

PRE-SELENIUM

1. Core Java Programming

- i. Introduction to Java
- ii. History of Java
- iii. Comparison with C and C++
- iv. Features of Java
- v. JDK, JRE, JVM overview
- vi. JDK Directory Structure
- vii. Basic Java Program through the command prompt

2. Installation and Setup

- i. Download and install JDK/JRE
- ii. Set Environment variables
- iii. Download Eclipse IDE
- iv. Coding standards are followed in Eclipse
- v. Naming standards followed in Eclipse
- vi. Features of Eclipse IDE

3. Packages

- i. Introduction to packages
- ii. Need for packages
- iii. Declaration in Java
- iv. Import statement in Java

- v. Static import in Java
- vi. Resolving name clashes in packages

4. OOPS and its application in Java

- i. Classes and Objects
- ii. Defining a class, defining instance variables, and methods
- iii. Defining a class, variable, and method in Java
- iv. Method Signature: method call
- v. Creating objects out of a class
- vi. Method calls via object references

5. Abstraction

- i. Interfaces and Abstract classes
- ii. Abstract and non-abstract methods

6. Inheritance

- i. extends and implements keywords in Java
- ii. Super class and Sub class
- iii. This keyword, the super keyword in Java for inheritance

7. Polymorphism

- i. Compile-time polymorphism — Overloading of methods
- ii. Run-time polymorphism — Overriding of methods
- iii. Method Overriding rules and method overloading rules

- iv. Introduction to the Object class and its methods

8. Encapsulation

- i. Protection of data
- ii. Java Bean, POJO
- iii. Getters/Setters

9. Data types

- i. Primitive Datatypes
- ii. Datatype Declarations
- iii. Datatype Ranges and their calculation
- iv. Memory allocation for each Datatype
- v. Variable Names Conventions
- vi. Numeric Literals, Character Literals
- vii. String Literals
- viii. Arrays
- ix. Array of Object References
- x. Non-Primitive Datatypes

10. Operators

- i. Expressions in Java
- ii. Assignment Operator
- iii. Arithmetic Operators
- iv. Relational Operators

- v. Logical Operators
- vi. Conditional Operators
- vii. Operator Precedence
- viii. Implicit Type Conversions
- ix. Upcasting and downcasting
- x. Type conversion

11. Conditional Control Statements

- i. Flowchart for conditional statements
- ii. If statement
- iii. If-else statement
- iv. If-else-if statement

12. Looping Control Statements

- i. For loop
- ii. While loop
- iii. Do-while loop
- iv. Unconditional Control Statements/Jump Statements
- v. break statement
- vi. return statement
- vii. continue statement

13. Scanner class

- i. Difference between Scanner and BufferedReader

- ii. Methods to get Primitive datatypes

14. De-bugging

- i. Launching and debugging Java code
- ii. Breakpoints
- iii. Debug perspective
- iv. Stepping commands

15. Access Modifiers in Java

- i. Role of access modifiers
- ii. Private access modifier
- iii. Role of private constructor
- iv. Default access modifier
- v. Protected access modifier
- vi. Public access modifier

16. Types of variables

- i. variable
- ii. variable memory storage
- iii. Static variable
- iv. Local variable
- v. Global/Instance Variable
- vi. variable widening
- vii. variable narrowing

17. Constructor

- i. Constructor
- ii. Default constructor
- iii. Non-arg-based constructor
- iv. Parameterised constructor
- v. Difference between a Constructor and a Method
- vi. Constructor chaining
- vii. this and super method
- viii. constructor overloading

18. String

- i. String datatype
- ii. String declaration
- iii. String methods
- iv. String types
- v. String memory allocation
- vi. Manipulations in string
- vii. Interfaces and classes in String

19. Arrays

- i. Declaration
- ii. Instantiation
- iii. Initialization of Java Array
- iv. Single-dimensional Array

- v. Multi-dimensional Array

20. Wrapper class

- i. Need for Wrapper classes
- ii. Autoboxing
- iii. Unboxing
- iv. Primitive Wrapper Classes

