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SOFTWARE TESTING PROJECT

COURSE CODE: SWE2005

SLOT : B1 + TB1

REVIEW : FINAL REVIEW

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SOFTWARE TESTING TOOL: SELENIUM

FACULTY: VIJAY ANAND R

WEBSITE: https://wanderlog.com/
(Trip Planner)

SUMMARY

Selenium is an open-source tool that automates web browsers. It provides a single interface that lets you write test scripts in programming languages like Ruby, Java, NodeJS, PHP,Perl, Python, and C#, among others. Testing done using the Selenium testing tool is usually referred to as Selenium Testing.

Selenium Software is not just a single tool but a suite of software, each piece catering to different Selenium QA testingneeds of an organization. Here is the list of tools

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

SELENIUM

Selenium is an open-source and a portable automated software testing toolfor testing web applications. It has capabilities to operate across different browsers and operating systems. Selenium is not just a single tool but a set of toolsthat helps testers to automate web-based applications more efficiently.

TOOL AND DESCRIPTION

The tools available in selenium suite and their usage

Selenium IDE

Selenium **I**ntegrated **D**evelopment **E**nvironment (IDE) is a Firefox plugin that lets testers to record their actions as they follow the workflow that they need to test.

Selenium RC

Selenium **R**emote **C**ontrol (RC) was the flagship testing framework that allowed more than simple browser actions and linear execution. It makes use of the full power of programming languages such as Java, C#, PHP, Python, Ruby and PERL to create more complex tests.

Selenium WebDriver

Selenium WebDriver is the successor to Selenium RC which sends commands directly to the browser and retrieves results.

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Selenium Grid

Selenium Grid is a tool used to run parallel tests across different machines and different browsers simultaneously which results in minimized execution time.

ADVANTAGES OF SELENIUM

- Provides you the capability of automatically recording your test cases based upon the interactions with the browser.
- Gives developers greater flexibility in executing the test cases. Either the test developer can run the entire test suite consisting of multiple test cases or execute a single test case.
- Operates on the basis of the rich set of Selenese commands, which helps the IDE understand what needs to be done.
- Allows the test developers to set breakpoints for the purpose of debugging particular test cases.
- Test cases can be re-used using the run command. (e.g., allowing you to re-use the logic of login or reload on multiple places in the entire suite)
- Use of multiple-locators for each element in the IDE ensures successful execution.

DISADVANTAGES OF SELENIUM

- Not suitable for testing extensive data
- Connections with the database cannot be tested
- Cannot handle the dynamic part of web-based applications
- Does not support capturing of screenshots on test failures
- No feature available for generating result reports

LIMITATIONS OS SELENIUM IDE

- No suitable for testing extensive data
- Connections with the database can not be tested
- Cannot handle the dynamic part of web-based applications
- Does not support capturing of screenshots on test failures
- No feature available for generating result reports

HARDWARE REQUIREMENTS:

1. Windows/Linux/Mac Laptop or Desktop with minimum 4GB RAM.

MERITS AND DEMERITS OF SELENIUM IDE:

S.NO	MERITS	DEMERITS
1.	Simple Installation	Selenium is open source, so in case of issues there is no prompt vendor assistance.
2.	Faster Execution	Selenium does not support automation testing of video and audio.
3.	Selenium supports various Browsers (Mozilla Firefox, Google Chrome, IE, Opera,Safari etc...)	Selenium does not give provision of running parallel tests from one computer
4.	Selenium supports various	Selenium has enormous timeout,

	programming languages to write programs (Test scripts)	sync and page load issues
5.	Selenium uses fewer Hardware resources.	Selenium cannot perform testing for the images.

FEATURES OF SELENIUM IDE

There are several features provided in the IDE under the toolbar, using which one can control the execution of test cases:

Speed Control – Helps control the speed of test cases

Run All – Allows execution of the entire Test Suite

Run – Runs the currently selected test

Pause/Resume – Allows a user to pause and resume a particular test case **Step** – Helps step into each specific command in the test script

Rollup – Helps group all the Selenese Commands together and make them execute as a single operation

REFERENCES:

- https://www.selenium.dev/selenium-ide/
- https://www.dev2qa.com/
- https://addons.mozilla.org/en-GB/firefox/addon/selenium-ide/
- https://chrome.google.com/webstore/detail/selenium-ide/mooikfkahbdckldjjndioackbalphokd/related
- https://www.tutorialspoint.com/what-are-the-limitations-of-selenium
- https://www.browserstack.com/guide/what-is-selenium-ide
- https://www.guru99.com/install-selenuim-ide.html

Introduction

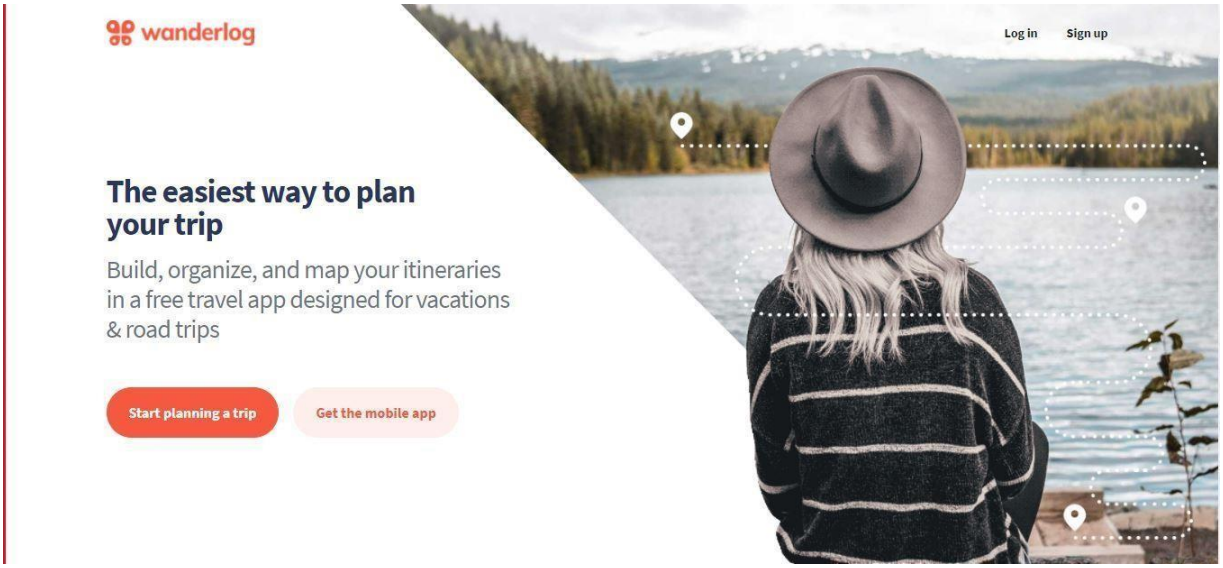
Wander log, is the easiest-to-use, completely free travel app for planning every kind of trip, including road trips and group travel. You can create a trip itinerary, organize flight and hotel reservations, view places to visit on a map, and collaborate with friends. After your vacation, share a travel guide or trip story to inspire other travelers.

Features of wander log

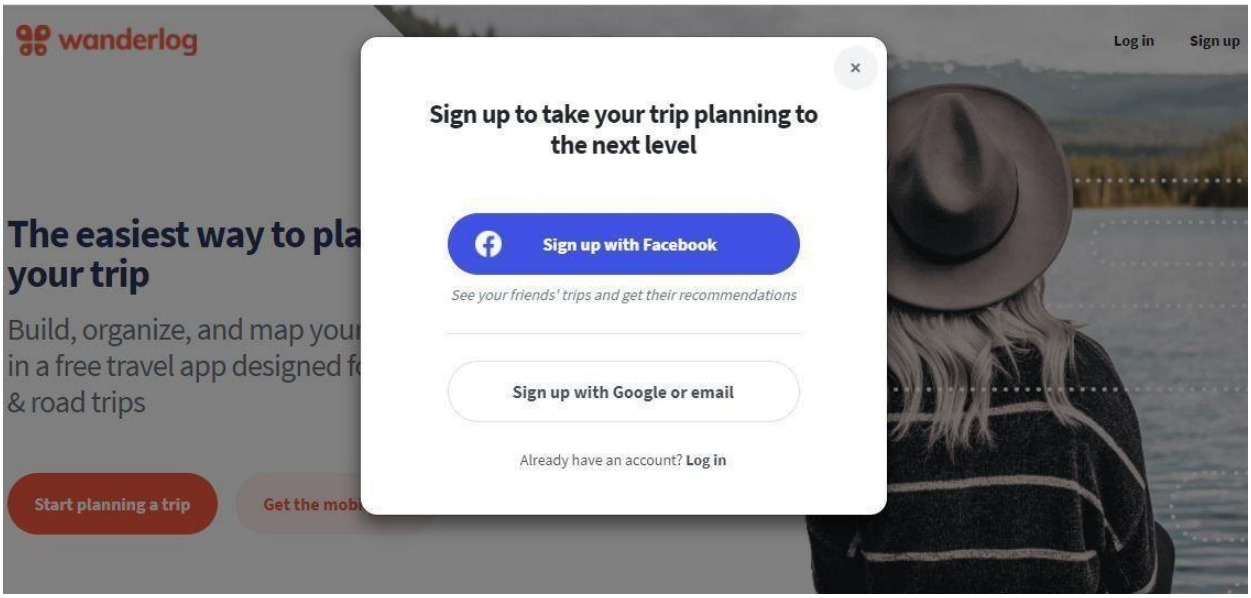
- Easy to Learn and Use
- Auto Generated and User Created Itineraries
- Functionality and App Integration
- Collaborative Trip Planning
- Free of Cost

