Project3_PerformanceTesting_v1.1

Monday, February 13, 2023 2:24 PM

Project 3: Performance Testing

Revised: 7/5/25

General Instructions

Group Work

This can be a *group collaboration assignment*. You will need to choose a partner for this assignment. If you would like to work individually, you can do that too. If you work as a group, but both names on your assignment. Let me know your groups in Slack.

Introduction

- This project allows you to apply the concepts in this class in a working program.
- You need to install JMeter on your PC or MAC. This requires that you install the JDK, which was also a requirement for the JUnit Assignment.
- Refer to the following link for details on JMeter: https://jmeter.apache.org/usermanual/index.html
- There are several tutorials on JMeter. Use any that you have access to. The following one is free. https://www.softwaretestinghelp.com/jmeter-tutorials/
- You are encouraged to deploy your own app for testing. This can be as simple as a static website. If you don't have experience with this, then you are encouraged work on a team with someone who knows how to deploy a webapp of some kind. If you get stuck, the instructor will give you a website for testing.

Part 1: Research on Performance Testing and JMeter

Research the following topics for a writeup that will be included as part of your deliverable.

- Describe three types of performance tests and include graphs (3) for each test that plots "Time" on the X axis and "Number of Threads" on the Y axis.
  - Load
  - Endurance
  - Stress/Spike

- Describe the following components of JMeter (include screen shots of how they are used):
  - Thread groups
  - A HTTP request sampler
  - Config elements
  - Listeners

- Describe an "Application Performance Index."

Part 2: JMeter Video Demo or Test document with Screen Shots

You are encouraged to create a video using video capture tool (PowerPoint, Camtasia, etc.) that will demo the following functionality in JMeter. If you don't feel comfortable doing a video, you can submit

a test document with screen shots.

Perform the following in Jmeter

1. Create a Thread Group for an Endurance Test. Name it appropriately.
2. Create a HTTP Request Sampler
3. Create a GET request.
4. In the Thread Group, select "Config Elements > "HTTP Header Manager." Add appropriate header data.
5. Access Thread Group > "Listeners" > "View Results Tree."

Repeat for a different kind of test

1. Repeat the steps above for a different kind of test, e.g. Load, Stress, etc.

Extra Credit

- What Linux commands can be used to test and evaluate performance on a Virtual Machine or server?

Rubric Summary

CRITERIA	QUESTIONS TO ADDRESS
Introduction	Proved an overview of the project.
Cover the following points in Part 1	Types of performance tests, components of JMeter, Application Performance Index.
Video demo or paper screen shots of Part 2.	Demonstrate all of the points listed in Part 2.
Conclusion and Recommendations	Summary of what you learned about integration testing and APIs. What recommendations would you make to improve this assignment?

Submit your Project #3 as a document to the Dropbox titled for this activity by the deadline. Follow details described in Part 1, Part 2, and the Rubric.

- If you worked as a team, include all team members on the paper.
- Please save in word format (.docx). Mac users can save as a PDF.
- Name your file with the following format: **LastnameFirstnameProject3.doc**