21. Generics

- i. Need for Generics
- ii. How Generics Work in Java
- iii. Types of Generics
- iv. Generic Type Class or Interface
- v. Generic Type Method or Constructor
- vi. Generic Type Arrays
- vii. Generics with Wildcards

22. Collection

- i. Java Collection Framework
- ii. Hierarchy of Collection Framework
- iii. Collection interface
- iv. Iterator interface
- v. Methods of the collection interface
- vi. List

- vii. Set
- viii. Queue

23. Map

- i. Introduction to the Map interface
- ii. Methods in Map
- iii. Iterating a Map
- iv. Map hierarchy
- v. Sorted Map
- vi. LinkedHashMap
- vii. TreeMap
- viii. HashMap

24. Exception handling

- i. Exception types
- ii. Usage of Try
- iii. Usage of Catch
- iv. Usage of Throw
- v. Usage of Throws
- vi. Usage of Finally
- vii. Built-in Exceptions,
- viii. Creating your Exception classes

25. File operations

- i. File Handling in Java
- ii. Stream
- iii. Java File Methods
- iv. File Operations in Java
- v. File reader
- vi. File writer
- vii. Buffered Reader
- viii. File permissions

26. SQL

- i. Introduction to SQL
- ii. Table creation
- iii. SQL Insert
- iv. SQL Update
- v. Applying Constraints
- vi. SQL Syntax
- vii. SQL Data Types
- viii. SQL Operators
- ix. SQL Database
- x. SQL Select
- xi. SQL Clause
- xii. SQL Delete

- xiii. SQL Join
- xiv. SQL Keys

27. JDBC Connection

- i. Establishing connection
- ii. Types of JDBC drivers
- iii. JDBC-ODBC Bridge Driver,
- iv. Native Driver,
- v. Network Protocol Driver, and
- vi. Thin Driver
- vii. Running query
- viii. Extracting Result

28. Coding standards

- i. Coding Standards for Classes
- ii. Coding Standards for Interface
- iii. Coding Standards for Methods
- iv. Coding Standards for Variables
- v. Coding Standards for Constants
- vi. Java Bean Coding Standards
- vii. Getter Methods
- viii. Setter Methods

SELENIUM

1. Selenium Introduction

- a. Types of Applications (Desktop, Web, Mobile, Hybrid)
- b. Software Testing Methods (Manual and Test Automation).
- c. Selenium Introduction
- d. Selenium Components
- e. Selenium vs. Other Testing Tools
- f. Advantages of Selenium
- g. Integration of Selenium with Other Tools

2. Selenium Components

- a. Purposes and functionalities
- b. Understanding the components
- c. Selenium RC
- d. Selenium IDE
- e. Selenium webdriver
- f. Selenium Grid
- g. When to use Grid

3. WebDriver

- a. Third-party drivers and plugins
- b. Driver requirements
- c. What is WebDriver
- d. Selenium Architecture
- e. Simple Program in Selenium WebDriver
- f. WebDriver methods

4. Types Of Browser Launch

- a. Desired Capability
- b. Downloading the driver file
- c. Downloading the Selenium jar file
- d. Chrome Browser Launching
- e. Safari Browser Launching
- f. Internet Explorer Browser Launching
- g. Installing FireBug and FirePath
- h. Firefox Browser Launching

5. Locators

- a. Inspecting elements in different browsers.

- b. Id
- c. name
- d. classname
- e. xpath
- f. tagName
- g. linkText
- h. partiallyLinkText
- i. cssSelector

6. Xpath

- a. Contains Xpath
- b. Text Xpath
- c. Text Contains Xpath
- d. Attribute with contains
- e. Following
- f. Ancestor
- g. Child
- h. Preceding

- i. Following-sibling
- j. Parent
- k. Self
- l. Descendant

7. Types Of XPath

- a. Relative Xpath
- b. Absolute Xpath
- c. Difference between Absolute Xpath and Relative Xpath
- d. Limitations in Absolute XPath
- e. Advantages of using Relative xpath

8. Check Box

- a. Finding checkboxes count
- b. Checking the visibility of the Check Box
- c. Checking the properties of the Check Box
- d. Identifying a common locator for all checkboxes
- e. Checking the toggled attribute

