FINAL AUTOMATION PROJECT

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About me

A 23-year-old hailing from Deir Hanna village.

Graduated in Computer Science from the University of Haifa.

Enjoys hobbies such as cooking, traveling, and coding.

Enthusiastic about expanding knowledge and thriving in the field of automation.

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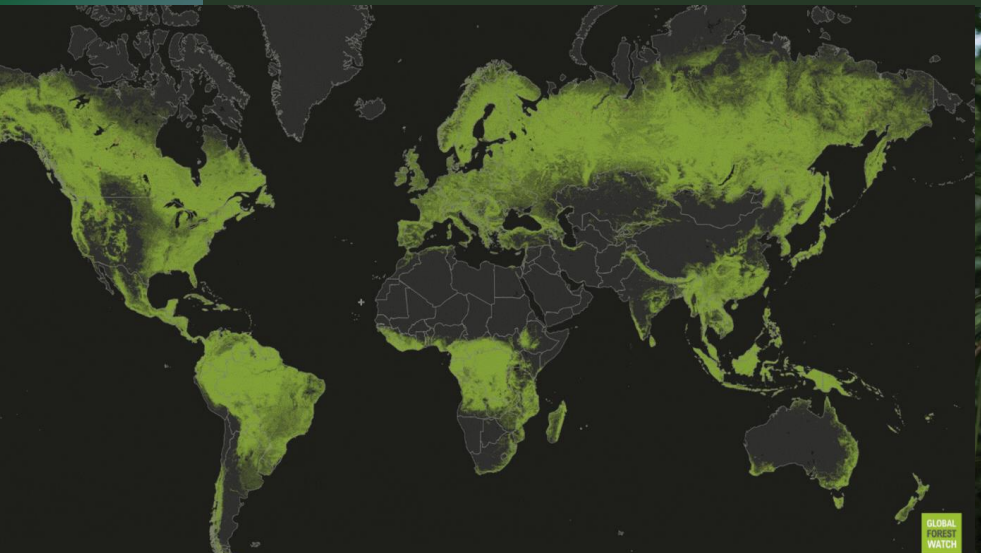
Introduction

- Our objective is to create automated tests for a selected website to ensure the functionality of its features.
- Tests are designed to verify the proper functioning of key features on the chosen website.
- The project focuses on automation testing using Python with Selenium and Selenium Grid also incorporated Continuous Integration with GitActions.
- The entire project was managed through GitHub due to its efficient version control and collaboration features.

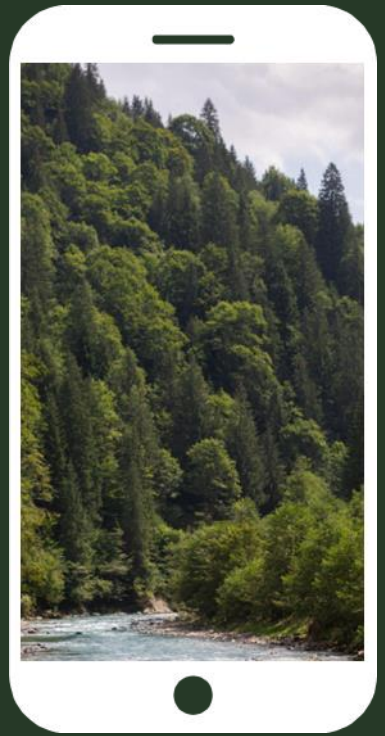
GLOBAL FORST WATCH

Real-time information about forests all around the world.



Why is the GFW website good for automated testing?

- API Integration: GFW offers an open APIs that facilitate automated data retrieval and analysis, streamlining testing processes.
- Real-time Updates: GFW continuously updates its data, enabling automated tests to reflect the most recent changes in forest conditions.
- Data Consistency: GFW's centralized platform ensures that forest monitoring data is consistently structured, making it ideal for automated testing purposes.



THE STP FILE

The purpose of the document is to define a framework program for testing This framework plan will include all relevant topics for planning and performing the tests, such as the test topics and types of tests, the schedule, and the planned work method for testing the system.

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Definitions and examples:

Functional tests verify that the software functions as expected, based on its specifications and requirements.
Example : Verify that we can successfully add an area to my list of areas.

Non-functional tests evaluate aspects like performance, usability, and security, ensuring the software meets user expectations beyond its basic functionality.
Example: Conducting a stress test by inputting an exceptionally long string to evaluate system behavior.

Negative tests focus on intentionally breaking the software by providing invalid inputs or unexpected scenarios, validating its resilience and error-handling capabilities.
Example: entering an invalid search query and verifying that the system displays an appropriate error message.

TESTING TREE

3. Map:

Functional testing:

a. Verify successfully map showing and basic interactions.
b. Verify successfully adding an area from the map to my list of areas.
c. Verify successfully adding a new filter to the map.
d. Verify successfully checking a new country statics by clicking on it on the map.

