

AN ISO 9001:2008 CERTIFIED



# TESTING TOOLS

## (Manual + Selenium) with PROJECT

MANUAL TESTING



SELENIUM



Mr. Nagesh K.

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## Course Objectives:

This course is designed to train the fresher's, intermediate and professionals on testing with the concepts of manual testing and Automation with Selenium. The main focus is, once the course is completed the candidate can go for the interview with lots of confidence in Testing concepts with Automation skills

# Testing Tools Content

## (Manual 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

### Where Exactly Testing Come into picture?

- Conventional Testing
- Unconventional Testing

### Testing Methodology

- Black Box Testing
- White Box Testing
- Gray Box Testing

### Levels of Testing

- Unit Level Testing
- Module Level Testing
- Integration Level Testing
  - Top down Approach
  - Bottom Up approach
  - Stubs & Driver
- User Acceptance Level 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

- One Tier Architecture
- Two Tier Architecture
- Three Tier Architecture
- N- Tier Architecture
- Difference between Web application and client server application

## 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

- Contents of Test Plan

### 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
- Common Repository oriented BRP

- Bug Tracking Tool Oriented BRP

- Bug Life Cycle (BLC)

### Bug Tracking Tools

- Bugzilla
- TestLink

### Test Closure Activity

- Test Execution stop criteria
- Test summary reports

### Additional concepts

- How the company will maintain the secured files
- Introduction to CR
- SVN Integration
- 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
- Test Bed
- Escalation Process
- Slippage
- Base Lining the Documents
- Publishing the documents
- Common Repository Management
- Patch Build
- PPM
- PPR
- MRM

- Defective Product
- Change Request
- Impact Analysis
- Walk Through
- Code Walk Through
- Code Optimization
- Work Around
- Defect Age
- Latent Defect

## **Testing Principles**

### **Ways of Testing**

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

### **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
- When selenium can be useful in testing
- Features of Selenium
- Differences between Selenium and QTP
- Selenium Components
- Selenium IDE
- Selenium RC
- Selenium Web Driver
- Selenium Grid
- Selendroid
- Appium

## Configuration of IDE & Dev Scripts

- Recording the script
- Running the script
- Object Identification
- Difference between Testcase and test suit
- Languages supported while Recording
- Synchronization in Selenium IDE
- Testing Vs Selenium IDE
- When to use Selenium IDE
- How to run the recorded script Against other browsers
- Why companies are not using Recording tools

## Selenium 2 / Web Driver

- Creating environment for Selenium ?
- Basic programs in RC
- Differences between Selenium RC and Webdriver
- Creating basics scripts with Webdriver
- Creating scripts by using Functions with Webdriver
- Running the scripts in Eclipse
- Selenese
- 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
- WebDriverBackedSelenium
- What is validation
- What is the use of validation in Automation testing
- When to use validation ?
- How to use validations
- Locators in Webdriver
- Debugging the script
- Maintaining synchronization Points
- How to handle Popups and alert messages in Webdriver
- Recognizing Similar Elements
- Working with Web Tables
- Working with dynamically changing Objects

## Automation Life Cycle Test Estimation Frameworks

- What is a Framework
- Types of Frameworks
- Modular framework
- Data Driven framework
- Keyword driven framework
- Hybrid framework
- Use of Framework
- How to develop the framework
- Integration of the framework
- How to execute the scripts from framework

## Developing reusable scripts

### 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

## Statements

- 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

- Proving it works Starting from scratch
- 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 and Run from TestNG
- Reporting Results & Analyze
- Run Scripts from Multiple Browsers
- 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

## Testdata & Object repository

- What is Test data
- What is object repository
- How to use object repository in Framework
- What is the use of maintaining Object repository

- Types of creating object repository

## Additional concepts

- Actions
- How to use Key Commands Mouse Over
- Scrolling Down
- What is ANT and Maven
- Build Management with Maven
- Setup the project with Maven
- Developing the scripts and Converting src to executable file

## Advanced concepts

- How the company will maintain the scripts
- Introduction to CR
- SVN Integration
- What is Continues Integration
- Jenkins Integration & Setup
- Execute the programs from Jenkins

## Selendroid

- Setting up the environment with Android SDK
- Remote Webdriver with Android
- Executing the scripts on Android mobiles and Emulators

## Appium

- Setting up the environment with Appium
- Remote Webdriver with Appium
- Executing the scripts on mobiles and Emulators

## Course Highlights

- After completion of the course the resource can able to perform below tasks:
- Can be able to set up the selenium environment in his organization
- Can able to automate the applications with Webdriver
- Selenium Webdriver – usage, commands and techniques
- Confidently he can develop the Frameworks as well as can use TestNG & JUNIT
- View and analyze results
- Continuous Integration (CI) using Jenkins and integration with WebDriver
- Data Driven example using Excel Configure Web Driver in Eclipse
- SVN source control integration

# REGULAR / WEEKEND / ONLINE TRAINING

## COMPLETE JAVA

- ☛ Core Java
- ☛ SCJP/OCJP
- ☛ Adv. Java
- ☛ Oracle
- ☛ Struts
- ☛ Hibernate
- ☛ Spring
- ☛ Web Services
- ☛ Design Patterns
- ☛ Relatime Tools

## COMPLETE .NET

- ☛ C#.NET
- ☛ ASP.NET
- ☛ C, C++, DS
- ☛ UNIX / LINUX
- ☛ SQL SERVER
- ☛ MVC 5 & WCF
- ☛ HADOOP
- ☛ ANDROID
- ☛ MSBI
- ☛ SHARE POINT
- ☛ CRT
- ☛ APTITUDE TRAINING

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**DURGA**  
**Software Solutions®**

### AMEERPET

# 202, 2nd Floor,  
HUDA Maitrivanam,  
Ameerpet, Hyderabad-500038.  
Ph: 040-64512786, 09246212143

### S.R. NAGAR

Canara Bank Building,  
2nd Floor,  
Near S. R Nagar Police Station,  
Hyderabad-500038.  
Ph: 040-64512786, 8096969696

### MADHAPUR

Plot No: 58,  
2nd Floor, Sai Nagar,  
Madhapur, Hyderabad-500034.  
Ph : 9505905786

### KPHB

3rd floor, above HDFC bank  
Near JNTU signal, Kukatpally,  
Hyderabad-500085  
Ph : 72072 12427

### BANGALORE

# 8, Kriti Building,  
Behind Staples Show Room,  
SGR Dental College Road,  
Munnekolala, Marthahalli.  
Ph : 9686031777

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