Develop an evaluation test for users logged into an e-learning application.

Github-https://github.com/Utkarsh9991/Testing.git

*The objective of this performance evaluation test is to assess the backend performance of the e-learning application under various simulated user loads. The test will focus on retrieving the performance metrics for all functions within the application.*

***Tools and Technologies:***

JMeter 5.1.1: JMeter is an open-source tool designed for load testing and performance measurement. It will be utilized to simulate multiple users interacting with the e-learning application simultaneously.

Java Development Kit (JDK) Version 8: JMeter relies on Java, and JDK 8 is the recommended version for compatibility.

***Testing Environment:***

The testing will be conducted on the Simplileran website, utilizing BlazeMeter for recording purposes. The environment should closely mimic the real-world conditions to ensure accurate performance metrics.

***Test Scenarios:***

1*. User Login Performance:*

**Scenario:** Simulate concurrent user logins to evaluate the system's ability to handle authentication requests.

**Steps:**

Use BlazeMeter to record the login sequence.

Create a JMeter Thread Group to simulate concurrent user logins.

Define a Constant Throughput Timer to control the rate of login attempts.

Utilize Listeners to collect and analyze response times and error rates.

*2. Course Access Performance:*

**Scenario:** Simulate users accessing different courses simultaneously to assess the performance of retrieving course content.

**Steps:**

Record course access scenarios using BlazeMeter.

Organize HTTP requests in different controllers for better test management.

Create a Thread Group to simulate various users accessing different courses concurrently.

Employ Listeners to analyze response times, throughput, and resource utilization.

*3.Quiz Submission Performance:*

Scenario: Simulate users submitting quizzes to evaluate the efficiency of the quiz submission process.

**Steps:**

Record quiz submission scenarios using BlazeMeter.

Organize HTTP requests within controllers for clarity.

Design a Thread Group for simultaneous quiz submissions.

Use Listeners to monitor response times and identify potential bottlenecks.

4*. Data Collection and Analysis:*

Utilize various JMeter Listeners such as Summary Report, View Results Tree, and Response Times Over Time to collect relevant performance data.

Analyze metrics such as response time, throughput, error rates, and resource utilization to identify performance bottlenecks.

***Conclusion:***

This performance evaluation test aims to provide valuable insights into the backend performance of the e-learning application, helping identify areas for improvement and ensuring a seamless user experience under different usage conditions.