Project Description

The purpose of this project is to develop a robust Quality Assurance (QA) and test environment for an airline booking website. The project encompasses various testing layers, including browser-based end-user testing using Selenium WebDriver, unit testing for backend elements using TestNG, API testing with Postman on the AWS cloud, and the automation of the testing process through the creation of a Jenkins job.

Problem Statement

The project requires end-to-end development of a comprehensive QA and test environment for an airline booking website. The key testing layers to be included are:

1. **Browser-Based End-User Testing using Selenium WebDriver:**
    - Develop Selenium WebDriver scripts to simulate user interactions with the airline booking website.
    - Test various scenarios such as flight searches, booking processes, and user account management.
    - Ensure compatibility with different browsers and versions.
2. **Unit Testing for Backend Elements using TestNG:**
    - Implement TestNG unit tests to verify the functionality of backend elements.
    - Test database interactions, server-side validations, and other critical backend components.
    - Ensure proper isolation and independence of unit tests.
3. **API Testing with Postman on AWS Cloud:**
    - Create Postman collections to perform API testing on the airline booking website.
    - Test API endpoints related to flight availability, booking confirmations, and user data retrieval.
    - Deploy and execute tests on the AWS cloud to simulate real-world conditions.
4. **Automation of Testing Process through Jenkins:**
    - Configure and set up a Jenkins job to automate the entire testing process.
    - Integrate Selenium WebDriver, TestNG, and Postman tests into the Jenkins pipeline.
    - Schedule and trigger the Jenkins job to run tests on a regular basis or on-demand.

Deliverables

The end-deliverables for this project will be executable scripts and modules that can be run on demand to test the airline booking web application. These deliverables will include:

1. **Selenium WebDriver Scripts:**
    - Detailed scripts for browser-based end-user testing.

- Documentation on how to execute the scripts and interpret results.

2. **TestNG Unit Tests:**
    - TestNG test classes verifying backend elements' functionality.
    - Documentation on how to run the unit tests and interpret results.
3. **Postman Collections:**
    - Postman collections for API testing on the AWS cloud.
    - Documentation on how to import and execute the collections.
4. **Jenkins Job Configuration:**
    - Jenkins job configuration files and documentation.
    - Instructions on triggering the Jenkins job and interpreting automated testing results.