

SAVITRIBAI PHULE PUNE UNIVERSITY A MINI

PROJECT REPORT ON

Demo Travel Website Testing using Selenium

SUBMITTED TOWARDS THE

PARTIAL FULFILLMENT OF THE REQUIREMENTS OF

BACHELOR OF ENGINEERING (Computer
Engineering)

BY

Prasann Shimpi	71922822M
Sanket Halake	71922556G
Shivam Dharmshetti	71922510J
Shashank Singh	71922816G

Under The Guidance of

Prof. Amol Dhakne
Academic Year 2020-21



DEPARTMENT OF COMPUTER ENGINEERING Dr. D. Y.
Patil Institute of Engineering, Management & Research
Akurdi, Pune.



Dr. D. Y. Patil Institute of Engineering, Management & Research

DEPARTMENT OF COMPUTER ENGINEERING

CERTIFICATE

This is to certify that the Project Entitled
Demo Travel Website Testing Using Selenium

Submitted by

Name of the students	Exam No:
Prasann Shimpi	71922822M
Sanket Halake	71922556G
Shivam Dharmshetti	71922510J
Shashank Singh	71922816G

is a bonafide work carried out by Students under the supervision of **Prof. Amol Dhakne** and it is submitted towards the partial fulfillment of the requirement of Bachelor of Engineering (Computer Engineering).

Dr. Amol Dhakne

Prof. P.P. Shevatekar

Internal Guide

H.O.D

Dept. of Computer Engg.

Dept. of Computer Engg.

Dr. A. V. Patil
Principal

Dr. D. Y. Patil Institute of Engineering, Management & Research

Sign of Internal Examiner

Sign of External Examiner

PROJECT APPROVAL SHEET

A Project Title

Is successfully completed by

Prasann Shimpi	71922822M
Sanket Halake	71922556G
Shivam Dharmshetti	71922510J
Shashank Singh	71922816G

at

DEPARTMENT OF COMPUTER ENGINEERING

(Dr. D. Y. Patil Institute of Engineering, Management & Research) SAVITRIBAI PHULE

PUNE UNIVERSITY, PUNE ACADEMIC YEAR 2020-2021

Dr. Amol Dhakne

Internal Guide

Dept. of Computer Engg.

Prof. P.P.Shevatekar

H.O.D

Dept. of Computer Engg.

Acknowledgments

It gives us great pleasure in presenting the preliminary project report on ‘Project Title’.

I would like to take this opportunity to thank my internal guide **Dr. Amol Dhakne** for giving me all the help and guidance I needed. I am really grateful to them for their kind support. Their valuable suggestions were very helpful.

I am also grateful to Prof. P.P. Shevtekar, Head of Computer Engineering Department, Dr. D. Y. Patil Institute of Engineering, Management & Research for his indispensable support, suggestions.

In the end our special thanks to **Dr. Amol Dhakne** for providing various resources such as laboratory with all needed software platforms, continuous Internet connection, for Our Project.

Prasann Shimpi	71922822M
Sanket Halake	71922556G
Shivam Dharmshetti	71922520J
Shashank Singh	71922816G
(B.E. Computer Engg.)	

Contents

- 1 Title
- 2 Problem Definition
- 3 Prerequisite
- 4 Software Requirements
- 5 Hardware Requirement
- 6 Learning Objectives
- 7 Outcomes
- 8 Theory Concepts
 - 8.1 What is Selenium?
 - 8.2 History of the Selenium Project
 - 8.3 Selenium's Tools Suite
 - 8.4 Brief Introduction Selenium IDE
 - 8.5 How to Choose the Right Selenium Tool for Your Need
 - 8.6 Advantages of Selenium
 - 8.7 Disadvantages of Selenium
 - 8.9 Selenium Versus UFT/QTP
 - 8.10 What is TestNG?
- 9 Web Application Testing by Using Selenium Tool
 - 9.1 Steps to Create Selenium test in Eclipse IDE (Include step by Step Screenshots of Project)
 - 9.2 Test Cases Performed (Describe in detail what test cases you performed)
 - 9.3 Results
- 10 Conclusion

1. Title

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

2. Problem Definition

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

3. Prerequisites

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

4. Software Requirements

React JS, Node JS, HTML, CSS, MongoDB, Selenium, Redux.

5. Hardware Requirements

8 GB RAM, i5 10th Gen Processor Laptop/PC.

6. Learning Objectives

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

7. Outcomes

Able to understand how to use Selenium Tools & perform exploratory testing.

