

Software Testing Syllabus

Newly Updated 2026-27



3000+
Placed Students



650+
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50+
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Behind Every Great Institute is a Great Founder



Mr. Kunal Sir

Director of CJC EdTech by Kunal Sir.

Mr. Kunal Sonu, Director of **CJC EdTech** holds a Master's degree in Computer Applications & has over **15+ years** of experience in Java/J2EE technologies. After resigning from Syntel, he pursued a career in teaching to provide in-depth knowledge and guidance to aspiring professionals. **Mr. Sonu** has delivered lectures at renowned institutions such as **Sinhgad Institutes, JSPM Group, & MMCOE, Pune**. With a passion for education, he is dedicated to helping **students achieve success in their careers**.



3000+
Placed Students



15+
Course Options



650+
Job Recruiters

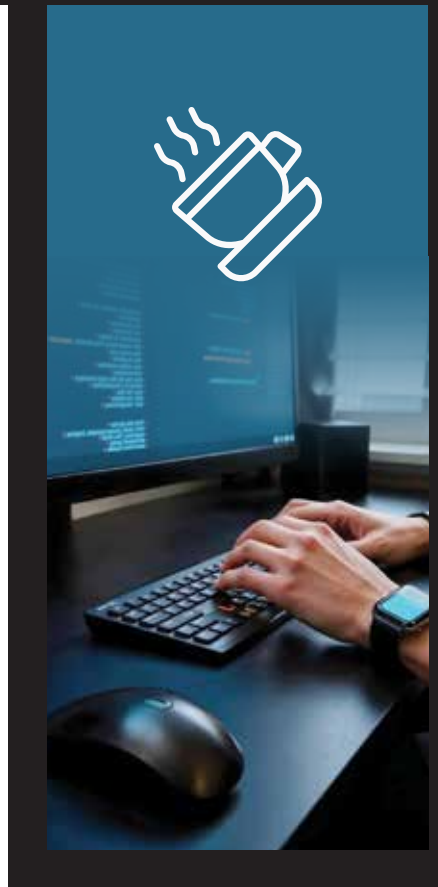


50+
Expert Trainers

CORE JAVA

1. JDK 1.8 New Features

- ☕ Java 8 Interface Default Method
- ☕ Java 8 Interface Static Method
- ☕ Java 8 Functional Interface
- ☕ Java 8 Lambda Expression
- ☕ Java 8 forEach() Method
- ☕ Java 8 Stream API
- ☕ Java 8 Collection
- ☕ Important Features of Java 8



2. Introduction to Java

- ☕ History of Java
- ☕ Important Features of Java
- ☕ JVM Architecture
- ☕ JDK, JRE and JVM
- ☕ Java Keywords
- ☕ Simple Hello World Program
- ☕ Java Flow Control
- ☕ Source File Structure
- ☕ Class and Objects
- ☕ Data Types

Primitive Data Types / Non-Primitive Data Types

- ☕ Constructor
- ☕ Packages
- ☕ Instance & Static Variables
- ☕ Static Block
- ☕ Has-A Relationship (Secondary Reference)
- ☕ Setter and Getter Methods
- ☕ Method Return Type (Primitive type and Class type)

3. Object-Oriented Programming (OOPs) Concepts

- Inheritance (IS-A Relationship)
- ☕ Constructor and Inheritance
- ☕ Inheritance with Parent Reference & Child Constructor
- ☕ Covariant Return Types
- ☕ Inheritance and Type Casting
- ☕ this / super Keyword

► Polymorphism

- ☕ Method Overloading
- ☕ Constructor Overloading

☕ Compile-Time Polymorphism

☕ Method Overloading & Narrowing Concept

☕ Method Overriding

☕ @Override Annotation

☕ Overriding & toString() Method

► Abstraction

☕ Abstract Class

☕ Interface

☕ Marker Interface

☕ Interface and Multiple Inheritance

☕ Uses and Benefits of Interface with Example

☕ Difference between Interface & Abstract Class

► Encapsulation

☕ Access Modifiers

☕ Data Hiding

☕ protected Access Modifier

OOPs Project



4. Exception Handling

☕ What and Why?

