

# Software Testing

## Manual Testing (1 Month)

This module is intended for Quality assurance engineers, test engineers, technical managers, software engineers, customer support engineers and anyone who needs to learn manual testing and also prepare for Software testing certifications offered by ISTQB, QAI such as CTFL, CAST, etc.

### Prerequisites

These prerequisites are not mandatory but preferably participants should have:

- IT Experience
- Good Reading, Writing & Speaking Skills (In English).

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

- a. What is Software Testing?
- b. Why Testing is necessary?
- c. Testing & Quality.
- d. Verification & Validation.

### **2. Quality Assurance & Quality Control**

- a. What is Quality?
- b. What is Quality Assurance & Quality Control?
- c. Introduction to CMM, ISO & TQM.

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### **3. Introduction to Software Development Life Cycle ( SDLC)**

- a. Waterfall Model, Prototype Model, Incremental Model.
- b. RAD Model, Spiral Model, V- Model.

### **4. Review Process**

- a. Informal Review
- b. Walkthrough
- c. Inspection

### **5. Different types of Testing.**

- a. Unit Testing, Integration Testing
- b. System Testing, Acceptance Testing, Security Testing.
- c. Some more testing types like Load testing, Stress testing, Regression Testing, Retesting, Sanity testing, etc.

### **6. Test Design Techniques like –**

- a. Equivalence Partitioning, Boundary Value Analysis.
- b. Statement Coverage, Decision Coverage, Path Coverage.

### **7. Introduction to Bug Life Cycle (Defect Management)**

- a. What are Bug, Error, and Defect & Failure?
- b. Causes of Software Defects.

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c. Sample Bug Report Format.

## **8. Introduction to Software Testing Life Cycle (STLC).**

## **9. Introduction of Test Management.**

- a. What is Test Case, Test Plan, Test Scenario etc.?
- b. Test Planning, Management, Execution & Reporting.
- c. Sample Test Case Format.

## **10. Introduction to Software Configuration Management (SCM).**

# **Automation Testing**

## **Selenium**

Selenium Introduction

Selenium History

Supported Browsers and Platforms

Flexibility and Extensibility

Selenium-IDE

Introduction

IDE Features

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Building Test Cases

Running Test Cases

Selenium Commands

Test Suites

Commonly Used Selenium Commands

Verifying Page Elements

Assertion or Verification?

Locating Elements

JavaScript and Selenese Parameters

Alerts, Popups and Multiple Windows

User Extensions

Executing Selenium-IDE Tests on Different Browsers

Troubleshooting

## **Selenium 1 (Selenium RC)**

Introduction

How Selenium RC Works

Installation

Specifying the Path to a Specific Browser

Selenium RC Architecture

Troubleshooting Common Problems

## **Selenium 2 (WebDriver)**

Introduction of WebDriver

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WebDriver and the Selenium-Server

Setting Up a Selenium-WebDriver Project

WebDriver: Advanced Usage

Explicit and Implicit Waits

Remote WebDriver

Advanced User Interactions

Parallelizing Your Test Runs

Selenium-Grid

Quick Start

What is Selenium-Grid?

When to Use It

Selenium-Grid 2.0

Selenium-Grid 1.0

How Selenium-Grid Works—With a Hub and Nodes

Starting Selenium-Grid

Configuring Selenium-Grid

Hub Configuration

Node Configuration

Timing Parameters

Common Errors

Troubleshooting

## **JMeter**

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What is JMeter

What can you test in JMeter

Installing JMeter

JMeter and Logs

Running JMeter Tests in Windows

Running JMeter Tests in Unix

The Elements of a JMeter Test Plan

Test Plan vs WorkBench

Thread Group

Samplers

Listeners

Assertions

Simple Controls

Creating Simple Test Plan

Running the Test Plan

Recording Scenario

Using different options of Proxy Server

Timers

Saving Results

Biscuits manager

Assertions

Testing different Browsers

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Switching Servers

Functional Testing

Reusing Elements

Variables

Variables from command line

Variable Substitution during Recording

Dynamic Variables

Running Test Periodically

Extractors

Extractors Examples

Extractors Exercises

Loops and Counters

Stress Testing

Understanding Statistics

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