8. Theory Concepts

8.1. 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 as Selenium Testing.

8.2. History of the Selenium Project

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 in order to form 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)

8.3. Selenium's 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

8.4. Brief Introduction Selenium IDE

Selenium IDE

It is a Firefox browser plug in, used to create and execute Test cases.

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
- Export Test cases to other formats (java, ruby etc...)

8.5. How to Choose the Right Selenium Tool for Your Need

Selenium consists of a number of tools that do different things, they are:

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

Following are the reasons to choose Selenium IDE:

- 1) To learn about concepts on automated testing and Selenium, including:
- 2) Selenese commands such as type, open, clickAndWait, assert, verify, etc.
- 3) Locators such as id, name, xpath, css selector, etc.
- 4) Executing customized JavaScript code using runScript
- 5) Exporting test cases in various formats.
- 6) To create tests with little or no prior knowledge in programming.

- 7) To create simple test cases and test suites that you can export later to RC or WebDriver.
- 8) To test a web application against Firefox only.

Following are the reasons to choose Selenium RC:

- 1) To design a test using a more expressive language than Selenese
- 2) To run your test against different browsers (except HtmlUnit) on different operating systems.
- 3) To deploy your tests across multiple environments using Selenium Grid.
- 4) To test your application against a new browser that supports JavaScript.
- 5) To test web applications with complex AJAX-based scenarios.

Following are the reasons to choose WebDriver:

- 1) To use a certain programming language in designing your test case.
- 2) To test applications that are rich in AJAX-based functionalities.
- 3) To execute tests on the HtmlUnit browser.
- 4) To create customized test results.

Following are the reasons to choose Selenium Grid:

- 1) To run your Selenium RC scripts in multiple browsers and operating systems simultaneously.
- 2) To run a huge test suite, that needs to complete in the soonest time possible.

8.6. Advantages of Selenium

- Language and Framework Support
- Open Source
- Multi-Browser Support
- Support Across various OS
- Ease of Implementation
- Reusability and Integrations
- Flexibility
- Parallel Test Execution and Go-To-Market
- Less Hardware Usage
- Frequent Updates

8.7. Disadvantages of Selenium

1. Selenium needs very much expertise resources. The resource should also be very well versed in framework architecture.
2. Selenium only supports web based application and does not support windows based application.
3. It is difficult to test Image based application.
4. Selenium need outside support for report generation activity like dependence on TestNG or Jenkins.
5. Selenium does not support built in add-ins support.
6. Selenium user lacks online support for the problems they face.
7. Selenium does not provide any built in IDE for script generation and it need other IDE like Eclipse for writing scripts.

8. Selenium script creation time is bit high.
9. Selenium does not support file upload facility.
10. Selenium partially supports for Dialog boxes.

8.8. Selenium Versus UFT/QTP

Features	Selenium	QTP/UFT
Type of Software	Set of APIs	Desktop Application
Flexibility	Runs across all the browsers	Supports only Windows
License	Open-source	Licensed
Environment	Allows all additional plugins	Supports SAP, Oracle and includes no add-ons to the software
Browser Area Accessibility	Controls the visible area of the browser where the page is loaded	Controls the menu and toolbars of the browser and all other website toolkits with various formats
Test Execution	Can run tests synchronously with the integration of test frameworks such as TestNG	Must be combined with Micro Focus ALM to execute tests synchronously. ALM is a paid framework

Object Repository	Doesn't have any such repository	Comes with a built-in repository
Test Execution Performance	Requires fewer system resources and can be used in Windows or Linux VM. Linux VM is lighter than Windows VM	Requires more system resources. It can only run on Windows VM, which uses more resources and needs more maintenance
Supported Technology	Struggles while automating SAP, Salesforce, mainframe applications	Supports nearly every major software application and environment, including SAP, Oracle, Salesforce, mainframes, embedded frameworks, headless browsers, and much more
Programming Language	Supports mature Object-Oriented Languages like Java	Supports only VBScript. Thus, the Object-Oriented Approach to automation becomes challenging with QTP/UFT

8.9. What is TestNG?

TestNG is a powerful testing framework, an enhanced version of JUnit which was in use for a long time before TestNG came into existence. NG stands for 'Next Generation'.