1. **Signup / Log in :**

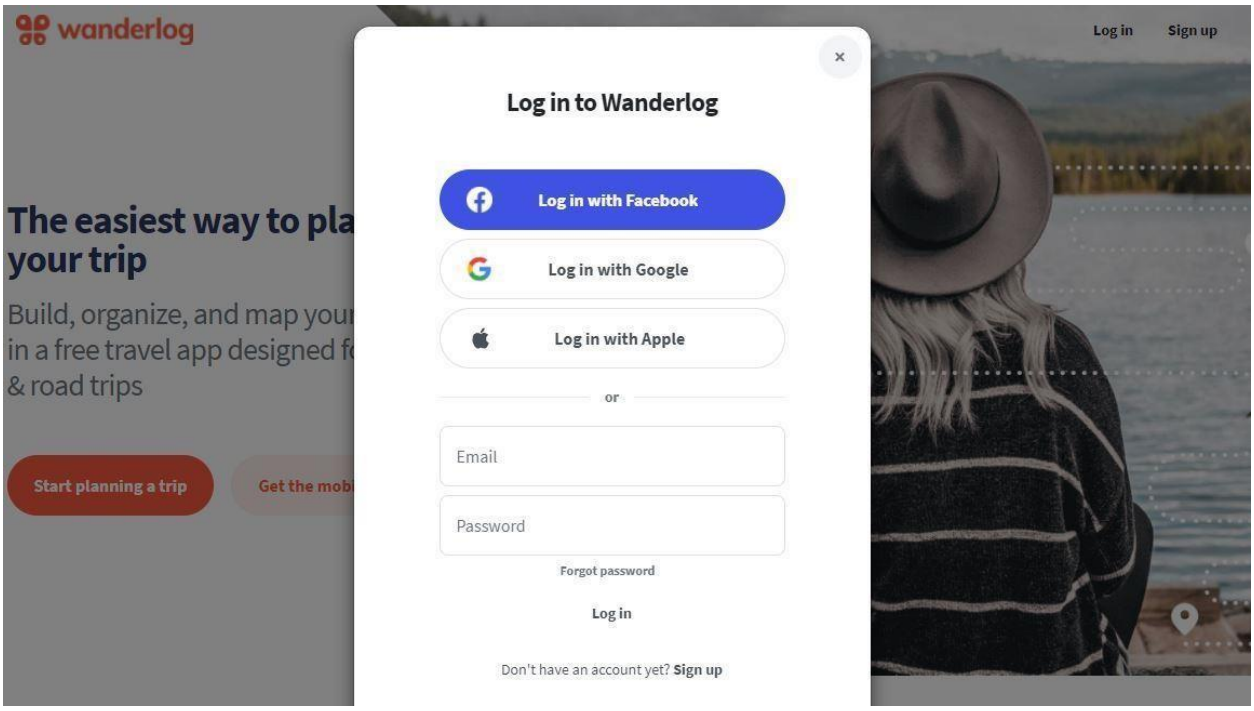
❖ The website lets users create and maintain their personal accounts.



- Provisions of creating the account via Facebook or google are provided to the users.



- Registered users can log into their accounts where their previous work is saved.



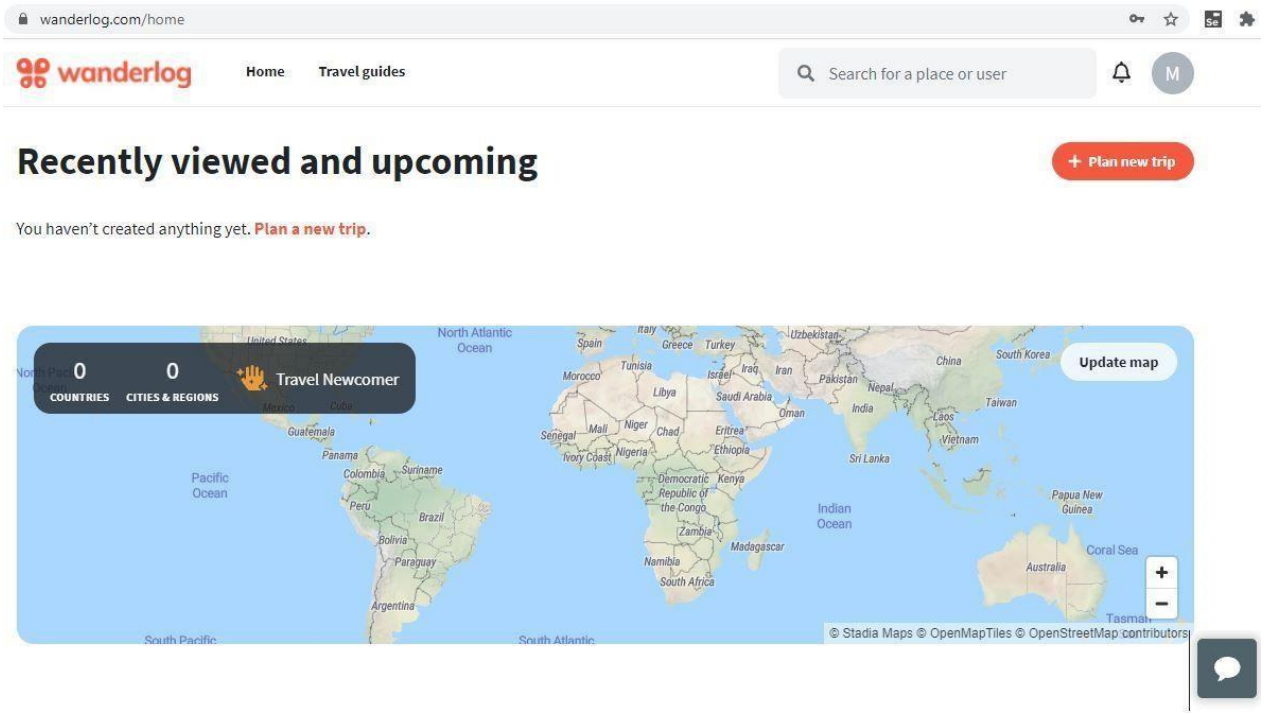
2. <u>Home page</u>

It provides the user with the following features:

