# Automation Testing with Selenium

# Day1

**Module 1:  Introducing WebDriver and WebElements**

- Selenium Testing Tools
    - Selenium WebDriver
    - Selenium Server
    - Selenium IDE
- Differences between Selenium 3 and Selenium 4
    - Handling the browser
    - Having better APIs
    - Having developer support and advanced functionalities
    - Testing Mobile Apps with Appium

- Setting up a project in Eclipse with Maven and TestNG using Java WebElements
- Locating WebElements using WebDriver
    - The findElement method
    - The findElements method
    - Inspecting Elements with Developer Tools
- Using the By locating mechanism
- Interacting with WebElements
    - Getting element properties and attributes
    - Performing actions on WebElements
    - Checking the WebElement state

**Module 2: Different Available WebDrivers**

- Firefox Driver
- Chrome Driver
- InternetExplorerDriver
- Edge Driver
- Safari Driver

# Day2

**Module 3: Using Java 11 Features with Selenium**

- Introducing Java Stream API
- Using Stream API with Selenium WebDriver

**Module 4:  Exploring the Features of WebDriver**

- Taking screenshots
- Locating target windows and Frames
- Exploring Navigate
- Waiting for WebElements to load
- Handling cookies

**Module 5: Exploring Advanced Interactions of WebDriver**

- Understanding the build and perform actions
- Learning mouse-based interactions
- Learning keyboard-based interactions

# Day3

**Module 6: Understanding WebDriver Events**

- Introducing the eventFiringWebDriver and eventListener classes
- Creating an instance of EventListener
- Exploring different WebDriver event listeners

**Module 7: Exploring RemoteWebDriver**

- Introducing RemoteWebDriver
    - Understanding Selenium Standalone Server
    - Understanding the RemoteWebDriver client
    - Using RemoteWebDriver for Firefox
    - Using RemoteWebDriver for Internet Explorer
- Understanding the JSON wire protocol

# Day4

**Module 8: Setting up Selenium Grid**

- Exploring Selenium Grid
- Understanding the hub
- Understanding the node
- Modifying the existing test script to use Selenium Grid
- Configuring Selenium Grid
    - Specifying node-configuration parameters
    - Hub-configuration parameters
    - Different ways to specify the configuration
- Using cloud-based grids for cross-browser testing

**Module 9: The PageObject Pattern**

- Creating test cases for our WordPress blog

- What is the PageObject pattern?
- Good practices for the PageObjects design
    - Think of a web page as a services provider
    - Always look for implied services
    - Using PageObjects within a PageObject
    - Think of methods in PageObjects as services and not as user actions
    - Identifying some WebElements on the fly
    - Keeping the page-specific details off the test script
    - Understanding loadable components
- Working on an end-to-end example of WordPress
    - Looking at all the PageObjects
    - Looking at the test cases

# Day5

**Module 10: Mobile Testing on iOS and Android using Appium**

- Different forms of mobile applications
- Available software tools
- Automating Android tests using Appium
    - Automating Android application tests
    - Prerequisites for Appium
    - Installing Appium
    - Automating for Android
    - Using Device Cloud to run tests on Real Devices

**Module 11: Data-Driven Testing with TestNG**

- Overview of data-driven testing
- Parameterizing Tests using suite parameters
- Parameterizing Tests with a Data Provider