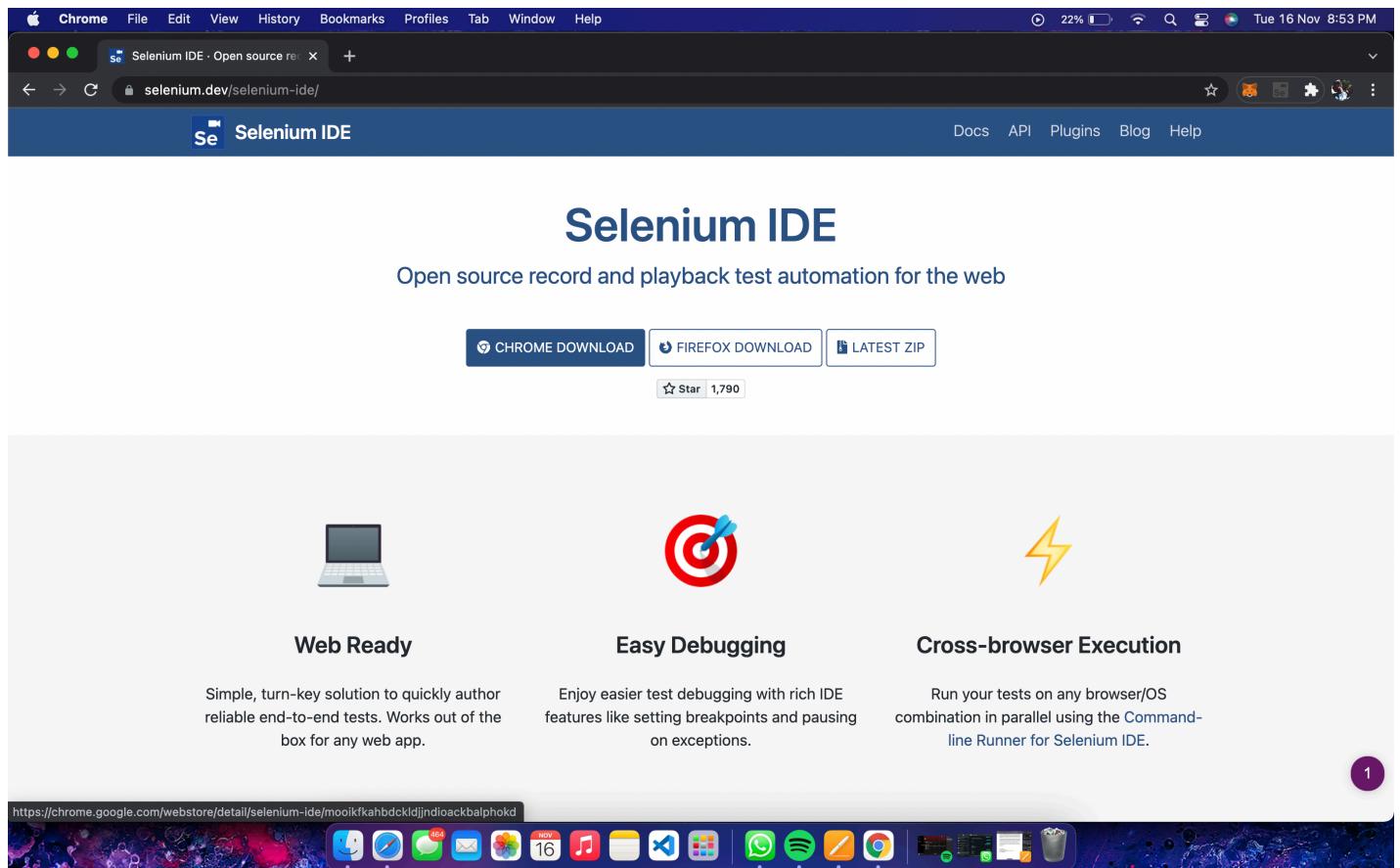
TestNG framework provides the following features –
Annotations help us organize the tests easily.

Flexible test configuration.
Test cases can be grouped more easily.
Parallelization of tests can be achieved using TestNG.
Support for data-driven testing.
Inbuilt reporting.