1. Plan a New Trip
2. View Previous Trips
3. Create and View Guides

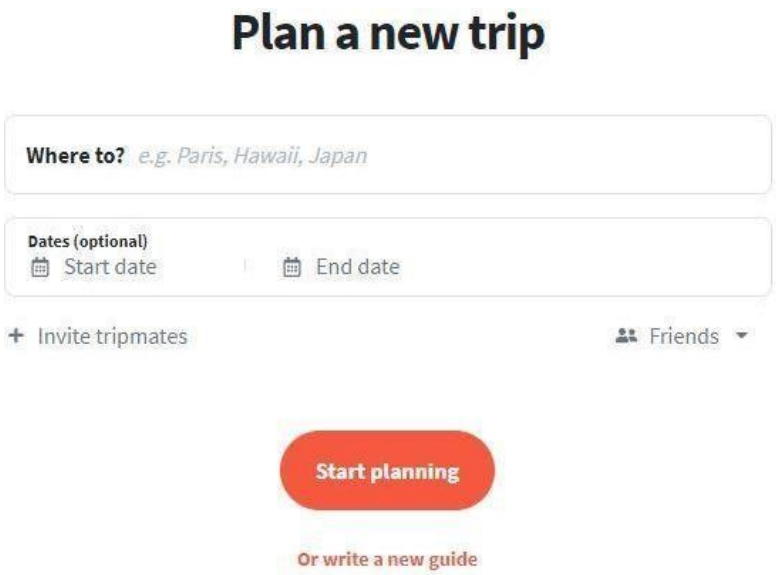
4. A Map to Explore Locations

5. A Tab Explore Popular Places



3. <u>Planning a new trip</u>

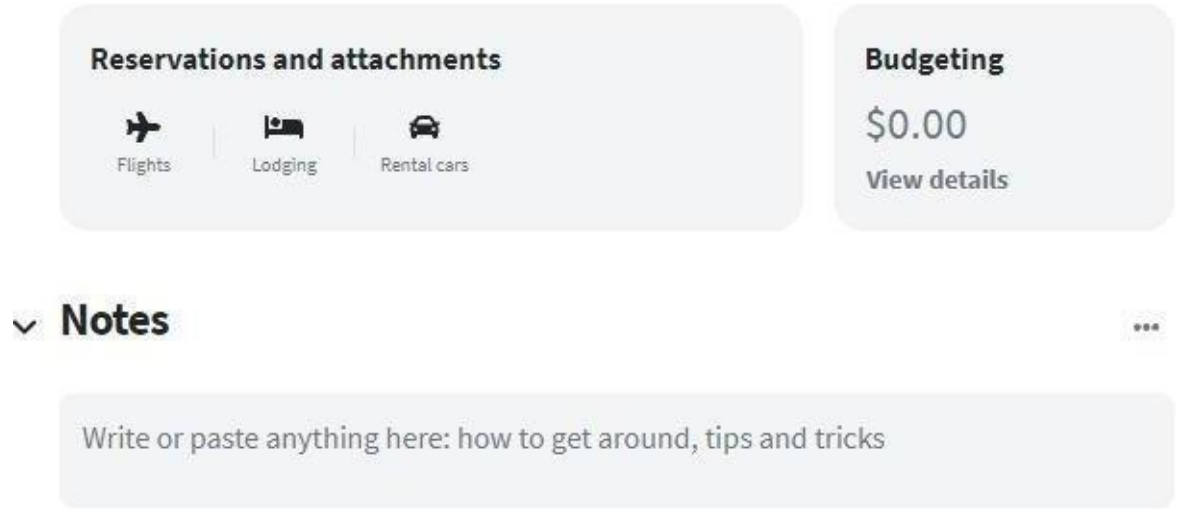
Wander log makes planning a trip easy by letting users choose a destination of their choice , start and end date of their trip and by providing them an option to add their friends in the planning process.

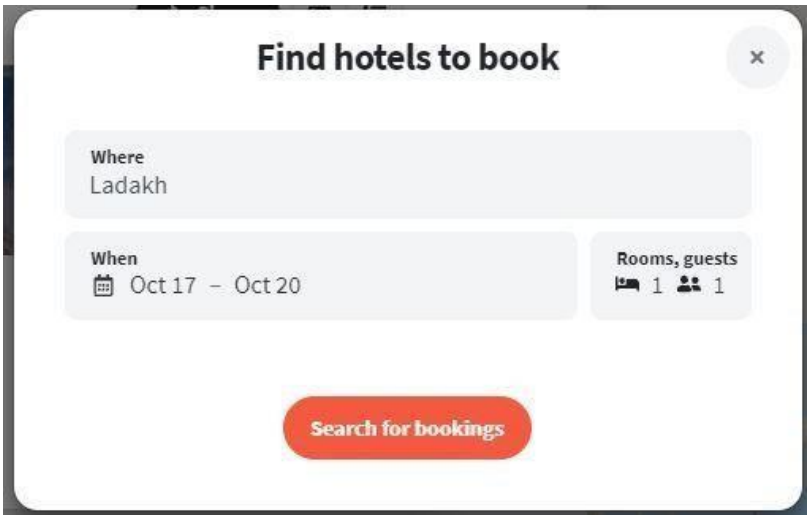


The website allows the users to pick from the top tourist places and view them on Googlemaps e by side providing an excellent user experience.

4. Additional features

1. Add fights
2. Add hotel and lodging
3. Adding activities for each trip day
4. Making personalized notes
5. Making personalized lists (e.g. Restaurants to visit)




Find hotels to book
Where
Ladakh
When
Oct 17 – Oct 20
Rooms, guests
1 1
Search for bookings

Test Cases:

Test Case ID	Test Case	Pre-Conditions	Input	Expected Output	Output	Status (Pass/Fail)
TC001	Test if user is able to login successfully	User must be signed up	Correct mail id ,CorrectPassword	User must successfully login to the Wander log	Successfully Logged in to the Wander log	Pass
TC002	Test if unregistered user is not able to login to wander log	-	Incorrect mail id ,incorrect password	User should be redirected to appropriate page and prompt to login again	Login error message	Pass
TC003	Test with valid email id and empty password such that login must get failed	User must be registered already	valid mail id and empty password	Proper error must be displayed and prompt to enter login again	Login error message	Pass
TC004	Test with empty email id and valid password such that login must get failed	registered user's password	empty email id and valid password	User should be redirected to appropriate page and prompt to login again	Login error message	Pass
TC005	Test with empty email id and empty password and check if login fails			User should be redirected to appropriate page and prompt to login again	Login error message	Pass
TC006	Check of the password is masked on the screen i.e., password must be in bullets		some password (can bea registered/unregistered)	The password field should display the characters in bullets such that the password is not visible on the	Password should be displayed in bullet	Pass

				screen		
TC007	Check if the login function handles case sensitivity	registered user's password which is originally in lower case changed to upper case or vice versa	case changed Email id /password	Login must fail saying incorrect email id/password	Login Failed	Pass
TC008	Test with invalid email idand valid password		Invalid email id ,validpassword	Login must fail saying incorrect email id/password	Login Failed	Pass
TC009	Test with invalid email idand empty password such that login must get failed		Invalid email id , emptypassword	Login must fail saying incorrect email id/password	Login Failed	Pass
TC010	Test with validemail id and invalid password		Valid email id , invalidpassword	Login must fail saying incorrect email id/password	Login Failed	Pass
TC011	Forgot Password	User must registered already		User should get the forgot password link on his/her email id.	Verify Forgot Password sends a forgot password link to user mail id	Pass
TC012	Test with New password	User must be Reset password	Valid email id and validNewly added password	Login must pass with newly given password	User must be successfull ylogged in	Pass
TC013	Test with planning trip	User must be logged in	Valid place and validDate	Planned Trip created successfully .	Planned Trip must be created and Displayed.	Pass
TC014	Test with URL of the Wander log website		Valid web address and valid browser	the URL should not redirect to a logged in page but to a logged out page of the site	The URL didnot redirected us to a logged in page	Pass
TC015	Test with logout from home	User must be logged in	Valid email id and validpassword	Logged out successfull y	User must logout of the site properly	Pass

Test plan Introduction :

- The test plan is designed to prescribe the scope, approach, resources and schedule ofall testing activities of the project Wander log website.
- The plan identify the items to be tested, the features to be tested, the types of testing to be performed, the personal responsible for the testing , the resources andschedule required to complete testing, and the take risks associated with the plan.

TEST STRATEGY

Features to be tested:

All the features of website wander log are needed to be tested.

Module Name	Applicable Roles	Description
Signing up	Registration	Registering the wander log by using email id, password and Full name.
Logging in	Entering Home page	Logging in the Homepage by mail id and password.
Planning a Trip	Destination to reach	Planning the place where we want to go by entering place and dates in it.
Mode of Transport	Travelling comfort	In wander log, the mode of transport depends on distance we can choose flight, cab.
Hotels	Stay and Do rest	The website will showthe nearer hotel after filling the destination.
Other features	Recording activities	Wander log can record the activities and we can make the notes.

Features not to be tested :

These features are not to be tested because they are not included in the softwarerequirement specs

1.User Interfaces

2.Hardware interfaces

3.Software interfaces

4.Database logical

5.Communications Interfaces

6.Website security and performance

Test Type :

In the project wander log, there are 3 types of testing should be conducted.

1.Integration testing

2. System testing

3.API testing

When will test occur

The tester will start the test execution when all the following inputs are ready

1.Software is available for testing

2. Test Specification is created

3.Test Environment is built

4. Enough human resource for testing

Test objective

The test objectives are to verify the functionality of Wanderlog website, the project should focus on testing

- The singing up

- The login

Testing Tasks

The following activities must be completed:

● Test plan prepared.

● Functional specifications written and delivered to the testing team

● Environment should be ready for testing (test data, test logins, test payment information, etc).

● Perform the tests.

● Prepare test summary report.

