



10-Week Java Bootcamp Course Curriculum

Module 1

Java Fundamentals

1. Data Types
2. Operators Control
3. Flow Statements
4. Object-Oriented Programming
5. Object and Wrapper Class
6. Exception Handling



Module 2

Java Advanced

1. Design Patterns (Singleton, Builder, Factory)
2. SOLID Principles
3. Collections and Generics
4. Lambda and Functional Interface
5. Stream API, Optional, Method References
6. Concurrency/Multithreading
7. Input/output Stream
8. Memory Management
9. Overview of Garbage Collector



Module 3 & 4

MySQL (Module 3)

1. SQL Queries (DDL, DML, DCL, Joins)
2. Nested Queries
3. SQL Constraints
4. Normalization, Transaction Management (ACID Properties)

JDBC (Module 4)

1. Introduction to JDBC
2. Setting Up JDBC
3. JDBC API Components
4. Advanced JDBC Concepts



Module 5

Spring Framework & Spring Boot

1. IoC (Inversion of Control)
2. Spring JDBC
3. Spring Data JPA / Hibernate
4. Spring MVC
5. Spring Boot
6. Lombok
7. REST API
8. Spring AOP
9. Spring Security



Module 6

Frontend Development

HTML, CSS, JavaScript

TypeScript

Angular:

1. Components and Templates
2. Directives and Pipes
3. Angular Forms
4. Services and Dependency Injection
5. Modules
6. Routing and Navigation
7. State Management in Angular
8. RXJS (Observable/Observer)
9. HTTP and API Communication
10. Authentication and Authorization in Angular



Module 7 & 8

Test-Driven Development (Module 7)

1. JUnit
2. Mockito

Microservices (Module 8)

1. Microservices Architecture Microservices
2. Monolithic vs. Microservices Architecture
3. Communication Service
4. Registry and Discovery API
5. Gateway and Routing
6. Microservices Health Monitoring
7. Distributed Tracing
8. Resilience and Fault Tolerance



Module 9 & 10

DevOps (Module 9)

1. Git/GitHub
2. Docker

Cloud (Module 10)

1. AWS
2. IAM
3. EC2 Service
4. S3 Service
5. RDS
6. ECS
7. AWS Lambda



Module 11

AI & Machine Learning

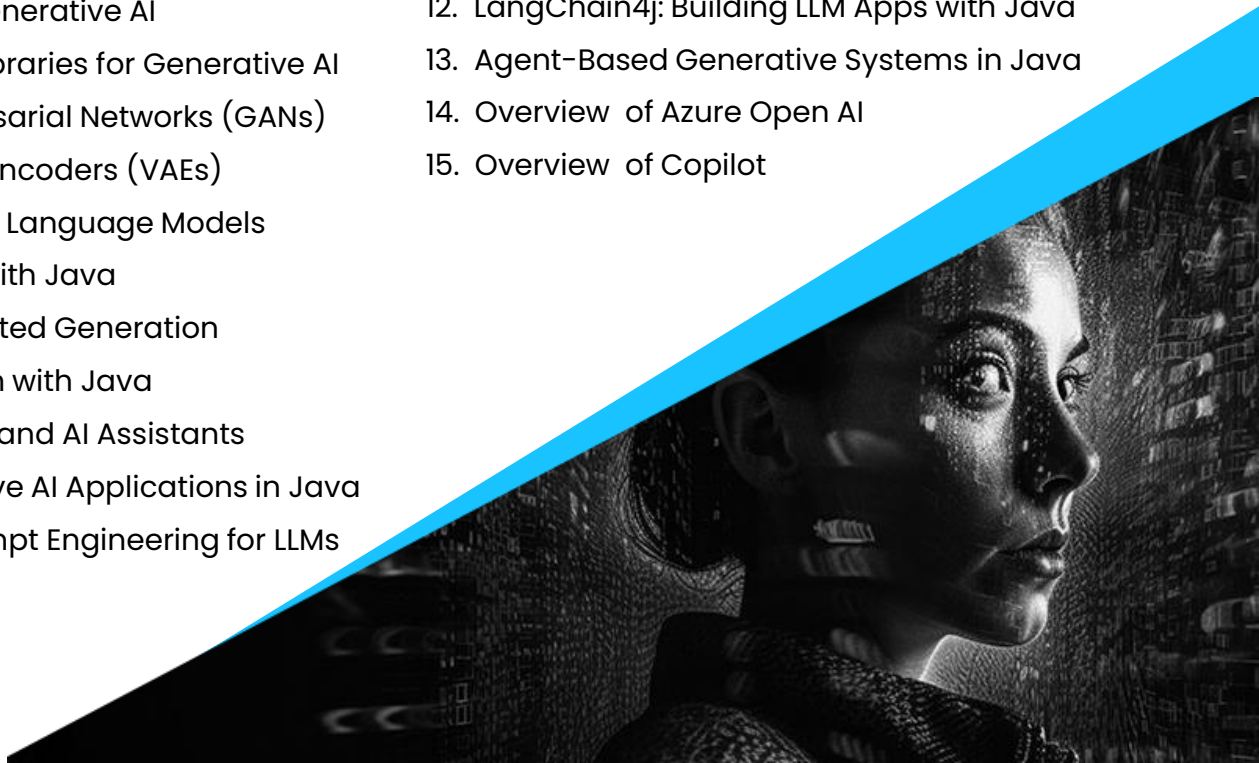
1. Introduction to AI and Java
2. Java Libraries for AI
3. Machine Learning with Java
4. Neural Networks and Deep Learning
5. Natural Language Processing (NLP)
6. Reinforcement Learning Concepts
7. Deploying AI Models