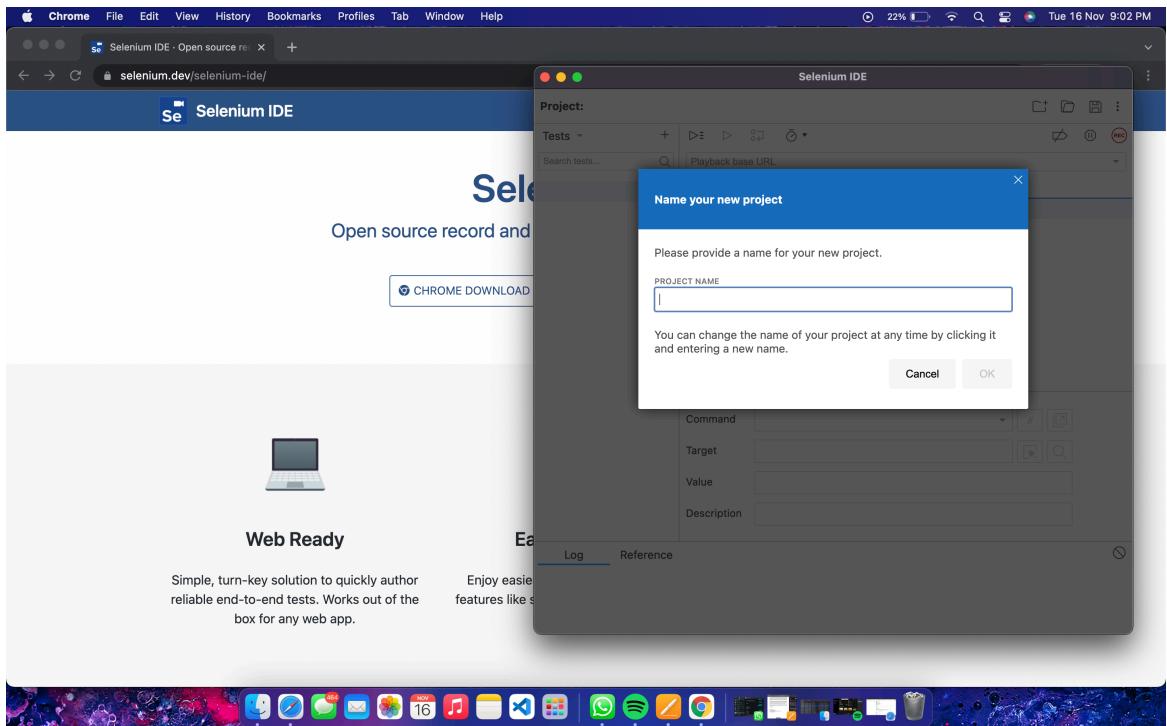
9. Web Application Testing by Using Selenium Tool

