**SELENIUM COURSE CONTENT**

**Batch Schedule:**

* Course name: Core java+ Selenium WebDriver + FRAMEWORK
* Course start date:
* Time:
* Course Duration:

**Java Programming Basics**

* Why Java for Selenium
* Java Architecture
* Installing Java
* Installing Eclipse
* Concept of class file
* Datatypes in Java
* String class and functions
  + Practical Examples on Strings handling
* Conditional Statements
  + If…else…
  + Switchcase
  + Practical Examples with conditions
* Loops
  + While Loop
  + For Loop
  + Practical Examples with loops
* Arrays
  + Single Dimensional Arrays
  + Two Dimensional arrays
  + Practical usage of arrays in Selenium
* Operators
* What are Functions?
* Function Input Parameters
* Function Return Types

**Object Oriented Programming**

* Local Variables
* Global Variables
* Static and Non-Static Variables
* Static and Non-Static Functions
* Creating Objects in Java
* Meaning of static
* Why is main method static?
* Object and Object References
* Call by reference and Value
* Overloading and Overriding Functions
* Access Modifiers – Public/Private/Default/Protected
* Constructors
* Interface
* Usage of Objects in Selenium
* Inheritance
* Usage of Inheritance in Selenium
* Creating Packages
* Accessing Classes across Packages

**Exception Handling**

* Exception handing with try catch block
* Importance of exception handling
* Exception and Error
* Throwable Class
* Final and Finally
* Throw and Throws
* Different Types of Exceptions
* Need of exception handling in Selenium framework

**Collection Framework**

* Sets
* Lists
* Queues
* Maps

**Retrieving Elements from Collections**

* For each loop
* Iterator Interface
* List Iterator Interface

**Eclipse**

* Installing Eclipse
* Creating Simple Java Project in eclipse
* Importing and Exporting
* Debugging using Eclipse
* Exploring Eclipse – Basic
* Exploring Eclipse – Advanced

**Selenium**

**Introduction to Selenium**

* Test Automation for Web Applications
* To Automate or Not to Automate?
* Introducing Selenium
* Brief History of The Selenium Project
* Selenium’s Tool Suite
* Supported Browsers and Platforms

**Selenium IDE**

* Installing Selenium IDE
* Creating your First Selenium IDE script
* How to use Locators in Selenium IDE
* How to enhance a script using Selenium IDE
* Creating and Running Tests
* Creating and Running Test Suite

**Selenium-RC**

* What is Selenium RC?
* selenium RC architecture
* what is sameorigin policy,introduction to selenium core
* Difference between Selenium IDE and Selenium RC
* Configuring Selenium RC in Eclipse
* Javadocs for Selenium RC
* Selenium Interface
* Starting and Stopping Selenium Server
* limitation in RC
* Difference between Webdriver(2.x) and Selenium RC(1.x)

**Introduction to Selenium WebDriver**

* Selenium Webdriver Architecture

1. client/language bindings
2. Webdriver API
3. Webdriver SPI
4. JSONWireProtocal
5. Drivers

* Download and configure the Webdriver jars in eclipse
* Prerequisites for selenium WebDriver
* Different types of browser drivers
* Focus on FF Driver,IE Driver, ChromeDriver,HtmlUnitDriver
* Working on RemoteWebDriver
* Introduction to page level commands/methods in WebDriver
* Introduction to navigation commands in WebDriver.
* Difference between quit and close methods
* Different techniques for closing the browsers.

**Introduction to Web Technologies in Selenium Webdriver**

* Introduction to html,
* dhtml
* xml,xpath
* Javascript,html5,cookies,regular expressions.
* Ajax,json

**INTRODUCTION TO OBJECT IDENTIFICATION IN WEBDRIVER**

* what is page source
* Hooking pagesource using pageinspectors.
* Introduction to HTML DOM
* Need of page source in selenium Webdriver
* what is static and dynamic objects
* Introduction to locators in selenium WebDriver
* Type of locators.
* Introduction to find element and find elements method in WebDriver.
* Introduction WebDriver Interface
* Introduction Web Element Interface
* How and when can we select the locators.
* Introduction to xpath,cssseelctor and jquery selectors
* Focus on xpath language and css
* Handling dynamic objects using xpath,cssselectors and jqueryselectors.
* Building customized locators.
* Introduction to objectmodel in WebDriver
* Identifying Web Elements using id, name, class

**Selenium GRID**

* What is Selenium Grid?
* When to Use Selenium Grid?
* What is a Hub and Node?
* How to Install and Use Grid 2.0?
* Designing Test Scripts That Can Run on the Grid
* Using the DesiredCapabilites Object
* Using the RemoteWebDriver Object
* Running a Sample Test Case on the Grid
* Sequential and Parallel Test Execution
* Running Tests on different Operating Systems
* Running Tests on different Browsers

**Handling Ajax Components**

* What is XPath
* When to Use XPath
* Absolute XPath/Relative XPath
* Specifying conditions with XPath
* CSS Selectors
* Customizing CSS Selector

