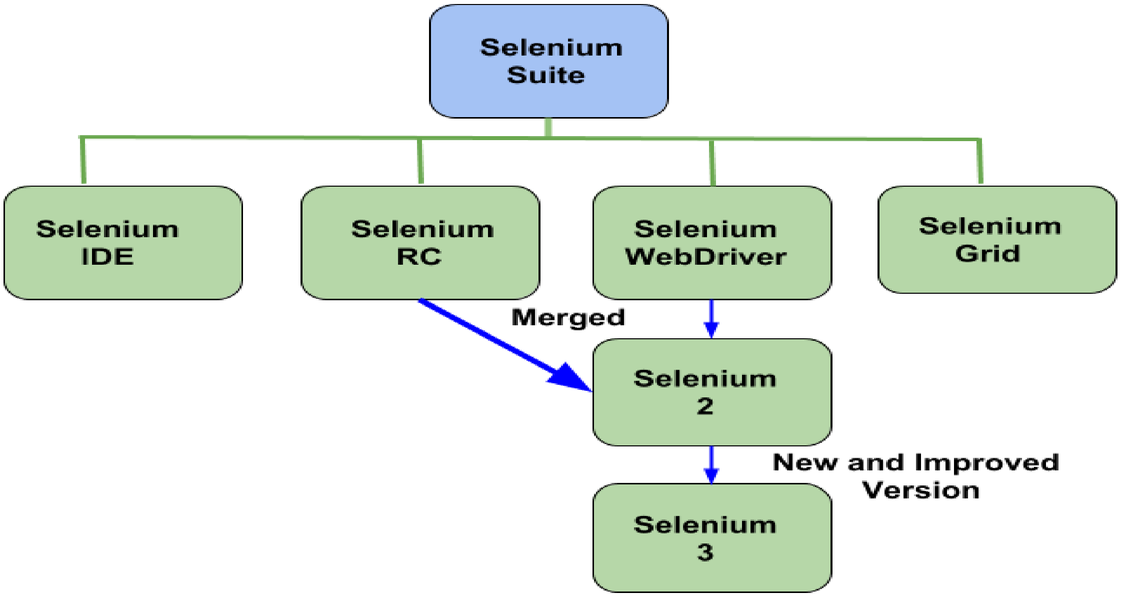
It is quite similar to HP Quick Test Pro (QTP now UFT) only that Selenium focuses on automating web-based applications. Testing done using Selenium tool is usually referred to as Selenium Testing

- Selenium supports various Operating environments.
    - Microsoft Windows
    - Linux
    - Macintosh
- Selenium supports various Browsers.
    - Mozilla Firefox
    - IE
    - Google Chrome
    - Safari
    - Opera etc…
- Selenium supports various programming environments to write programs (Test scripts)
    - Java
    - C#
    - Python
    - Perl
    - Ruby
    - PHP

History of the Selenium Project

Selenium first came to life in 2004.

- In 2006, Selenium WebDriver was launched at Google.
- In 2008, the whole Selenium team decided to merge Selenium WebDriver with Selenium RC to form a more powerful tool called Selenium 2.0
    - Selenium 1
        - (Selenium IDE + Selenium RC + Selenium Grid)
    - Selenium 2
        - (Selenium IDE + Selenium RC + Selenium WebDriver + Selenium Grid)



Selenium’ Tools Suite

Selenium is not just a single tool but a suite of software's, each catering to different testing needs of an organization. It has four components.

- Selenium Integrated Development Environment (IDE)
- Selenium Remote Control (RC)
- WebDriver
- Selenium Grid

1. Selenium IDE Features :-

- ➢ Create Test Cases, Test suites (We can Record test cases or type Test steps using element locators and Selenese commands)
- ➢ Edit Test Cases
- ➢ Execute Test cases, Test suites
- ➢ Debug Test Cases.
- ➢ Enhance Test Cases

2. Drawbacks of Selenium IDE :-

- ➢ It supports Mozilla Firefox browser only.
- ➢ It doesn’t support Programming logic/features to enhance Test cases.
- ➢ It doesn’t support Data-Driven Testing.
- ➢ It is not suitable for complex test case design.
- ➢ No centralized maintenance of Objects/Elements

2. Selenium Remote Control (Selenium RC) :-

Selenium RC was the flagship testing framework of the whole Selenium project for a long time. This is the first automated web testing tool that allowed users to use a programming language they prefer. As of version 2.25.0, RC can support the following programming languages:

- ○ Java
- ○ C#
- ○ PHP

- Python
- Perl
- Ruby

3. Selenium WebDriver :-

- It is a Programming interface to create and execute Test cases.
- Selenium IDE has IDE but doesn't have Programming interface.
- Selenium WebDriver has Programming interface but doesn't have IDE.
- It communicates directly to the browser.
- No need of Separate Server such as RC ServerUFT/QTP has both IDE as well as a Programming interface.
- Faster Execution than IDE & RC
- Selenium WebDriver supports various programming environments to write programs.