TEST REPORT

Project Name	Wander log
Testing Tool	Selenium IDE
Chosen language	Python
Product description	A trip planner
Testers	THARUN MANIDEEP SRICHANDA NA
No of test cases	15

Login Functionality

Test data	input	output
login	Credentials for alphanumeric and symbol (@)	Some Special characteristics to be involved else it may not accept
	Numbers and special characters	Valid input
	Incorrect password	Credentials given are wrong
	correct password	Login to the website (Wander log)

Search Functionality:

search	Place name	related areas
	Hotel	Nearer to place
	Transport	Depends on place
	Route map	Map to destination

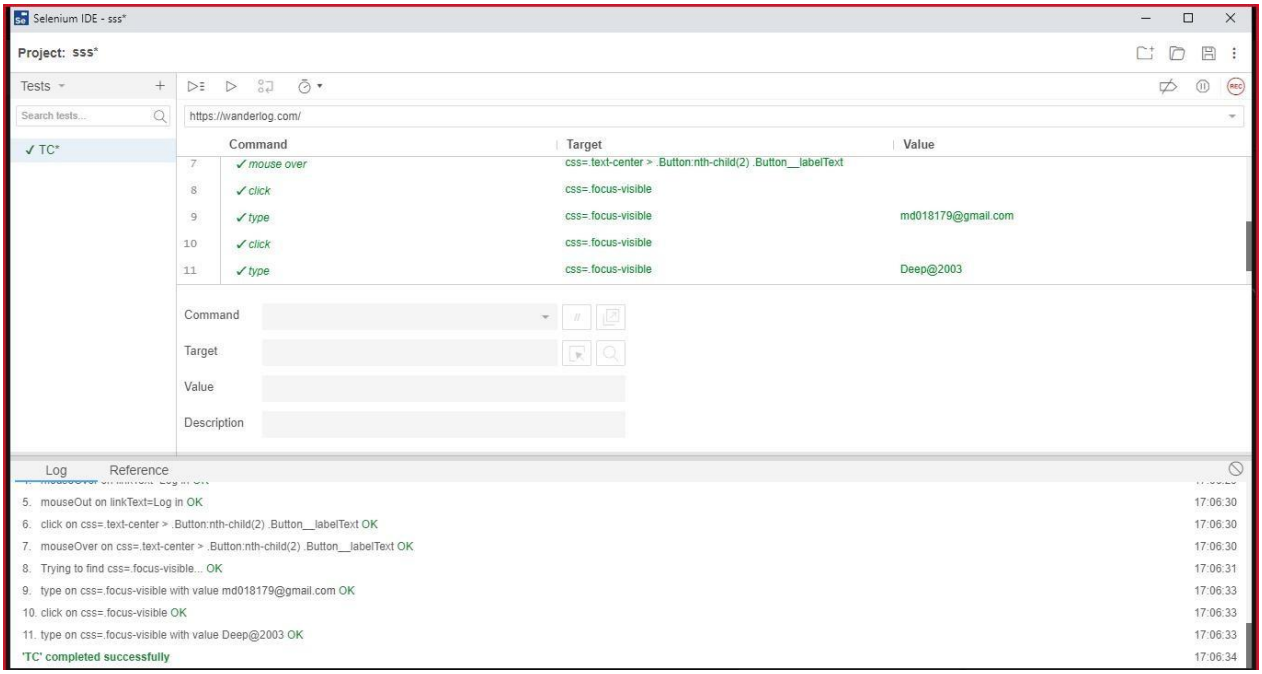
Fixing place functionality:

Fixing Place	Selecting the required Place	The area nearto the state stations appears
	selecting the wished stations	Categories appears

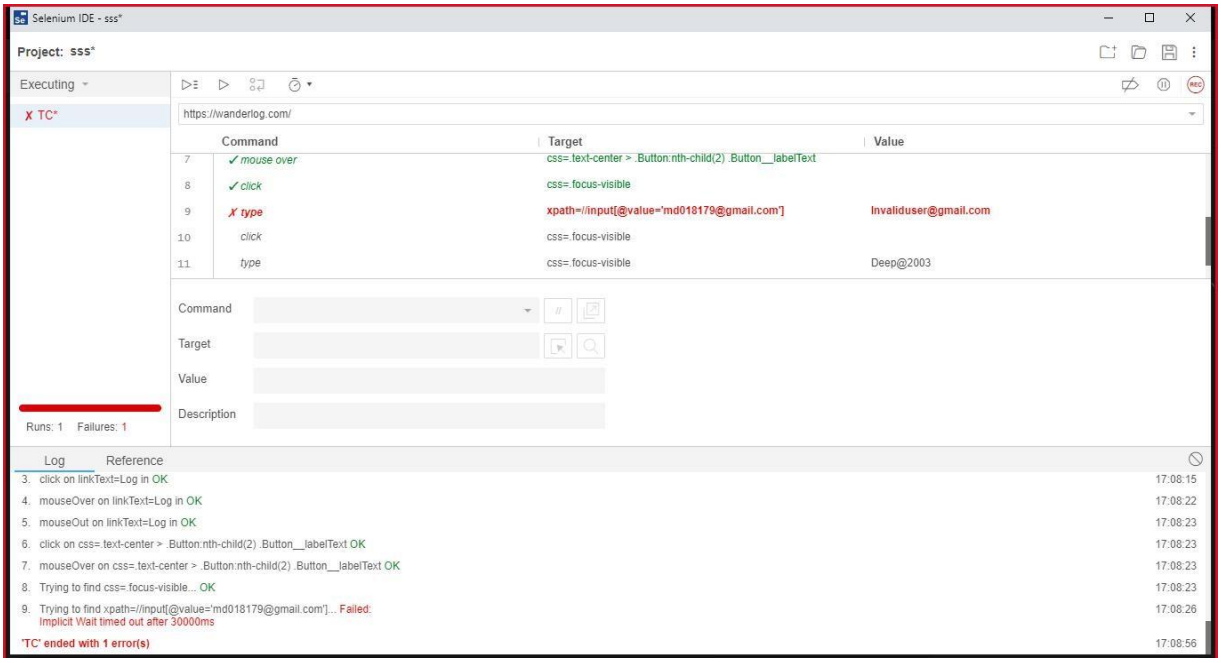
Start planning trip functionality:

Start planningtrip	Various places	Historical places around the wished area appears
	The selected places can be allocated with a guide	Guide helps us

PASS CASE:



FAIL CASE:



Test Report Summary

This section includes the summary of testing activity in general.

S. No	Functionality	Status
1	Login	Pass
2	Login	Pass
3	Login	Pass
4	Login	Pass
5	Search	Pass
6	Search	Pass
7	Search	Pass
8	Search	Pass
9	Fixing place	Pass
10	Fixing Place	Pass
11	Start Planning trip	Pass
12	Start planning trip	Pass

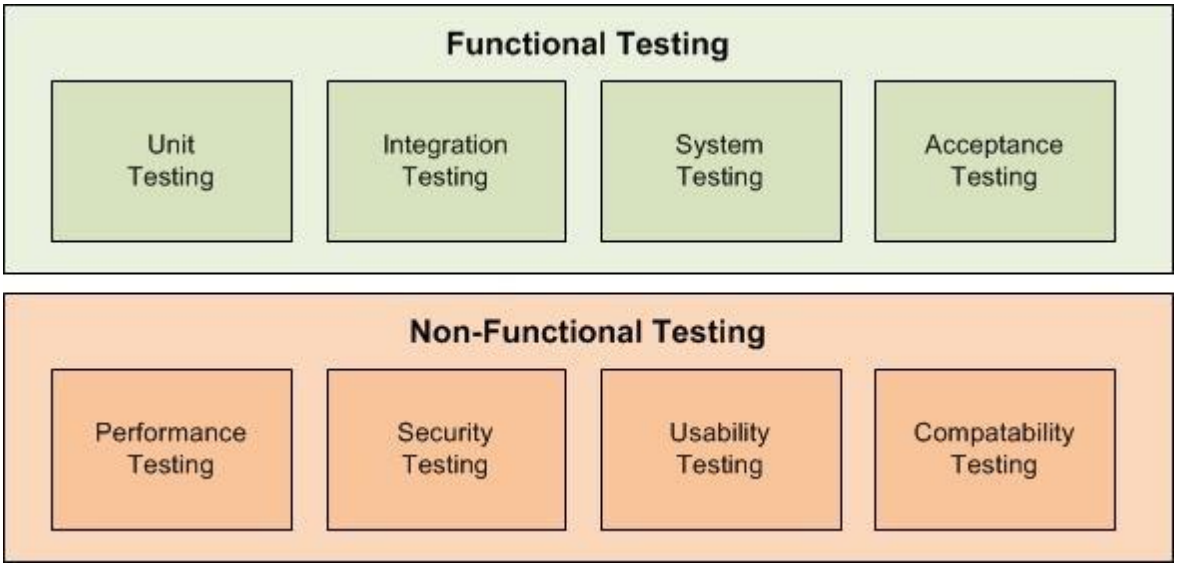
TEST METHODOLOGY:

For Wander log, the testing methodologies are

Testing methodologies are the strategies and approaches used to test a particular product to ensure it is fit for purpose. Testing methodologies usually involve testing that the product works in accordance with its specification, has no undesirable side effects when used in ways outside of its design parameters and worst case will fail-safely.

We have two test methodologies in software testing:

- Functional testing
- Non-functional testing



Verification and validations

Verifications:

1) User should be able to Login with valid credentials.
2) User should not be allowed to Login with Valid email address and InvalidPassword.