9.1. Steps to Create Selenium test in IDE (Include step by Step Screenshots of Project)

- Open Chrome and install Selenium IDE extension



- Open and create a new project



- Enter base URL

• Enter base URL

• Create new test and enter test name

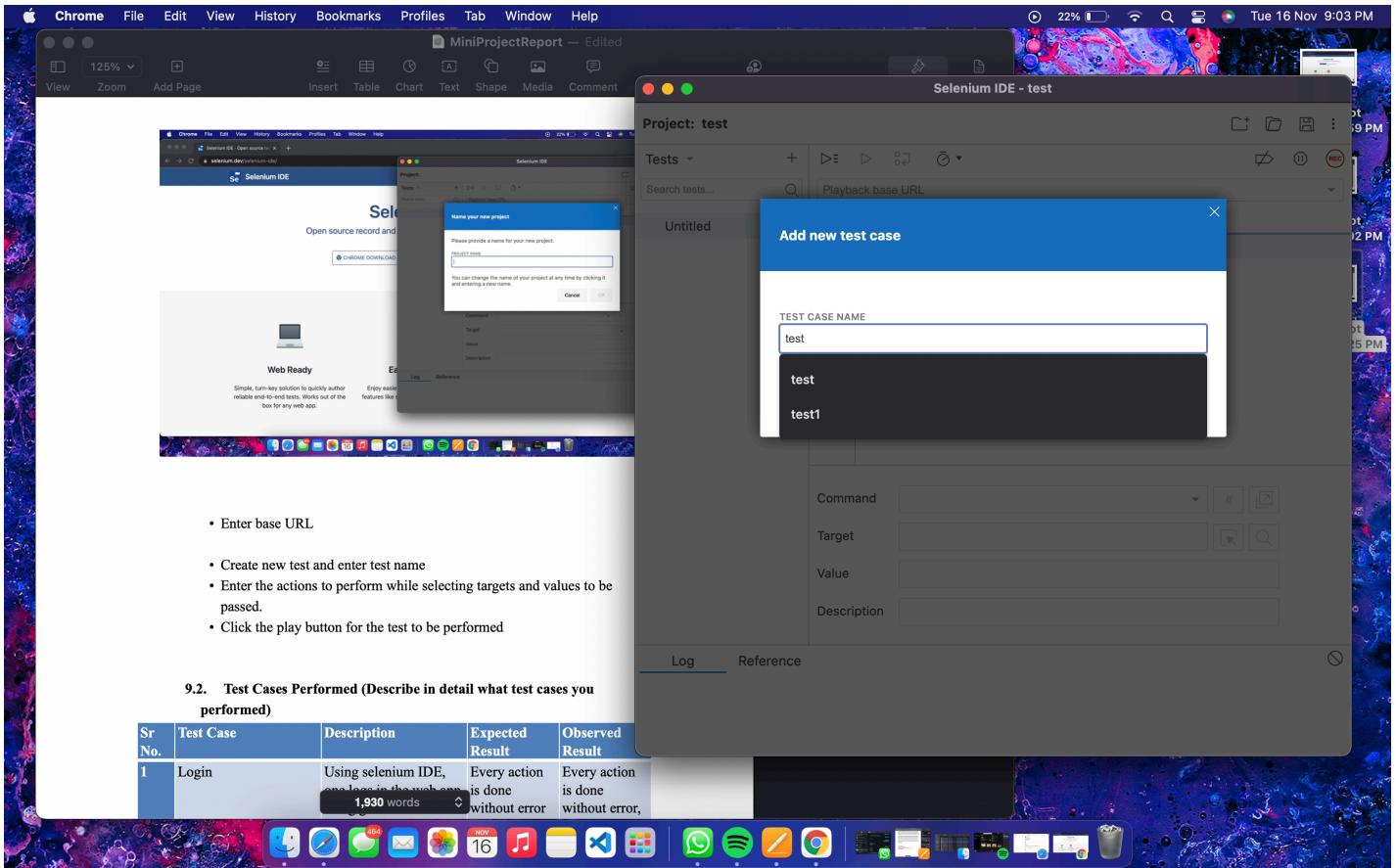
