

API & Performance Testing (3 Months)

Duration: 3 Months (~120 Hours)

Mode: Live Online / Classroom

Designation after completion: API Tester / Performance Test Engineer

Tools & Technologies: Postman, RestAssured, JMeter, Swagger, Jenkins

Certifications prepared: Postman API Fundamentals, JMeter Performance Testing

Course Syllabus (12 Weeks)

Week 1 – API Basics

- Introduction to APIs & Web Services
- REST vs SOAP overview
- Swagger / OpenAPI basics
- Assignment → Test REST API using Swagger

Week 2 – Postman Basics

- Collections, Environments, Variables
- Basic CRUD operations in Postman
- Assignment → Create Postman collection for User API

Week 3 – Postman Advanced

- Test scripts in Postman (JavaScript)
- Assertions & schema validation
- Data-driven testing in Postman
- Collection runner & monitors
- Assignment → Automate User API with datasets

Week 4 – RestAssured Setup

- Installing RestAssured with Java + Maven
- Writing GET, POST, PUT, DELETE requests
- Assignment → Automate Petstore API with RestAssured
- Mock Interview 1

Week 5 – API Validations

- Response code validation
- JSON Schema validation
- Assertions with JSONPath
- Assignment → Validate API responses for e-commerce APIs

Week 6 – API Security & Auth

- Authentication types: Basic, OAuth, JWT
- Handling tokens in Postman & RestAssured
- Assignment → Automate secured API with token

Week 7 – Performance Testing Basics

- Introduction to Performance Testing
- Types: Load, Stress, Endurance, Spike testing
- Performance test planning
- Assignment → Identify performance tests for banking app

Week 8 – JMeter Basics

- JMeter installation & interface
- Thread Groups, Samplers, Listeners
- Recording test scenarios with HTTP Proxy
- Assignment → Record login scenario with JMeter
- Mock Interview 2

Week 9 – JMeter Advanced

- Parameterization with CSV files
- Correlation for dynamic values
- Timers, Pre- & Post-processors
- Assignment → Run load test with 100 users

Week 10 – CI/CD & JMeter

- Running JMeter from command line
- Integrating JMeter with Jenkins pipelines
- Generating JMeter HTML reports
- Assignment → Add JMeter test in CI/CD pipeline

Week 11 – Performance Analysis

- Analyzing JMeter results & bottlenecks
- Monitoring server resources (CPU/memory)
- Preparing performance reports
- Assignment → Prepare performance report for sample app

Week 12 – Revision & Project

- End-to-End API Testing (Postman + RestAssured)
- End-to-End Performance Testing (JMeter + Jenkins)
- Capstone Project: API & Performance Testing for e-commerce APIs
- Mock Interview 3