



## **Advanced Java Course – Duration 2 Months**

**( JDBC, Spring Boot, Hibernate, Micro Services & Rest API Testing with 1 Real-time Project )**

**Introduction to JSE**

**Introduction to JEE**

**Introduction to JME**

### **JDBC**

What Is the JDBC API?

Driver Types

Two-tier and Three-tier Models

Connection Overview

Transactions

DriverManager Overview

Statement Overview

Sending Batch Updates

ResultSet Overview

Types of Result Sets

Concurrency Types

PreparedStatement Overview

CallableStatement Overview

### **JDBC SQL Programming**

Error Checking and the SQLException Class

The SQLWarning Class

JDBC Types

Executing SQL Queries

ResultSetMetaData

Executing SQL Updates

Using a PreparedStatement

Parameterized Statements

Stored Procedures

Transaction Management

**OVERVIEW ON APPLETS**

**OVERVIEW ON JAVA**

**SERVLETS**

## **OVERVIEW ON SPs**

### **SOLID PRINCIPLES**

### **DESIGN PATTERNS**

#### **REST API**

Overview

What Is API?

Difference between SOAP and REST

REST Architecture

CRUD operations

RESTful Methods (GET, POST, PUT, DELETE, PATCH)

How to design API

HTTP Status Codes

Use of APIs thru postman tool

Principles of REST APIs

HTTP vs HTTPS

#### **MICROSERVICES**

What is microservice

Design patterns

Load balancer

API gateway

Microservice communication

Configuration server

Circuit breaker

Rate Limiter

OAuth

Containerization

Orchestration

Basics of CI/CD

Basics of Versioning and upgrades

#### **SPRING BOOT with Hibernate**

Overview

Difference between spring and spring boot

Spring boot Architecture

Folder Structure

Ways to create spring boot application

Tight coupling vs Loose Coupling

Environment setup

Introduction to JPA and ORM

Difference between JPA and Hibernate

Dependency Injection

Annotations

Introduction to maven

Dependency Injection (Constructor and Setter Injection)

Inversion of Control

Bean Lifecycle

Database Access with JPA CRUD

Spring MVC Security (Login, Logout and other security concepts)

Introduction to Thymeleaf

Spring MVC CRUD

Hibernate Advanced Mappings (@OneToOne, @OneToMany, @ManyToMany)

Unit test cases (JUnit)

**PROJECT (Which includes implementing all the above concepts)**

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