Introduction

Welcome to our 3-month Java Programming This curriculum is meticulously designed to cater to beginners and professionals alike, ensuring a hands-on, engaging, and career-oriented learning journey. By the end of the course, you'll be equipped to build robust applications and confidently tackle Java-based interviews or projects.

Month 1: Java Fundamentals & Core Concepts

Week 1: Introduction to Java

- Understanding Java's Importance in Modern Applications
- Setting Up Your Development Environment (IDE Setup: Eclipse/IntelliJ)
- Writing Your First Java Program
- Hands-on Projects:
- "Hello World" with a Twist: Personalize and style it!
- A Simple Calculator (CLI-Based).

Week 2: Data Types and Control Structures

- Primitive Data Types, Variables, and Constants
- Operators: Arithmetic, Logical, and Relational
- Control Statements: if, else, switch
- Loops: for, while, do-while
- Hands-on Projects:
- Create a Quiz App Using Loops and Conditions.

Week 3: Arrays and Strings

- Working with Single and Multidimensional Arrays
- Introduction to Strings and Common String Methods
- String Manipulations and Formatting
- Hands-on Projects:

- Design a Mini Library System Using Arrays.

Week 4: Functions and Basic OOP Concepts

- Introduction to Methods: Syntax and Examples
- Passing Parameters and Return Types
- Object-Oriented Programming Basics:
- Classes and Objects
- Constructors and Overloading
- Hands-on Projects:
- Build a Simple Bank Account Application.

Month 2: Advanced Java Concepts

Week 1: OOP in Depth

- Encapsulation, Inheritance, and Polymorphism
- Abstract Classes and Interfaces
- Method Overriding and Super Keyword
- Hands-on Projects:
- Create a Vehicle Management System Using Inheritance.

Week 2: Collections Framework

- Introduction to Java Collections: List, Set, and Map
- Iterators and Enhanced For Loops
- Sorting and Searching in Collections
- Hands-on Projects:
- Employee Records Management System Using Collections.

Week 3: Exception Handling

- Try-Catch Blocks, Finally, and Throw/Throws

- Custom Exceptions in Java
- Hands-on Projects:
- Build a File Reader Application with Robust Error Handling.

Week 4: File Handling and Streams

- Working with Files: Reading and Writing
- BufferedReader and BufferedWriter
- Serialization and Deserialization
- Hands-on Projects:
- Create a Student Report Card Generator Using Files.

Month 3: Java Frameworks and Real-World Applications

Week 1: Introduction to Java Frameworks

- Overview of Spring Boot and Hibernate
- Setting Up a Spring Boot Project
- Building a Basic RESTful API
- Hands-on Projects:
- Design a To-Do List Application with CRUD Operations.

Week 2: Database Connectivity

- Introduction to JDBC (Java Database Connectivity)
- Connecting Java Applications to MySQL/PostgreSQL
- Writing SQL Queries in Java
- Hands-on Projects:
- Develop a Customer Management System Linked to a Database.

Week 3: Multithreading and Concurrency

- Threads in Java: Creation and Lifecycle

- Synchronization and Locks
- Executors and Thread Pools
- Hands-on Projects:
- Build a Multi-User Chat Application (CLI-Based).

Week 4: Capstone Project & Deployment

- Capstone Project Options:
- Online Bookstore with Database Integration
- Attendance Management System
- Deploying a Java Application to a Web Server
- Presentation and Feedback Session

Key Features of the Program

- Interactive Learning: Daily live coding sessions, quizzes, and weekly hackathons.
- Project-Based Approach: Every concept is tied to real-world applications.
- Mentor Support: Personalized feedback and guidance from experienced developers.
- Career-Focused: Resume-building workshops and interview preparation included.

Enroll Today and take your first step towards becoming a Java Development Expert!