**Synchronization**

* ImplicitWait
* WebDriverWait
* FluentWait
* PageLoadTimeout

**TestNG**

**What is TestNG?**

* Checking reports created by TestNG
* Generating HTML Reports
* Annotations used in TestNG
* Validating Tests with Assertions
* Creating multiple Tests
* Prioritizing Tests
* Parameterizing Tests with dataProvider
* TestNG dataProvider with Excel
* Creating and Running Test Suites with TestNG.xml
* Parallel Test Execution with TestNG
* Cross Browser Testing using TestNG
* Batch Running of tests in TestNg
* Skip Test in TestNG
* Set Test Dependencies in TestNG
* Assertion in TestNG
* error collectors
* improved Assertions using HAMCREST JAVA LIBRARY
* Test Groups in TestNG
* Setting priority of execution for test cases
* Test Parameterization in TestNG
* Putting Dataproviders for multiple tests in a single file
* Parameterizing/Sharing single dataprovider for multiple test cases
* Parallel Test Execution Using TestNG
* Test Listeners in TestNG
* Listenrs for logging in case of FAILED, SKIPPED or PASSED test cases
* TestListener Adaptor
* Reporting multiple failures in single test case
* Logging and Reports in TestNg
* Integrate ReportNG with TestNG
* Pre-Serve Test Execution Order in TestNG
* TestNG Tests Run Count after Retry.
* Retry executing only Failed Tests using TestNG
* Mocking in TestNg.

**Automation Test Frameworks**

* Modular Driven Framework
* Keyword Driven Framework
* Data Driven Framework
* Hybrid Framework

**Page Object Model (POM) & Page Factory in Selenium**

* What is POM
* Why POM?
* Advantages of POM
* Creating POM Tests
* What is Page Factory?
* Creating Tests with Page Factory

**Database Testing using Selenium**

* JDBC (Java Database Connectivity)
* Driver Manager
* Driver
* Connection
* Statement
* ResultSet
* SQLException
* Connecting to DataBases
* Sending SQL Queries to Database
* Processing Results
* Real-time examples of Database Testing with Selenium

**AutoIT**

* Installing AutoIT
* Components of AutoIT
* Using FinderTool
* AutoIT commands
* Creating Scripts in AutoIT
* Creating executable files
* Running AutoIT Scripts from Selenium

**MAVEN & JENKINS**

**MAVEN**

* What is Maven and Why Maven?
* Installing/Configuring Maven
* Creating Maven Project
* Importing Maven Project into Eclipse
* What is POM.xml?
* Adding Dependencies to POM.xml

**JENKINS**

* Installing/Configuring Jenkins
* Scheduling Test Execution in Jenkins
* Auto mail configuration in Jenkins
* What is continues integration?
* Continues integration with JENKINS

**LOG4J**

* Introduction about Logging
* Logging problems without Log4J
* How to solve Logging problem with Log4J
* What is Layout?
* Different types of Layouts in Log4J
* What is Appender?
* Different types of Appenders

**Introduction to Build Tools**

* what is build
* what is build lifecycle
* what is the need of build automation
* How to use build automation tools in WebDriver
* where we use build automation tools in webdriver.
* How to integrate the build automation tools in webdriver.

**Introduction to ANT**

* what is Ant
* when to use Ant
* what is build /ant file
* Download and configuration of ant on windows
* steps for building ant file
* Understanding Ant datatypes and properties
* Integrating ant with testng
* Developing and running ant files from eclipse ,command prompt.
* Need of ant in report generation
* Need of ant in framework development
* XSLT report generation using TestNg and Ant
* Building a BAT file to run tests using ANT

**Introduction to Common Repository/SCM Tool**

* What is SVN?
* SVN centralized repository
* How will SVN be useful to team?
* Installing SVN client UI - TortoiseSVN
* Revisions in repository
* Checkin and Checkout with UI
* Installing SVN eclispe plugin - Subeclipse
* Checkin and Checkout code with eclipse

**INTRODUCTION TO AUTOMATION TEST FRAMEWORKS**

* what is framework
* Types of frameworks
* Design and implmentation of datadriven frameworks
* Design and implementation hybrid-driven frameworks(datadriven+keyword driven)
* Design and implementation of framework using page object design patterns,model
* page factory.

**INTRODUCTION TO GIT/GITHUB/CONTINUOUS INTEGRATION -JENKINS**

* Jenkins Integration
* What is continuous integration
* How Jenkins helps in continuous integration
* Downloading and Installing Jenkins
* Executing simple batch commands
* Build project at will and build at intervals/ Scheduling builds
* Executing Selenium Project builds with ANT
* Executing Selenium Project builds on remote Server/Github with ANT?
* Build Triggers
* Mailing if build fails
* Configuring/Scheduling Maven Project in Jenkins
* Configuring/Scheduling remote Git maven project in Jenkins

Revise on all concepts, introduction to future tools, technologies

**Note**: Techifynow also provides training on Manual testing, Selenium with java,c#,Mobile

testing(manual, **Appium**), **SOA-Webservices** testing,QTP/uft,coded-ui,Mobile

development(Android iOS), Web technologies(Angular.js,Node.js,Python,Php,Dot

net),**DevOps,Ethical Hacking**,SQL,**TiBCO**,Linux ,**AWS**,**Data Science** etc.