☕ (Try, Catch, Finally, Throw, Throws, Try with Resources)

☕ Try and Catch Block

☕ Multiple Catch Blocks

☕ Throw Keyword

☕ Exception Propagation

☕ Custom Exception

☕ AutoCloseable Interface (JDK 1.7 Feature)

☕ Try with Resources (JDK 1.7 Feature)

☕ Nested Try

☕ Finally Block

Finally Block with Return Statement

☕ Throws Keyword

Throws with Method Throws with Constructor



5. String Handling

- ☕ What and Why?
- ☕ Immutable String
- ☕ Methods of String Class
- ☕ Creating an Immutable Class



6. Collection Framework

Collection Project

- ☕ Java Collection
- ☕ **Java List** - *ArrayList, Vector, LinkedList | Nested List | Sorting Lists | Handling Duplicates in List*
- ☕ **Java Set** - *HashSet | TreeSet | LinkedHashSet | Nested Set*
- ☕ **Java Map** - *HashMap | LinkedHashMap | WeakHashMap*
- ☕ **Cursors** - *Iterator | ListIterator | Enumeration*
- ☕ Java Collections Utility Class
- ☕ **Comparable & Comparator** - *Custom Sorting | Difference between Comparable & Comparator*
- ☕ Collection and Generics



7. Synchronization

- ☕ What and Why?
- ☕ Synchronized Method
- ☕ Synchronized Block
- ☕ Static Synchronization



8. Input and Output

- ☕ File
- ☕ FileWriter & FileReader
- ☕ BufferedWriter & BufferedReader
- ☕ Input from Keyboard by Console
- ☕ Input from Keyboard by Scanner Class
- ☕ PrintWriter Class
- ☕ Reading and Writing Data Simultaneously



9. JDBC API

- | | |
|-----------------------------------|------------------------|
| ☕ What is JDBC? | ☕ Connection Interface |
| ☕ JDBC Drivers | ☕ Statement Interface |
| ☕ Steps to Connect to Database | ☕ PreparedStatement |
| ☕ Connectivity with Oracle, MySQL | ☕ CallableStatement |
| ☕ DriverManager | ☕ CRUD Operations |

MANUAL TESTING

1. Introduction to Testing

- What is testing?
- Why testing is essential?

2. 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 Technique
- Informal review
- Walkthrough
- Technical review
- Inspection



3. SDLC Life Cycle Models

- Waterfall Model
- Verification and Validation Model(V Model)
- Incremental Model
- Iterative Model
- Agile Model
- Spiral Model
- Rapid Application Development Model (RAD)

4. Agile Methodology

- Understanding Agile
- Scrum Methodology
- Scrum Roles,Events,Scrum Terms and Artifacts
- Estimating in Agile



5. Test Process

- Generic Test Process

6. Test Management

- Project Delivery
- Test policy
- Test Strategy
- Test Plan
- Test Completion Report

7. Risk

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



8. Defect

- What is defect?
- Defect synonymous
- Defect life cycle
- Defect severity
- Defect priority
- Defect age
- Defect tracking and correction Defect techniques
- Defect tracking
- Defect reporting
- Sample format of defect report

9. Black box testing techniques

- Equivalence partitioning or Equivalence classing
- Boundary value analysis
- Use case based testing
- State transition testing
- Cause effect graphing
- Error guessing



FULL SYSTEM AND UI TESTS



COMPONENT AND UNIT TESTS

10. White box testing techniques

- Basis path
- Control structure testing

11. Type of Testing

- Functional Testing
- Non-Functional Testing
- Regression testing
- Retesting



12. Levels of Testing

- Unit level testing Integration testing
- System testing
- System integration testing

13. Defect Tracking Tools



AUTOMATION TESTING

1. Introduction to Automation Testing

- ⚙ What is an Automation Testing?
- ⚙ Which Test Cases to Automate?
- ⚙ Different Automation tools.
- ⚙ Automation Challenges & Mitigations.