  i. Java

  ii. C#

  iii. Perl

  iv. Python

  v. Ruby

  vi. PHP

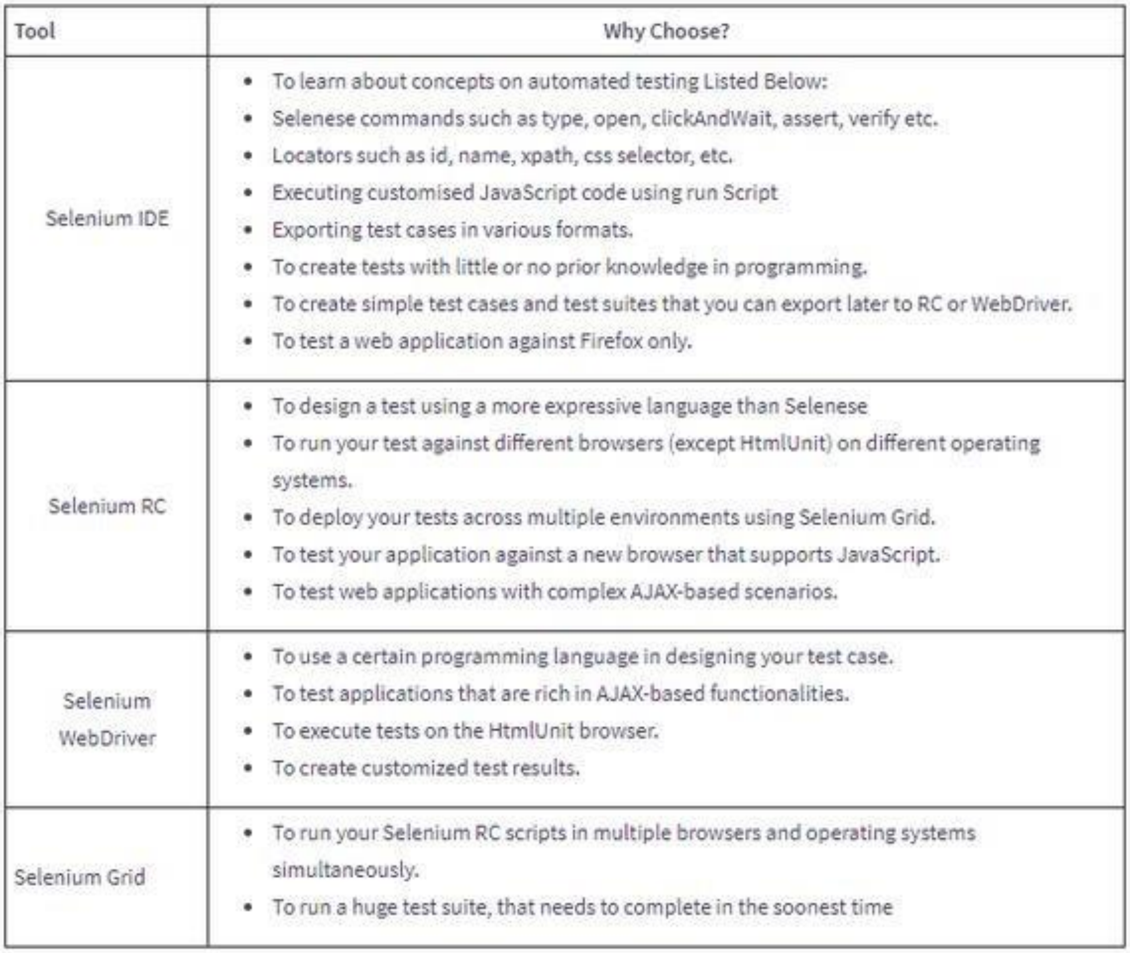
- Using Element/Object locators/properties and Webdriver Methods we can create and execute Test cases.
- Selenium Webdriver supports various browsers to create and execute a test case/test script/test

  Note: Browser driver varies from one browser to another.

- *Drawbacks of Selenium WebDriver*
  - It doesn't generate detailed Test Reports.
  - No centralized maintenance of Object/elements
  - It requires Programming Knowledge
  - Cannot support the readily new browser
  - Installation is More Complicated than Selenium IDE
  - No built-in mechanism for logging runtimemessage

4. Selenium Grid :-

- Selenium Grid is used to execute tests across multiple browsers, operating environments and machines in parallel.
- Selenium Grid 2 supports Selenium RC Tests as well as Selenium WebDriver Tests.
  1. Selenium WebDriver to create Test cases using Element locators and Webdriver methods.
  2. Java Programming to enhance test cases.
  3. TestNG Framework to group test cases, execute test batches and generate detailed test reports.
- Features:
- Enables simultaneous running of tests in multiple browsers and environments.
- Saves time enormously.
- Utilizes the hub-and-node concept. The hub acts as a central source of Selenium commands to each node connected to it.



Tool	Why Choose?
Selenium IDE	• To learn about concepts on automated testing Listed Below: • Selenese commands such as type, open, clickAndWait, assert, verify etc. • Locators such as id, name, xpath, css selector, etc. • Executing customised JavaScript code using run Script • Exporting test cases in various formats. • To create tests with little or no prior knowledge in programming. • To create simple test cases and test suites that you can export later to RC or WebDriver. • To test a web application against Firefox only.
Selenium RC	• To design a test using a more expressive language than Selenese • To run your test against different browsers (except HtmlUnit) on different operating systems. • To deploy your tests across multiple environments using Selenium Grid. • To test your application against a new browser that supports JavaScript. • To test web applications with complex AJAX-based scenarios.
Selenium WebDriver	• To use a certain programming language in designing your test case. • To test applications that are rich in AJAX-based functionalities. • To execute tests on the HtmlUnit browser. • To create customized test results.
Selenium Grid	• To run your Selenium RC scripts in multiple browsers and operating systems simultaneously. • To run a huge test suite, that needs to complete in the soonest time

2. TEST PLAN

Introduction :-

Testing the Attendance Marking system application.

Goals: To provide platform for online attendance system

Objectives: Provide platform for taking attendance

Configuration Management Plan :-

Stakeholders	Tasks
Aditi Chavan	Unit Testing
Ashutosh Janrao	Integration Testing
Samruddhi Ballal	Alpha Testing
Developer	Resolving the Bugs and deploying patches
Customer	Beta Testing

Features to be tested :-

- Login
- Sign Up
- Book Cab
- Check Availability

Approach :-

- Unit Testing
- Integration Testing
- Acceptance Testing
- Alpha Testing
- Beta Testing

Item Pass/Fail Criteria :-

- **Evaluation Team** - This subsection describes the job responsibilities and possibly the names of those on the evaluation team.
- **Exit Criteria** - Defines when to stop testing.

- **Evaluation Process** - Describes the four steps of the evaluation process to be followed.
- **Requirements Traceability Matrix** - Describes the process to record and track incidents back to requirements

Suspension Criteria and Resumption Requirements :-

- Specify criteria to be used to suspend the testing activity.
- Specify testing activities which must be redone when testing is resumed.

Test Deliverables :-

- Test Cases
- Test Scripts
- Defect Reports
- Test Reports

Test Environment :-

- Environment
  Windows 10
  Chromedriver
  Selenium
  Apache
  Tomcat

- Programming Languages
  HTML
  CSS
  JAVA
  Servlet
- Testing tool used
  selenium

Test Case Scenarios :-

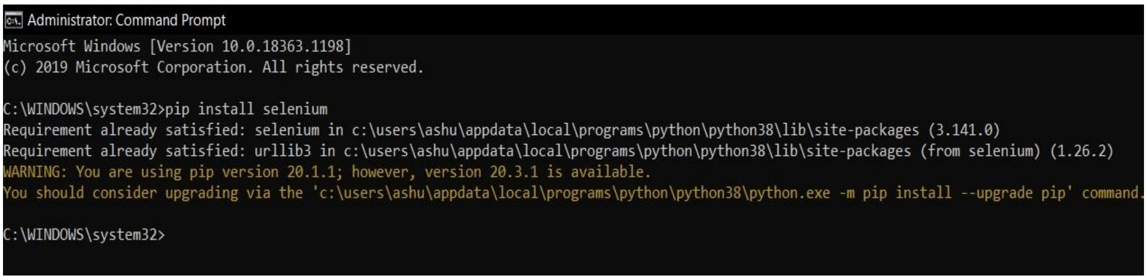
Sr No	**Input**	**Description**	**Expected Result**	**Actual Result**	**Status**
1	!abcupgmail.com	Email should be in proper format	Email is in wrong format	Email is not accepted	Pass
2	Signup	After signup information should be stored in database and redirected to login page	Data should be inserted in database and redirected to login page	Data is inserted and page is redirected to login page	Pass
3	login	If credentials provided are correct then it should be redirected to	Page should redirected to Profile page if credentials matched	Page should redirected to login page if credentials matched and	Pass

