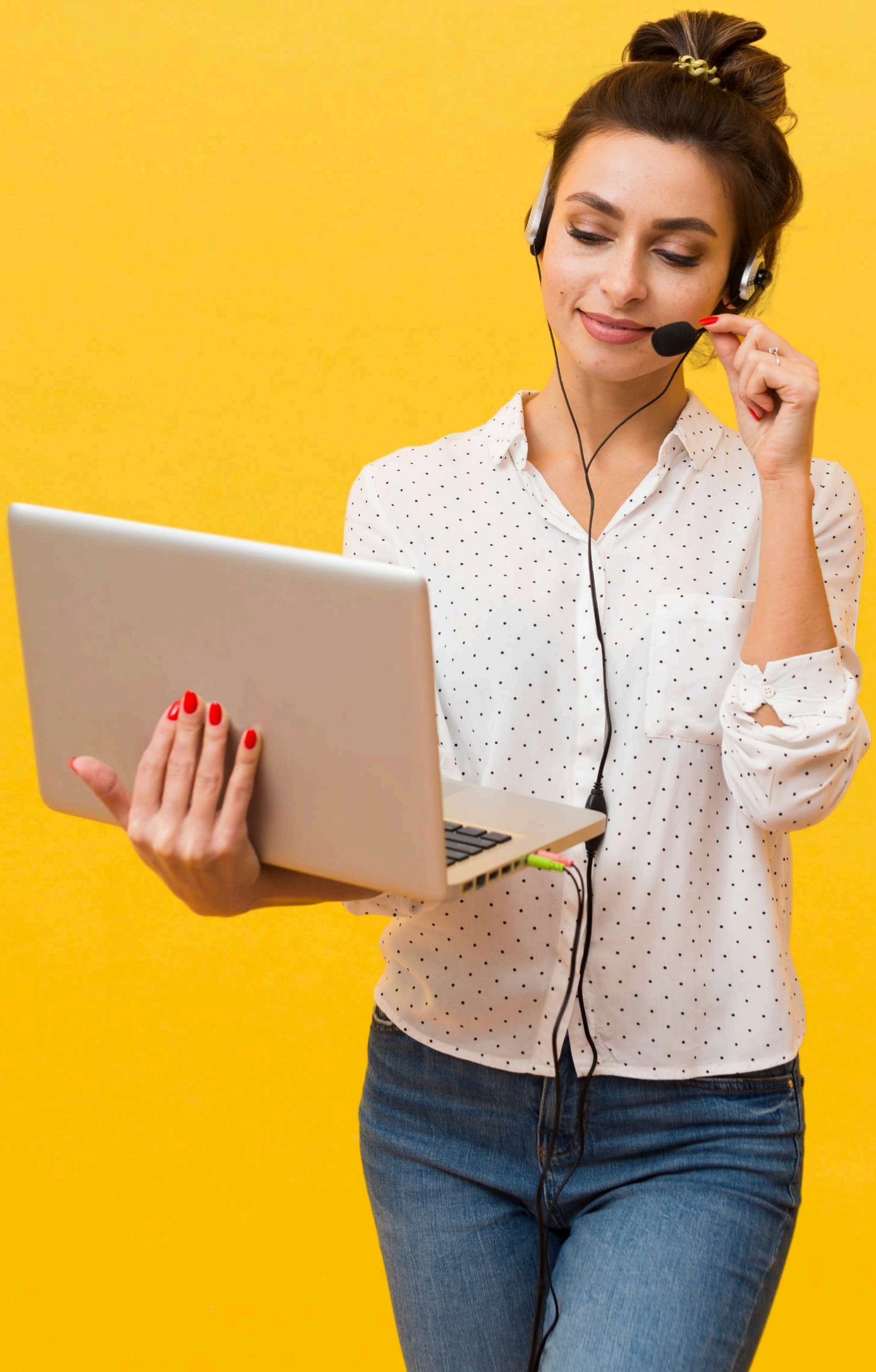
JOBZENTER

Software Training & Placements

Software Testing



COURSE CURRICULUM

JAVA

1. Datatype

- Primitive Data Types (int, char, boolean, etc.) - Non-Primitive Data Types (String, Arrays, Classes, etc.) - Type Casting (Widening and Narrowing)

2. OOPS (Object-Oriented Programming)

- Class and Object -

Encapsulation - Inheritance -

Polymorphism - Abstraction

3. Inheritance

- Single Inheritance - Multilevel Inheritance - Hierarchical

Inheritance - Multiple Inheritance (through interfaces) - Method Overriding

4. Polymorphism

- Compile-time Polymorphism (Method Overloading) - Runtime Polymorphism

(Method Overriding)

5. Overloading

- Method Overloading - Constructor Overloading - Rules for Overloading (changing parameters,

return type, etc.)

