# ■ Java Full Stack Developer Tools

## ■ Frontend (Client-Side)

| Tool / Technology | Category | Description |
|---|---|---|
| HTML5 | Markup | Defines the structure of web pages |
| CSS3 | Styling | Adds styles and layouts |
| Bootstrap / Tailwind CSS | Framework | Makes responsive and modern UI |
| JavaScript (ES6+) | Scripting | Adds interactivity and logic |
| React.js / Angular / Vue.js | Framework | Builds single-page applications (SPA) |
| Webpack / Vite / NPM | Build Tools | Bundles and manages frontend dependencies |
| Git / GitHub | Version Control | Code versioning and collaboration |

## ■■ Backend (Server-Side)

| Tool / Technology | Category | Description |
|---|---|---|
| Java (Core + Advanced) | Language | Main backend programming language |
| Spring Boot / Spring MVC | Framework | For REST API and enterprise applications |
| Spring Security / JWT / OAuth2 | Security | For authentication and authorization |
| Maven / Gradle | Build Tools | Dependency management and project building |
| Apache Tomcat / JBoss | Server | Runs the Java web application |
| Postman / Swagger | API Tools | Testing and documenting REST APIs |

## ■■ Database

| Tool / Technology | Category | Description |
|---|---|---|
| MySQL / PostgreSQL / Oracle | RDBMS | Stores structured data |
| MongoDB / Cassandra | NoSQL | Stores unstructured data |
| Hibernate / JPA | ORM Framework | Maps Java objects to database tables |
| MySQL Workbench / pgAdmin | DB Tools | Database management and queries |

## ■■ Additional Tools

| Tool / Technology | Category | Description |
|---|---|---|
| IntelliJ IDEA / Eclipse / STS / VS Code | IDE | For writing and debugging code |
| Git / GitHub / GitLab / Bitbucket | Version Control | Manage source code |
| Docker / Jenkins / Kubernetes | DevOps Tools | For CI/CD and containerization |

| | | |
|---|---|---|
| AWS / Azure / Google Cloud | Cloud | Deploy applications online |
| JUnit / Mockito / Selenium | Testing Tools | Unit and automation testing |

## ■ Example Stack Setup

| Layer | Technology |
|---|---|
| Frontend | React.js + HTML + CSS + JavaScript |
| Backend | Java + Spring Boot + REST API |
| Database | MySQL + Hibernate |
| Tools | Maven, Postman, Git, IntelliJ IDEA |