• Enter the actions to perform while selecting targets and values to be passed

• Click the play button for the test to be performed

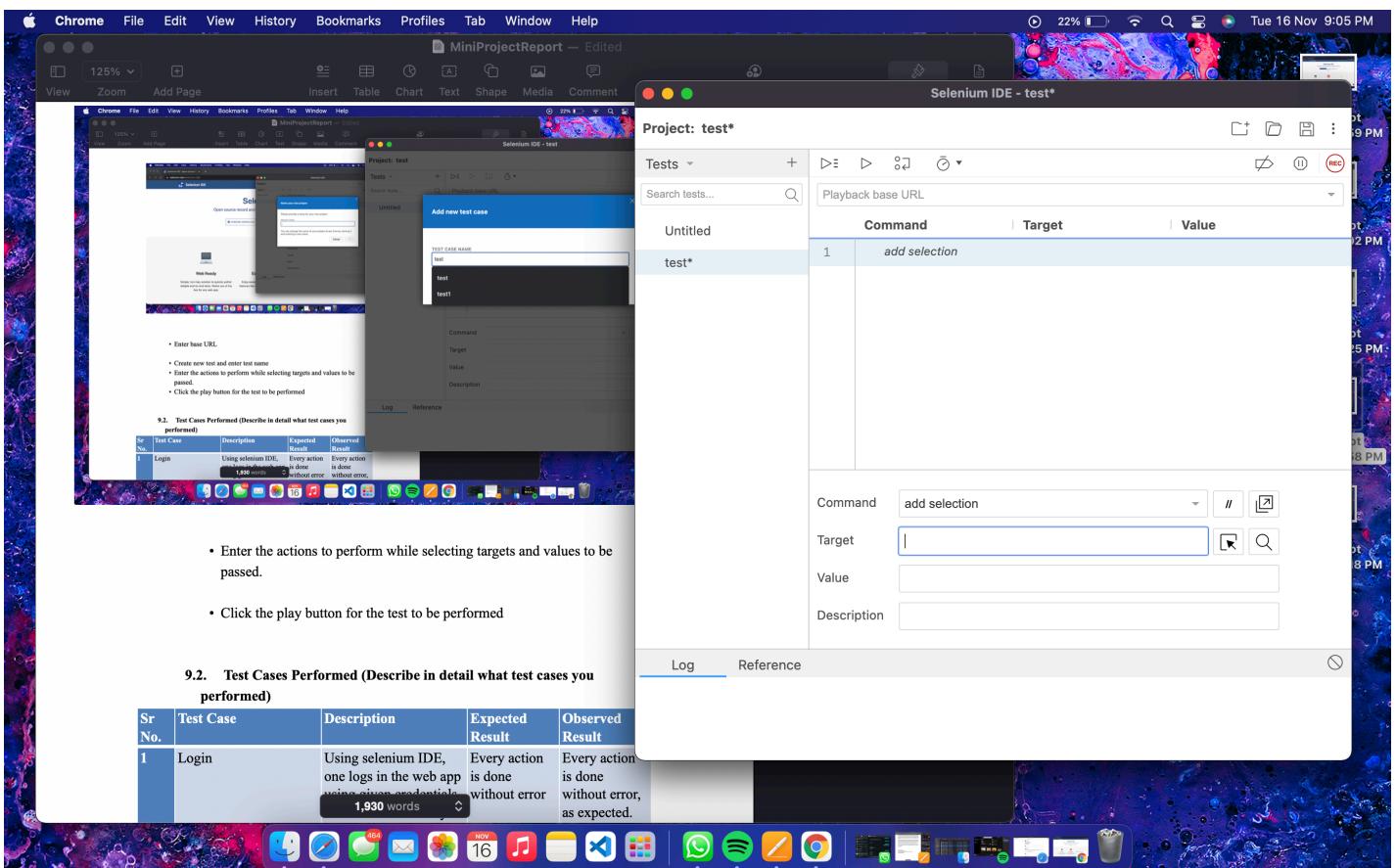
9.2. Test Cases Performed (Describe in detail what test cases you performed)

