**Capstone Project – Automation**

**JpetStore**

**Introduction**

Our capstone project focuses on automating tests for JPetStore, an open-source pet store web application, using Selenium. Selenium is a powerful tool for automating web browsers, enabling us to simulate user interactions and validate functionality. Through this project, we aim to enhance our skills in software testing and ensure the reliability and performance of the JPetStore application. Our work will involve creating test scripts, running test cases, and reporting on the application's robustness.

**Project Title:**

JPET Store

**Objective:**

The objective of our capstone project is to develop automated test scripts using Selenium to thoroughly test the functionality of the JPetStore application. Our goal is to identify and document any defects, ensuring the application is reliable and user-friendly. This will enhance our expertise in Selenium and automated testing methodologies.

# Project Components:

1. Test Case Design
2. Test Automation Framework Development
3. Test Execution
4. Reporting
5. Documentation

# Project Requirements

1. **Test Case Design**
   * Identify and document the test scenarios and test cases that will be automated.
   * Write BDD (Behaviour - Driven Development) style feature files that describe the test scenarios.
   * Prioritize test cases based on their criticality and functionality coverage.

# 2.Test Case Requirement

* + - Register
    - Login
    - Search
    - Product Details
    - Add to Cart
    - Payment/Checkout

# 3.Test Automation Framework Development

# Framework Architecture

* Implemented a hybrid automation testing framework that combines Data-Driven and Behaviour Driven Development (BDD) approaches.
* Using Page Object Model (POM) design pattern to maintain the test object repository.

1. **Selenium, TestNG, and Cucumber Integration**

* Integrated Selenium WebDriver for web automation.
* Using TestNG for test case management, execution, and reporting.
* Implemented Cucumber for BDD test execution.

1. **Data-Driven Testing**

* Implement data-driven testing to separate test logic from data, enabling multiple data sets to validate functionality.

**4.API Automation Framework Development using postman.**

* **API Test Design:**

Define comprehensive test cases to validate the functionality and performance of JPetStore's backend services, specifying input data, execution steps, and expected outcomes.

* **Postman-based Framework Development:**

Develop a robust automation framework using Postman to efficiently manage, organize, and execute API tests, ensuring scalability, reusability, and easy maintenance.

# 5.Test Execution

* Executed the automated test cases on different browsers and platforms.
* Implementing test suites to group and manage test cases effectively.
* Handle exceptions and errors gracefully during test execution.

# 6.Reporting

* Generate comprehensive test execution reports with detailed insights into test results, including screenshots.
* Ensure that reports are visually appealing and easy to interpret.

# 7.Documentation

* Create clear document for your automation framework.
* Document the test cases, including input data, expected outcomes, and steps to execute, ensuring clarity and enabling easy reference for future testing.

**Project Deliverables**

* **Automated Test Scripts:**

A set of comprehensive test scripts developed using Selenium for testing the JPetStore web application.

* **API Test Scripts:**

Automated tests for JPetStore's backend services, created using Postman or a similar tool.

* **Test Execution Reports:**

Detailed reports summarizing the results of automated tests, including any defects found and their severity.

* **Documentation:**

Comprehensive documentation covering test plans, test cases, automation frameworks, and any recommendations for improvement.

* **Presentation:**

A presentation outlining the project objectives, methodology, findings, and recommendations for stakeholders.

# Evaluation Criteria

Our capstone project will be evaluated based on the following criteria:

* 1. **Functionality:** Does the automation framework effectively automate test cases JPET Store.
  2. **Robustness:** Does the framework handle exceptions and errors gracefully.
  3. **Scalability:** Is the framework designed for easy addition of new test cases and features.
  4. **Documentation:** Is the project documentation comprehensive and easy to understand.

# Project Timeline

* 1. Start Date:12-06-2024
  2. End Date:20-06-2024

# Project submition

* 1. We will submit our project code and documentation as a zip file or through a version control repository (e.g., GitHub, Gitlab,…).

# Conclusion:

Our capstone project focused on automating tests for the JPetStore web application using Selenium and Postman for web and API testing, respectively. Through meticulous test case design and the development of robust automation frameworks, we aimed to enhance the reliability and functionality of JPetStore. By executing comprehensive tests and meticulously documenting our process, we have provided valuable insights and recommendations for improving the application's overall quality and user experience. This project has not only deepened our understanding of automated testing methodologies but also equipped us with valuable skills essential for ensuring the reliability and performance of web-based applications.