**Exercise 1: Employee Management System - Overview and Setup**

1. ​
   * **Project Name:** EmployeeManagementSystem
   * **Group:** com.example
   * **Artifact:** EmployeeManagementSystem
   * **Packaging:** jar
   * **Java Version:** 17 (or any supported version)
   * **Dependencies:**
     + **Spring Data JPA:** For managing database operations.
     + **H2 Database:** An in-memory database for quick testing and development.
     + **Spring Web:** For creating RESTful APIs.
     + **Lombok:** To reduce boilerplate code like getters, setters, constructors, etc.
2. **Generate the project** and download it. Extract the project and open it in your IDE (IntelliJ IDEA or Eclipse).

**Step 2: Configuring Application Properties**

Once your project is set up, you need to configure the application.properties file to connect to the H2 database.

1. **Locate the application.properties file:**

This file is located in src/main/resources/application.properties. If it's not present, create one. # H2 Database Configuration

spring.datasource.url=jdbc:h2:mem:testdb

spring.datasource.driverClassName=org.h2.Driver spring.datasource.username=sa

spring.datasource.password=password

# Hibernate Configuration for H2

spring.jpa.database-platform=org.hibernate.dialect.H2Dialect

# Enable H2 Console

spring.h2.console.enabled=true

spring.h2.console.path=/h2-console

* **spring.datasource.url=jdbc:h2:mem**

: Configures the H2 database in memory mode. testdb is the name of the database.

* **spring.datasource.driverClassName=org.h2.Driver**: Specifies the driver class for H2 database.
* **spring.datasource.username=sa**: Username for the database.
* **spring.datasource.password=password**: Password for the database.
* **spring.jpa.database-platform=org.hibernate.dialect.H2Dialect**: Configures the dialect for H2 database with Hibernate.
* **spring.h2.console.enabled=true**: Enables the H2 database console, which can be accessed via a web browser.
* **spring.h2.console.path=/h2-console**: Specifies the path to access the H2 console (e.g., http://localhost:8080/h2-console).

**Final Steps**

1. **Run the Application:**
   * **Navigate to the EmployeeManagementSystemApplication.java file and run it as a Spring Boot application.**
   * **This will start the embedded server (Tomcat by default) and configure the H2 database.**
2. **Access the H2 Console:**
   * **Open a web browser and go to http://localhost:8080/h2-console.**
   * **Use the configured settings to connect:**
     + **JDBC URL: jdbc:h2:mem:testdb**
     + **Username: sa**
     + **Password: password**
   * **Click “Connect,” and you can now interact with the H2 database.**