CORE   JAVA

Introduction to Java
- History of Java
- Features of Java
- JVM Architecture
- JDK 1.8, JRE and JVM
- Java Keywords
- Simple Hello World Program
- Java Flow Control
- Source File
- Class and Objects
- Data Types
  - Primitive Data Types
  - Non − Primitive Data Types
- Constructor
- Packages
- This/Super Keyword
- Instance & Static Variable
- Static Block
- Covariant Return Types
- Singleton and Immutable Class

Object Oriented Programming (OOPs)
- Inheritance (Has a, Is a)
- Polymorphism (Overloading, Overriding)
- Abstraction (Abstract and Interface)
- Encapsulation (Setter Getter, Access Modifier)
- Interface
- Casting

String Handling
- String: What and Why?
- Immutable String
- String Comparison
- String Concatenation
- Substring
- Methods of String class
- String Buffer class

- ➤ String Builder class
- ➤ Creating Immutable class
- ➤ toString method
- ➤ String Tokenizer class

Exception
- ➤ Exception Handling:
   What and Why? (Try, Catch, Finally, Throw Throws Try with Resources)
- ➤ try and catch block
- ➤ Multiple catch blocks
- ➤ Nested try
- ➤ finally block
- ➤ throw keyword
- ➤ Exception Propagation
- ➤ throws keyword
- ➤ Exception Handling with Method Overriding
- ➤ Custom Exception

Collection
- ➤ List- ArrayList, Vector, LinkedList
- ➤ Set- HashSet, TreeSet, LinkedHashSet
- ➤ Map- HashMap, TreeMap, LinkedHashMap,Weak Hash Map
- ➤ Cursors-
   - ■ Iterator
   - ■ List Iterator
   - ■ Enumeration
   - ▪ Enumeration-
   - ▪ Comparable & Comparator
   - ▪ Generics
   - ▪ Enum
   - ▪ Auto Boxing Annotation
   - ▪ Collection Project

Synchronization
- ➤ Synchronization: What and Why?
- ➤ Synchronized method
- ➤ synchronized block
- ➤ static synchronization

Manual Testing Syllabus

Introduction to Testing
- ➢ What is testing?
- ➢ Why testing is essential?

Quality
- ➢ What is quality of software?
- ➢ Quality attributes

Software Development Life Cycle (SDLC)

Software Testing Life Cycle (STLC)

QA and QC activities

Verification and Validation

Verification techniques
- ➢ Informal review
- ➢ Walkthrough
- ➢ Technical review
- ➢ Inspection

Types of Software Development Life Cycle Models
- ➢ Waterfall Model
- ➢ Verification and Validation Model(V Model)
- ➢ Incremental Model
- ➢ Iterative Model
- ➢ Agile Model

Test Process
- ➢ Generic Test Process

Test Management (TL or PM)
- ➢ Project Delivery
- ➢ Estimation
- ➢ Test policy
- ➢ Test Strategy
- ➢ Test Plan
- ➢ Phase Test plan
- ➢ Test Completion Report
- ➢ Test Metric

Risk
- ➤ What is risk?
- ➤ Risk Identification
- ➤ Risk Probability
- ➤ Risk Impact
- ➤ Risk examples
- ➤ Risk mitigation
- ➤ Risk contingency

Defect
- ➤ What is defect?
- ➤ Defect synonymous
- ➤ Defect life cycle
- ➤ Severity
- ➤ Priority
- ➤ Defect age
- ➤ Defect tracking and correction
- ➤ Defect techniques
- ➤ Defect tracking
- ➤ Defect reporting
- ➤ Sample format of defect report

Black box testing techniques
- ➤ Equivalence partitioning or Equivalence classing
- ➤ Boundary value analysis
- ➤ Use case based testing
- ➤ Functional and Non Functional testing
- ➤ Cause effect graphing
- ➤ Error guessing

White box testing techniques
- ➤ Basis path
- ➤ Control structure testing

Types of testing
- ➤ Types of Functional and Non Function testing
- ➤ Regression testing
- ➤ Retesting

Levels of testing
- ➢ Unit level testing
- ➢ Integration testing
- ➢ System testing
- ➢ System integration testing

Defect Tracking Tools
- ➢ Jira

Automation Testing Syllabus

Introduction to Automation Testing
- ➢ What is Automation Testing?
- ➢ Which Test Cases to Automate?
- ➢ Different Automation tools
- ➢ Automation Challenges & Mitigations

