JAVA FULL STACK

DURATION 90 Days

COURSE OVERVIEW

The Java Full Stack Development Program provides end-to-end training in Java programming, frontend and backend web development, databases, frameworks like Spring Boot, and real-world project implementation. This course focuses on practical learning, hands-on projects, and preparing students for Java Full Stack Developer roles.

COURSE CURRICULUM

MODULE 1: CORE JAVA

BASICS

- Introduction to Java & Installation
- Programming Elements & First Application
- Data Types & Operators
- Control Statements
- Access Modifiers & Wrapper Classes
- Packages

OBJECT-ORIENTED PROGRAMMING (OOP)

- Classes & Objects
- Object Casting
- Exception Handling
- Multi-threading
- Garbage Collection
- Inner Classes

ADVANCED JAVA CONCEPTS

- Java I/O & File Handling
- String Handling
- Reflection API
- Arrays
- Collection Framework & Map Interface
- JDK 8 Features
- JDK 10 & 11 Features

MODULE 2: JDBC – DATABASE CONNECTIVITY

- Introduction to JDBC
- Establishing Database Connections
- Statement, PreparedStatement, CallableStatement
- ResultSet Interface & Metadata
- Batch Updates
- Transaction Management

MODULE 3: SERVLET PROGRAMMING

- Introduction to Servlets
- Developing & Deploying Servlets (Generic & HttpServlet)
- ServletRequest & ServletResponse
- ServletConfig & ServletContext
- HTML to Servlet Communication
- Servlet to Database Communication
- Request Dispatching & Redirecting
- Attributes, State & Session Management
- URL Rewriting, Hidden Form Fields, Cookies, HttpSession
- Filters, Listeners & Annotations
- Authentication, Authorization & Security
- Error Handling & Welcome File Handling

MODULE 4: JSP (JAVA SERVER PAGES)

- Introduction to JSP & JSP Tags
- Scripting Elements & Implicit Objects
- Directives & Standard Actions
- Using Java Beans in JSP
- Expression Language (EL) & JSTL
- Working with Custom Tags
- MVC Architecture
- Deploying Project Using MVC

MODULE 5: ORACLE DATABASE

- Database Fundamentals & RDBMS Concepts
- Oracle Introduction
- DDL, DML, DRL
- Functions, Integrity Constraints
- Joins & Subqueries
- Transactions, Views, Indexes
- PL/SQL: Procedures, Functions, Triggers
- Error Handling

MODULE 6: HTML5 – WEB STRUCTURE

- HTML Fundamentals & Document Structure
- Head & Body
- HTML Elements & Tags
- Text, Links, Images & Buttons
- Tables & Attributes
- Lists (Ordered, Unordered, Description)
- Forms & Input Elements
- Media Elements (Audio & Video)
- Semantic Elements

MODULE 7: CSS3 – STYLING & LAYOUT

CSS BASICS

- Introduction, Variables & Data Types
- Operators & Control Statements
- Loops

SELECTORS

- Universal, Tag, Class, ID
- Group, Descendant & Child Selectors

BOX MODEL

- Margin, Padding, Border, Width & Height

LAYOUT TECHNIQUES

- Positioning: Static, Relative, Absolute, Fixed, Sticky
- Flexbox & Grid Layout

RESPONSIVE DESIGN

- Media Queries, Breakpoints, Orientation Handling

EFFECTS

- Backgrounds, Colors, Transforms
- Transitions, Box Shadows

MODULE 8: BOOTSTRAP – RESPONSIVE UI

- Introduction to Bootstrap
- Grid System & Typography
- Buttons, Cards, Forms & Tables
- Pagination, Modal & Carousel
- Utility Classes
- Responsive Layout Design

MODULE 9: JAVASCRIPT – PROGRAMMING FUNDAMENTALS

BASICS

- Introduction, Variables & Data Types
- Operators & Control Statements
- Loops

FUNCTIONS

- Function Declaration
- Arrow Functions
- Callbacks & Higher Order Functions
- Async Functions

ARRAYS & OBJECTS

- CRUD Operations
- Array & Object Methods
- Spread & Rest Operators
- Destructuring

DOM MANIPULATION

- DOM Structure
- Selecting & Modifying Elements
- Creating & Removing Elements

ADVANCED JAVASCRIPT

- Scope & Closures
- this Keyword
- Call, Apply & Bind
- Promises, Async/Await
- Fetch API
- JavaScript Modules

MODULE 10: REACT JS – FRONTEND FRAMEWORK

- Introduction to React
- Virtual DOM & JSX
- Components, Props & State
- React Hooks
- Routing with React Router
- Forms & Controlled Components
- API Integration (Axios)
- Context API & Redux Basics
- Performance Optimization & Lazy Loading

MODULE 11: SPRING BOOT & MICROSERVICES

SPRING BOOT

- Introduction & Setup
- Building Spring Boot Applications
- REST APIs with In-Memory DB & CRUD Operations
- REST APIs with Relational DB
- JPA Repository Concepts
- Spring Boot Actuator & Custom Logging
- Profiles, Auto-Configuration & Thymeleaf
- Spring Web Integration
- Spring Boot Security

MICROSERVICES

- Core Concepts & Design Considerations
- Spring Cloud & Cloud Config
- API Gateway
- Messaging Queue Concepts (CloudBus)
- Fault Tolerance & OAuth2
- Swagger API Documentation
- Cloud Hosting & Deployment

CAREER OUTCOMES

AFTER COMPLETING THIS COURSE, LEARNERS CAN PURSUE ROLES SUCH AS

- Java Full Stack Developer
- Backend Developer
- Web Application Developer
- Software Engineer
- API Developer