		Profile Page	Otherwise it display the message that “Invalid credentials”	Otherwise it display the message that “Invalid credentials”	
4	Empty field validation	Empty input should not be accepted	If field is empty form should not be submitted	If field is empty form should not be submitted	Pass
5	Password	Password length should be greater than Or equal to 8	Password length less than 8 digits should not be accepted	Password length less than 8 digits should not be accepted	Pass
6	Book Cab	When user book a cab then request should be sent to driver	Request sent to driver	Request sent to driver	Pass
7	Check Availability	When user search for a cab and if it is available then information of available cab should be displayed	If cab available then information of cab should be displayed otherwise it should displayed the message “no cabs are available”	If cab available then information of cab should be displayed otherwise it should displayed the message “no cabs are available”	Pass

Setting up Selenium :-

Use pip to install the selenium package . Python 3.6 has pip available in the standard library.

Using pip ,you can install selenium like this :- **pip install selenium**



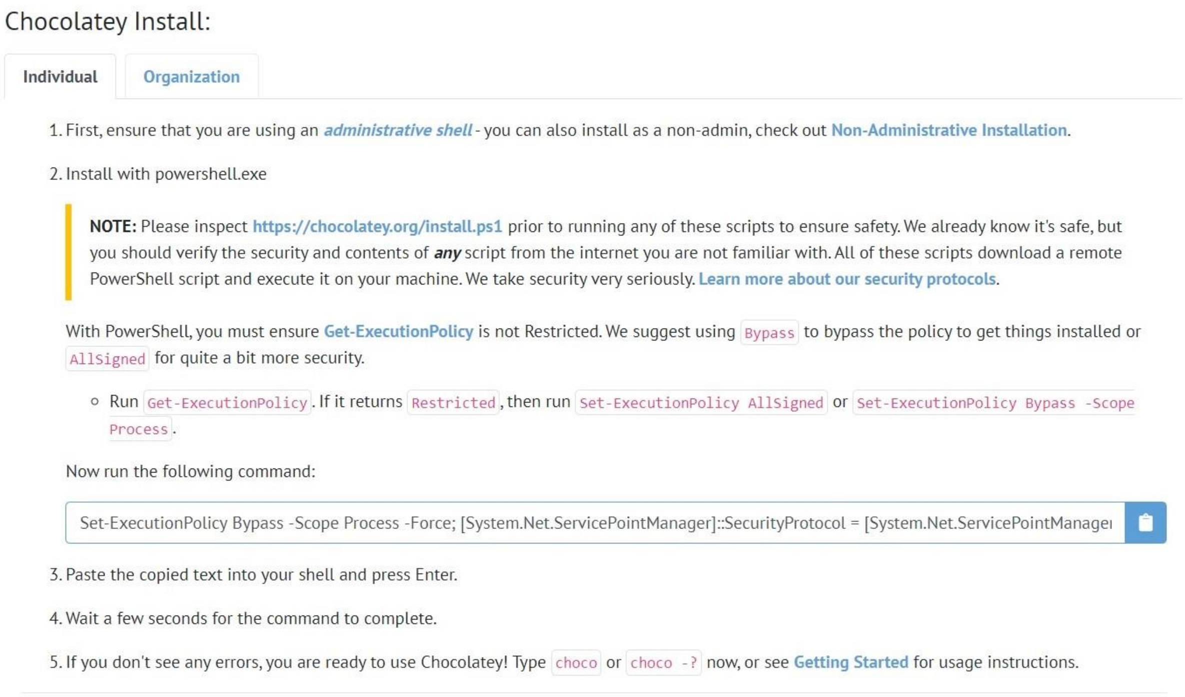
```
Microsoft Windows [Version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>pip install selenium
Requirement already satisfied: selenium in c:\users\ashu\appdata\local\programs\python\python38\lib\site-packages (3.141.0)
Requirement already satisfied: urllib3 in c:\users\ashu\appdata\local\programs\python\python38\lib\site-packages (from selenium) (1.26.2)
WARNING: You are using pip version 20.1.1; however, version 20.3.1 is available.
You should consider upgrading via the 'c:\users\ashu\appdata\local\programs\python\python38\python.exe -m pip install --upgrade pip' command.

C:\WINDOWS\system32>
```

Setting up Chromedriver :-

1. Install chocolatey :-

Visit official website of chocolatey
https://chocolatey.org/

Steps to Install Chocolatey :-



Chocolatey Install:

1. First, ensure that you are using an *administrative shell* - you can also install as a non-admin, check out Non-Administrative Installation.

2. Install with powershell.exe

> **NOTE:** Please inspect https://chocolatey.org/install.ps1 prior to running any of these scripts to ensure safety. We already know it's safe, but you should verify the security and contents of ***any*** script from the internet you are not familiar with. All of these scripts download a remote PowerShell script and execute it on your machine. We take security very seriously. Learn more about our security protocols.

With PowerShell, you must ensure Get-ExecutionPolicy is not Restricted. We suggest using `Bypass` to bypass the policy to get things installed or `AllSigned` for quite a bit more security.

- Run `Get-ExecutionPolicy`. If it returns `Restricted`, then run `Set-ExecutionPolicy AllSigned` or `Set-ExecutionPolicy Bypass -Scope Process`.

Now run the following command:

```
Set-ExecutionPolicy Bypass -Scope Process -Force; [System.Net.ServicePointManager]::SecurityProtocol = [System.Net.ServicePointManage
```

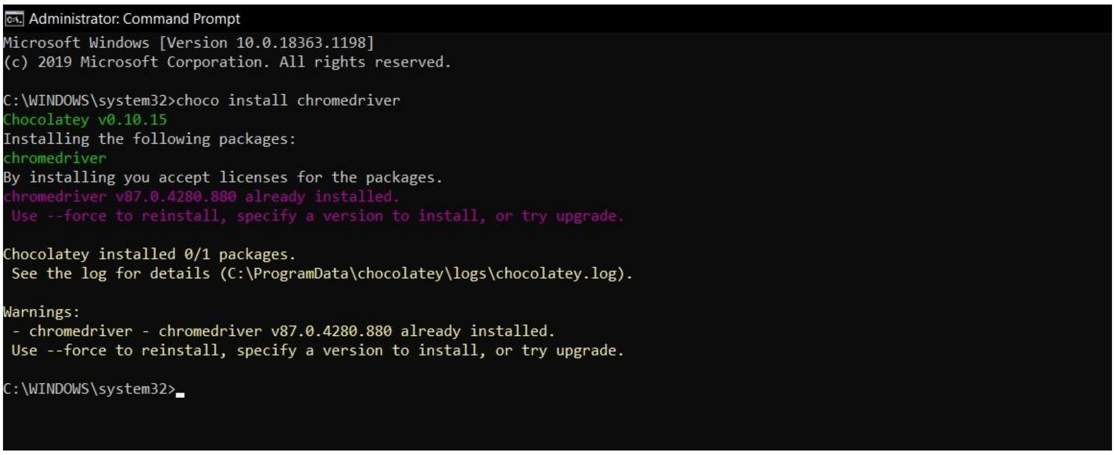
3. Paste the copied text into your shell and press Enter.

