Manual Testing & Test Automation with Selenium

Course Objectives:

- This course is designed to impart training on testing with the concepts of manual testing and Automation with Selenium.

MANUAL TESTING

Introduction to Software Testing

- Product Vs Project
- What is Quality?
- Bug / Defect
- What is testing?
- Why Testing?

Software Development Life Cycle

- Initial (or) Requirements phase.
- Analysis phase Design phase
- Coding phase
- Testing phase
- Delivery and Maintenance phase
- How to choose model for Project

Testing Methodologies

- Black Box Testing
- White Box Testing
- Grey Box Testing

Levels of Testing

- Unit Level Testing
- Assembly Level Testing
- Product Level Testing
  - Top down Approach
  - Bottom Up approach
  - Stubs & Driver

- User Acceptance Testing
  - Alfa Testing
  - Beta Testing

- System Level Testing (Non Functional Testing)

Software Development Models

- Waterfall Model
- Prototype Model
- Evolutionary Model
- Spiral Model
- Fish Model

- V-Model
- Agile Process

Environments

- What is meant by a Web Application?

Different Ways of Testing

- Manual Testing
- Automation Testing
- Drawbacks of Manual Testing
- Drawbacks of Automation Testing

Types of Testing

- Build Verification Testing/BAT/Pre SRN Testing
- Smoke Testing and Sanity Testing
- Regression
- Re-Testing
- Alpha Testing
- Beta Testing
- Static Testing
- Dynamic Testing
- Installation Testing
- Compatibility Testing
- Monkey Testing
- Usability Testing
- End-To-End Testing

- Exploratory Testing
- Security Testing
  - Authentication Testing
  - Direct URL Testing
  - Firewall Leakage Testing

- Port Testing
- Reliability Testing
- Mutation Testing
- Adhoc Testing
- Globalization Testing
- I18N Testing
- L10N Testing

Software Testing Life Cycle

Test Planning

- What is meant by a Test Plan?
- Why Planning is Important?

Test Development

- Use Case Reviews
- Types of Test Cases
- Formats of Testing Documents
- Testing Process
- Test case design
- Test design techniques

- BVA
  - ECP and Error Guessing

- Traceability Matrix

Test Execution

- Execution Process
- End-to- End Scenarios execution

Result Analysis - Bug Tracking and Reporting

- Types of Bugs
- Identifying the Bugs
- Isolation the Bugs
- Bug Life Cycle
- Reporting the Bugs
- Classical Bug Reporting

Test Closure Activity

- Test Execution stop criteria
- Test summary reports

Additional concepts

- What is Continues Integration?

- Jenkins Integration & Setup.
- Execute the programs from Jenkins.

Real Time Process Awareness with Terminology

- Quality Assurance
- Quality Control
- NCR
- Inspection
- Audit
- CAPA
- Software Configuration Management
- Build Release process
- SRN
- S/W Delivery process
- SDN
- Reviews
- Peer-Review
- Traceability Matrix
- Metrics

Non Functional Testing

- Load Testing
- Performance Testing
- Stress Testing
- Volume testing
- Soak Testing
- Spike Testing

SELENIUM

Introduction

- What is Automation Testing
- When best to go for Automation
- Advantages of Automation
- Criteria for Automation

Introduction to Selenium

- What is Selenium
- Use of selenium
- Features of Selenium
- Differences between Selenium and QTP

Evolution of Selenium

- Selenium IDE
- Selenium RC & Grid
- Selenium Web Driver

Selenium Web Driver

- Creating environment for Selenium
- Creating basics scripts with Webdriver

- Creating scripts by using Functions with Webdriver
- Running the scripts in Eclipse
- Introducing Web Driver's Drivers
- Browser commands in Webdriver with examples
- Interactive commands in Webdriver with examples
- Information commands in Webdriver with examples
- Validation commands in Webdriver with examples
- What is validation
- What is the use of validation in Automation testing
- When to use validation
- How to use validations
- Locatrors in Webdriver
- Debugging the script
- How to handle Popups and alert messages
- How to develop the scripts in Real time with Oops

Core Java Fundamentals

- Java Programming Language Keywords
- Data Types
- Class and Object
- Encapsulation
- Inheritance
- Polymorphism
- Overridden and Overloaded Methods
- Abstraction
- Array Declaration, Construction and Initialization

Flow Control, Exceptions, and Assertions

- Writing Code Using If and Switch
- Writing Code using Loops
- Handling Exceptions
- Working with the Assertion Mechanism
- Using the java.lang.String Class
- Using the java.lang.Math Class
- Using Wrapper Classes
- Using the equals() Methods with Strings, Wrappers and Objects

Defining, Instantiating, and Starting Threads

- Preventing Thread Execution
- Synchronizing Code
- Thread Interaction

JUnit Introduction

- Understanding unit testing Frameworks
- Setting up JUnit
- Testing with Junit
- Junit annotations

TestNG Framework

- What is TestNG
- Create TestNG.xml file
- Integrate the Selenium Scripts
- Reporting Results & Analyze
- TestNG annotations

- Batch execution in TestNG
- Providing the description to the test methods and skipping the tests
- What is the differences between Junit and TestNG

Test Data & Object Repository

- What is Test Data
- What is object repository
- Hhow to use object repository in Framework
- What is the use of maintaining Object repository