Performance / Load Testing with Jmeter

Duration: **5 Days**

Prerequisites:

- Basic understanding of software development life cycle (SDLC) and Software Testing concepts.
- Familiarity with web applications and how they function (HTTP protocol, client-server architecture).
- Knowledge of basic programming or scripting concepts is beneficial but not mandatory.
- Experience with using a web browser for Internet navigation.
- Basic familiarity with command-line operations (especially if using JMeter on a platform that requires it, such as Linux or macOS).
- Understanding of HTML and web technologies like client-side scripting (JavaScript) may be helpful for recording and scripting in JMeter.
- Prior experience in any testing tool is advantageous but not a requirement.
- Willingness to learn and experiment with new tools and techniques in performance testing.

These prerequisites are designed to ensure that students have a foundational understanding that will allow them to grasp the concepts and hands-on exercises presented in the JMeter course effectively. No advanced technical skills are required, and the course aims to be accessible to those with a basic IT background.

Course Description:

The JMeter Course is a comprehensive training program designed to teach learners the essentials of performance and load testing using Apache JMeter, a popular open-source software. Through this course, participants will understand the fundamentals of performance testing, including concepts like baselines, load and stress testing, and the importance of performance tuning. Students will also learn how to set up and configure JMeter, track errors, and effectively run tests. The course's structured curriculum, starting from the basics and moving towards more complex scenarios like form submissions, session management, and distributed testing, ensures a practical learning experience. Learners will gain hands-on experience with JMeter's components like Thread Groups, Controllers, Listeners, and Timers. By the end of the course, they will be adept at using JMeter for testing web applications, managing user sessions, monitoring server resources, and integrating with other testing tools. This JMeter Certification Course will equip participants with the skills needed to conduct thorough performance evaluations, making them valuable assets in ensuring the scalability and reliability of software applications.

Target Audience:

This JMeter course equips IT professionals with key skills in performance and load testing for robust software delivery.

- Quality Assurance Engineers
- Test Automation Engineers
- Performance Testers
- Software Developers involved in performance tuning
- DevOps Professionals
- Application Support Analysts
- System Architects
- Technical Project Managers
- IT Professionals interested in learning about performance testing

Course Outlines:

Chapter 1: Performance Testing Fundamentals Day-1
- The incident
- The aftermath
- Performance testing
- Performance testing and tuning
- Baselines
- Load and stress testing
- JMeter to the rescue
- Up and running with JMeter
- Installation
- Installing the Java JDK
- Setting JAVA_HOME
- Running JMeter
- Tracking errors during test execution
- Configuring JMeter

Chapter 2: Recording Your First Test Day-1
- Configuring the JMeter HTTP proxy server
- Setting up your browser to use the proxy server
- Using a browser extension
- Changing the system settings
- Running your first recorded scenario
- Anatomy of a JMeter test
- Test Plan
- Thread Groups
- Controllers
- Samplers
- Logic controllers
- Test fragments
- Listeners
- Timers
- Assertions
- Configuration elements
- Pre-processor and post-processor elements

Chapter 3: Submitting Forms Day-2
- Capturing simple forms
- Handling checkboxes
- Handling radio buttons
- Handling file uploads
- Handling file download
- Handling the XML response

Chapter 4: Managing Sessions Day-2
- Managing sessions with cookies
- Managing sessions with URL rewriting

Chapter 5: Resource Monitoring Day-3
- Basic server monitoring
- Setting up Apache Tomcat Server
- Configuring Tomcat users
- Setting up a monitor controller in JMeter
- Monitoring the server with a JMeter plugin
- Installing the plugins
- Adding monitor listeners to the test plan

Chapter 6: Distributed Testing Day-3
- Remote testing with JMeter
- Configuring JMeter slave nodes
- Configuring one slave per machine
- Configuring the master node to be tested against one slave per machine
- Configuring multiple slave nodes on a single box
- Configuring the master node to be tested against multiple slave nodes on a single box
- Executing the test plan
- Viewing the results from the virtual machines

Chapter 7: Timers and Functions Day-4
- JMeter properties and variables
- JMeter functions
- The Regular Expression tester
- The Debug sampler
- Using timers in your test plan
- The Constant timer
- The Gaussian random timer
- The Uniform random timer
- The Constant throughput timer
- The Synchronizing timer
- The Poisson random timer
- The JDBC Request sampler
- Configuring a JDBC Connection Configuration component
- Adding a JDBC Request sampler

Chapter 8: Helpful Tips Day-4
- JMeter integration with selenium
- Handling FTP request
- Installing CA certificate in the browser
- Testing REST web services
- Parameterization using CSV File
- Parameterization using Test Plan