# Selenium Syllabus

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Software Test Level: System Testing

Software Test Type: Functional Testing

Software Test Method: Automated Testing

Test Tool: Selenium

Note: Automated Functional Testing at System Test Level using Selenium

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Select Selenium Tool/s, Programming Language to write Test Scripts and TestNG Framework as Test Runner.

Selenium Suite of Tools/Selenium Components

i) Selenium IDE

ii) Selenium RC

iii) Selenium WebDriver

iv) Selenium Grid

> Selenium IDE is a Record and Playback tool, no programming support and it is prototype tool, not suitable for complex Test Design, so eliminate Selenium IDE, next Selenium RC is out dated, next Selenium Grid, It is only for Test Execution/Parallel Testing and doesn't support Test Design,

> So now we have only one tool for creating and executing Test cases, that is Selenium WebDriver.

> Selenium WebDriver supports Java, C#.NET, Python, Perl, Ruby and PHP, nowadays most of Selenium Testers are choosing Java, so select Java for Selenium.

> Testing Framework Selection depends on Programming platform, we select Java as programming platform, and then supported Framework is either JUnit or TestNG, select TestNG Framework for selenium as Test Runner.

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## I) Selenium Fundamentals

1) Introduction to Selenium

2) Selenium Test Life Cycle

## II) Java for Selenium

Java Standard edition or core Java is enough for Selenium Testing, In Core Java, learn,

Java Environment Setup

1) Java Data Types,

2) Java Modifiers

3) Java Variables

4) Java Operators

5) Java Comments

6) Java Control Flow

    i) Java Conditional or Decision Making Statements

    ii) Java Loop Statements

    iii) Java Branching Statements

7) String Handling in Java

8) Java Array and ArrayList

9) Java IO

10) Java Methods

    i) Predefined Methods

    ii) User defined Methods

11) Java Constructor

12) Exception Handling

13) Fundamentals of Object Oriented Programming

    i) Inheritance

    ii) Polymorphism

iii) Abstraction

iv) Encapsulation

## III) Selenium WebDriver

1) Introduction to Selenium WebDriver

2) Selenium WebDriver Environment Setup

3) Web Elements and Operations

4) Web Element Locators

i) Element Locators

ii) Inspecting Elements

5) Selenium WebDriver API Commands

i) Browser Commands

ii) Commands for Web Elements

iii) Verification Commands

6) Writing Basic Selenium Test Cases

7) Enhancing Selenium Test Cases

i) Inserting Verification Points

ii) Creating & Inserting Reusable Components

iii) Create Object Repositories/POM

iv) Parameterization

v) Synchronization

vi) Exception Handling etc…

8) Selenium Data Driven Testing

9) Selenium Cross Browser Testing

10) Selenium Batch Testing

## IV) TestNG Testing Framework for Selenium

1) Install TestNG for Selenium

2) TestNG Annotations and Attributes

3) Creating Test Batches

4) Grouping Test Cases

5) Prioritizing Test Cases

6) Executing Test batches and generating Test Reports

7) Data Driven Testing

8) Parallel Testing

## V) Automation Framework Design & Implementation

1) Maven Integration and Jenkins Integration

2) Create Folder Structure

3) Create Test Automation Resources (Object Repositories, Customized Commands, Reusable Functions, Test Data etc,)

4) Create Test Cases using Test Automation Resources

5) Execute Test Batches using Driver Script and generate Test Result

## VI) Selenium Project

1) Understanding the AUT

2) Derive Test Scenarios

3) Selenium Test Environment Setup (Using Eclipse IDE, Java, Selenium WebDriver, TestNG, Maven, jenkins etc,)

4) Create Selenium Test Cases

5) Execute Test Batches and Analyze Test Results

Note: Jenkins is an open-source Continuous Integration (CI) server, which automates the build and deploy process of your web applications. By running your Selenium test suite in Jenkins, you also automate testing as part of the build process.

Maven is an Open Source build automation tool, It is used to setup Selenium Environment easily and maintenance of Test environment also easy.

Test Automation Resources: Object Repositories, Customized Commands, Reusable Functions, Test data etc…

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