3) User should not be allowed to Login with Invalid email adddress and ValidPassword.
4) User should be redirected to appropriate page when clicking on Forgot Password link.
5) User should not be allowed to Login with blank email address field and Password field.

Validations:

1) Email address field should be alphanumeric with some symbols.
2) Login credentials should be case sensitive.
3) Password should be displayed as bullets.
4) Validation of password for strong password
5) Appropriate validation message should be displayed at correct place when providing invalid Email address/ Password.

Black box testing:

A Wander log login screen has two fields, email and password as an input and the output will be to enable access to the page.

This form of testing technique will check the input and output.

- A user logged in when inputs a correct email and correct password
- A user receives an error message when enters incorrect email and incorrect password.

Some of the black box techniques are

Boundary value analysis

This technique identifies the flaws of the input values rather than focusing on the range of input values. It also helps in dealing with extreme output values. It is also helpful while you are performing equivalence partitioning.

We have a login form of Wander log with Email and Password fields having the following characteristics:

- Email has the combination of alphanumeric and symbol.
- Password should have between 5 and 20 characters.

State Transition Testing

State transition testing is a technique of black-box testing where the tests aredesigned to execute valid and invalid state transitions.

- A login page will let you input email and password. Each incorrect password will be sent the user to the login page. After an attempt, the user will be sentto an error message as INVALID.
- It considers the number of attempts.

Error Guessing Technique:

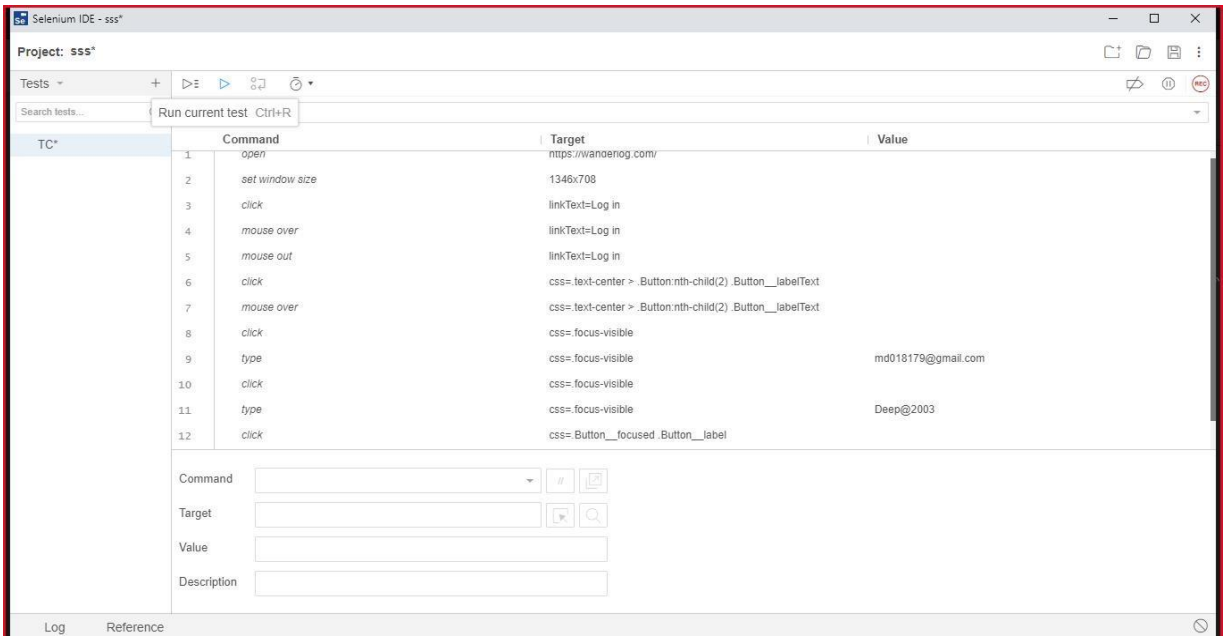
This method of designing test cases is about guessing the output and input to fixany errors that might be present in the system. It depends on the skills and judgment of the tester.

- If an analyst finds errors in a login page, then the testers will write the test cases focusing on the login page.
- In login page, we have the ability to guess the email that must contains @ symbol.

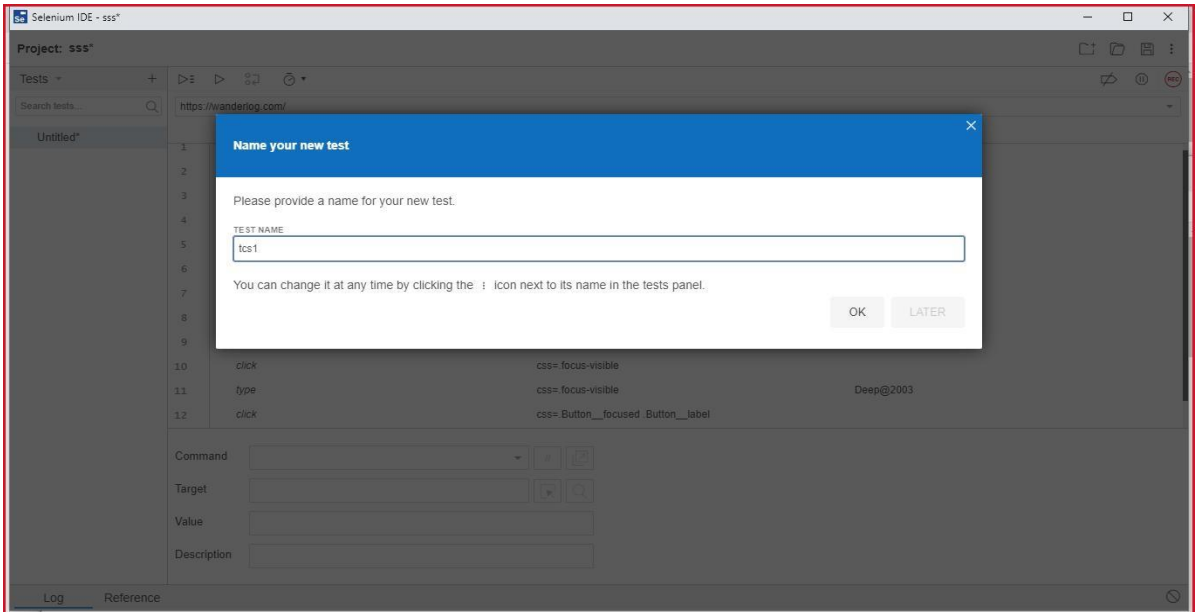
Screenshots:

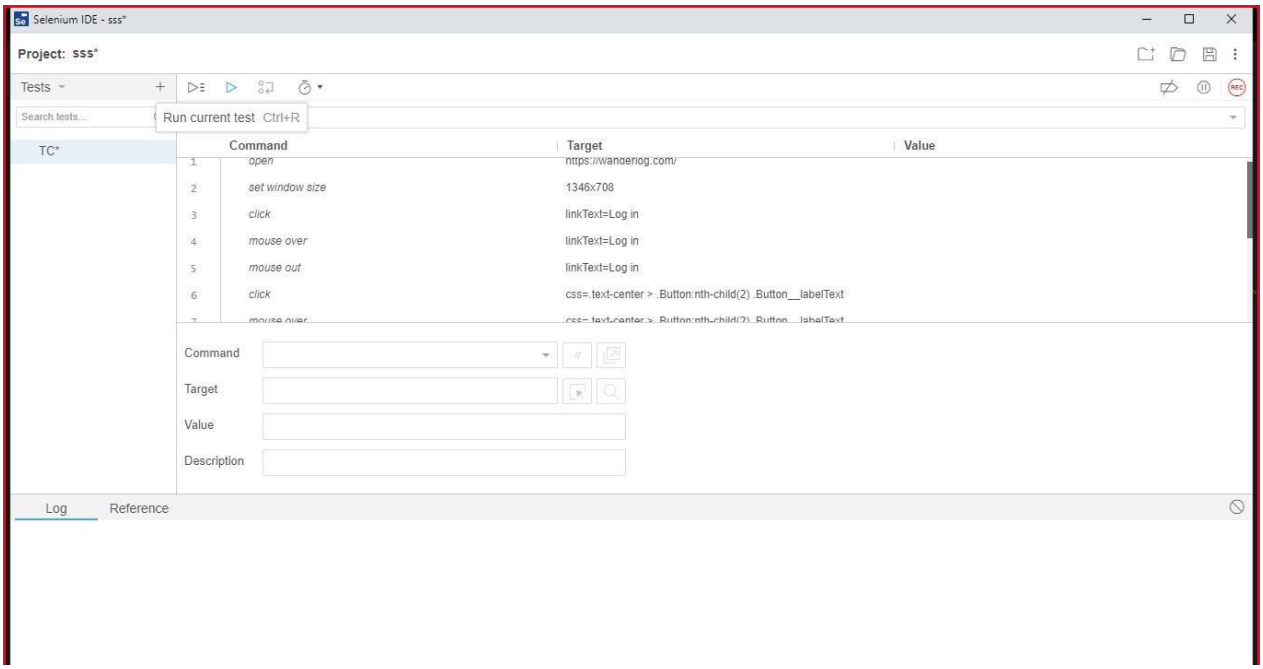
TESTING WANDER LOG WEBSITE USING SELENIUM IDE:

- Collecting command

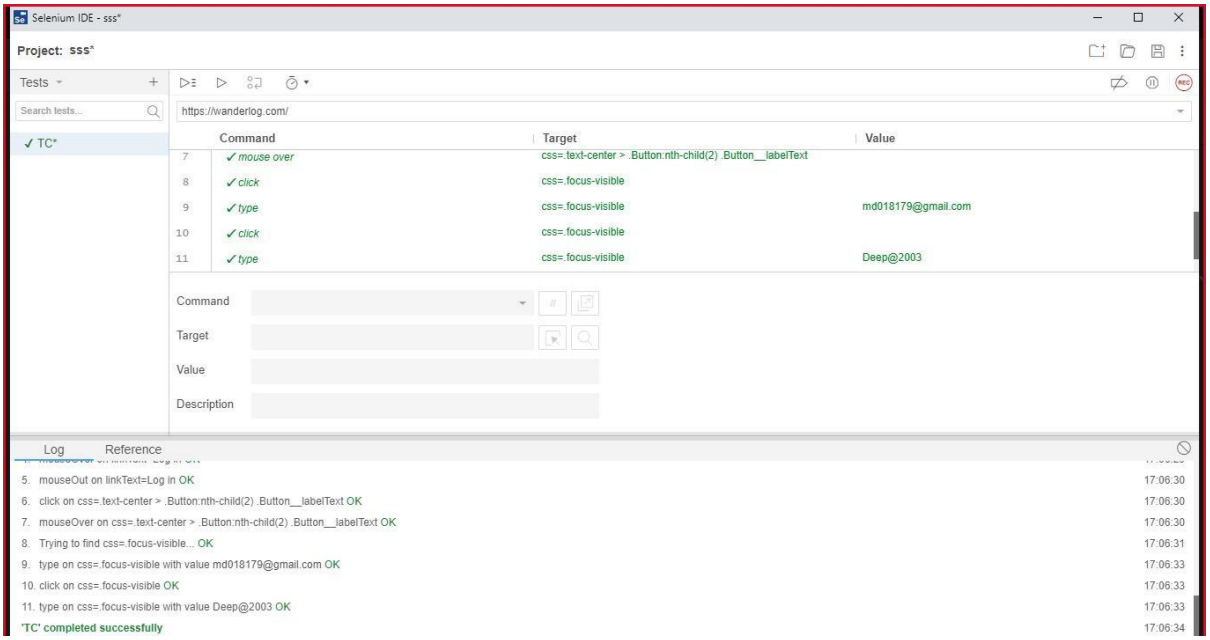


- Creating Test case in selenium

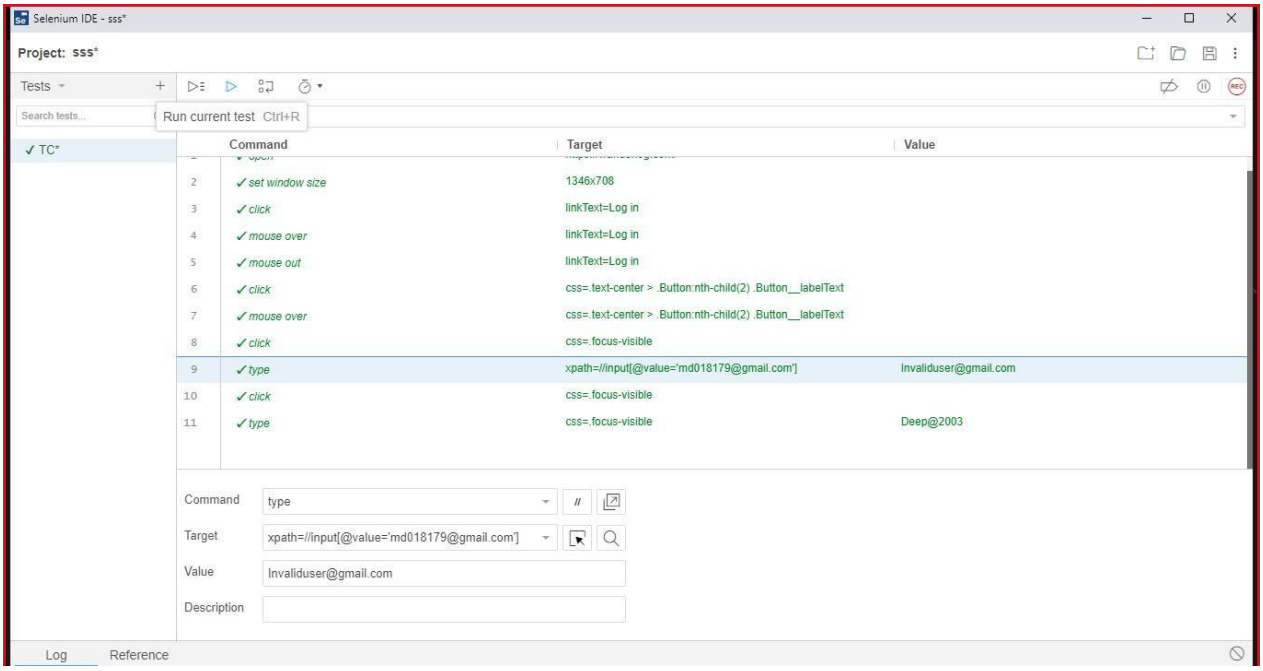


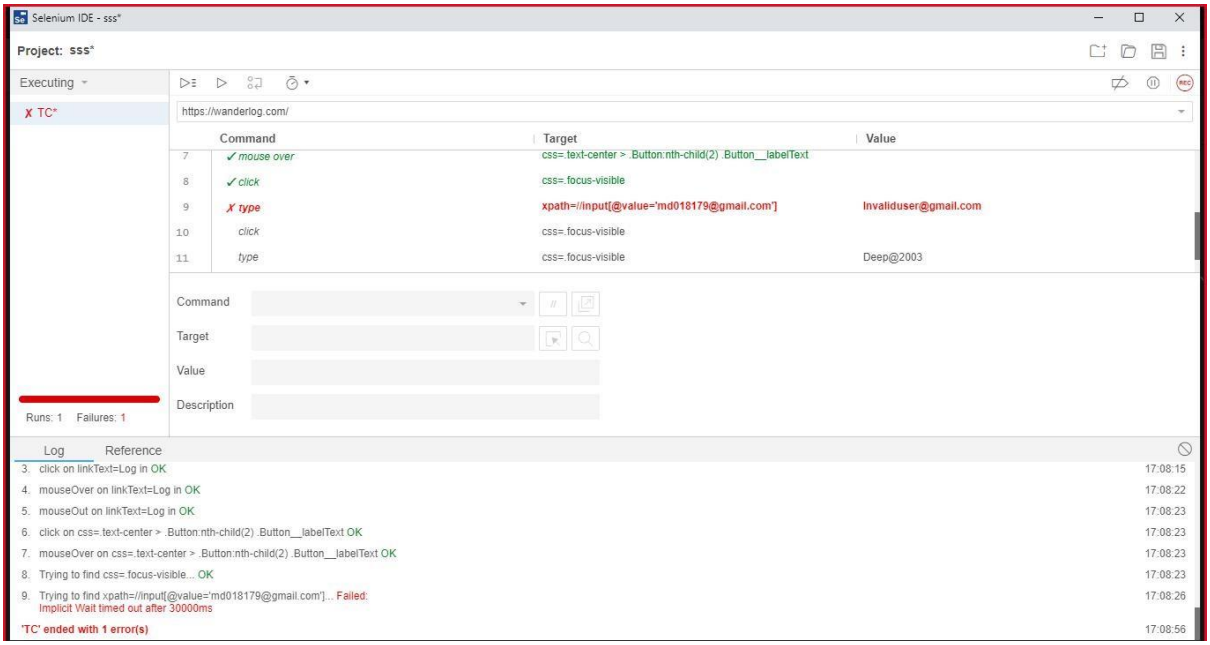


