Full-Stack with Java: From Beginner to Advanced

Course Overview

A complete journey through modern full-stack development using **Core Java, JSP, Servlets, JDBC, MySQL, Frontend (HTML, CSS, JavaScript), Backend architecture, Sessions, Security, Deployment, and AI-assisted development**

Module 1 - Foundations & Setup

1. Java for full-stack roadmap
2. Installing development environment on Windows, macOS & Linux
3. Writing and running your first Java program
4. Understanding full-stack roles, responsibilities, and tech layers

Module 2 - Core Java Essentials

1. Variables, constants, identifiers, comments
2. Primitive and non-primitive data types
3. Type casting and user input handling
4. Operators: arithmetic, assignment, comparison, increment/decrement
5. Strings: methods, indexing, concatenation, manipulation

Module 3 - Control Flow & Logic Building

1. Conditional statements: if, else-if, switch-case, ternary
2. Loops: while, do-while, for, for-each, nested loops
3. Control keywords: break, continue
4. Assessment: Even-Odd logic implementation + solution

Module 4 - Data Structures in Java

1. Arrays: creation, update, length, searching, modification
2. Working with an Array of Objects
3. Collections Intro: List, Set, Map basics

Module 5 - Methods and Built-in Utilities

1. Creating methods, calling methods
2. Math utilities and random number generation
3. Working with Date and Time
4. Formatting date and time outputs

Module 6 - Frontend for Java Developers

Installing code editor (Sublime Text or any preferred editor)

HTML5 Concepts

1. Headings, paragraphs, formatting
2. Div, tables, forms, navbars
3. Audio, video, iFrame, drag & drop
5. Registration form, login form — UI exercises + solutions

CSS3 Concepts

1. Inline, internal, external CSS
2. Selectors: class, id, pseudo-classes
3. Box model: padding, border
4. Flexbox and Grid layouts
5. Colours, shadows, gradients, rounded UI, button styling
6. Frontend capstone practice + solutions

Module 7 - JavaScript for Interactive UI

1. Internal, inline, external JavaScript linking
2. Async and defer script behaviour
3. DOM manipulation using ChatGPT assistance
4. String operations via DOM
5. Decision-making on UI using JavaScript
6. Form validation & error handling using try-catch-finally
7. Using arrow functions and ES6 Classes

Practice

Login form validation logic + solutions

Module 8 - Java Web Development (JSP & Servlets)

Setup

1. JDK installation and path setup on Windows
2. Installing Eclipse EE for enterprise web development
3. Creating dynamic web projects in Eclipse
4. Web architecture: client-server model and Java components

Apache Tomcat Server

1. Web server architecture overview
2. Downloading, installing, and configuring with Eclipse for Java deployment

JSP (Java Servlet Pages)

1. JSP syntax and lifecycle
2. Directives and scripting elements
3. Creating dynamic views using JSP pages

Servlets

1. Servlet lifecycle
2. Handling HTTP request & form data
3. Deploying servlets from Eclipse

Module 9 - MySQL & JDBC CRUD Integration

1. Introduction to MySQL and Workbench setup
2. Starting MySQL service from Workbench
3. Creating a database and tables

SQL Query Mastery

INSERT, SELECT, WHERE, UPDATE, DELETE

JSP + JDBC + Servlet CRUD

Insert flow → registration JSP → insert servlet → test records
Read records → report JSP + servlet logic
Update flow → edit JSP → update servlet → test update
Delete flow → delete link JSP → delete servlet → test delete

Reporting Mini Project

1. Planning and designing a report app
2. Add the JDBC driver to the project
3. Link JSP with Servlet logic
4. Run the app and view the report

Module 10 – Web App Security & Login System

Encrypting passwords using MD5 from Java
Developing a secure login with sessions

Features

Login JSP → login servlet → session create & read → dashboard
Logout servlet → destroy session → test login & logout

Module 11 – Deployment & Debugging

1. Generating a WAR file using Eclipse
2. Configuring web.xml for deployment
3. Classpath debugging for MySQL driver
4. Correct driver naming and common error resolution

Conclusion

Thank you for being part of Full-Stack Development with Java: From Basic to Advanced. Your dedication, consistency, and curiosity made this journey truly inspiring. You didn't just learn technologies you built real applications, solved challenges, and embraced future-ready AI tools for unstoppable productivity.

Congratulations on completing the course and capstone project successfully! This milestone marks the beginning of a strong full-stack developer mindset powered by modern development and AI-enhanced workflows. Keep building, keep innovating, and never stop exploring.

Wishing you unlimited success ahead proud of you!