☕ Java Full Stack – Virtual Internship 2025

📅 **Duration**: 8 Weeks (Monday–Saturday)
🕐 **Class Time**: 2 Hours Daily
🎯 **Goal**: Train students from Java basics to full-stack web development using **Java, Spring Boot, MySQL, HTML/CSS/JS, and Angular or React**.

WEEK 1: Java Core Programming Fundamentals

Day	Topics	Activities
Day 1	Introduction to Java & IDE Setup (Eclipse/IntelliJ)	Write Hello World, setup JDK
Day 2	Variables, Data Types, Operators	Practice basic input/output
Day 3	Conditional Statements & Loops	Build: Number guessing game
Day 4	Arrays, Strings & Basic String Methods	Mini task: Word Counter
Day 5	Functions, Recursion, Overloading	Build: Factorial and Palindrome checker
Day 6	Object-Oriented Programming (OOP) – Part 1	Create classes & objects (Student class)

✏️ Quiz: Java Basics
📝 Assessment: Console-based Student Management App
🎯 Output: Java Mini App (no UI)

◆ WEEK 2: Advanced Java & OOP Concepts

Day	Topics	Activities
Day 7	OOP – Inheritance, Polymorphism	Employee hierarchy system
Day 8	Abstraction, Interfaces	Shape or Payment Gateway example
Day 9	Exception Handling	Create a calculator with exception handling
Day 10	File Handling	Read/write files: Student info file system
Day 11	Collections (List, Set, Map)	Manage products in cart using HashMap
Day 12	Java Project: Mini Library System	Build console-based library manager

🧪 Quiz: OOP & Exceptions
📝 Assessment: Library System using Java OOP
🎯 Output: GitHub Java Console Project

◆ WEEK 3: HTML, CSS, JS – Web Frontend Basics

Day	Topics	Activities
Day 13	HTML Basics & Forms	Build: User registration page
Day 14	CSS Styling, Box Model, Flexbox	Design responsive pricing cards
Day 15	JS Basics: Variables, Loops, Functions	Calculator using JS
Day 16	DOM Manipulation & Events	Image slider or to-do list
Day 17	JS Form Validation	Email & password validation
Day 18	Mini Project: Login Form with Validation	HTML+CSS+JS integration

🧪 Quiz: Web Basics
📝 Assessment: Frontend Form Validation App
🎯 Output: Hosted Form Page (GitHub Pages)

◆ WEEK 4: Database – MySQL with JDBC Integration

Day	Topics	Activities
Day 19	Intro to RDBMS & MySQL	Install MySQL, create DB
Day 20	CRUD Operations + Joins	Query practice using sample tables
Day 21	JDBC Overview	Java-DB connection setup
Day 22	CRUD App in Java using JDBC	Create CLI-based DB Manager
Day 23	Prepared Statements & DAO Pattern	Modularize DB operations
Day 24	Java + MySQL Project	Mini Java + MySQL Integration App

✏️ Quiz: SQL + JDBC
📝 Assessment: Student/Inventory Management System
🎯 Output: Full Console App with DB Integration

◆ WEEK 5: Spring Boot Backend Development

Day	Topics	Activities
Day 25	Intro to Spring Boot & REST APIs	Setup basic controller
Day 26	REST CRUD with Spring Boot	Create Product APIs
Day 27	Spring Data JPA + MySQL Integration	Save and retrieve data
Day 28	Exception Handling + Validation	Add global error handlers
Day 29	Swagger UI + Postman Testing	Test and document your APIs
Day 30	Spring Boot Project: Product Catalog API	Build and test REST service

✏️ Quiz: Spring Boot Basics
📝 Assessment: Spring Boot REST CRUD App
🎯 Output: REST API Hosted on Render or Local

◆ WEEK 6: Frontend with React

Day	Topic	Activity
Day 31	Intro to React	Setup React project + folder structure using Vite or CRA
Day 32	Components, Props	Build: Task list component
Day 33	Routing, Forms & State	Create Signup/Login form with React Router
Day 34	Consuming REST API	Fetch products from Spring Boot backend
Day 35	State Management + UI Design	Cart or profile viewer using useState and Bootstrap
Day 36	Frontend-Backend Integration Project	Complete working UI + API connection

🧪 Quiz: React Basics
📝 Assessment: Product Catalog UI + API Integration
🎯 Output: Full CRUD App (React + Spring Boot)

◆ WEEK 7: Security, Deployment, & Testing

Day	Topics	Activities
Day 37	JWT Authentication in Spring Boot	Implement login & token auth
Day 38	Role-Based Authorization	Admin vs User access
Day 39	Frontend Auth Integration	Save token, secure frontend
Day 40	Testing Spring Boot with JUnit	Write test cases for APIs
Day 41	Deploy Spring Boot + React/Angular App	Use Render/Netlify or Railway
Day 42	Project Polishing & GitHub Push	Finalize folder structure + README

🖊️ Quiz: Auth & Deployment
📝 Assessment: Secure Full Stack App
🎯 Output: Hosted Java Full Stack App

◆ WEEK 8: Capstone Project & Demo Day

Day	Topics	Activities
Day 43	Final Project Planning + DB Schema	Select idea + create schema
Day 44	Backend Development – Controllers + DB	Spring Boot CRUD + Auth
Day 45	Frontend Development – Pages + Routing	Angular or React integration
Day 46	Testing + Deployment	Complete integration testing
Day 47	Resume, GitHub, LinkedIn Updates	Portfolio enhancement
Day 48	Final Presentation + Certification	Capstone Demo + Internship Certificate

✏️ Final Quiz: Java Full Stack Recap
📝 Final Assessment: E-Commerce / Booking / Blog App
🎯 Output: Hosted Full Stack Capstone Project