6. Overriding

- Method Overriding - Rules for Overriding (access level, return type, etc.) - Super

Keyword - Final Keyword in Overriding

7. Abstraction

- Abstract Classes - Interfaces (in relation to abstraction)

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8. Interface

- Default Methods in Interfaces - Static Methods in

Interfaces - Multiple Inheritance using Interfaces

9. Constructor - Constructor Chaining

- Default Constructor - Parameterized Constructor - Constructor Chaining

(within same class using `this()``)

10. Conditional Statement (if else)

- Simple `if` statement - `if-else`

statement - `else if` ladder - Nested `if-

else` statements - Ternary Operator

11. Control Statement (for loop)

- `for` Loop - `while` Loop - `do-while` Loop -

Enhanced `for` Loop (for-each) - Break and

Continue Statements

12. Scanner Class

- Creating a Scanner Object - Reading Different Data Types (nextInt(), nextLine(), nextDouble(),

etc.)

13. Variable

- Local Variables - Instance

Variables - Static Variables

14. Switch Casting (Possibly meant to be "Type Casting" and "Switch Statement")

- Switch Statement (Syntax, Rules)

15. Array

- Array Initialization

- Array Length and Iteration

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16. String

- String Class - String Methods (`length()`, `charAt()`, `substring()`, etc.) - String iteration - StringBuilder and StringBuffer (Mutable Strings)

17. Collection 1 - List, Set

- List Interface (ArrayList, LinkedList) - Set Interface (HashSet, TreeSet, LinkedHashSet) - Differences between List and Set - Common Operations (Add, Remove, Iterate)

18. Collection 2 - Map

- Map Interface (HashMap, TreeMap, LinkedHashMap) - Key-Value Pairs - Iterating through a Map - Common Map Methods (`put()`, `get()`, `containsKey()`, etc.)

19. Iterator

- Iterator Interface (hasNext(), next(), remove()) - ListIterator - For-each Loop vs. Iterator

20. Exception

- Types of Exceptions (Checked vs. Unchecked) - Common Exceptions (NullPointerException, ArrayIndexOutOfBoundsException, etc.) - Creating Custom Exceptions - Exception Propagation

21. Exception Handling

- Try-Catch Block - Finally Block - Throw and Throws Keyword - Multiple Catch Blocks

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SELENIUM

1. Browser Launch

- Setting up WebDriver - BrowserDriver Executables

(chromedriver) - Opening URLs with `get()` and

`navigate().to()` - Maximizing the Browser Window -

Closing the Browser (`close()` vs. `quit()`)

2. WebDriver Methods

- Navigation Commands (`navigate().back()`, `navigate().forward()`, `refresh()`) - Page

Interaction Commands (`getTitle()`, `getCurrentUrl()`, `getPageSource()`)

3. WebDriver Elements

- Finding Elements (`findElement()`, `findElements()`) - Interacting with Elements

(`click()`, `sendKeys()`, `clear()`, `submit()`) - Retrieving Element Attributes

(`getAttribute()`, `getText()`, `getCssValue()`) - Handling Element States

(`isDisplayed()`, `isEnabled()`, `isSelected()`)

4. Locators

- ID Locator - Name Locator - Class Name

Locator - Tag Name Locator - Link Text and

Partial Link Text Locator - CSS Selector -

XPath (Absolute vs. Relative XPath)

5. Drop Down

- Selecting Options using `Select` Class (`selectByVisibleText()`, `selectByValue()`, `selectByIndex()`) -

Deselecting Options (`deselectAll()`, `deselectByVisibleText()`, etc.) - Handling Multi-Select Drop-downs -

Retrieving All Options (`getOptions()`, `getAllSelectedOptions()`, `getFirstSelectedOption()`)