4. Wait a few seconds for the command to complete.

5. If you don't see any errors, you are ready to use Chocolatey! Type `choco` or `choco -?` now, or see Getting Started for usage instructions.

2. Install Chromedriver :-

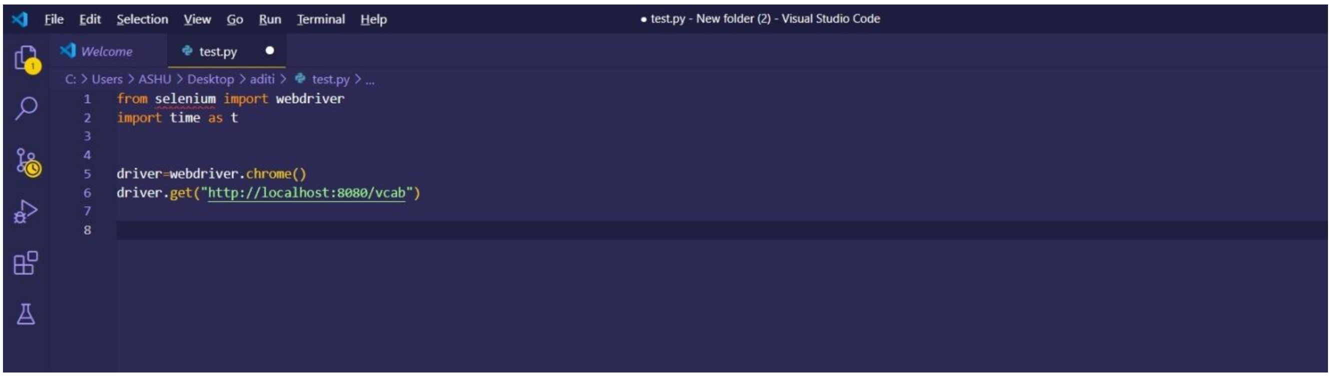
choco install chromedriver



```
Microsoft Windows [Version 10.0.18363.1198]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>choco install chromedriver
Chocolatey v0.10.15
Installing the following packages:
chromedriver
By installing you accept licenses for the packages.
chromedriver v87.0.4280.880 already installed.
 Use --force to reinstall, specify a version to install, or try upgrade.

Chocolatey installed 0/1 packages.
 See the log for details (C:\ProgramData\chocolatey\logs\chocolatey.log).

Warnings:
 - chromedriver - chromedriver v87.0.4280.880 already installed.
 Use --force to reinstall, specify a version to install, or try upgrade.

C:\WINDOWS\system32>_
```

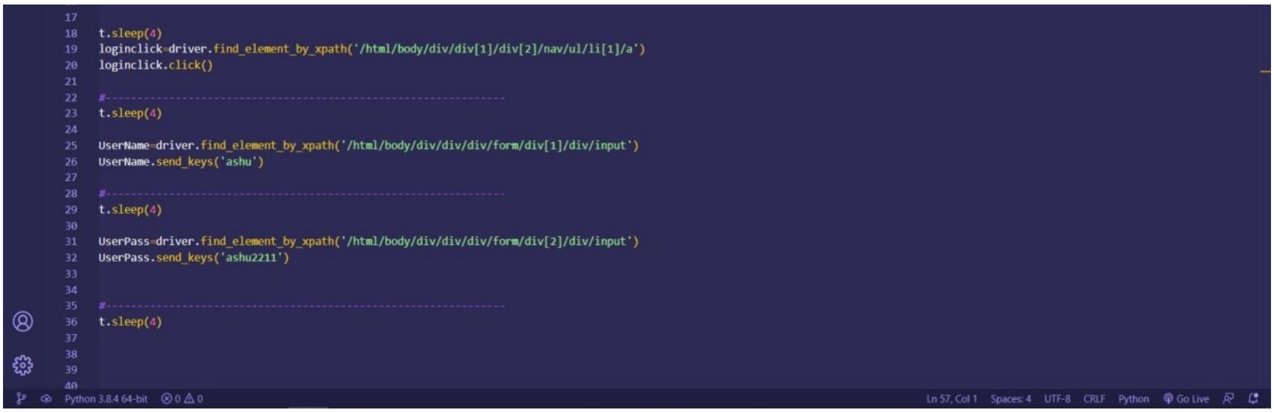
Selenium Testing Using Webdriver :-

Use the Selenium with ChromeDriver the Corresponding Package has to be included before initializing .