9. Text Box

- a. Handling the Text Box
- b. Checking the visibility of the Text Box
- c. Checking the properties of the Text Box
- d. Identifying a common locator for all TextBoxes
- e. Finding the Textboxes count

10. Radio Button

- a. Handling the Radio Button
- b. Checking the visibility of the Radio Button
- c. Checking the properties of the Radio Button
- d. Identifying a common locator for all RadioButtons
- e. Finding the radio buttons

11. Dynamic Locators

- a. Absolute Path method
- b. Relative XPath method
- c. Identify by index
- d. Preceding-sibling, Following-sibling concept
- e. Ancestor, parent concept

- f. Common tagname(*) method
- g. Multiple attributes to locate an element

12. Navigation Commands

- a. Navigate To Command
- b. Forward Command
- c. Back Command
- d. Refresh Command
- e. Navigate method over the get method
- f. Navigation by using JavaScriptExecutor

13. WebDriver Commands

- a. Fetching a web page
- b. Locating elements and sending user inputs
- c. Clearing User inputs
- d. Fetching data over any web element
- e. Performing a Click event
- f. Navigating backward in browser history
- g. Navigating forward in browser history
- h. Refresh/ Reload a web page

- i. Closing Windows
- j. Closing Browser
- k. Handling Windows
- l. Handling Frames
- m. Handling Drag and Drop

14.Actions

- a. Drag and Drop
- b. Mouseover Action
- c. Right Click
- d. Double Click
- e. Accessing modifier keys using the Actions class

15.Alerts

- a. Switching into Alert
- b. Alert methods
- c. Types of Alert
- d. Handling the Alert
- e. Passing the inputs to Alerts
- f. Entering text into Alert

- g. Get the text present in the Alert
- h. Pop-ups

16. Robot Class

- a. Need for Robot Class
- b. Methods to implement this class
- c. Mouse click using the Robot class
- d. Limitations

17. Waits

- a. Need for Waits
- b. Static waits
- c. Dynamic waits
- d. Implicit Waits
- e. Explicit Waits
- f. Fluent Waits
- g. WebDriver Waits

18. JavaScript

- a. WebElement Highlighting
- b. Click Operation

- c. Fetching the Data from WebElement
- d. Sending the Inputs to the WebElement
- e. Scrolling Operations
- f. Highlighting a WebElement

19. ScrollUp/ScrollDown

- a. Scroll the web page by pixel
- b. Scroll the web page by the visibility of the element
- c. Scroll down the web page to the bottom of the page

20. Frames

- a. Need for Frames
- b. Identifying a Frame
- c. Switching to Frames using Selenium WebDriver
- d. Different ways of switching
- e. Dynamic frames handling
- f. Frames Size
- g. Concept of Nested Frames

21. Windows Handling

- a. Importance of Windows Handling

- b. Handling Multiple Windows
- c. Windows Handling using Set
- d. Windows Handling using List

22. WebTable

- a. Analyzing WebTable structure in the DOM
- b. Handling multiple web tables on a page
- c. Dynamically changing WebTable handling
- d. Extracting values from webTable
- e. Analyzing the Tagnames
- f. Different Scenarios with WebTable

23. Dynamic WebTable

- a. Handling Dynamic Tables In Selenium
- b. Analyzing the Dynamic WebTable
- c. Analyzing the HTML Tags in Dynamic WebTable
- d. Different Scenario with Dynamic WebTable

24. ScreenShot

- a. Need a Screenshot in Automation testing
- b. Capture a Screenshot in Selenium

- c. Capture Full Page Screenshot
- d. Taking a Screenshot of a particular element of the page
- e. Taking a Screenshot with different file formats
- f. Random name generation for screenshots

25. Links

- a. Identifying URL
- b. Validating URL
- c. To find broken links
- d. Collect all the links on the web page

26. DropDown

- a. Select a class in Selenium WebDriver
- b. Different Select commands
- c. Multiple Select commands
- d. DeSelect Commands
- e. Get all options
- f. Dropdown without Select tag

