Project Proposal: Automated Testing Framework for a Web Application

Group Code: ALX2_SWD6_G1 (NHA)

Job Profile: Software Tester

Technical Instructor: Hussein Ali

GitHub Repository: ALX2_SWD6_G1_Group5

1. Project Name

Automated Testing Framework for a Web Application

2. Team Members

No	Student Name	Email	Phone
1.	Sarah Elhassan Abd El Latif	Sarahelhassan89@gmail.com	01000302590
2.	Ahmed Ibrahim Khalil	Ahmedkhalel109@gmail.com	01010260098
3.	Zainab Osama Ali	Zeinab.tail@gmail.com	01283473009
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3. Project Idea & Overview

Problem Statement: Manual testing of web applications is time-consuming, error-prone, and inefficient for continuous integration/continuous deployment (CI/CD) pipelines.

Solution: Develop an **automated testing framework** to validate web applications' functionality, performance, and security, reducing human effort and improving testing accuracy.

Scope:

- Create reusable test scripts for critical workflows (e.g., login, data submission, API integration).
- Integrate with CI/CD tools for automated test execution.
- Generate detailed test reports for stakeholders.

4. Technologies & Tools

- **Test Automation:** Selenium WebDriver, TestNG/JUnit
- **CI/CD Integration:** Jenkins, GitHub Actions
- **Version Control:** Git/GitHub
- **Test Reporting:** Allure Reports, Extent Reports
- **Performance Testing:** JMeter (optional)
- **Security Testing:** OWASP ZAP (optional)
- **Programming Language:** Java/Python
- **Collaboration:** Jira/Trello

5. Work Plan & Team Roles

Team Member	Role & Responsibilities
Sarah Elhassan Abd El Latif	Framework architecture, CI/CD integration, API testing.
Ahmed Ibrahim Khalil	Test script development, documentation.
Zainab Osama Ali	Bug tracking and reporting.
Walaa Anwar	Functional testing, cross-browser compatibility.
Youssef Yasser Abdelhamid	Performance testing, security testing.

Timeline:

1. **Week 1-2:** Requirement analysis and tool setup.
2. **Week 3-4:** Develop core test scripts and integrate with Selenium.
3. **Week 5-6:** Implement CI/CD pipeline and reporting.
4. **Week 7-8:** Final testing, documentation, and demo preparation.

6. Functional Requirements

- Test scripts must validate login functionality, form submissions, and API responses.
- Support cross-browser testing (Chrome, Firefox, Edge).
- Generate HTML/PDF test reports with pass/fail status.
- Integrate with GitHub for version control and Jenkins for CI/CD.

7. Non-Functional Requirements

- **Performance:** Tests must be carried out within 10 minutes for a medium-sized web app.
- **Scalability:** Framework must handle 100+ concurrent test cases.
- **Usability:** Easy-to-read reports for non-technical stakeholders.
- **Security:** Encrypt sensitive test data (e.g., passwords).

8. GitHub Repository

- **Link:** https://github.com/SarahElHassan1/ALX2_SWD6_G1_Group5
- **Initial Setup:** Repository created with folders for test scripts, documentation, and CI/CD configurations.

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Training Governorate: Alexandria