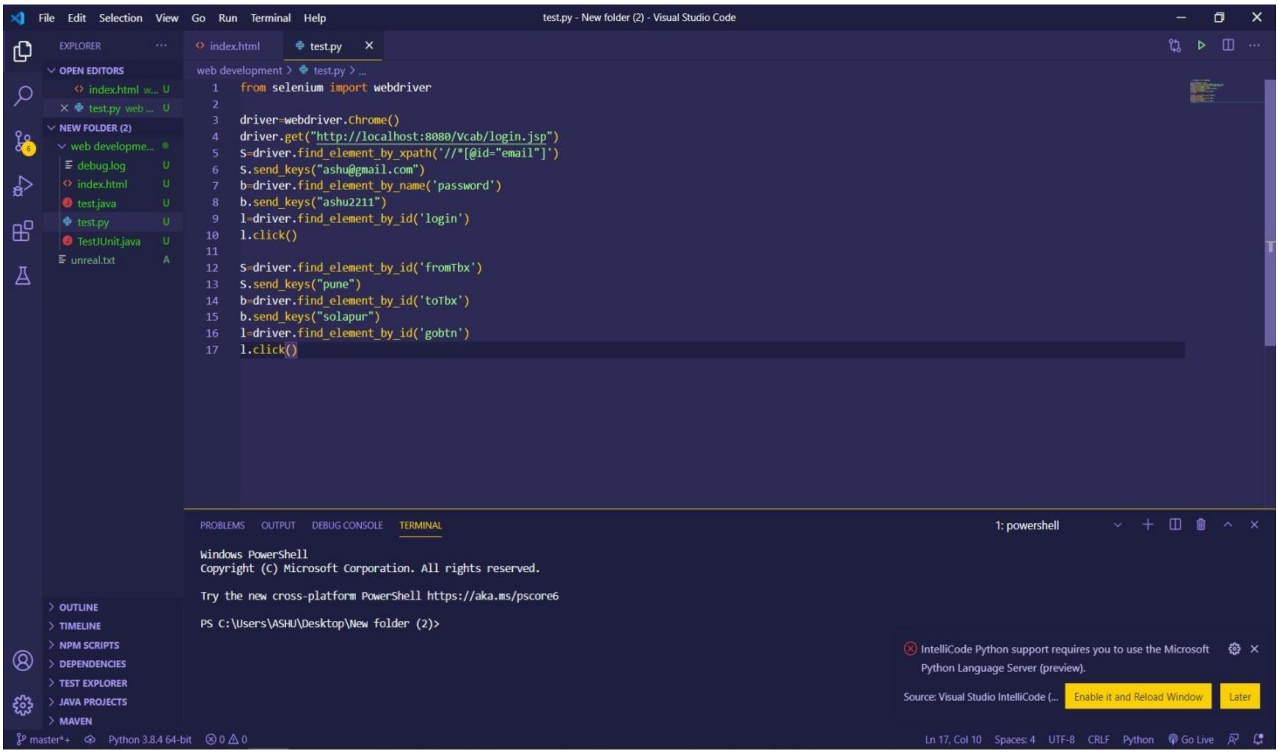

File
Edit
Selection
View
Go
Run
Terminal
Help
• test.py - New folder (2) - Visual Studio Code
Welcome
test.py
C: > Users > ASHU > Desktop > aditi > test.py > ...

```python
from selenium import webdriver
import time as t


driver=webdriver.chrome()
driver.get("http://localhost:8080/vcab")

```

Testing the login functionality :-



```python

t.sleep(4)
loginclick=driver.find_element_by_xpath('/html/body/div/div[1]/div[2]/nav/ul/li[1]/a')
loginclick.click()

#--------------------------------------------------------------
t.sleep(4)

UserName=driver.find_element_by_xpath('/html/body/div/div/div/form/div[1]/div/input')
UserName.send_keys('ashu')

#--------------------------------------------------------------
t.sleep(4)

UserPass=driver.find_element_by_xpath('/html/body/div/div/div/form/div[2]/div/input')
UserPass.send_keys('ashu2211')


#--------------------------------------------------------------
t.sleep(4)



```

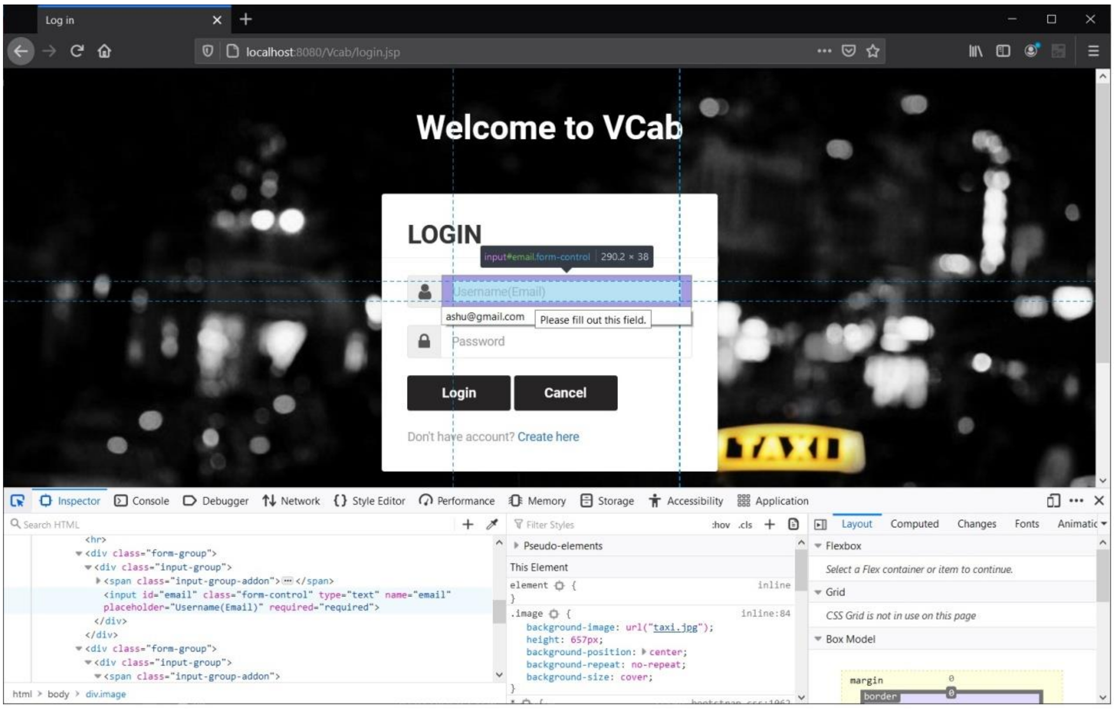


```python
from selenium import webdriver

driver=webdriver.Chrome()
driver.get("http://localhost:8080/Vcab/login.jsp")
S=driver.find_element_by_xpath('//*[@id="email"]')
S.send_keys("ashu@gmail.com")
b=driver.find_element_by_name('password')
b.send_keys("ashu2211")
l=driver.find_element_by_id('login')
l.click()

S=driver.find_element_by_id('fromTbx')
S.send_keys("pune")
b=driver.find_element_by_id('toTbx')
b.send_keys("solapur")
l=driver.find_element_by_id('gobtn')
l.click()
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\ASHU\Desktop\New folder (2)>
```

IntelliCode Python support requires you to use the Microsoft Python Language Server (preview).

Source: Visual Studio IntelliCode (...



ashu@gmail.com

Please fill out this field.

