



# GETIN TECHNOLOGIES

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## **COURSE NAME: SELENIUM TRAINING**

### **MODULE-2**

[Visit our website for Course Fees and Course Duration](#)

#### **Placement Eligibility:**

**Eligible:** Any Bachelor Degree, Any Master Degree, MBA

**Not Eligible:** Diploma

#### **Class Mode:**

**Classroom | Online | Recorded Session | AI Session**

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# SELENIUM COURSE 2 SYLLABUS

## JAVA SYLLABUS

### JAVA – Introduction

- What is JAVA?
- Why JAVA?
- What is JDK, JRE & JVM and its differences
- JAVA Features
- Installation of JAVA
- Eclipse IDE

### Sample JAVA Programs

- Run JAVA Program using CMD
- Run JAVA Program using IDE
- Naming standard of JAVA
- What is API, .jar files?
- What are Packages & its usages

### Data Types

- Primitive Data Types
- Non-Primitive Data Types
- Enumerated Data Types
- Array

### Operators

- Assignment Operators
- Arithmetic Operators

- Relational Operators
- Logical Operators
- Conditional Operators

## Conditional Statements

- if
- if-else-if
- Switch

## Control Statements

- For Loop
- While Loop
- Do While Loop
- While Do Loop
- Break Keyword
- Continue Keyword
- Goto Keyword



## Basic OOPs

- What are OOPs?
- Why JAVA is OOPs Language?
- Class
- Object
- Method
- Syntax of Class, Object, Method
- Calling Method via Object
- Calling Method without Object (Static Method)
- Calling Method of another Class

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## Classes

- Object Class
- Object Class Method
- Scanner Classes
- Scanner Class Methods
- Final Class
- Singleton Class
- Diff b/w Final vs Non-Final Class
- Diff b/w Singleton vs Normal Class

## Variables

- Global Variable
- Local Variable
- Instance Variable
- Static Variable
- Constant Variable
- Final Variable

## Constructor

- Constructor
- Types
- This Method
- Super Method
- Copy Constructor
- Constructor Overloading

## Access Modifier

- Public
- Private
- Protected
- Default
- Role of Access Modifier
  - Methods
  - Classes
  - Variables
  - Constructors

## Advanced OOPs

- What is
  - Inheritance
  - Extends Keyword
  - Base Class
  - Derived Class
  - This Keyword
  - Super Keyword

## Polymorphism

- Method Overloading
- Method Overriding

## Advanced OOPs Abstraction

- Interface

- Abstract Class
- Difference b/w Interface vs Abstract vs Class
- Abstract Methods
- Non-Abstract Methods
- Implements Keyword
- Inhering Interface
- Inheriting Abstract Class

## Encapsulation

- Data Hiding
- Getter Setter Methods

## String

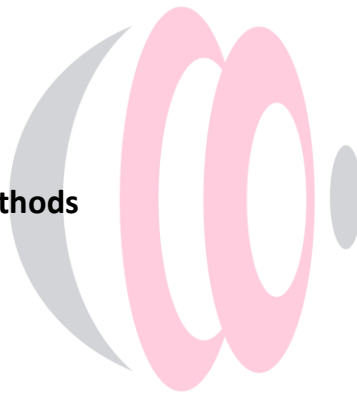
- String Builders
- String Buffer

## Collections

- Collection Interface
- Types of Collections
- Difference of its Types
- List
- Set
- Map

## Exception Handling

- What is an Exception?



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- Try Block
- Catch Block
- Finally Block
- Type of Exception
- Throw Keywords
- Throws Keywords
- JAVA Exceptions

## SELENIUM SYLLABUS

### Introduction

- What is Software Testing?
- Types of Software
- Why is Software Testing required?
- Types of Testing
  - Manual – Functional / Non-Functional
  - Automation

### Automation Testing

- What is Automation?
- Why Automation is required?
  - Automation Tools
  - Advantage & Disadvantage of Automation

### Selenium Introduction

- **What is Selenium & its Version**
- **Why Selenium is preferred**
- **Selenium Features**
- **Advantage & Disadvantage of Selenium**
- **Comparison of Selenium with QTP/other Tools**
- **Selenium Components**
  - **Selenium RC**
  - **Selenium WebDriver**
  - **Selenium IDE**
  - **Selenium Grid**