Automation
Testing



2. Introduction to Selenium

- ⚙ What is selenium?
- ⚙ History and various versions of selenium.
- ⚙ Advantages of using Selenium over other tools.
- ⚙ Selenium components.



3. Selenium Web Driver

- ⚙ What is a driver?
- ⚙ What is a Selenium Web Driver?
- ⚙ Automation Setup for Selenium Web Driver.
- ⚙ Configuration of Selenium Jar using Eclipse.
- ⚙ Web Driver Interface Methods.



4. HTML

- ⚙ HTML Basic.



4. Locators

- ⚙ Use of locators.
- ⚙ Different locators available in Selenium.

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



5. Webelement

- ⚙ Search Web Elements on web pages.
- ⚙ Web Element Methods.

6. Synchronizing Test Script with Wait

-  Implicit Wait.
-  Explicit Wait.
-  Fluent Wait.

7. Action Interface and Actions class

-  Introduction.
-  Use of Actions class.
-  Actions class methods with description.
-  Building a series of multiple actions.

8. 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.



9. Handling Web Table

-  What is Web Tables?
-  Extracting values from Web Tables.
-  Static and Dynamic Web Tables.

10. Excel sheet Operations

-  Introduction.
-  Read and Write excel sheet with .xls & .xlsx
-  Format By Using Apache.



11. TestNG

-  TestNG & TestNG features.
-  How to integrate TestNG with Eclipse.
-  TestNG Annotations.
-  Use of Data Provider Annotation.
-  Parameterization by using testing.xml file.
-  POM file Parameterization by using Data Provider.
-  TestNG Assertions.
-  TestNG Listeners.
-  TestNG Reporting.



12.Build Tools-Maven

13.Framework Designing

- ⚙ What is a Framework?
- ⚙ Different Types of Framework.
- ⚙ How to Design a framework?

14.Properties File

15.Page Object Model

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



16.Log 4j

17.Jenkins



- ⚙ What is Jenkins and how to use it?
- ⚙ Integration of Maven/TestNG/Jenkins/Selenium.

18.Auto IT

- ⚙ Introduction.
- ⚙ Download file using Auto IT in Selenium.
- ⚙ Web Driver with example.

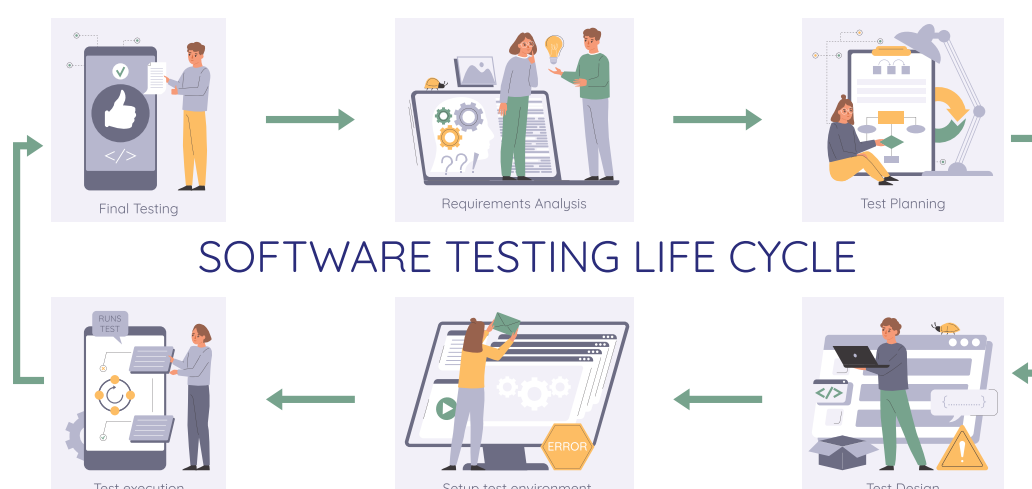
19.Behavior Driven Development (BDD)

20.Framework Using Cucumber



What is BDD?