Sr No.	Test Case	Description	Expected Result	Observed Result
1	Login	Using selenium IDE, one login in the tests one 1,930 words	Every action is done without error,	Every action is done without error,

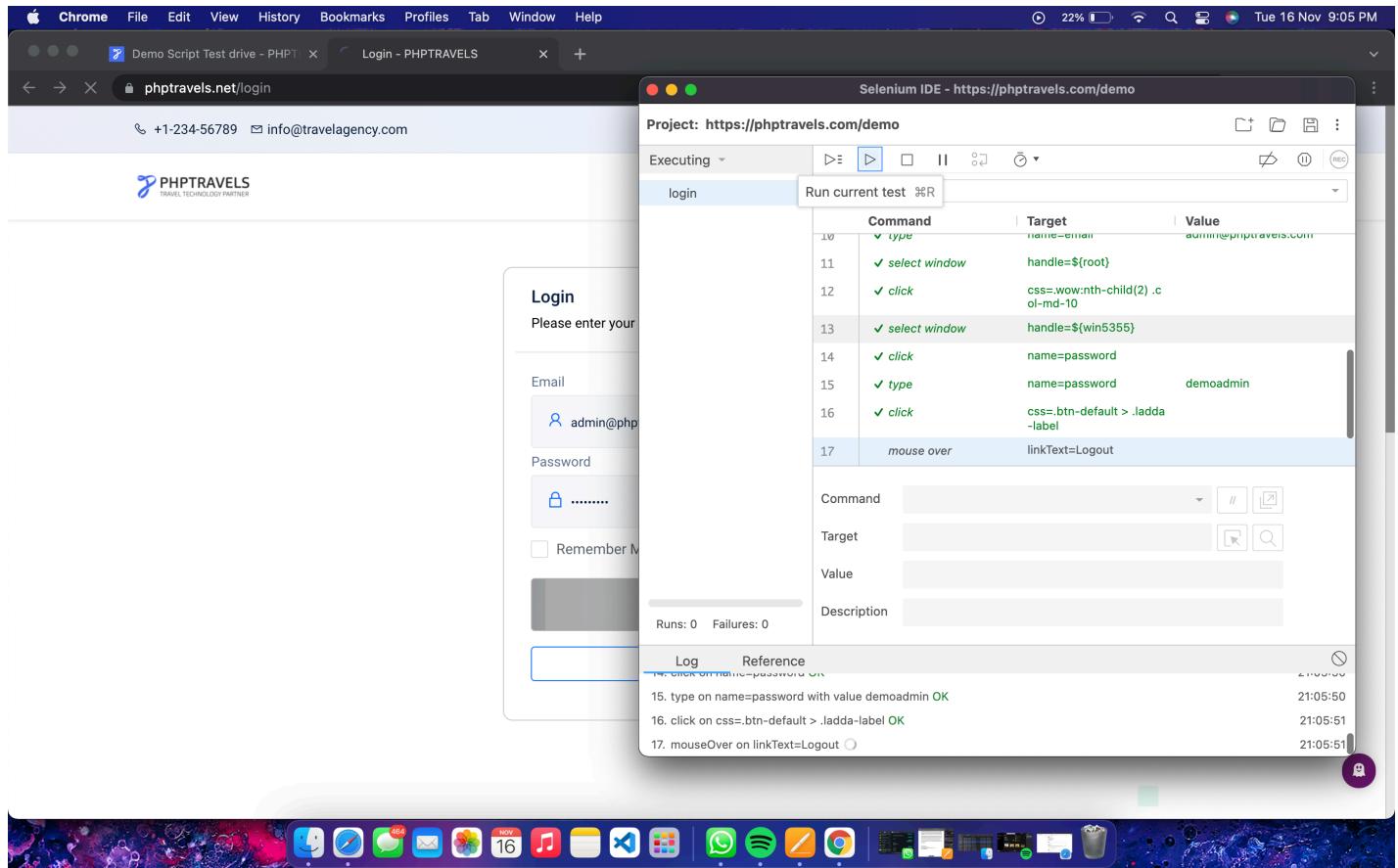
- Create new test and enter test name



- Enter the actions to perform while selecting targets and values to be passed.



- Click the play button for the test to be performed



9.2. Test Cases Performed (Describe in detail what test cases you performed)

Sr No.	Test Case	Description	Expected Result	Observed Result
1	Login	Using selenium IDE, one logs in the web app using given credentials and then successfully logs out.	Every action is done without error	Every action is done without error, as expected.
2	Rental Car Booking	Follows steps to book a rental car, select destinations and check if a ride is available	<ul style="list-style-type: none"> • Logs in • Enters start and destination • Logs out 	Every action is done without error

Sr No.	Test Case	Description	Expected Result	Observed Result
3	Flight Booking	Follows steps to book a flight ticket, select destinations and check if a ride is available	<ul style="list-style-type: none"> • Logs in • Enters start and destination for flight • Logs out 	Every action is done without error
4	Hotel Booking	Follows steps to book a hotel, select a trending stay and check if a room is available	<ul style="list-style-type: none"> • Login • Search and select a recommended hotel • Check room availability • Logout 	Every action is done without error
5	Visa Support Application	Follows steps to get aid for visa process.	<ul style="list-style-type: none"> • Login • Select country for VISA • Fill Application Form • Logout 	Every action is done without error
6	Search Bar	Search for hotels in a specific area	<ul style="list-style-type: none"> • Login • Select Area • Search hotels • Logout 	Every action is done without error
7	Update Profile	Update some information on the website	<ul style="list-style-type: none"> • Login • Update some information • Check if info is updated • Logout 	Every action is done without error

9.3. Results

Chrome File Edit View History Bookmarks Profiles Tab Window Help

21% Tue 16 Nov 9:06 PM

[Demo Script Test drive - PHPT](#) [Login - PHPTRAVELS](#)

phptravels.net/login +1-234-56789 info@travelagency.com

PHPTRAVELS TRAVEL TECHNOLOGY PARTNER

Login
Please enter your details

Email Email

Password Password

Remember Me

Selenium IDE - https://phptravels.com/demo

Project: https://phptravels.com/demo

Tests	+	Command	Target	Value
Cars	15	✓ type	name=password	demoadmin
FlightBooking	16	✓ click	css=.btn-default > .label	
HotelBooking	17	✓ mouse over	linkText=Logout	
Visa	18	✓ click	linkText=Logout	
✓ login				
		search and logout	Command	
		update profile	Target	
			Value	
			Description	

Log Reference

Running 'login'

- open on /demo OK
- setWindowSize on 1440x819 OK
- click on css=.wow:nth-child(2) small:nth-child(1) OK
- storeWindowHandle on root OK
- selectWindow on handle=\${win5355} OK
- selectWindow on handle=\${root} OK