## **Selenium IDE**

- **Installation of IDE**
- **Features**
- **How to play & Record**
- **Create Test Case in JAVA**
- **How to Play Back**
- **Advantage & Disadvantage of Selenium IDE**

## **Debugging**

- **Breakpoint**
- **Stat Debug**
- **Debug Mode**
- **Step Over**



- Step Into
- Resume

## Selenium – Launching Browsers

- Add Selenium Library
- Add Drivers
- Different Browser Launch
  - Chrome
  - Edge
  - IE
  - Firefox
  - Launching URL

## Selenium – Locating Elements

- HTML Tags
- Different types of Elements
  - Textbox
  - List
  - Dropdown
  - Label
  - Checkbox
  - Radio button
- Performing Click Action
- Types of Locators

## Selenium – WebDriver Methods

- Find Element()
- Find Elements()
- Click()
- Clear()
- SendKeys()
- get text()
- get Attributes()
- get CurrentUrl()
- get Title()
- quit()
- close()



## Types of Xpath

- Relative
- Absolute
- Advantage & Disadvantage
- Limitations
- Types of Relative X path
- Finding the count of the Element
- How to locate Unique Element
- How to find a common Locators for same type of Elements
- Usage of Xpath in Program

## Waits

- Synchronization
- Implicit
- Explicit
- Fluent
- Proper usage of waits
- JAVA Waits

## WebDrivers Handling

- Dropdown Handling
- Window Handling
- Frame Handling
- Alert Handling

## Window based Handlings

- Window Alert
- Robot Class
- Upload File
- Auto IT plugin
- Screenshots

## Action Class

- Move to Element
- Double Click
- Right Click

- Drag and Drop
- Mouse Over
- Action with Keyboard Keys

## Exceptions

- Selenium Exceptions

## Java Script Executor

- Scroll Up
- Scroll Down
- Scroll To Element
- Scroll To View
- Horizontal Scroll
- Highlight The Element
- SendKeys
- Click
- Gettext()

## Web Table Handling

- HTML Structure of Web Table
- Static Web Table
- Dynamic Web Table

## Desired Capabilities

- Usage
- Desired Capabilities of Different Browser

- **Desired Capabilities of Methods**

## **Maven**

- **Maven And It's Usage**
- **Create Maven Project**
- **Maven Project Structure**
- **Pom XML File**
- **Maven Dependencies**

## **File Operations**

- **Read & Write .txt File**
- **Read & Write .json File**
- **Read & Write .property File**
- **Read & write .excel File**

## **Code Management**

- **Git Repository**
- **Git Bash**
- **Git Commands**
- **Merge Code**
- **Resolve Conflicts**
- **Push Code with Eclipse**
- **Push Code with Git Bash**
- **Push Code with Command prompt**

# Frameworks

## Introduction

- What is Framework?
- Types Of Frameworks
- Frame Work Rules
- Data Driven Framework
- Create Data Driven Framework

## Assertion

- Soft Assert
- Hard Assert
- Verify



## Pom Framework

- What is Pom
- Rules
- Advantages And It's Features
- Page Object
- Page Factory



## Testing Framework

- Install TestNG plugins
- Test Driven Development Framework

- **Advantages of TestNG**
- **Different between TestNG Vs JUnit**
- **Testing Annotations**
- **Testing XML File**
- **XML Tags**
- **Data Provider**
- **Run Test Parallely**
- **Testing Reports**

## **Cucumber Framework**

- **Install Cucumber plugins**
- **Behavior driven Development**
- **Feature File and Latin language**
- **Step Definition**
- **Runner Class**
- **JVM report Generation**
- **Hooks Concept**
- **Background Concept**
- **Scenario Outline**



## Hybrid Framework

- **Create Hybrid Framework By combining**
  - Data Driven
  - Pom
  - TestNG
  - Cucumber

## Customized Report

- **Extent Reporting**
  - Extent Report Plug-in
  - Create Test
  - Implement Methods
  - Store Report
- **Allure Reporting**
- **Allure Plugin**
  - Implement Methods
  - Create Report

