

Prerequisites

1. Core Java

- Fundamental features like **OOP concepts**, **Java APIs**, **basic I/O**, and **memory management**.
- Key topics: classes, objects, inheritance, polymorphism, encapsulation, abstraction.

2. Exception

- Mechanism to handle runtime errors using **try**, **catch**, **finally**, **throw**, and **throws**.
- Types: Checked and Unchecked exceptions.

3. Threads

- Enables multitasking; created using **Thread** class or **Runnable** interface.
- Synchronization for thread safety in shared resources.

4. Collections

- Data structures like **List**, **Set**, **Map**.
- Common classes: **ArrayList**, **HashSet**, **HashMap**.

5. JDBC

- Java API to interact with databases.
- Supports SQL operations: **SELECT**, **INSERT**, **UPDATE**, **DELETE** via **Connection**, **Statement**, **PreparedStatement**.

6. Maven/Gradle

- Build tools for managing dependencies, project lifecycle, and automation.
- **Maven** uses **pom.xml**, **Gradle** uses **build.gradle** for configurations.

7. Spring ORM/Hibernate

- **Spring ORM** integrates Hibernate to manage database operations.
- **Hibernate** is an ORM framework that maps Java objects to database tables.

8. Servlet

- Java class that handles HTTP requests and responses in web applications.
- Part of the **Java EE** framework; works with **HttpServletRequest** and **HttpServletResponse**.