**NEXT IT CAREER**

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Duration: **45 to 50 days**
Mode of Training: **Online & Offline**

# SELENIUM AUTOMATION TESTING

## WITH

# PROJECT IMPLEMENTATION

**FRAMEWORKS:**

## TRAINING KEY POINTS:

- Resume Preparation
- Interview Questions
- Mock Interviews
- One Bank Project
- Placement Assistance

# COURSE CONTENT

## Module I - PRE-SELENIUM (Core Java programming)

### Chapter 1 – Core Java introduction

Introduction of Java
Downloading and installing java
JDK, JRE, JVM overview
What is eclipse?
Download eclipse
Configure Java with eclipse
Creating a new Java project
Create and execute sample Java program
What is a package

### Chapter 2 – Class and Objects

What is a Class?

What is an Object?

Why do we need Objects?

How to create objects?

Java naming standards

### Chapter 3 – Data Types in Java

What is a Data Type?

Java Data Types

What are Primitive data types:

byte, short, int, long, char, Boolean, double, float.

Primitive data types memory sizes and Range Values

Whare are Reference or Non primitive Data Types

Difference between Primitive and non-primitive data types

Data type casting

## Chapter 4 – Operators in Java

- What is an operand
- What is an operator
- Java Operators
- Unary Operator
  - Minus
  - Pre and post increment
  - Pre and post decrement
- Binary operator
  - Arithmetic operators
  - Assignment operator
  - Relational or Comparison operators
  - Logical operators
- Ternary Operator

## Chapter 5 – Variables in Java

- What is a Variable
- Types of variables in Java
- What is Global Variable?
- What is instance, static, local and block variables
- Accessing instance, static, local and block variables
- Default values for variables
- Difference between instance, static, local and block variables

## Chapter 6 – Conditional Statements or Control Statements

- What is a conditional statements?
- Java conditional statements
  - If statement
  - If else statement
  - If else if statement

Switch statement

Sample Java programs on conditional statements

**Chapter 7 – Loop statements or Iterative statements**

What is a loop statements?

Java loop statements

for

while

do

for each

break keyword

continue keyword

Sample java programs on loop statements

**Chapter 8 – Reading data during execution**

By using Buffered Reader

By using Scanner

Difference between Buffered Reader and Scanner

**Chapter 9 – Methods**

What is a method

Advantages of method

What is code reusability and how can we implement with methods

Types of methods

What are method parameters

What is instance method and how to execute

What is static method and how to execute

this keyword usage

**Chapter 10 – Constructors**

What is Constructor

Constructor uses

Types of Constructors

Default Constructors

User defined constructors

Super keyword usage

**Chapter 11 – Arrays**

What is an Array

How to declare a new array in Java

Types of Arrays in Java

Assigning values into array

Accessing values from array

Finding size of an array

Drawback of Arrays

**Chapter 12 – Collections**

What are a collection in java

Java Collections Types

List Collection

Set Collection

HashMap

**Chapter 13 – Exception Handling**

What is an exception in java?

Creating exception in java

Handling exception with try and catch blocks

finally keyword

Types of Exceptions

**Chapter 14 – Working with Strings**

What is a String

Declaring a String in java

String class and StringBuffer class

Mutable and immutable string in java

String class methods

Important Java programs with String class methods.

## Chapter 15 – Workign with External Files – MsExcel and NotePad

Working with Excel

Why do we use Excel files in Automation projects

Finding given Excel file is exist or not?

Creating a new Excel file

Entering data into Excel file

Reading data form Excel file

Working with Notepad

Why do we use NotePad files in Automation projects

Finding given notepad file is exist or not?

Creating a new notepad file

Entering data into notepad file

Retrieving data from notepad file

## Chapter 16 – Working with Database

Why do we use Database concepts in Automation projects

Java programs for Database connections and executing queries

## Chapter 17 – Working with Date and Time

Sample scenarios on Date and Time methods in Automation projects

Java programs for retrieve current date and time

Java program for finding difference between given dates

## Chapter 18- OOPs Concept

Classes and Objects

Inheritance

What is Inheritance in java

What are the usages of Inheritance in Java

How to implement Inheritance in Java

Types of Inheritance

Access modifiers in java – public, private, protected and default

this and Super Keywords in java

Polymorphism

What is Polymorphism in java

What is method overloading and Method Overriding

Compile and Runtime polymorphism

Abstraction

What is Abstraction

Implementing Abstraction with interface

What is interface

Creating new interface

Implementing method overriding with interface

Implementing multiple inheritance with interface

Encapsulation

What is Encapsulation in Java

Implementing Encapsulation with getter and setter methods

**Chapter 19- Debugging**

What is Debugging?

