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Module 1 – Core Java

Chapter 1

- Get all participants on WebEx (can take a good 10-15 min as this is the first time)
- Quick round of introductions
- Course Structure
- Introduction to Java
  JDK, JRE and JVM
- Download and install Java and Eclipse
- Create and run your first program

Chapter 2

- What is a class?
- Packages
- Naming Conventions
- Main method
- Primitive and Reference Data Types
- Operators

Chapter 3

- Operators (Continued)
- Flow Control
- Loops
- Arrays

Chapter 4

- Usage of Methods
- BODMAS
- Static and Non-Static
- What is Class, Java-Bean, Why instance variables are made Private
- Usage of 'this' keyword
- Constructors, need for the same, No-arg, Overloaded constructor
- Overloaded Methods

Chapter 5

-Object and Object References
-Garbage collection
-Encapsulation and Data-hiding
-Parent and Child class, Inheritance concept
-Object class hierarchy
-Interface and inheritance
-Coding to Interface
-Abstraction, what is Abstract class
-Polymorphism
-Overloading, Overriding

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Chapter 6

- Interfaces (continued)
- Abstract Classes
- Packages
- Access Modifiers
- Jars

Chapter 7

- Log4J framework
- Handling Properties files

Chapter 8

- Exception Handling
- Checked and unchecked exceptions
- Errors
- Creating your own Exceptions

Chapter 9

- String class deep dive
- Immutable concept using String class
- StringBuffer
- StringBuilder

Chapter 10

- Collection Classes
- Limitations of Arrays
- Array List
- Linked List
- Hash Map
- Hash Set

Module 2 - Tools

Chapter 1

- Handling Excel sheets with Apache POI
- Handling XML files with DOM Parsers

Chapter 2

- Unit Testing with JUnit
- Source code management with SubVersion
- Tortoise Client

Chapter 3

- Unit Testing with TestNG

- Extent Reports

Chapter 4
- Dependency Management Concepts
- Install Maven
- Maven Central Repository
- Maven Builds

Chapter 5
- Continuous Integration concepts
- Setup Jenkins
- Connect to Source Code Management
- Automated Builds
- Automated Tests

Module 3 – Test Automation

Chapter 1
- Introduction to
  - o Selenium IDE
  - o Selenium Webdriver
- What is Selenium 3.0
- What is GeckoDriver
- Internal architecture of Webdriver
- Configuring webdriver in eclipse
- How webdriver commands gets converted to RESTful commands
- Concept of Firefox profile
- What is desired capabilities
- How to handle launching browsers dynamically
- Headless browser HtmlUnitDriver and ChromeHeadless

Chapter 2
- Identifying different web objects i.e Web-Elements
- usage of various Locator strategies
- WebDriver interface
- WebElement interface
- Inspecting elements in Chrome, Firefox, Safari
- Xpaths
- Absolute and complete Xpaths
- Creating customized Xpaths
- Css Selectors
- Generating own CssSelectors
- Element with variable Ids - startswith, contains, endswith

- Inspecting elements in Mozilla, Chrome (Inspectors)
- Dynamic object handling

Chapter 3
- Xpath
- Creating Custom Xpaths
- CSS selectors
- Using Xpath Functions
- Dynamic object handling
- Other useful addons for locators
- WebDriver Element Locator addon
- Xpath Helper plugin for chrome

Chapter 4
- Managing various controls
- Extracting more objects
- Handling input fields, buttons, links,
- Object present or not
- Handling Radio buttons, checkboxes
- Hidden components
- isDisplayed
- Taking screenshots
- Implicit wait

Chapter 5
- Synchronisation in Webdriver
- Unconditional
- Conditional
- ImplicitWait
- ExplicitWait
- FluentWait
- Handling WebTables
- Handling Multiple windows
- pop-up window, new tabs
- Handling Alerts
- Samples on how to execute JavaScript
- Mouse actions - hover over, drag and drop

Chapter 6
- Creating Framework base test
- Splitting the methods and creating util methods
- Generating reports
- Creating screenshots
- Implementing Selenium Grid

Chapter 7

- What is Selenium Grid
- Architecture of Selenium Grid
- Why Selenium Grid is used
- When to use
- Downloading Selenium Grid
- What is Hub and Node
- MaxSession and MaxInstances
- Remote WebDriver & DesirecCapabilities role
- How to configure Hub and node using command prompt
- How to configure Hub and node using JSON

Chapter 8

- PageObjectModel
- Concept
- OOPS Refresher
- Where to use
- PageFactory Design pattern
- Implementing a complete framework using PageObjectModel with PageFactory design pattern

Chapter 9

- What is BDD
- BDD vs TDD
- What is Cucumber
- Installing Cucumber Eclipse plugin
- Download Cucumber Jars
- What is Feature file?
- Runner class
- Gherkin
- Step definitions
- Executing BDD tests and seeing results

Chapter 10

- Parameterization without Using Examples Keyword
- Parameterization Using Examples Keyword
- Parameterization Using DataTables as Raw
- Parameterization Using DataTables as maps
- What is Cucumber Tag
- How to use Cucumber Tags effectively
- @Before @After Cucumber Hooks

Interview Preparations and Discussions

Souce Code Management – Git/GitHub