Module 12

Generative AI

1. Introduction to Generative AI
2. Java Tools and Libraries for Generative AI
3. Generative Adversarial Networks (GANs)
4. Variational Auto encoders (VAEs)
5. Transformers and Language Models
6. Text Generation with Java
7. Retrieval Augmented Generation
8. Image Generation with Java
9. Code Generation and AI Assistants
10. Building Generative AI Applications in Java
11. Memory and Prompt Engineering for LLMs
12. LangChain4j: Building LLM Apps with Java
13. Agent-Based Generative Systems in Java
14. Overview of Azure Open AI
15. Overview of Copilot

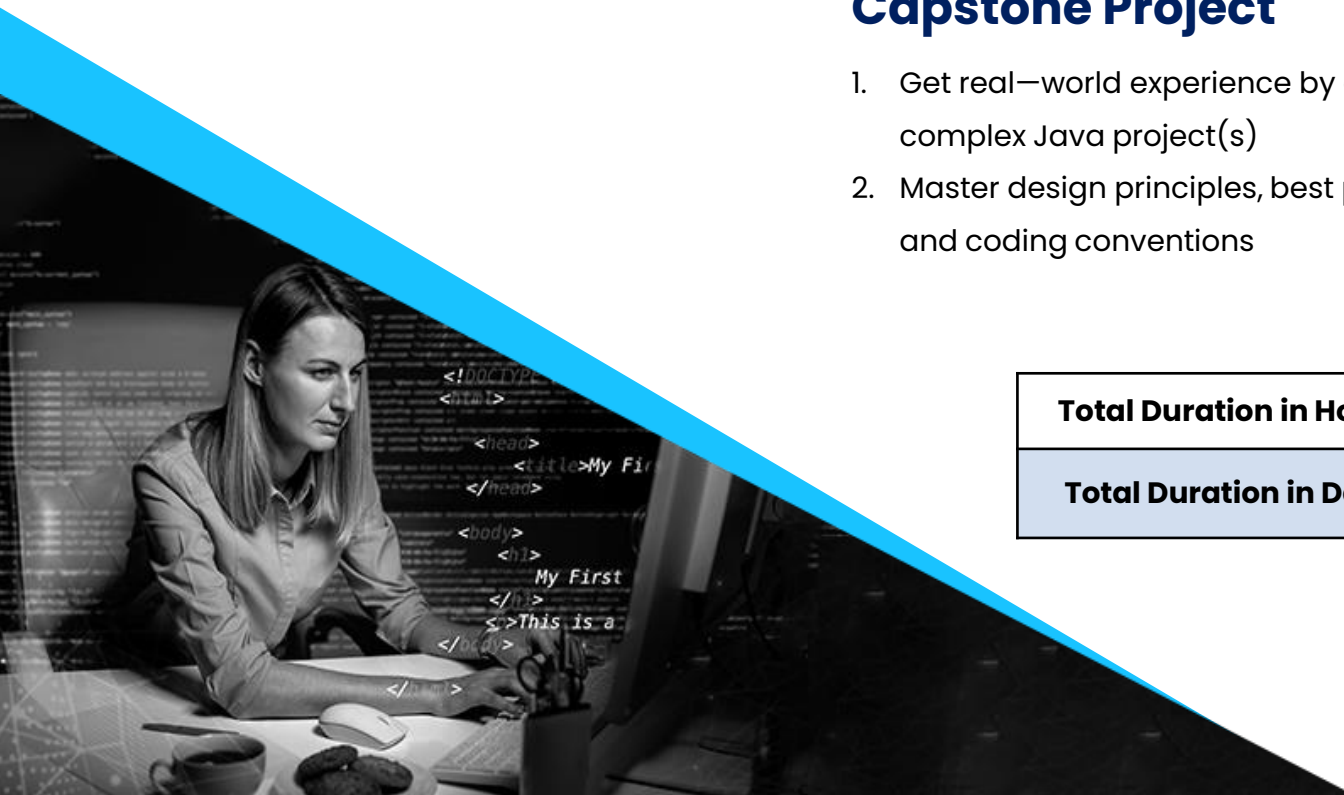


Module 13

Capstone Project

1. Get real—world experience by developing complex Java project(s)
2. Master design principles, best practices and coding conventions

Total Duration in Hours	420
Total Duration in Days	53



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