

Advance Java Training

Duration: 40 Hours

➤ Prerequisite

- Class , Object , Inheritance , Polymorphism , Encapsulation , Abstraction , Exceptions, String, String Buffer, StringBuilder

➤ Environment setup

- JDK 8
- Eclipse
- STS
- Postman
- MYSQL

➤ Java Architecture components

- JDK,JVM,JRE Overview
- JVM Internal Architecture
- Compilation , Execution Flow
- Java Platform Independent

➤ File Handling in Java

- File Navigation and I/O
- Types of Streams
- The Byte-stream I/O hierarchy
- Character Stream Hierarchy
- Reader , Writer classes
- Serialization

➤ Threads in Java and managing, handling threads (multithreading) in Java

- Defining, Instantiating, and Starting Threads
- Thread States
- Preventing Thread Execution
- Sleeping
- Thread Priorities and yield()
- Synchronizing Code
- Synchronization and Locks
- Thread Interaction
- Using notifyAll() When Many Threads May Be Waiting Concurrent Patterns in Java
- Introducing Executors, What Is Wrong with the Runnable Pattern?
- Defining the Executor Pattern: A New Pattern to Launch Threads
- Defining the Executor Service Pattern, a First Simple Example

- Comparing the Runnable and the Executor Service Patterns
- Understanding the Waiting Queue of the Executor Service
- Wrapping-up the Executor Service Pattern
- From Runnable to Callable: What Is Wrong with Runnables?
- Defining a New Model for Tasks That Return Objects
- Introducing the Callable Interface to Model Tasks
- Introducing the Future Object to Transmit Objects Between Threads
- Wrapping-up Callables and Futures, Handling Exceptions

➤ Java Collections

- Overriding hashCode() and equals()
- Overriding equals()
- Overriding hashCode()
- Collections
- So, What Do You Do with a Collection?
- List Interface ,Set Interface ,Map Interface Using the Collections Framework •
- Array List Basics
- Autoboxing with Collections
- Sorting Collections and Arrays
- Navigating (Searching) Tree Sets and Tree Maps
- Generic Types
- Generics and Legacy Code
- Mixing Generic and Non-generic Collections
- Why You Should Avoid Vectors and Stacks
- Understanding Copy On Write Arrays
- Introducing Queue and Deque, and Their Implementations
- Understanding How Queue Works in a Concurrent Environment
- Introducing Concurrent Maps and Their Implementations
- Atomic Operations Defined by the ConcurrentMap Interface
- Understanding Concurrency for a HashMap
- Understanding the Structure of the ConcurrentHashMap from Java 7
- Introducing the Java 8 ConcurrentHashMap and Its Parallel Methods

Java 8 new features

- Lambda Expressions
- Introduction
- Writing Lambda Expressions
- Functional Interfaces
- Types of Functional Interfaces
- Method reference(::)

Stream API

- Introduction
- Stream API with Collections
- Stream Operations
- Date and Time Api

➤ JDBC

- Prerequisite
- MYSQL Query's

- Introduction to JDBC
- Architecture of JDBC
- Role of Driver Manager
- Understanding JDBC Driver Types

Getting Started with JDBC

- Connecting to Database using JDBC
- Managing Database resources
- Handling JDBC Exceptions

Performing Basic CRUD operations using JDBC

- Executing Static SQL Statements
- Iterating Through ResultSets
- Understanding Scrollable ResultSets
- Understanding Updatable ResultSets
- Understanding PreparedStatement
- Retrieving Data Using PreparedStatement
- Inserting the Record
- Updating the Record
- Removing the Record
- Introduction to ORM and its need
- The Persistence Life Cycle
- Java persistence API (JPA)
- JPQL
- Association and Mapping

➤ Maven in Java

- What is Maven
- Install Maven
- Maven Repository
- Local Repository
- Central Repository
- Remote RepositoryMaven Pom.xml
- Maven Example
- Maven Web App

➤ Apache POI

- POI Introduction, POI Architecture ,POI Features ,POI Installation , Excel Document Handling ,POI Creating Workbook
- POI Creating Cell , POI Creating Date Cell ,POI Aligning Cell ,POI Cell Border ,POI Cell Color ,POI Merging Cells
- POI Excel Font ,POI Excel Header ,POI Hiding Rows ,POI Cell Properties ,POI Drawing Border ,POI Multiple Styles
- POI Excel Cell Type ,POI Drawing Shape ,POI Image ,POI Newline in Cell
- POI Outlining, POI Page Number ,POI Reading Cell Content ,POI Rewriting
- POI Shift Row ,POI Styling Shapes ,POI Comment ,POI Hyperlink
- POI Microsoft Word

- POI Creating MS Word
- POI Word Paragraph
- POI Word Table
- POI Word Style
- POI Word Aligning
- POI Extract Text
- POI Extract Paragraph

➤ Spring Boot framework

Introduction to Spring Platform and environment and Spring Boot Features

Introduction to Spring Framework, IoC

- What is Spring Framework, Benefits of Spring
- The Spring architecture
- IOC – Inversion of control, wiring beans
- Bean containers, lifecycle of beans in containers
- Customizing beans with BeanPostProcessors & BeanFactoryPostProcessors
- XML and Annotation-based, mixed configurations
- Java configuration

Spring MVC framework

- Introduction: DispatcherServlet, Handler mappings, Resolving views
- Annotation-based controller configuration
- Web Based Application Using Spring Boot
- Introduction to Web Services
- Introduction to REST web Services
- REST Controllers on the top of MVC
- Spring Boot Integration with Rest

Spring JPA Integration

- Spring support for JPA
- Implementing Spring JPA integration
- Spring Data
- Spring Boot(Annotation based and Java configuration)

➤ Web Services

- Spring ReST
- Spring DATA ReST