- Running the command



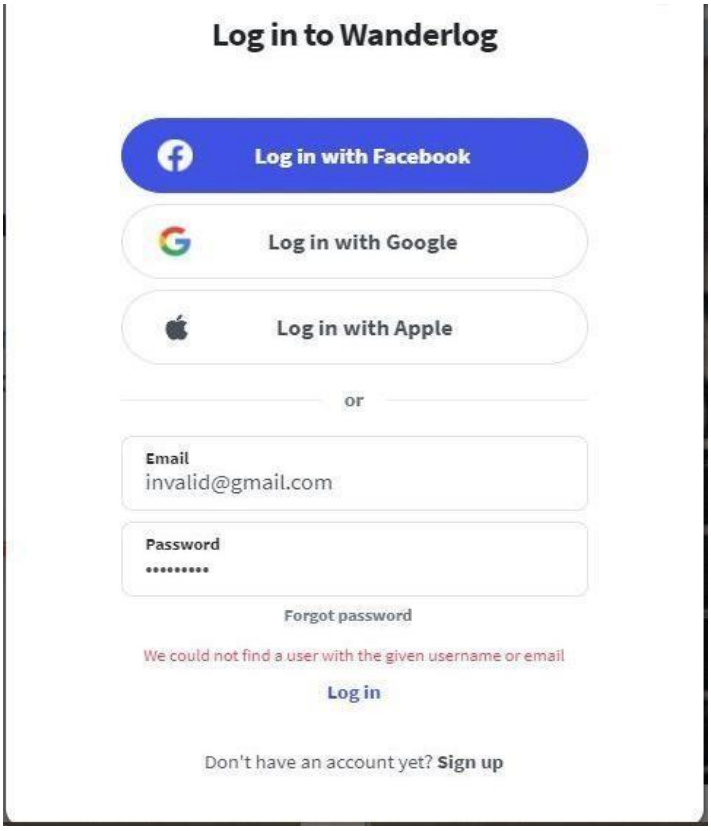
- Creating fail test in selenium



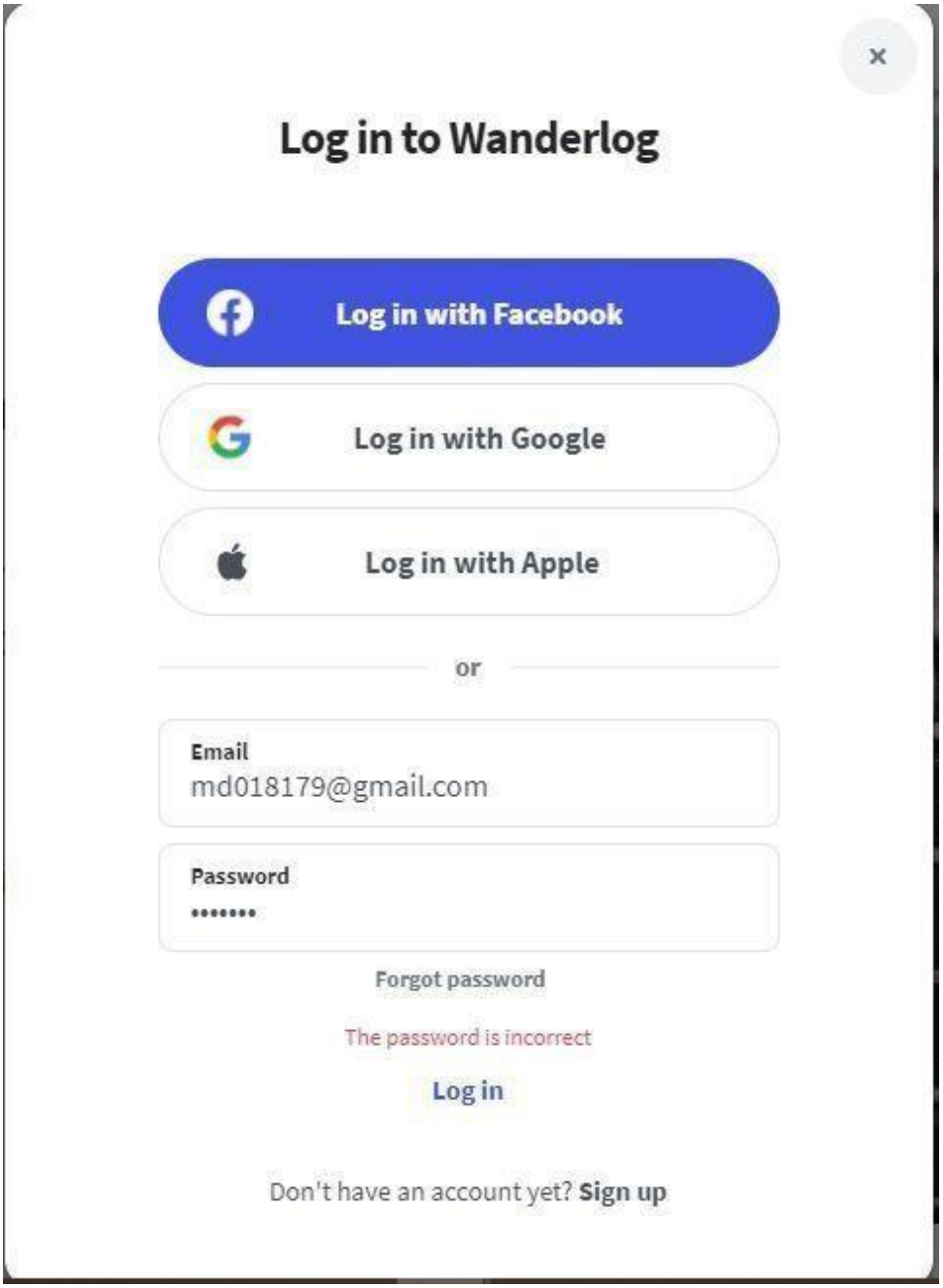


Test case screenshot of Wander log:

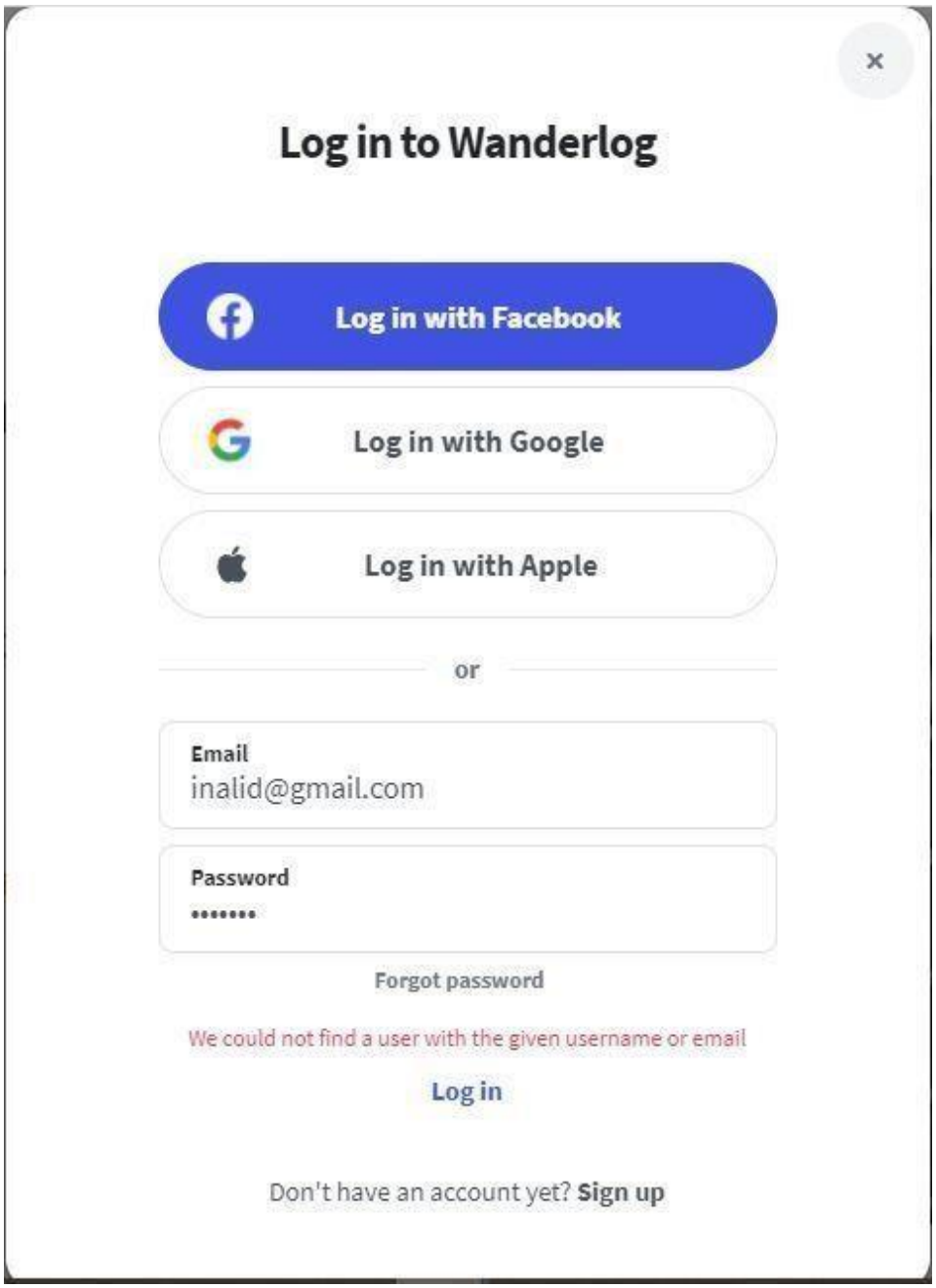
Incorrect Email id and Correct Password



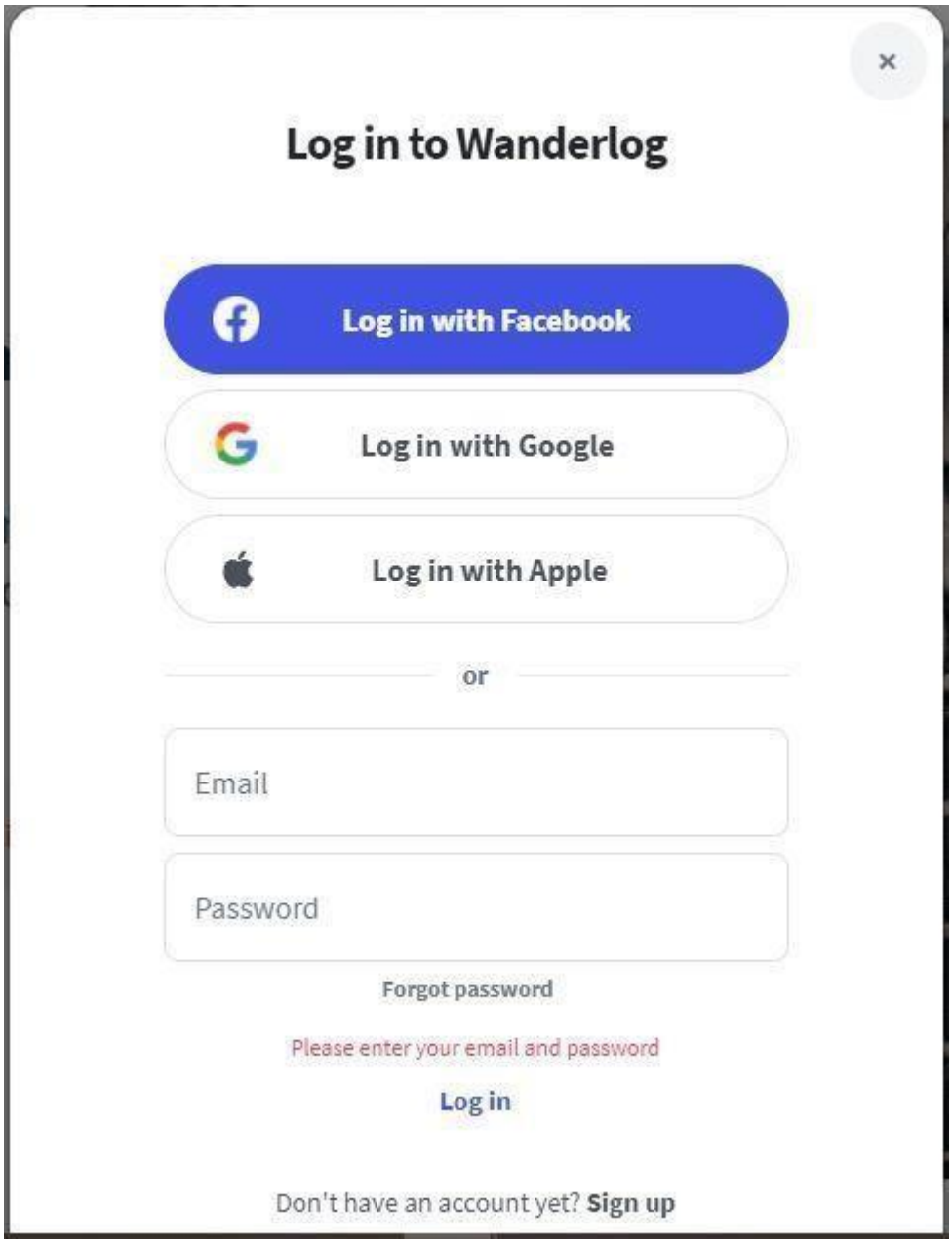
Correct Email id and Password



Incorrect Password and Incorrect Email id



Empty Email id and Empty Password



PROJECT REPORT

Topic area	Title	Description
Selenium	Testing tool	Using testing toolfor the website
Wanderlog	Testing website	A trip planning website
Complier	VS code	Runs the program
Language	Python	

Scope of project

1. Proper authentication
2. Personalized list
3. Secured information
4. Efficiency
5. Remainder alerts

CODE

Login module

```
from selenium import webdriver
from selenium.webdriver.common import keys
from selenium.webdriver.support.wait import WebDriverWait
from selenium.webdriver.support import expected_conditions as ECfrom
selenium.webdriver.common.by import By

driver=webdriver.Chrome()
driver.implicitly_wait(4) driver.maximize_window()
driver.get("http://www.wanderlog.com")
l=driver.find_element_by_xpath('/html/body/div[1]/nav/div/div/div/ul/div/div/li[1]/a') l.click()
l2=driver.find_element_by_xpath('/html/body/div[3]/div/div[1]/div/div/div/div[2]/div[2]/div/div[3]/button/div/div/span') l2.click()
l3=driver.find_element_by_xpath('/html/body/div[3]/div/div[1]/div/div/div/div[2]/div[2]/div/form/div[3]/div/input')
l3.send_keys('md018179@gmail.com')
l4=driver.find_element_by_xpath('/html/body/div[3]/div/div[1]/div/div/div/div[2]/div[2]/div/form/div[4]/div/input')
l4.send_keys('Deep@2003')
l5=driver.find_element_by_xpath('/html/body/div[3]/div/div[1]/div/div/div/div[2]/div[2]/div/form/button/div/div/span') l5.click()
```

Planning a trip module

```
from selenium import webdriver

from selenium.webdriver.common import keys

from selenium.webdriver.support.wait import WebDriverWait

from selenium.webdriver.support import expected_conditions as EC

from selenium.webdriver.common.by import By

driver=webdriver.Chrome()

driver.implicitly_wait(4)

driver.maximize_window()

driver.get("https://wanderlog.com/plan/create/plan")

l=driver.find_element_by_xpath('/html/body/div[1]/nav/div/ul/div/div/li[2]/a')
l.click()

l2=driver.find_element_by_xpath('/html/body/div[5]/div/div[1]/div/div/div/div[2]/div[2]/div/div[3]/button/div/div/span')

l2.click()

l3=driver.find_element_by_xpath('/html/body/div[5]/div/div[1]/div/div/div/div[2]/div[2]/div/form/div[3]/div/input')

l3.send_keys('md018179@gmail.com')

l4=driver.find_element_by_xpath('/html/body/div[5]/div/div[1]/div/div/div/div[2]/div[2]/div/form/div[4]/div/input')

l4.send_keys('Deep@2003')

l5=driver.find_element_by_xpath('/html/body/div[5]/div/div[1]/div/div/div/div[2]/div[2]/div/form/button/div/div/span')

l5.click()

l6=driver.find_element_by_xpath('/html/body/div[1]/div[2]/div/div/div/div[2]/form/div[1]/div[1]/div/div/div/div[1]/input')

l6.send_keys('paris')

l7=driver.find_element_by_xpath('/html/body/div[1]/div[2]/div/div/div/div[2]/form/div[1]/div[1]/div/div/div/div[2]/ul/li[1]/div')

l7.click()

l8=driver.find_element_by_xpath('/html/body/div[1]/div[2]/div/div/div/div[2]/form/button[1]')

l8.click()

l9=driver.find_element_by_xpath('/html/body/div[1]/div[2]/div/div/div/div[4]/button/div/div/span')


l9.click()
```

CONCLUSION

From the above review, we have tested the wanderlog(trip planning website) in selenium using Visual Studio code. The testing tool we usedin our project is selenium.

selenium is automated testing tool and an open source tool that automates web browsers.It supports multiple programming languages

Selenium is the most effective test automation tool due to its wide range of features such as open source, supports many languages, integrates easily with many platforms, has cross browser support and isbest suited to test web applications.

The website we used to test is wanderlog(trip planner) in our projectWanderlog is a trip planning website.It have login module, planning a trip module. we are doing the testing with all possible test cases.
Both pass and fail cases are tested using VS code.

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