- g. Handling a dropdown with values changing their position dynamically

27. Sauce Lab

- a. SauceLab-Introduction
- b. Value Proposition
- c. Manual testing on Sauce Labs

POST - SELENIUM

1. Maven

- a. Introduction to Apache Maven
- b. Maven Dependencies
- c. Maven Plugins
- d. Controlling The Build
- e. Maven Release Process

2. Data Driven

- a. Data Driven Explanation
- b. Excel Types
- c. Apache poi-ooxml
- d. Interface class, methods in Apache POI-OOXML

- e. Read Data from Excel
- f. Write data in Excel
- g. Update data in Excel
- h. Creation of Automation scripts reading data from excel

3. JUNIT Framework

- a. JUNIT Test Framework
- b. Download and installation of JUnit
- c. JUNIT Annotation & API
- d. JUNIT Assert
- e. Create JUNIT Test Suite
- f. JUNIT Ignore Test
- g. JUNIT Parameterized Test
- h. JUNIT Vs TestNG
- i. Execution metrics from JUNIT

4. TESTNG Framework

- a. TESTNG with Selenium
- b. Advantages of TESTNG over JUnit

- c. TESTNG Annotation & API
- d. Create a TESTNG Suite
- e. TESTNG Parameterized Test
- f. Parameters
- g. Data Provider
- h. Re-running the failed Test Case
- i. IretryAnalyzer
- j. IAnnotationTransformer
- k. TESTNG Assert
- l. Hard Assert
- m. Soft Assert
- n. Run Multiple test cases
- o. Customized, PDF,&Email Testing reports in Selenium Webdriver
- p. TESTNG Ignore Test

5. Cucumber Framework

- a. BDD Introduction
- b. Cucumber Introduction

- c. How to download & install the plugin
- d. Gherkin Language
- e. Feature files
- f. TestRunner with JUnit
- g. Step Definition
- h. Scenario and Scenario Outline
- i. BaseClass and POM Integration
- j. CucumberOptions
- k. Reports
- l. Rerun failed scenarios

6. e-commerce domain

- a. Domain explanation
- b. Keywords explanation in the e-commerce domain
- c. End-to-end flow explanation in the e-commerce domain
- d. Different interfaces integration explanation
- e. Test scenarios preparation
- f. Testcase preparation

- g. Defect raising using JIRA
- h. Automating an e-commerce site using framework

7. Manual testing

- a. Software build process
- b. SDLC
- c. STLC
- d. Introduction to Testing
- e. Manual and Automation Testing
- f. Testing Techniques
- g. Testing principles
- h. Test scenario and Testcases preparation
- i. Software testing methodologies
- j. Functional and non-functional testing
- k. Detailed explanation for the Waterfall methodology
- l. Detailed explanation for Agile Methodology
- m. Defect raising using JIRA

8. Agile methodologies

- a. Agile Methodologies Overview
- b. Agile Scrum
- c. Agile ceremonies
- d. Agile artifacts
- e. Kanban
- f. Adaptive Project Framework (APF)
- g. Extreme Project Management (XPM)

9. Understanding Real-time scenarios and work culture

- a. Project explanation
- b. Challenges faced by a tester
- c. Roles and responsibilities of a tester
- d. Day-to-day activities of a tester

10. Resume preparation

- a. Your resume is arguably the most critical part of the modern job application process.
- b. A well-organized, tailored resume will increase your chances of landing an interview, while a poorly written resume could get lost in the sea of applicants.

- c. We will help you to prepare your impressive resume with the best specifications of your skill set.

11. Mock-Interview

- a. Mock interviews by Greens Technologies give you the platform to prepare, practice and experience the real-life job interview.
- b. Familiarizing yourself with the interview environment beforehand in a relaxed and stress-free environment gives you an edge over your peers.
- c. Our mock interviews will be conducted by industry experts with an average experience of 5+ years. So you're sure to improve your chances of getting hired!

12. Real-Time project

- a. To put your knowledge into action, you will be required to work on two industry-based projects that discuss significant real-time use cases.
- b. These projects are completely in line with the modules mentioned in the curriculum and help you to clear the certification exam.