Non-functional:

performance Testing:

e. Evaluate the time taken to perform filtering on the map.

Compatibility Testing:

f. Validate the responsiveness and functionality of the map interface on various devices (e.g., desktops, laptops, tablets, smartphones) with different screen sizes and resolutions.

Reliability Testing:

g. Verify the stability of the map service by running continuous stress tests over an extended period to identify potential memory leaks or resource exhaustion.

1. Sign- In/out:

Functional testing:

a. sign in to GFW account.
    i. Verify successful login with a valid email and password.
    ii. Verify unsuccessful login with an invalid email or password.
        1. Attempt login with an invalid email.
        2. Attempt login with a valid email and incorrect password.
    iii. forgot password:
        1. retrieve password using email address.
        2. retrieve password using phone number.
b. Sign up for a GFW account.
    i. Successful sign out from the user account
    ii. verify that the sign out button is present and clickable.

Non-functional:

Reliability Testing

c. Perform regular GFW sign-in under unstable network conditions.
d. Verify that the user data is still in the database after signing out.

Scalability Testing

e. Test the sign-in functionality with many concurrent users:
    1. multiple users attempt to log in simultaneously on GFW.

Localization and Globalization Testing:

f. Perform sign-up using different regional settings (language, date formats).

THE STD FILE

This document serves as the software test description for the GeeksforGeeks software development project. It provides a comprehensive overview of the tests outlined in the software test plan. These tests are important to the success of the project as they include both functional and non-functional aspects, ensuring the platform's stability and reliability.

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Sign in tests 3

ID	Title
C1	Verify that a user can successfully login with valid details
C2	Verify unsuccessful login when entering wrong a password
C3	Verify that a user can successfully logout

Add Case | Add Subsection

Search tests 3

ID	Title
C4	Verify successful searching process and relevant results
C5	Verify successful searching a very long input
C6	Verify getting no results when searching invalid inputs

Add Case | Add Subsection

Area Tests 3

ID	Title
C11	Verify successfully adding a new area from the map to my areas list
C12	Verify successful searching a new country on the map and click on analyzing it
C13	Verify successfully adding a filter to the map

Add Case | Add Subsection

Profile tests 2

ID	Title
C7	Verify successful retrieving of profile information
C8	Verify successful changing user location

Add Case | Add Subsection

Localization and Globalization 2

ID	Title
C9	Verify successful searching under different language settings
C10	Verify successful login under different location settings

Add Case | Add Subsection

TEST CASES

Test case example

Test Case	
test case name	Verify successfully adding a new area from the map to my areas list
test case goal	The goal of this test case is to ensure that a new area can be added successfully from the map to the user's areas list on the Global Forest Watch website.
data	GFW website URL Area name and code
advanced conditions	Logged into a GFW user account Stable internet connection
writer	mohammed hussien
date	26.03.2024
priority	Critical

number	step	expected result
1	Navigate to the Global Forest Watch website.	The GFW homepage loads successfully.
2	Log in to the GFW user account.	The user is logged in successfully.
3	Access the "Explore" section or map functionality on the GFW website.	The map interface is accessible.
4	Select an area on the map either by searching or by clicking on the map.	The selected area is highlighted or displayed on the map.
5	Fill out the area details with valid info	Area details are succsessfully filled and accepted
6	Add the selected area to the user's "My Areas" list.	The selected area is successfully added to the "My Areas" list associated with the user's account.
7	Navigate to my areas list in the user profile	Verify that the added area appears in the "My Areas" list.

LIVE DEMO

CHALLENGES FACED

- The presence of interactive map components on the website posed a unique challenge for testing, Interacting with maps often requires specialized testing approaches
- limited coverage of API tests. With fewer API endpoints to test, it became challenging to find a diverse set of meaningful test cases.
- Sticking to the project timeline without straying or falling behind to ensure deadlines are met efficiently.

LESSONS LEARNED

- Effective Time Management: Learning to prioritize tasks and allocate time efficiently was crucial for meeting project deadlines.
- Good Code Structure: Maintaining a well-structured codebase helped in enhancing code readability, reusability, and maintainability, reducing the likelihood of errors.
- Documentation: Maintaining comprehensive documentation for code, test cases, and project progress was vital for knowledge sharing and future reference.

HOW TO SAVE THE TREES

Educating yourself is the crucial first step in the fight for the earth's forests. Once you know how to protect our forests, you can go out and show others how to save trees too! In this article we'll discuss these 5 ways that you can preserve our forest:

01 **Planting Trees**

02 **Buy Forest Alliance Certified Products**

03 **Support Organizations**

04 **Use Tree-Free Products**

05 **Enjoy Forests Responsibly**

THANKS!

Any questions?

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