PRATIK KUMAR

Assignment: Hibernate Example Project

Prerequisites

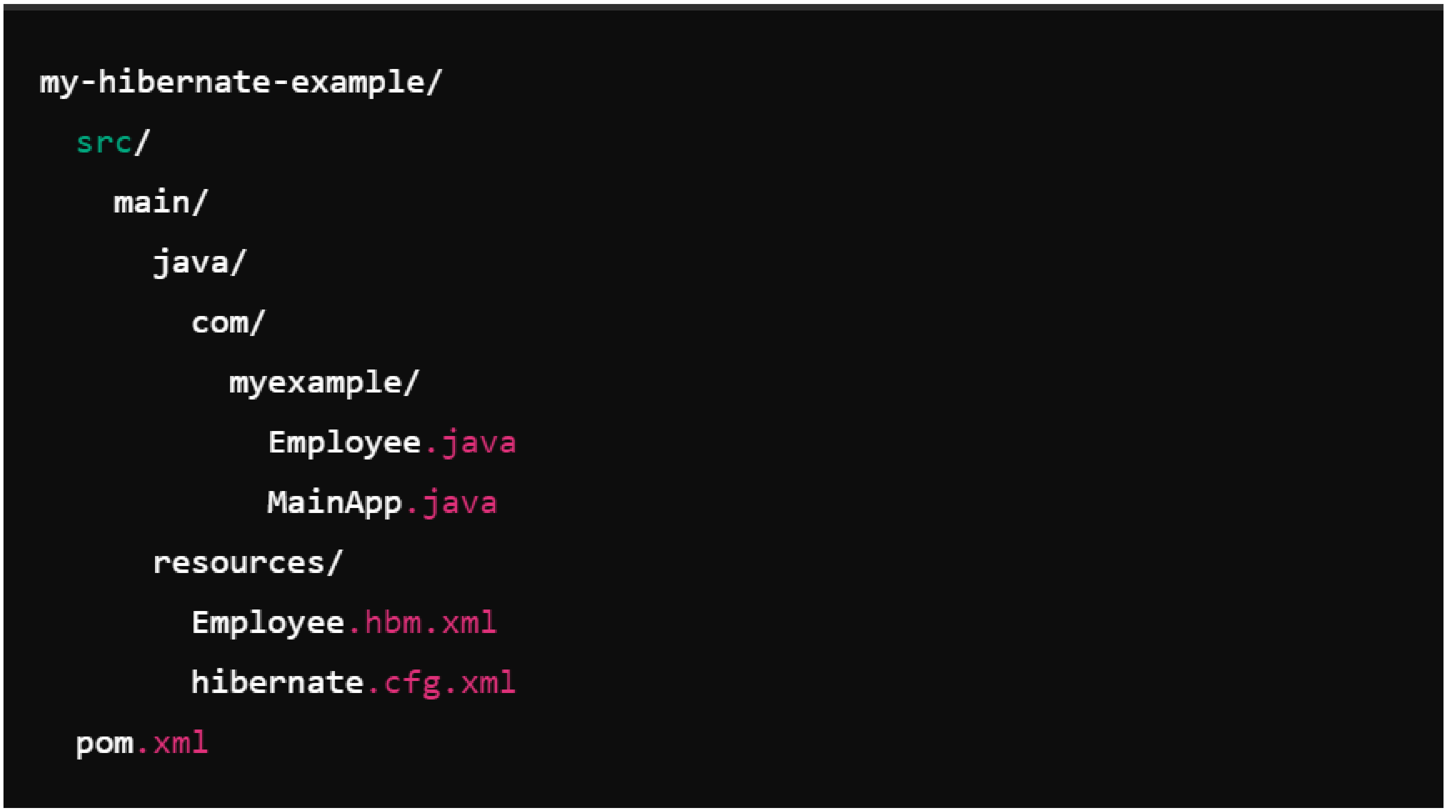
- **JDK Installation**
- **MySQL Installation** (Ensure you have MySQL 8.0.37 or a similar version)
- **Apache Maven Installation**

Database Setup

- **Database Name:** my_hibernate_example
- **Table Name:** employee

Project Structure

We will create a Maven project with the following structure:



```
my-hibernate-example/
  src/
    main/
      java/
        com/
          myexample/
            Employee.java
            MainApp.java
      resources/
        Employee.hbm.xml
        hibernate.cfg.xml
  pom.xml
```

Steps:

1. **Create a Persistent Class**

Create a Java class that represents an entity mapped to the employee table.