Don't have account? Create here

```html
<hr>
<div class="form-group">
  <div class="input-group">
    <span class="input-group-addon">⋯</span>
    <input id="email" class="form-control" type="text" name="email"
    placeholder="Username(Email)" required="required">
  </div>
</div>
<div class="form-group">
  <div class="input-group">
    <span class="input-group-addon">
```

html > body > div.image

Pseudo-elements

This Element

```css
element {                                  inline
}
.image {                                   inline:84
  background-image: url("taxi.jpg");
  height: 657px;
  background-position: center;
  background-repeat: no-repeat;
  background-size: cover;
}
```

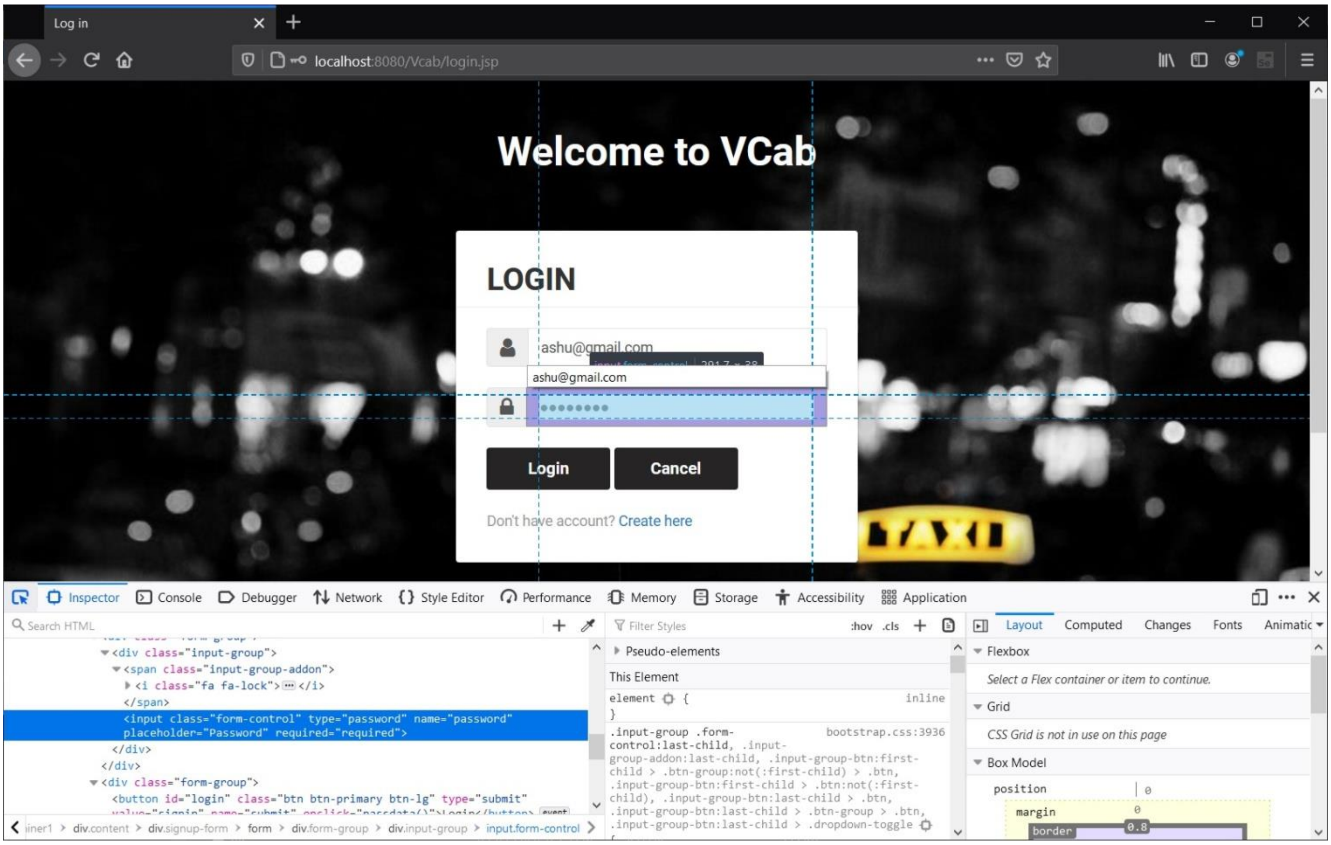
Flexbox

Select a Flex container or item to continue.

Grid

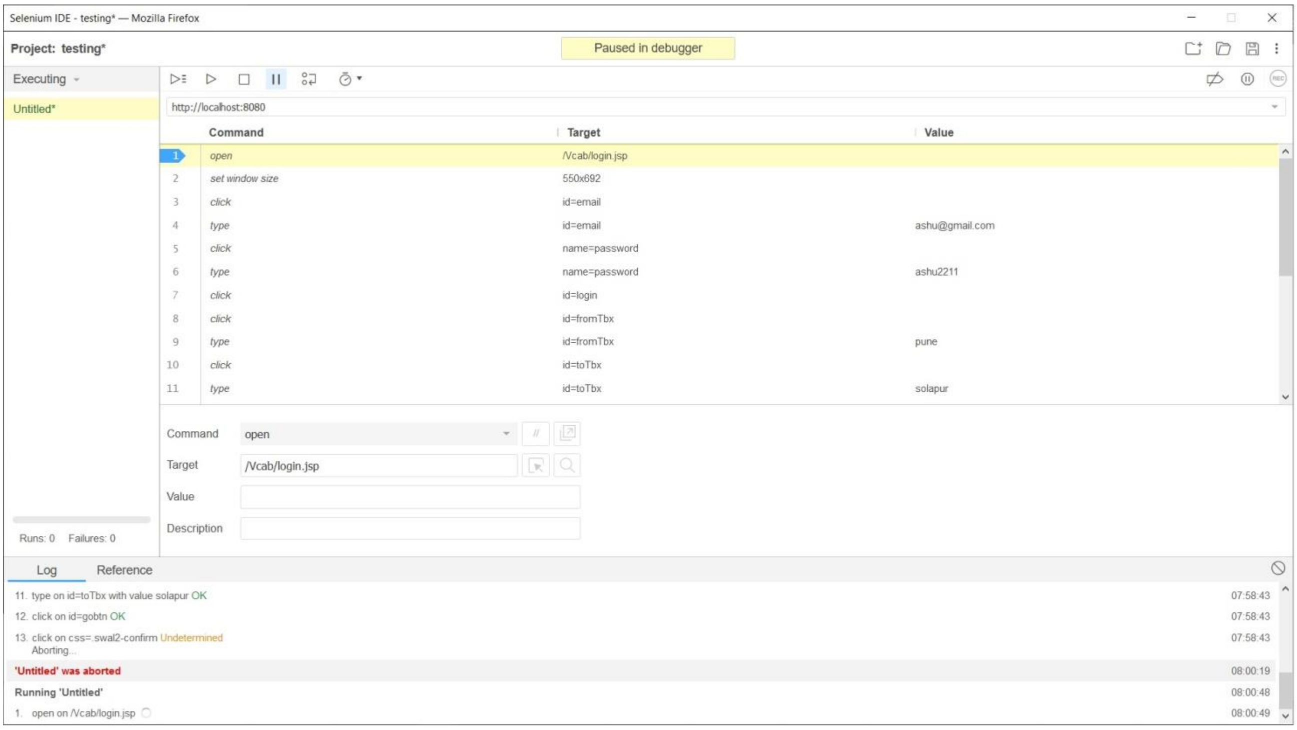
CSS Grid is not in use on this page

Box Model



```
<div class="input-group">
  <span class="input-group-addon">
    <i class="fa fa-lock">…</i>
  </span>
  <input class="form-control" type="password" name="password"
  placeholder="Password" required="required">
</div>
</div>
<div class="form-group">
<button id="login" class="btn btn-primary btn-lg" type="submit"
```