## Advanced Topics

- **Desired Capabilities**
- **Selenium grid**
- **Jenkins**

## Interview / Mock / Preparations

- **Real Time project Practice**
- **Knowledge on IT Domains**



- **Creating Test Script in Existing Framework – Based on the Project**
- **Agile Practices**
- **Test Methodology Tools**
  - **JIRA**
- **Manual testing And It's Concept**
- **Resume Preparation**
- **Dumps on Interview Question**

## **Manual Testing:**

### **INTRODUCTION:**

- **Introduction**
- **Introduction To Testing**
- **Why Testing**
- **Verification And Validation**

### **Software Development Life Cycle:**

- **Requirements Phase**
- **Analysis Phase**
- **Design phase**
- **Coding Phase**
- **Testing phase**
- **Delivery and Maintenance Phase**

### **SDLC Models:**

- **Waterfall Model**
- **V Model**
- **Interactive Model**

- Agile Model

### Software Test Levels:

- Unit Testing
- Integrating Testing
- System Testing
- Acceptance Testing

### Software Test Types:

- Functional Testing
- Non-functional Testing

### Test Strategy & Planning:

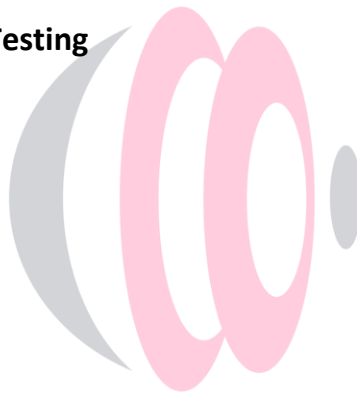
- Test Strategy
- Test Planning
- Test Design
- Test Execution
- Test Reporting

### Defect Tracking:

- Defect Life Cycle
- Defect Types
- Defect Categorization
- Guidelines On Deciding The Severity Of A Defect
- Guidelines On Deciding The Priority Of Bug

### Software Test Documents:

- Test Scenario
- Test Case
- Test Data



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- Test Policy
- Test Strategy
- Test Plan Documentation
- Defect
- Bug

### Types of Testing:

- White Box Testing
- Black Box Testing
- Positive Testing
- Negative Testing
- Beta Testing
- Live Environment Testing
- Smoke Testing
- Sanity Testing
- Regression Testing
- Formal Testing
- Informal Testing
- Monkey Testing
- Retesting



### Testing Technique:

- Equivalence Partitioning Techniques
- Decision Table Technique
- State Transition Technique
- Boundary Value Analysis
- Error Guessing Technique
- Adhoc Testing

### Agile Model:

- Why do we go for Agile?
- Role players in Agile
- Different Artifacts used in agile
- Agile Ceremonies

### Test Management Tool:

- JIRA
- How to open an account in JIRA?
- How to create a Bug?

### REST API:

#### Introduction to Rest API:

- What is Rest API
- History of Rest API
- Why Rest API is popular

#### Rest API Design Principles:

- Rest API constraints
- Rest API architecture
- Resource identification
- Uniform interface
- Self-descriptive messages
- Hypermedia as the engine of application state (HATEOAS)

#### HTTP Protocol:

- HTTP request methods
- HTTP status codes
- HTTP headers
- HTTP response types

- HTTP response caching

### **Rest API Development:**

- Creating a Rest API
- Handling HTTP methods
- Mapping resources to URLs
- JSON and XML data formats
- Handling parameters and query strings

### **Rest API Testing:**

- Functional testing of Rest API
- Performance testing of Rest API
- Security testing of Rest API
- Tools for Rest API testing (Postman, SoapUI, etc.)

### **Rest API Security:**

- Authentication and authorization
- OAuth 2.0 and JWT
- TLS/SSL encryption
- Best practices for Rest API security

### **Rest API Best Practices:**

- Rest API versioning
- Error handling
- Documentation of Rest API
- Rest API optimization
- Rest API deployment

### **Advanced Rest API Concepts:**

- Microservices and Rest API
- GraphQL and Rest API

- **Rest API with Spring Boot**
- **Rest API with Node.js**



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