Non-Functional Testing Using Postman, REST Assured, and JMeter.

***Githublink-https://github.com/Utkarsh9991/Testing.git***

Project Objective: The objective of this initiative is to automate key functionalities for a Pet Store company using the Petstore API (<https://petstore.swagger.io/>) through a comprehensive approach utilizing Postman, REST Assured, and JMeter.

Role: As a Test Engineer at XYZ Corp, the responsibility is to design an end-to-end automation strategy encompassing CRUD operations, environment-specific testing, and performance validation.

**Tools Employed:**

**Postman:**

For crafting and executing API requests/collections.

Data-driven testing to ensure robust coverage.

Integration with Newman for command-line execution.

**Java 1.8+ and Maven:**

Building a REST Assured test automation framework.

Harnessing the power of Rest Assured v4.5.1 and TestNG v7.1.0.

Writing assertions in Java for precise validation.

**Newman:**

Facilitating the execution of Postman collections from the command line.

**JMeter:**

Performing performance testing and load generation.

Validating basic authentication and image presence using XPath assertions.

Conduction of load testing with incremental thread counts.

**Deliverables:**

**Postman Collections:**

Assignment\_001: Automation of CRUD operations for pet data with robust data-driven testing and parameterized values.

Assignment\_002: Testing a PUT call with environment-specific data using global and environment variables.

Assignment\_003: Validation of user information retrieval with a GET call.

Assignment\_004: Validation of pet details filtered by status using a GET call and parameters.

Assignment\_005: Validation of user logout operation with a GET call.

**REST Assured TestNG Tests:**

Implementation of CRUD operations tests mirroring Postman assignments.

Implementation of environment-specific testing with Hamcrest assertions.

Individual tests for user information validation, login validation, and pet status filtering.

User logout validation test.

**JMeter Load Tests:**

Validation of basic authentication and image presence using XPath assertions.

Load testing with escalating thread counts for comprehensive performance analysis.

**Project Steps:**

**Postman Assignments:**

Execute five assignments in Postman, ensuring parameterized data, variable usage, and accurate assertions.

**REST Assured TestNG Tests:**

Develop Java code for the five testing scenarios using REST Assured and TestNG.

Implement assertions and handle environment-specific data effectively.

**JMeter Load Tests:**

Design and execute performance tests in JMeter for the provided URLs.

Utilize appropriate samplers and assertions for accurate load testing.

**Evaluation Criteria:**

Completeness and functionality of Postman collections and REST Assured tests.

Correctness and efficiency of JMeter performance tests.

Code quality and maintainability of REST Assured tests.

Documentation and presentation of results.

**Expected Outcomes:**

Successful automation of three REST API services covering CRUD operations, data-driven testing, environment-specific validation, user actions, and performance testing.

Demonstration of proficiency in utilizing Postman, REST Assured, and JMeter for API testing.

Acquisition of valuable experience in test automation strategies and best practices.

This project provides a comprehensive learning experience for automation testers, combining diverse tools and testing approaches to address non-functional aspects of an API-driven system