Testing Using Selenium IDE :-



	Command	Target	Value
1	open	/Vcab/login.jsp	
2	set window size	550x692	
3	click	id=email	
4	type	id=email	ashu@gmail.com
5	click	name=password	
6	type	name=password	ashu2211
7	click	id=login	
8	click	id=fromTbx	
9	type	id=fromTbx	pune
10	click	id=toTbx	
11	type	id=toTbx	solapur

Command: open

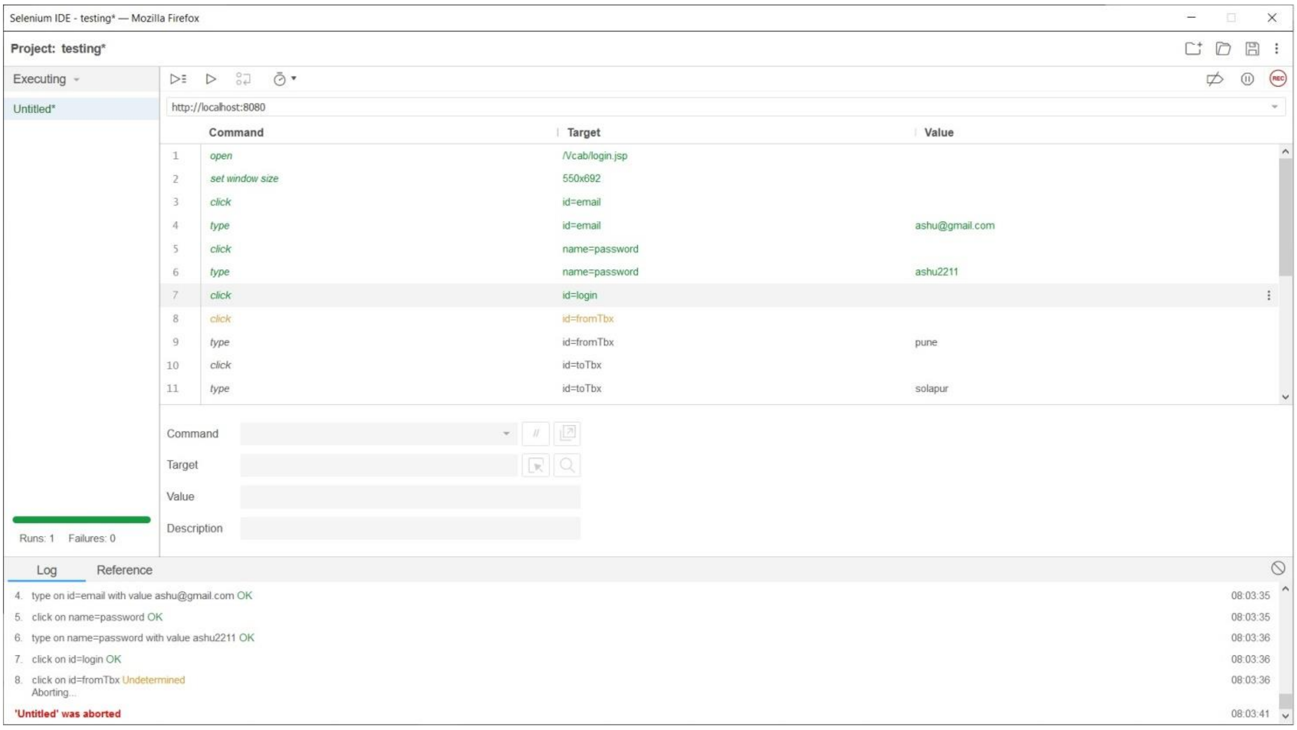
Target: /Vcab/login.jsp

Value:

Description:

Runs: 0 Failures: 0

```
11. type on id=toTbx with value solapur OK                07:58:43
12. click on id=gobtn OK                                  07:58:43
13. click on css=.swal2-confirm Undetermined              07:58:43
    Aborting...
'Untitled' was aborted                                    08:00:19
Running 'Untitled'                                        08:00:48
1. open on /Vcab/login.jsp                                08:00:49
```



Selenium IDE - testing* — Mozilla Firefox

Project: testing*

Executing

Untitled*

http://localhost:8080

	Command	Target	Value
1	open	/Vcab/login.jsp	
2	set window size	550x692	
3	click	id=email	
4	type	id=email	ashu@gmail.com
5	click	name=password	
6	type	name=password	ashu2211
7	click	id=login	
8	click	id=fromTbx	
9	type	id=fromTbx	pune
10	click	id=toTbx	
11	type	id=toTbx	solapur