- ⚙ Use of Cucumber tool to implement BDD framework.
- ⚙ Given, When, Then, And, But annotations and-
-usage in features class Writing a Step Definition.
- ⚙ Writing Runner Class.
- ⚙ Passing parameters in Step Functions.
- ⚙ Cucumber Annotations.
- ⚙ Data table in Cucumber and its implementation Pretty,
-Tags and Glue
- ⚙ Generating Junit,



API TESTING

1. 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/patch/Delete.
- HTTP Status Response Code.



2. ARC (Advance Rest Client)

- 🖥️ Introduction.
- 🖥️ How to call Rest API in ARC.
- 🖥️ CRUD Operation with All HTTP method.

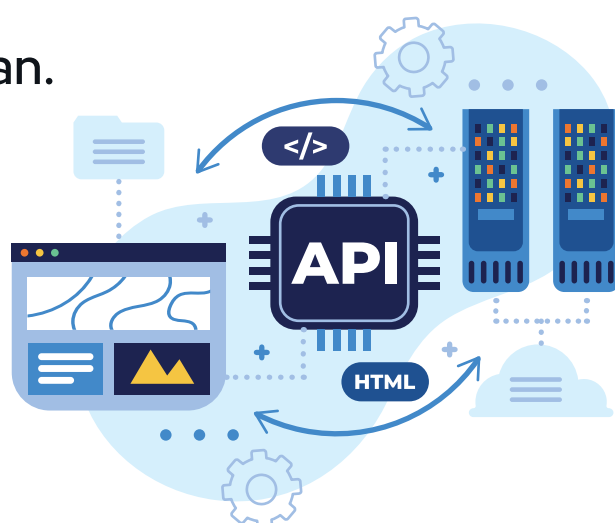
3. Rest Assured

- Introduction.
- Rest Assured methods:-GET/POST/PUT/DELETE.
- Integration with TestNG.
- ASSEST in Rest Assured.
- Rest Assured Authentication Handle-Basic Auth.

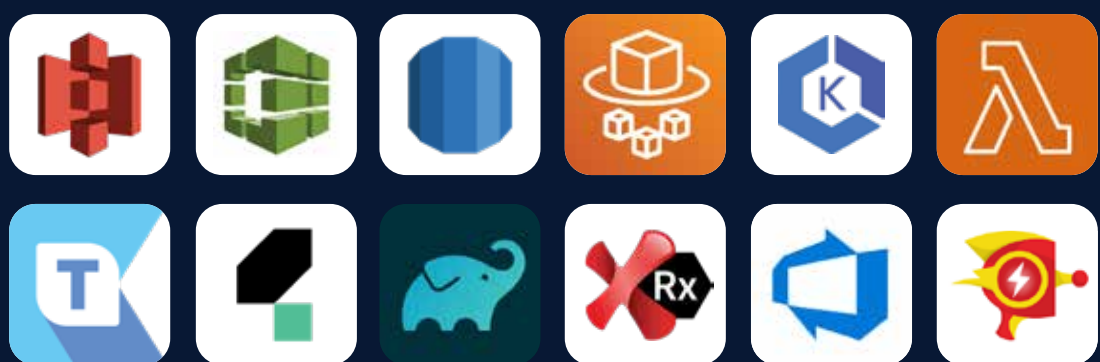


4. Postman

- 🔪 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.
- 🔪 What is response header.
- 🔪 API History in Postman.
- 🔪 Generate HTML Test Report.
- 🔪 Create a collection from API Specification-
-or API Schema.
- 🔪 Test Script in postman.
- 🔪 Pre Request Script in postman.



From Hello World to Full Applications, My Coding Growth



Why **Coding Feels Impossible?**
Kunal Sir Has the **Answer!**



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