6. Take Screenshot

- Capturing Full Page Screenshot (`TakesScreenshot` Interface) -

Capturing Web Element Screenshot

- Capturing Full Page Screenshot(using Utility File - Apache)

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7. Alert

- Handling JavaScript Alerts (`alert.accept()`, `alert.dismiss()`) -

Handling Confirmation Boxes - Handling Prompt Boxes (`sendKeys()`

in Alerts) - Switching to Alert (`switchTo().alert()`) - Retrieving Alert

Text (`getText()`)

8. Frame

- Identifying Frames (`findElement(By.tagName("iframe"))`) - Switching between Frames

(`switchTo().frame()`, `switchTo().defaultContent()`) - Nested Frames Handling - Switching

Back to Main Content

9. Drag Down

- Scrolling Web Pages (using JavaScriptExecutor)

- Scrolling to Specific Elements

- Drag and Drop Actions (`Actions` Class)

- Vertical and Horizontal Scrolling

10. Keyboard Actions

- Keyboard Operations (`Actions` Class - `sendKeys()`, `keyDown()`, `keyUp()`)

- Handling Key Combinations (e.g., Ctrl+C, Ctrl+V)

- Simulating Keyboard Input to Elements

- Sending Special Keys (e.g., ENTER, TAB)

11. Windows Handling

- Handling Multiple Browser Windows (`getWindowHandles()`, `switchTo().window()`)

- Switching Between Windows and Tabs

- Closing Specific Windows

12. Wait

- Implicit Wait

- Explicit Wait (`WebDriverWait` and `ExpectedConditions`)

- Fluent Wait (Polling intervals and timeout)

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Project Class

1.Base Class

Centralized WebDriver setup and teardown

Common utility methods (e.g., screenshots, click)

Reusable test configurations

2.POJO

Simple Java objects with getters and setters

Used for data representation in tests

Supports serialization/deserialization

3.POM (Page Object Model)

Separates page elements and actions into page classes

Enhances code maintainability and reusability

Reduces code duplication

4.Data Driven

Tests driven by external data (Excel)

Parameterization using TestNG/JUnit

Apache POI for Excel integration

5.TestNG

Annotations (@Test, @BeforeMethod, etc.)

Test grouping, prioritization, and parallel execution

Data Providers for parameterization

6.Singleton Design Pattern

Ensures a single instance of a class

Commonly used for WebDriver management

7.Cucumber BDD

Gherkin syntax (Given, When, Then)

Feature files and step definitions

Cucumber Hooks (@Before, @After)

JUnit

Annotations (@Test, @Before, @After)

Assertions for test validation

Integration with Maven/Gradle

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6. Error Handling

- Managing API errors and exceptions

- Validating error responses

Playwright with Java

1. Playwright Setup

- Installing Playwright in a Java project

- Basic configuration for browsers (Chromium, Firefox, WebKit)

2. Browser Automation

- Launching browsers and opening pages

- Handling browser contexts and incognito mode

3. Locating Elements

- Using CSS selectors and XPath

- Interacting with elements (`click()`, `fill()`, `hover()`)

4. Assertions

- Verifying page content and element states

- Using `assert` for validation

5. Handling Alerts and Pop-ups

- Managing dialogs, alerts, and frames

6. Test Structure

- Organizing tests with Playwright Test

- Parallel test execution

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SQL

1. Database Basics

   - Understanding databases, tables, and schemas
   - Key concepts: Primary Key, Foreign Key, Indexes

2. SQL Queries

   - Writing basic queries: `SELECT`, `INSERT`, `UPDATE`, `DELETE`
   - Using `WHERE`, `ORDER BY`, `GROUP BY`

3. Joins

   - Understanding and using different types of joins (INNER, LEFT, RIGHT, FULL)
   - Joining multiple tables

4. Aggregate Functions

   - Using `COUNT()`, `SUM()`, `AVG()`, `MAX()`, `MIN()`
   - Grouping data with `GROUP BY` and `HAVING`

5. Subqueries

   - Writing nested queries
   - Using subqueries in `SELECT`, `WHERE`, and `FROM` clauses

6. Database Management

   - Creating and altering tables
   - Managing users and permissions
   - Backup and restore operations

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