Command

Target

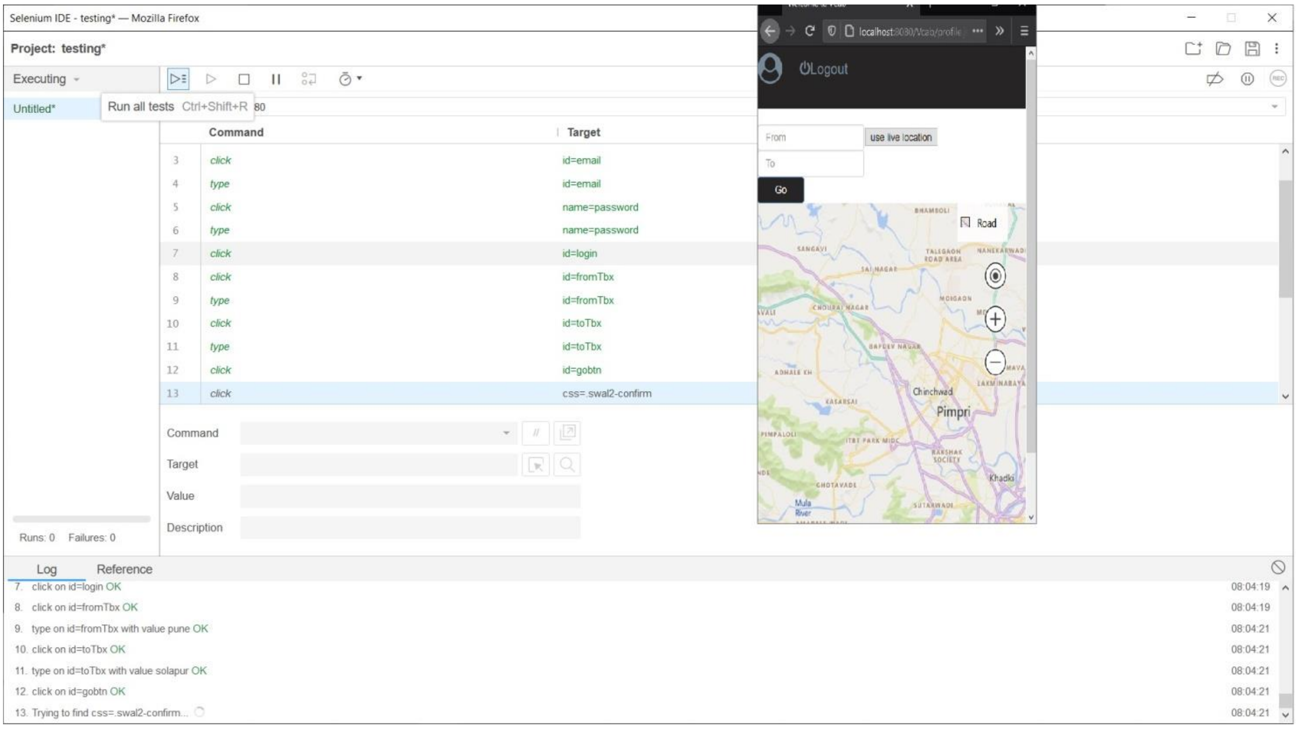
Value

Description

Runs: 1 Failures: 0

Log Reference

```
4. type on id=email with value ashu@gmail.com OK             08:03:35
5. click on name=password OK                                 08:03:35
6. type on name=password with value ashu2211 OK              08:03:36
7. click on id=login OK                                      08:03:36
8. click on id=fromTbx Undetermined                          08:03:36
   Aborting...
'Untitled' was aborted                                       08:03:41
```



Selenium IDE - testing* — Mozilla Firefox

Project: testing*

Executing

Untitled*

Run all tests Ctrl+Shift+R

	Command	Target
3	click	id=email
4	type	id=email
5	click	name=password
6	type	name=password
7	click	id=login
8	click	id=fromTbx
9	type	id=fromTbx
10	click	id=toTbx
11	type	id=toTbx
12	click	id=gobtn
13	click	css=.swal2-confirm

Command

Target

Value

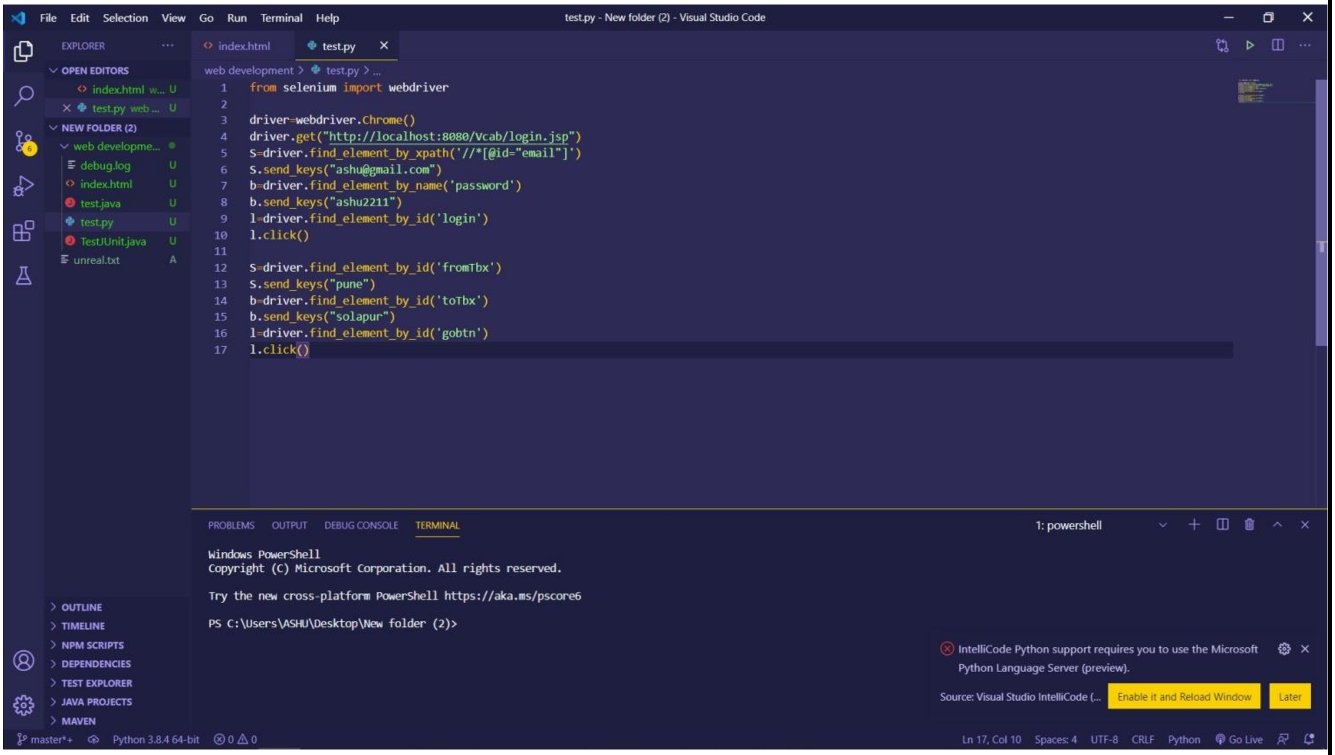
Description

Runs: 0 Failures: 0

Log Reference

```
7. click on id=login OK                                      08:04:19
8. click on id=fromTbx OK                                    08:04:19
9. type on id=fromTbx with value pune OK                     08:04:21
10. click on id=toTbx OK                                     08:04:21
11. type on id=toTbx with value solapur OK                   08:04:21
12. click on id=gobtn OK                                     08:04:21
13. Trying to find css=.swal2-confirm...                     08:04:21
```

Program :-



```
from selenium import webdriver

driver=webdriver.Chrome()
driver.get("http://localhost:8080/Vcab/login.jsp")
S=driver.find_element_by_xpath('//*[@id="email"]')
S.send_keys("ashu@gmail.com")
b=driver.find_element_by_name('password')
b.send_keys("ashu2211")
l=driver.find_element_by_id('login')
l.click()

S=driver.find_element_by_id('fromTbx')
S.send_keys("pune")
b=driver.find_element_by_id('toTbx')
b.send_keys("solapur")
l=driver.find_element_by_id('gobtn')
l.click()
```

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\ASHU\Desktop\New folder (2)>
```

IntelliCode Python support requires you to use the Microsoft Python Language Server (preview).

Source: Visual Studio IntelliCode (...

Conclusion :-

In this way using the Selenium we have Perform Testing and Prepared Test Report of the same.