21:05:47
21:05:47
21:05:47
21:05:47
21:05:49
21:05:49
21:05:49

Chrome File Edit View History Bookmarks Profiles Tab Window Help

21% Tue 16 Nov 9:07 PM

[Demo Script Test drive - PHPT](#) [Submit Visa - PHPTRAVELS](#)

phptravels.net/visa/submit/o/bm/26-11-2021 +1-234-56789 info@travelagency.com

PHPTRAVELS TRAVEL TECHNOLOGY PARTNER

Submission Form

First Name First Name

Email Email

Date 26-11-2021

Selenium IDE - https://phptravels.com/demo

Project: https://phptravels.com/demo

Executing	Command	Value
Visa	get	
	submit	
	submit	
	name=first_name	Prasann
	name=first_name	Prasann
	name=last_name	Shimpi
	name=last_name	Shimpi
	type	
	click	
	click	
	type	
	click	
	type	

Log Reference

17. type on css=.select2-search__field with value Bermuda OK
18. sendKeys on css=.select2-search__field with value \${KEY_ENTER} OK
19. mouseOver on id=submit OK
20. click on id=submit OK
21. click on name=first_name OK
22. type on name=first_name with value Prasann

21:07:36
21:07:38
21:07:41
21:07:43
21:07:45
21:07:47

Chrome File Edit View History Bookmarks Profiles Tab Window Help

21% Tue 16 Nov 9:09 PM

Demo Script Test drive - PHPTRAVEL rendezvous-hotels - PHPTRAVEL +

phptravels.net/en/usd/hotel/singapore/rendezvous-hotels/40/19-11-2021/20-11-2021/1/2/0/1/IN/IN/0

'Selenium IDE' started debugging this browser Cancel

+1-234-56789 info@travelagency.com ENGLISH USD ACCOUNT

PHPTRAVELS TRAVEL TECHNOLOGY PARTNER Home Hotels Flights Tours Cars Visa Blog Offers Company

Hotel Details Rooms Amenities Policy Map

Rendezvous Hotels ★★

Singapore, Rendezvous Hotels

2 / 5

More Photos

About Rendezvous Hotels

0

Chrome File Edit View History Bookmarks Profiles Tab Window Help

21% Tue 16 Nov 9:10 PM

Demo Script Test drive - PHPTRAVEL Flights - PHPTRAVEL +

phptravels.net/en/usd/flights/dxb/rml/oneway/economy/21-11-2021/1/0/0

+1-234-56789 info@travelagency.com ENGLISH USD ACCOUNT

PHPTRAVELS TRAVEL TECHNOLOGY PARTNER Home Hotels Flights Tours Cars Visa Blog Offers Company

DXB → RML

Dates (19-11-2021 → 21-11-2021)
Adults 1 Childs 0 Infants 0 Total Flights

One Way Round Trip Economy

DXB - Dubai Intl - Dubai RML 19-11-2021 1 Search

Oops! No matches

0

Chrome File Edit View History Bookmarks Profiles Tab Window Help 20% Tue 16 Nov 9:13 PM

Demo Script Test drive - PHPTRAVELS Search Cars - PHPTRAVELS +

← → C phptravels.net/cars +1-234-56789 info@travelagency.com ENGLISH USD ACCOUNT

PHPTRAVELS TRAVEL TECHNOLOGY PARTNER Home Hotels Flights Tours Cars Visa Blog Offers Company

RENTAL BEST CARS TODAY

One Way Return

Origin: Pune Destination: From Date: 19-11-2021 To Date: 20-11-2021 Travellers: Travellers 1

Pune, India

Featured cars

10 % DISCOUNT 20 % DISCOUNT 5 % DISCOUNT 10 % DISCOUNT 0

Chrome File Edit View History Bookmarks Profiles Tab Window Help 20% Tue 16 Nov 9:14 PM

Demo Script Test drive - PHPTRAVELS Search Hotels - PHPTRAVELS +

← → C phptravels.net/hotels +1-234-56789 info@travelagency.com ENGLISH USD ACCOUNT

PHPTRAVELS TRAVEL TECHNOLOGY PARTNER Home Hotels Flights Tours Cars Visa Blog Offers Company

SEARCH FOR BEST HOTELS

City Name: Kansas Checkin: 19-11-2021 Checkout: 20-11-2021 Travellers: Travellers 2 Rooms 1

Kansas, United States
Kansas City, United States

Featured Hotels

0 % DISCOUNT 15 % DISCOUNT 0 % DISCOUNT 15 % DISCOUNT

10. Conclusion

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