// src/main/java/com/myexample/Employee.java

package com.myexample;

```
public class Employee {
    private int id;
    private String name;
    private double salary;

    public Employee() {}

    public Employee(int id, String name, double salary) {
        this.id = id;
       this.name = name;
       this.salary = salary;
    }

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public double getSalary() {
        return salary;
    }
    public void setSalary(double salary) {
        this.salary = salary;
    }
}
```

2. Create the Mapping File for the Persistent Class

This file tells Hibernate how to map the Employee class to the employee table.

```
<!-- src/main/resources/Employee.hbm.xml -->
<!DOCTYPE hibernate-mapping PUBLIC "-//Hibernate/Hibernate Mapping DTD//EN"
    "http://hibernate.sourceforge.net/hibernate-mapping-3.0.dtd">
<hibernate-mapping>
    <class name="com.myexample.Employee" table="employee">
        <id name="id" column="id">
            <generator class="native"/>
        </id>
        <property name="name" column="name"/>
        <property name="salary" column="salary"/>
    </class>
</hibernate-mapping>
```

3. Create the Hibernate Configuration File

This file contains database connection settings and other Hibernate properties.

```
<!-- src/main/resources/hibernate.cfg.xml -->
<!DOCTYPE hibernate-configuration PUBLIC "-//Hibernate/Hibernate Configuration DTD//EN"
    "http://hibernate.sourceforge.net/hibernate-configuration-3.0.dtd">
<hibernate-configuration>
    <session-factory>
        <property name="hibernate.dialect">org.hibernate.dialect.MySQLDialect</property>
        <property name="hibernate.connection.driver_class">com.mysql.cj.jdbc.Driver</property>
        <property name="hibernate.connection.url">jdbc:mysql://localhost:3306/my_hibernate_example</property>
        <property name="hibernate.connection.username">root</property>
        <property name="hibernate.connection.password">password</property>
        <property name="hibernate.hbm2ddl.auto">update</property>
        <mapping resource="Employee.hbm.xml"/>
    </session-factory>
</hibernate-configuration>
```

4. Create the Main Application Class

This class will use Hibernate to persist an Employee object to the database.

```
// src/main/java/com/myexample/MainApp.java
package com.myexample;

import org.hibernate.Session;
import org.hibernate.SessionFactory;
import org.hibernate.Transaction;
import org.hibernate.cfg.Configuration;

public class MainApp {
    public static void main(String[] args) {
        SessionFactory factory = new Configuration().configure().buildSessionFactory();
        Session session = factory.openSession();
        Transaction tx = session.beginTransaction();

        Employee emp = new Employee("Jane Doe", 45000);
        session.save(emp);

        tx.commit();
        session.close();
    }
}
```

5. **Configure Maven Dependencies**

Ensure your pom.xml includes dependencies for Hibernate and MySQL.

```
<!-- pom.xml -->
```

```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>com.myexample</groupId>
  <artifactId>my-hibernate-example</artifactId>
  <version>1.0-SNAPSHOT</version>

  <dependencies>
    <dependency>
      <groupId>org.hibernate</groupId>
      <artifactId>hibernate-core</artifactId>
      <version>5.4.32.Final</version>
    </dependency>
    <dependency>
      <groupId>mysql</groupId>
      <artifactId>mysql-connector-java</artifactId>
      <version>8.0.25</version>
    </dependency>
  </dependencies>
</project>
```

6. Run the Application

Compile and run your Maven project using the following commands:

```
cd path/to/your/project/my-hibernate-example
mvn compile
mvn exec:java -Dexec.mainClass="com.myexample.MainApp"
```