Java Backend Development Live-85

Foundation

Class Agenda

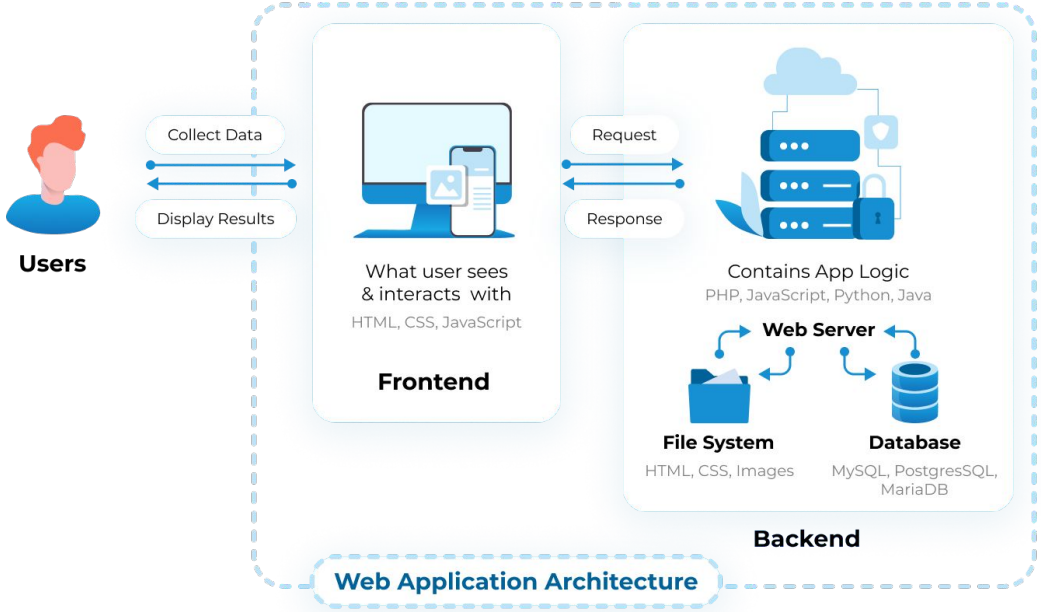
- Welcome to Java Backend Development
- Modern Web Architecture
- Backend Tech Stack Overview
- Setting Up Your Dev Environment
- Introduction to java: java, javac, bytecode, platform independent
- Q&A + Resources

Welcome to Java Backend Development

- What is Backend Development?
- How backend fits into full-stack development
- Real-world use cases: Ecommerce, social media, fintech, etc.
- Why backend is critical for scalability, security, and performance

Modern Web Architecture

- Frontend → Backend → Database → External Systems
- API: The communication bridge
- High-level request flow: Browser → API → Service → DB



Backend Tech Stack Overview

- Java (language)
- Spring & Spring Boot, JPA, Spring-Security (frameworks)
- MySQL (database), Redis (caching), Kafka (event streaming)
- Tools: Postman, Git, GitHub, IDEs, Maven/Gradle
- Where each tool fits in the stack

Setting Up Your Dev Environment

- Install JDK (version you're using)
- IDE (IntelliJ / Eclipse/ VScode)
- Install MySQL and set root user
- Postman setup
- Git + GitHub basics (clone, pull, commit, push)

Introduction to java

⚙️ Key Java Components

- `java`: Java Runtime — runs `.class` (bytecode) files
- `javac`: Java Compiler — compiles `.java` files into `.class` files

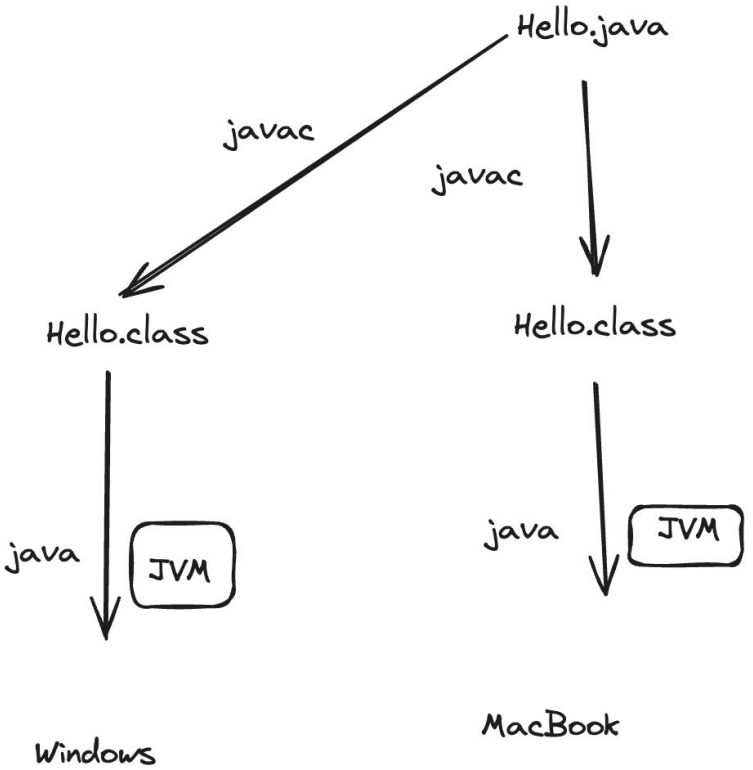
🔁 Bytecode

- Intermediate code generated by `javac`
- Stored in `.class` files
- Executed by the Java Virtual Machine (JVM)

🌍 Platform Independence

- "Write Once, Run Anywhere"
- Bytecode runs on any system with a JVM
- JVM abstracts away the underlying OS

Execution of Java Code



Java
:Platform Independent

Q&A + Resources

- Setup guide & GitHub starter repo
- Java revision resources