Software Testing

Month 1: Fundamentals of Software Testing

Week 1: Introduction to Software Testing

- Definition and importance of software testing
- Role of testing in the software development lifecycle
- Types of testing: manual vs. automated

Week 2-3: Software Development Lifecycle (SDLC) and Testing Levels

- Understanding various SDLC models
- Different testing levels (unit, integration, system, acceptance)
- Introduction to V-model and Agile testing methodologies

Week 4-5: Manual Testing Techniques

- Test planning and strategy
- Test case design and execution
- Defect reporting and tracking

Week 6: Introduction to Test Automation

- Basics of test automation
- Popular test automation tools (e.g., Selenium, JUnit, TestNG)
- Setting up a basic automation environment

Month 2: Advanced Testing Concepts and Specialized Testing

Week 1-2: Automated Testing with Selenium

- Advanced features of Selenium
- Building and maintaining automation scripts
- Running automated tests in different browsers

Week 3-4: Performance Testing

- Introduction to performance testing
- Load testing, stress testing, and scalability testing
- Tools for performance testing (e.g., JMeter)

Week 5: Security Testing

- Basics of security testing
- Common security vulnerabilities

- Conducting security testing using tools (e.g., OWASP ZAP)

Week 6: Final Project and Emerging Trends

- Guided work on a testing project
- Presentations and feedback
- Emerging trends in software testing