

# **Software Testing**

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## **1. Introduction to Software Testing**

**Topics Covered:**

**What is Software Testing & QA**

**Objectives, Role of testing, Importance**

**Errors, Bugs, Defects, Failures definitions**

**Difference between Manual and Automated testing**

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## **2. Software Development Life Cycle (SDLC) & STLC**

**Topics Covered:**

**SDLC phases (Waterfall, V-Model, Agile/Iterative)**

**Software Testing Life Cycle (STLC) phases**

**Entry/exit criteria for testing activities**

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## **3. Testing Fundamentals & Principles**

**Topics Covered:**

**Seven (or more) testing principles**

**Verification vs Validation**

**Test strategy vs Test planning**

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## **4. Manual Testing Concepts & Techniques**

**Topics Covered:**

**Black-box testing, White-box testing, Grey-box testing**

**Static vs Dynamic testing**

**Test design techniques (Boundary value, Equivalence Partitioning, etc.)**

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## **5. Test Planning, Monitoring & Control**

**Topics Covered:**

**Test plan objectives, Test plan contents**

**Risk analysis, Resource allocation**

**Test execution schedule and monitoring metrics**

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## **6. Test Case Design & Execution**

**Topics Covered:**

**Test scenarios vs Test cases**

**Writing effective test cases**

**Traceability matrix (RTM)**

**Test execution and results tracking**

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## **7. Types & Levels of Testing**

**Topics Covered:**

**Unit, Integration, System, Acceptance testing**

**Functional vs Non-functional testing (performance, usability, security)**

**Regression, Smoke, Sanity, Ad-hoc testing**

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## **8. Defect Tracking & Reporting**

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### **Topics Covered:**

**Bug lifecycle, Severity/Priority**

**Bug reporting templates**

**Tracking tools overview (JIRA, Bugzilla, etc.)**

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## **9. Quality Assurance & Standards**

### **Topics Covered:**

**QA vs QC**

**ISO standards, CMM/TQM basics**

**Test metrics & quality measurement**

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## **10. Basics of Automation Testing**

### **Topics Covered:**

**Why automation? Benefits & scope**

**Manual vs Automated testing comparison**

**Selecting tests for automation**

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## **11. Selenium WebDriver & Automation Tools**

### **Topics Covered:**

**Introduction to Selenium IDE/WebDriver/Grid**

**Locator strategies (ID, XPATH, CSS, etc.)**

**Handling web elements in automation scripts**

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## **12. Automation Frameworks (TestNG/Maven)**

**Topics Covered:**

**Automation frameworks overview**

**TestNG basics (annotations, grouping, reporting)**

**Maven project structure**

**Page Object Model (POM) principles**

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## **13. Database/SQL & API Testing (Optional Tech Expansion)**

**Topics Covered:**

**Basic SQL queries for testing data validation**

**Introduction to API testing using tools like Postman**

**JSON/XML data basics for API tests**

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## **14. Project Work / Case Studies / Interview Preparation**

*Boost your creativity*

**Topics Covered:**

**Real-world scenario testing**

**Test Plan / Test Case project**

**Resume tips & mock interview questions**

**ISTQB or certification preparation guidance**

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