



Effective Software Testing Methodology workshop (3 Days)

Preface: Today one of the factors to achieve software quality is through comprehensive Testing. With crunched schedules and stringent budget, testers need structured approach to handle testing as a process through set of tools.

This course is designed for people who aspire to do the testing as a professional work to satisfy customers through effective testing.

Participants will learn how to create an effective test strategy, how to design creative test cases, how to optimize test cases to get the most testing from the fewest number of cases and how to collect metrics and analyze the report for improvements.

Attendees will leave this course with a solid foundation for testing in situations which are very diverse and dynamic. This course is centered around a common case study which builds throughout the course. You will emerge from this three-day session knowing how to plan and conduct tests in diverse and complex environments.

Objectives

This course will build on basic testing principles and introduce new methods to teach testers how to:

- Describe the major software development lifecycles with testing process adaptation
- Develop a test strategy
- Write a high-level test plan
- Develop test scripts and test cases using a wide variety of techniques
- Create decision tables
- Get the most testing from the least number of test cases
- Track and control test scripts and cases
- Assess risk from the project, technical and business perspectives
- Describe which tools are the best to use in a particular test
- Write meaningful test reports
- Measure your testing efforts
- Use the results from testing to improve the testing process and other processes

Who Will Benefit

- Test analysts
- Test engineers
- Software developers
- Project managers
- Test lab managers
- QA analysts

Take Away

- Practical exposure in preparing Test Plan, Test Case, Metrics Report and Analysis
- Sample Templates and Checklists for all testing activity
- Exposure through testing tool to understand the testing efficiency
- End 2 End comprehensive testing course material

Course Outline

1. Introduction to Software Testing and Testing Methodologies
 - a. Testing Objectives
 - b. Testing Process Methods
 - c. Integration of Project Management, Testing Management and QA

2. General Testing Concepts
 - a. Testing Phases
 - b. Testing Approaches
 - c. Testing Levels
 - d. Testing Types
 - e. Test Assets
 - f. Test Automation

3. Understanding Functional Requirements
 - a. Need of understanding requirements
 - b. How to Analyze requirement as a Test Analyst
 - c. Requirement Traceability and Verification Matrix
 - d. Handling Non Functional requirements

4. Test Case Design and Development
 - a. Need of Test Case Design
 - b. Goal of Test Case Design
 - c. Process to be followed for effective Test Case Design
 - d. Test Case Design Techniques
 - e. Test Case Design Phases
 - f. Test Case Design for Non Functional requirements

5. Case Study for Designing Test cases
 - a. Helps the Analysts to understand the requirements, assists to prepare Test Design and Test Case documents

6. Defect Management and Defect Life Cycle
 - a. Explanation for Defect
 - b. Understanding Defect properties – Defect Severity, Priority etc
 - c. Process to report Defects
 - d. Defect Cycle Stages
 - e. Defect Metrics
 - f. Defect Analysis
 - i. RCA
 - ii. Statistical Growth Analysis
 - iii. Orthogonal Defect Classification (ODC)

7. Advanced Testing Techniques
 - a. Testing Techniques
 - i. White Box
 - ii. Black Box
 - b. White Box Testing
 - i. Control Flow
 - ii. Data Flow
 - iii. Mutation Testing

- c. Black Box Testing
 - i. Equivalence Partitioning Method
 - ii. Boundary Value Analysis
 - iii. Decision Tables
 - iv. Cause Effect Graph
 - v. State Transition Testing
 - vi. Orthogonal Array Strategy Testing

- 8. Test Management Process
 - a. Test Management Definition
 - b. Need for Test Management
 - c. Test Planning
 - d. Risk Management
 - e. Test Estimation
 - f. Test Strategy
 - g. Status Reporting and Tracking
 - h. Defect Management
 - i. Reporting and Analysis
 - j. Scheduling and Resource Management

- 9. Case Study to understand the complexity through Cyclomatic method

- 10. Quality Assurance
 - a. Definitions of Quality
 - b. Objectives of QA
 - c. Reviews
 - d. Metrics
 - e. Defect Prevention
 - f. Configuration Management

- 11. Agile Testing
 - a. Changes from Traditional to Agile Testing
 - b. Test Driven Development
 - i. Test and Implementation Code as Design
 - ii. Automation
 - c. Integration of Customer, Analyst, Developer and Tester
 - d. Fine-tuning traditional process to Agile methods

- 12. Organization Standards and Practices
 - a. Checklist for each phases
 - b. Template for each phases
 - c. Process to be followed in the Testing phases
 - d. Metrics needed for Testing
 - e. Tracking, Reporting and Analyzing
 - f. Optimization