Why do we use Debug Execution?

Debug Option

# Module II - Selenium Automation

## Chapter 1 – Selenium Introduction

- What is Manual and Automaton Testing?
- Drawbacks of Manual and advantages of Automation Testing
- Why Selenium?
- What is Selenium?
- Selenium History
- Selenium Components
  - Selenium IDE
  - Selenium RC
  - Selenium WebDriver
  - Selenium Grid
- Advantages of Selenium
- Limitations of Selenium

## Chapter 2 – Selenium WebDriver set up

- Required software for WebDriver set up
- Download Selenium WebDriver jar
- WebDriver set up with Java project
- WebDriver set up with Maven project
- Difference between Java and Maven projects

## Chapter 3 – Working with Browsers

- Working with Chrome browser
- Working with Edge browser
- Working with Firefox browser
- Working with Safari Browser
- Working on browser commands

## Chapter 4 – Locating Elements

- What are Elements in Web application

How to locate elements with Selenium

Types of locators – id, name, className, linkText, partialLinkText, tagName, xPath, cssSelector

What is xpath

Types of xPath

Limitations of absolute xPath and advantages with relative xPath

xPath functions

text, contains, last, following, ancestor, child, preceding, following-sibling, self, decendant

## Chapter 5 – Working with Elements

Working with Text box

Selenium scripts related to Text box

Working with Multiline text box

Selenium scripts related to Multiline Text box

Working with links

Selenium scripts related to links

Working with buttons

Selenium scripts related to buttons

Working with check boxes

Selenium scripts related to check boxes

Working with radio buttons

Selenium scripts related to radio buttons

Working with dropdowns

Selenium scripts related to dropdown

Working with broken links

Selenium scripts related to broken links

## Chapter 6 – Working with Mouse and Keyboard operations

click an Element

Right click on links and select right click options

Double click on elements

Mouse over on the element

Drag and Drop Elements

Sending Keyboard keys to applications

## Chapter 7 – Working with multiple browser windows

getWindowHandle and getWindowHandles methods

open a new browser window with selenium

Retrieve total number of browsers are opened in script

Switch to required browser window

Close required browser window

## Chapter 8 – Handling Alerts

What is alert

Types of alerts

Web based alert

Window based alert

Selenium Alert interface

Methods of Alert interface

Working in web-based alerts

Working on window-based alerts

Working on Robot class

## Chapter 9 – Handling Frames

What is a Frame?

Types of Frames – nested frame and multiple frames

Switch to frame, nested frame and multiple frames

## Chapter 10 – Web Table

What is a web table

Understanding html code for web table

Locating Webtable, particular row and particular cell

Selenium programs related to Web table

Retrieve total number of rows

Retrieve total number of cells for a given row

Retrieve given cell value

Retrieve all cell values

Finding given text is exist in a web table

Performing operations on Web table elements

## Chapter 11 - Working with Screenshots

Why do we need Screenshots in Automation process

Selenium program to take a screenshot of a page

## Chapter 12 - Synchronization

What is Synchronization?

Types of Synchronizations

Handling Synchronizations in Selenium

Unconditonal Synchronization

With java – Thread.sleep()

With Selenium – Sleeper class

Conditional Synchronization

By using implicit wait

By using Explicit wait

What are the Explicit wait conditions are available

Difference between implicit and explicit wait

## Chapter 13 - Element Repository

What is Element Repository

What is a property file and create a new property file in eclipse

Adding element locators into property file

Retrieving element locators from property file

Reading data from property file and implementing

## Chapter 14 – Miscellaneous Topics

- Selenium listeners
- Types of exceptions in Selenium
- Assert and Verify commands
- Working on Headless testing
- Git Hub
- Jenkins
- Selenium Grid

## Chapter 15 – Selenium Frameworks

- What is a framework
- Importance of Framework for automation project
- Types of Frame work
    - Page Object Model
    - TestNG
    - Cucumber
    - Data Driven
    - Modular Driven
    - Hybrid (Cucumber, Page Object Model with Data Driven)