TESTING TOOLS

Manual Testing and
Selenium+ Java+Appium+SoapUI
with **Frameworks**

Testing TOOLS

Selenium

Selenium

Leaders in Training

Manual Testing

Se

MIND Q SYSTEMS
QUALITY, TIME AND AGAIN

Manual Testing (In Agile & DevOps environment)

Introduction
- Introduction to software Testing
- Software Development Process
- Project Vs Product
- Objectives of Testing
- Testing Principles

Software Architecture
- Different Layers (tiers)

System Environment
- Development
- QA
- UAT
- PROD

Software Development Life cycle
- SDLC

SDLC Models
- Waterfall Model
- V-Model
- Incremental Iterative Models
- Agile Methodology
    - Introducing Agile Process
    - Agile Manifesto
    - Agile Principles

Software Testing Methods
- White Box Testing
- Black Box Testing
- Grey Box Testing
- Agile Testing
- Ad Hoc Testing
  Levels of Testing
  1. Unit Testing Test Approach –
     - TDD (Test Driven Development)
  2. Integration Testing Test Approach -
     - Big Bang Integration
     - Top Down approach
     - Bottom up approach
     - Stub and Driver
     - Continuous integration
  3. System Testing
     Test Approach –
     - Requirement based (Traceability)
     - Risk-Based (Risk factor number)

Functional Testing & Non Functional Testing
- Compatibility Testing
- Performance Testing
- Load Testing
- Volume Testing
- Stress Testing
- Recovery Testing
- Parallel Testing
- Compliance Testing
- Mutation Testing
- Security Testing
- Usability Testing

Regression Testing & Types
- Unit Regression
- Regional Regression
- Full Regression

4 User Acceptance Testing
- Alpha Testing
- Beta Testing
- Regulatory Acceptance Testing
- Operational Acceptance Testing
- Contractual Acceptance Testing

5. Maintenance Testing
   - Maintenance Test Life cycle
   - Change Request
   - Impact Analysis Document
   - Type of Maintenance
   - Corrective
   - Perfective
   - Adaptive

Software Testing Life Cycle (STLC)
- Requirement Analysis
- Test Planning
- Test Scenario / Test Case Design
- Test Environment Setup
- Test Execution
- Test Closure

Test process Documents
- Test plan
- Test scenarios
- Test Case
- RTM (Requirement Traceability Matrix)
- Defect Report

Test Case Authoring
- Functional Test case
- Review of Test case
- Walkthroughs
- Inspection
- Peer Review
- Traceability Matrix

Build Release Process
- Standalone Application
- Client – Server Application
- Web- Application

Globalization Testing
- Internationalization Testing (I18N)
- Localization Testing (L10N)

Defect Reporting & Tracking
- Defect Reporting
- Defect Life Cycle
- Severity & Priority
- Defect tracking tools

Test Closure
- Criteria for Test Closure
- Test Summary Report Agile Methods and Approaches
- Introduction to Kanban & Best Practices
- Scrum
- Getting Agile with Scrum
- Scrum Origin
- Projects where Scrum can be implemented
- Characteristics of Scrum
- Scrum framework
- Main roles of a Scrum team
- Product Owner
- Scrum Team
- Team
- Chickens
- Planning in Scrum
- Goals of Planning
- The planning onion
- Define the Vision
- Create the Product Roadmap and Organize the Scrum Teams
- Release Planning
- Sprint Planning
- Daily Scrum

- Ceremonies in Scrum
- Sprint Planning Meeting
- The Daily Scrum
- Sprint Review Meeting
- Sprint Retrospection
- Main artifacts of a Scrum project
- Product backlog
- Sprint backlog
- Burn down charts
- Potentially Shippable Product Increment
- Task Board
- Using User Stories to Scale Down a Project
- Concept of User Stories
- Format of User Stories
- Writing User Stories - Examples
- Definition of Done

Agile Testing Concepts
- What is agile testing?
- Agile testing quadrants
- Agile Testing principles
- Exploratory Testing
- User stories
- Story points
- Designing test scenarios and test cases based on user stories

Test / Project Management Tool: JIRA
- Importance of JIRA and How to Install JIRA?
- What are the features of JIRA
- How to create a JIRA Project.
- Adding Users to our JIRA Account
- Importance of Defect Life Cycle and understanding the various stages / states of a defect.
- Converting a Defect Life Cycle into JIRA workflow for a project
- Adding Bugs to the JIRA Project
- Attaching screenshots to the Bugs in JIRA
- Assigning, Closing, Adding comments etc to the JIRA bugs.
- Creating and Customizing JIRA Dashboard.

