DEPI Diploma Project Proposal

Automated Testing Framework Development

Diploma Program: DEPI

Candidate Name: Group

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Project Overview

This proposal outlines the development of an automated testing framework designed to conduct end-to-end testing for a web application. The primary goal is to ensure the application's functionality, usability, and performance meet industry standards through automated test execution.

Project Scope and Objectives

The project will focus on designing and implementing an automated testing suite utilizing Selenium or an equivalent tool. The framework will cover UI validation, functionality verification, API testing, and performance assessment. Additionally, it will include test reporting and defect tracking to facilitate efficient quality assurance.

Technologies and Tools

- Testing Standards: ISTQB 4

- Project Management: Jira

- API Testing: Postman

- Automated Testing: Selenium

- Test Case Development: Best practices for structured test creation

- Performance Testing: JMeter

Project Timeline and Deliverables

Week 1: Environment Setup and Test Case Development
Tasks:

- Install and configure Selenium WebDriver or a similar automation tool.

- Establish a structured project directory for efficient test script management.

- Develop initial test cases for UI validation (e.g., navigation, buttons, and form submissions).

- Integrate Postman for API testing and create foundational test scripts.

- Configure Jira for efficient test case management and defect tracking.

Week 2: Functional Testing and Report Generation
Tasks:

- Develop comprehensive functional test cases for core application workflows.

- Implement automation for test execution using Selenium.

- Integrate reporting tools such as TestNG or JUnit to generate detailed test reports.

- Expand API testing with additional endpoints.

- Set up performance testing tools such as JMeter or Gatling.

Week 3: Performance and UI Testing
Tasks:

- Develop test cases for performance assessment, including load and stress testing.

- Execute performance tests to evaluate application response time and scalability.

- Enhance UI test coverage by incorporating responsive design and cross-browser validation.

- Log and manage defects using Jira based on test execution outcomes.

Week 4: Final Testing, Optimization, and Deployment
Tasks:

- Optimize the test framework for enhanced efficiency and reusability.

- Execute the full suite of tests, including UI, functional, API, and performance validations.

- Analyze test results and address any unresolved issues.

- Generate comprehensive final reports summarizing test outcomes.

- Develop documentation for utilizing and maintaining the testing framework.

- Integrate the framework into a CI/CD pipeline to facilitate continuous testing.

Conclusion
This DEPI diploma project proposal presents a structured approach to developing an automated testing framework that enhances software reliability and efficiency. Through a

combination of modern testing tools, structured methodologies, and CI/CD integration, this framework will streamline the testing process and improve overall software quality.

Upon successful completion, this project will demonstrate the candidate's expertise in automated testing, ensuring readiness for industry applications and quality assurance roles.