Introduction to Selenium
- ➢ What is selenium?
- ➢ History and various versions of selenium
- ➢ Advantages of using Selenium over other tools
- ➢ Selenium components

Selenium Web Driver 3.0
- ➢ What is a driver?
- ➢ Why Selenium Web Driver?
- ➢ What is a Selenium Web Driver?
- ➢ Automation Setup for Selenium Web Driver
- ➢ Configuration of Selenium Jar using Eclipse
- ➢ Setup for Firebug, Fire path for Mozilla Firefox browser
- ➢ Web Driver Interface Methods

HTML
- ➢ HTML basics

Locators
- ➢ Use of locators
- ➢ Different locators available in Selenium
  - o ID
  - o Name

- o Link text
- o Partial Link Text
- o Class Name
- o Tag Name
- o Xpath
  - Absolute Xpath
  - Relative Xpath
  - Dynamic Xpath
- o CSS

Webelemnt
- ➢ Search Web Elements on web pages
- ➢ Web Element Methods

Synchronizing Test with Wait
- ➢ Implicit Wait
- ➢ Explicit Wait
- ➢ Fluent Wait With examples

Action Interface and Action class
- ➢ Introduction
- ➢ Use of Action class
- ➢ Action class methods with description
- ➢ Building a series of multiple actions

Miscellaneous Selenium scenarios
- ➢ Capturing Screen shots
- ➢ Alert and Pop up handling
- ➢ Calendar handling
- ➢ Frames handling
- ➢ Cookies
- ➢ Why we handle Cookie in Selenium?
- ➢ Cookies methods
- ➢ Multiple Window Handling
- ➢ Java Script injection
- ➢ Locate and handle web elements of Ajax framework
- ➢ Verifying statements

Handling Web Tables
- ➢ What is Web Tables?
- ➢ Extracting values from Web Tables

➢ Static and Dynamic Web Tables

Excel sheet Operations
➢ Introduction
➢ Read excel sheet with .xls & .xlsx format by using Apache
➢ POI jars Write excel sheet .xls & .xlsx format by using Apache POI jars

TestNG
➢ TestNG & TestNG features
➢ How to integrate TestNG with Eclipse
➢ TestNG Annotations
➢ Use of DataProvider Annotion
➢ Parameterization by using testing.xml file
➢ POM file Parameterization by using Data Provider
➢ TestNG Assertions
➢ TestNG listeners
➢ TestNG Reporting

Build Tools-Maven
➢ How to create a maven project in Eclipse Maven Build Cycles
➢ How to compile and Run tests using Maven.
➢ Integration of Maven with TestNG by using Advanced Selenium

Framework Designing
➢ What is a Framework?
➢ Different Types of Framework
➢ How to Design a framework?
➢ Modular Testing Framework
➢ Data Driven Framework using Excel
➢ Downloading and configuration of Apache POI
➢ Executing Test cases from Excel
➢ Keyword Framework Hybrid Framework

Page Object Model
➢ Introduction

- ➤ Advantages of POM
- ➤ How to implement POM using Page Object and Page Factory by using Selenium Web Driver

Source Code Management Tool
- ➤ Github

API Testing Syllabus

Introduction of API and Web services:-
- ➤ What is API.
- ➤ What is API Testing.
- ➤ What is Web Services.
- ➤ Types of Web Services.
- ➤ HTTP Methods-GET/POST/PUT/Delete.
- ➤ HTTP Status Response Code.

ARC(Advance Rest Client):-
- ➤ Introduction.
- ➤ How to call Rest API in ARC.
- ➤ Curd Operation with All HTTP method.

Postman.
- ➤ Introduction.
- ➤ How to call Rest API in Postman.
- ➤ How to pass path parameter in Request.
- ➤ How to set Headers in Postman.
- ➤ How to pass JSON/XML Payload.
- ➤ How to check response status code.
- ➤ How to check JSON/XML response message.

Database Testing

- ➤ Introduction to SQL
- ➤ Introduction to Databases and RDMBS
- ➤ Install a Database Engine
- ➤ SQL Syntax
- ➤ SQL Data Types
- ➤ SQL Operators
- ➤ SQL Expressions
- ➤ SQL Comments
- ➤ SQL – Data Definition Language Commands and Operations.
- ➤ SQL – Data Manipulation Language Commands and Operat

*****