Additional
- Project Metrics
- QA & AC
- ISO & CMM Standards
- Testing Certifications
- Organization hierarchy
- Role of Projects Team members
- Interview Questions

Case Studies

- **Case Studies & Workshops**
- **Interview Tips**
- **Resume Preparation**
- **100% Placement Assistance**

Selenium

Introduction
- What is automation testing?
- Difference between Manual & Automation Testing
- When to go for Automation
- Advantages of Automation
- Licensed Automation Tools
- Open Source Automation Tools

Introduction of Selenium
- Overview of Selenium
- Different Selenium Components(Selenium IDE, Web Driver, Selenium GRID)
- Differences between Selenium and other Tools

Configuring Eclipse IDE
- Installation of Java
- Installation Eclipse IDE
- How to create new java project
- How to create a new java class
- Compiling and Running java class
- Analyzing the results of java program

Learning Java
- Introduction to Java programming
- Primitive and Non-Primitive Data types
- Operators in Java
- Wrapper Classes
- Types of Variable (Local, Instance and Static Variables)

Conditional Statements
- If else condition
- If else if condition (nested if)
- Switch case statement
- Examples for all the above conditions

Loop Statements
- While loop
- Do while
- For loop
- For each loop
- Examples for all the above loops

Arrays
- What is an Array?
- Type of Arrays
- Working with Single Dimensional and Multi Dimensional Arrays
- Using Clone() and arraycopy()

Packages, Classes and Objects
- Packages
- Classes ,Objects and Object References
- Constructors
- Methods(instance,static)
- Access Modifiers (private, default, protected and public)
- Method arguments call by value and call by reference
- How to write user defined methods

Interface& Abstract Class
- How to define Interface
- How to implement Interface
- How to define Abstract Class
- Abstract method vs. Concrete method
- Interface vs. Abstract class vs. Concrete Class
- Implements vs. extends

Encapsulation
- What is hiding data
- Using access modifiers private, default, protected, public
- Accessing the public methods outside the class
- Difference in accessing in same package / different package

Inheritance
- What is Inheritance and Why to use Inheritance?
- Single Level Inheritance, Multi-Level Inheritance, Multiple Inheritances (Through Interface)
- super keyword
- this keyword
- Composition / Aggregation
- Inheritance(Is a Relationship) vs. composition(Has a Relationship)

Polymorphism
- What is polymorphism?
- Compile time Polymorphism
- Method overloading
- Constructor overloading
- Runtime Polymorphism
- Method Overriding
- Is it possible to override Constructor?
- final keyword

Exception handling
- What are exceptions and errors?
- Checked Exception or Compile time Exception
- Unchecked Exception or Runtime Exception
- How to handle exceptions in the program?
- Using try and catch blocks
- Using of throws
- Throw ,Throwable , finally

Collections
- Overview of Collections API
- Arrays vs Collections
- List, Set, Map interfaces
- Using Array List Class
- Working with elements of a Collection
- Examples for all the above concepts

Database Connection (JDBC)
- How to configure MySQL database
- How to configure with Eclipse
- Connection Interface Commands
- Statement Interface Commands
- Result Set Interface Commands
- How to execute query

Debug Java code / Scripts in Eclipse
- Understanding Debug
- Using Breakpoints
- Verify the values during debug
- Using step over, step into

Selenium WebDriver
- Features and Limitations of Selenium Webdriver
- Configure Selenium with Eclipse IDE(Adding selenium Libraries)
- Configure Selenium with Chrome, Firefox Driver, IE, Safari, Opera browsers
- WebDriver Interface
- Chrome Driver, Firefox Driver, Internet Explorer Driver, Edge Driver classes
- Chrome Options, Firefox Options, Internet Explorer Options classes
- Browser Commands
- Navigation Commands
- Handling Cookies

Locators
- Object Identification
- Different types of Locators
- Xpath, relative Xpath, complete Xpath, css Selector
- How to build dynamic Xpath
- Identifying Objects using Xpath and cssSelectors
- How to use Regular Expressions in Xpath and CssSelectors
- How to configure ChroPath ,TruePath, FireBug and FirePath
- Html Tags and DOM structure

Text Field, Check box, Radio Buttons, Links and Buttons
- Handling TextField and Text Area
- Handling Checkbox's
- Handling RadioButtons
- Handling Links and Buttons
- WebElement Interface methods
- findElement and findElements

Dropdowns, Web Tables, Calendar
- Handling dropdowns/listboxes
- Select Class methods
- Working with Dynamic Web Table Elements
- Extracting data from WebTable's
- Custom methods for WebTable's
- Select date from calendar

Alerts, Frames, Windows
- Handling alerts
- Alert interface methods
- Handling Frames /IFrames
- Handling Nested Frames
- How to handle multiple browsers or Tabs
- Target Locator interface methods

Actions Class, TakesScreenshot, JavaScript Executor
- Mouse Events
- Click, double Click, contect Click, drag And Drop, click And Hold, release
- Keyboard Events
- How to scroll page
- Capture screenshot
- How to execute JavaScript

Synchronization
- How to use implicitWait, pageLoadTimeout, setScriptTimeout
- How to use ExplicitWait
- How to implement WebDriverWait
- What are different ExpectedConditions and how to use
- How to implement FluentWait

Miscellaneous
- Headless browsers
- Handling Notifications
- Handling Auto Suggestions
- Highlight objects
- Scroll into view
- How to find broken links
- Different Selenium Exceptions

- Capture screen shot of entire page
  Auto It, Sikuli, Robot
- Configure Sikuli with Selenium
- File Upload/Download with Sikuli
- Configure Auto It with Selenium
- File Upload/Download with Auto IT
- File Upload/Download with Robot

Apache POI
- Configure Apache POI with Eclipse.
- Workbook ,Sheet ,Row ,Cell Interfaces methods
- HSSFWorkbook, HSSFSheet, HSSFRow,
  HSSFCell methods
- XSSFWorkbook, XSSFSheet, XSSFRow,
  XSSFCell methods
- How to read data from Excel file(XLS or XLSX)
- How to write data to Excel file(XLS or XLSX)

TestNG
- TestNGFeatures
- Configure TestNG with Eclipse
- TestNG Annotations
- Integrate Selenium Scripts with TestNG
- Create TestNG.xml file
- Assert methods
- Hard Assert vs. Soft Assert
- Cross browser testing
- How to use DataProvider
- Reporting Results
- Listeners
- Sequential Execution vs. Parallel Execution
- How to create batch file

Maven
- What is maven?
- Installing Maven in Local Machine
- Creating Maven project in Eclipse

- Understanding of POM .xml
- Maven Integration with TestNG
- Maven Lifecycle
- Executing Scripts Using Maven build tool
- Advantages Maven Build Tool

Jenkins
- Overview of Jenkins
- Installing Jenkins
- Configure Maven project in Jenkins
- Configure Non Maven project in Jenkins
- Creating Jobs in Jenkins
- Scheduling Jobs for timely Execution
- Integration with Selenium Scripts and Running
  Scripts
- Configure Email notification in Jenkins

Selenium Grid
- Overview of Selenium Grid
- Remote WebDriver and Desired Capabilities class
- Configuring Hub
- Configuring Node
- Running scripts on Remote system
- Run Selenium scripts in parallel on Remote system.

GitHub & Git
- How to create GitHub Account.
- Configure Git and GitHub with Eclipse
- Git & GitHub Commands
- Integrate with Framework

Automation Life Cycle
- What is a Framework?
- Types of Frameworks
- How to implement Data Driven framework
- How to implement Page Object Model(POM)
- How to implement Keyword driven Framework
- How to implement Hybrid framework
- How to execute the scripts from frameworks

Appium
- Introduction to Mobile Automation & Appium
- Installation of Android SDK on Windows OS
- Installation of Appium on Windows OS
- Configure Appium Client libraries
- Configuration of Environment variables
- How to use UIAutomator Viewer
- How to use Appium Inspector
- Different types of Locators
- Mobile Web App Automation
- Native App Automation
- Hybrid App Automation
- Configuring & executing scripts on Emulator and Real
  Device

Katalon Studio
- Download and Install Katalon Studio
- Configuring Katalon Studio for Web Applications
- How to create TestCase and TestSuite
- How to create Object Repository
- Create Automation Script using Record and
  Playback, Manual Mode, Script Mode
- How to integrate with other environments

Cucumber (Overview)
- How can we use it with Selenium Web Driver
- BDD Testing: Cucumber with Selenium