**Hibernate.cfg.xml**

<session-factory>

<property name=*"connection.driver\_class"*>com.mysql.cj.jdbc.Driver</property>

<!-- property name="connection.driver\_class">com.mysql.jdbc.Driver</property -->

<property name=*"connection.url"*>jdbc:mysql://localhost:3306/productdb?useSSL=false&amp;serverTimezone=UTC</property>

<property name=*"dialect"*>org.hibernate.dialect.MySQL8Dialect</property>

<property name=*"connection.username"*>root</property>

<property name=*"connection.password"*>Password@12</property>

<property name=*"connection.pool\_size"*>5</property>

<!-- >property name="dialect">org.hibernate.dialect.MySQLDialect</property-->

<property name=*"current\_session\_context\_class"*>thread</property>

<property name=*"show\_sql"*>true</property>

<property name=*"format\_sql"*>true</property>

<property name=*"hbm2ddl.auto"*>update</property>

<!-- mapping class="com.mcnz.jpa.examples.Player" / -->

</session-factory>

**Pom.xml**

<dependencies>

<!-- https://mvnrepository.com/artifact/org.hibernate/hibernate-core -->

<dependency>

<groupId>org.hibernate</groupId>

<artifactId>hibernate-core</artifactId>

<version>5.6.5.Final</version>

</dependency>

<dependency>

<groupId>com.mysql</groupId>

<artifactId>mysql-connector-j</artifactId>

<version>8.1.0</version>

</dependency>

</dependencies>

**Product.java**

**package** com.mphasis.domain;

**import** javax.persistence.Entity;

**import** javax.persistence.\*;

@Entity

**public** **class** product {

@Id

@GeneratedValue(strategy=GenerationType.IDENTITY)

@Column(name="product\_id")

**private** **int** id;

@Column(name="product\_name")

**private** String name;

@Column(name="product\_price")

**private** **double** price;

**public** product() {

}

**public** product(String name, **double** price) {

**super**();

**this**.name = name;

**this**.price = price;

}

**public** **int** getId() {

**return** id;

}

**public** String getName() {

**return** name;

}

**public** **double** getPrice() {

**return** price;

}

**public** **void** setId(**int** id) {

**this**.id = id;

}

**public** **void** setName(String name) {

**this**.name = name;

}

**public** **void** setPrice(**double** price) {

**this**.price = price;

}

@Override

**public** String toString() {

**return** "Product [id=" + id + ", name=" + name + ", price=" + price + "]";

}

}

**HibernateUtil.java**

**package** com.mphasis.dbutil;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.cfg.Configuration;

**import** com.mphasis.domain.product;

**public** **class** HibernateUtil {

**private** **static** SessionFactory *factory*;

**public** **static** SessionFactory getSessionFactory() {

**if**(*factory*==**null**)

{

*factory*=**new** Configuration()

.configure("hibernate.cfg.xml")

.buildSessionFactory();

}

**return** *factory*;

}

**public** **static** **void** close()

{

*factory*.close();

}

}

**ProductmanagementDAO.java**

**package** com.mphasis.dao;

**import** java.util.List;

**import** org.hibernate.Session;

**import** org.hibernate.SessionFactory;

**import** org.hibernate.query.Query;

**import** com.mphasis.dbutil.HibernateUtil;

**import** com.mphasis.domain.product;

**public** **class** ProductManagementDAO {

**public** **void** AddProduct(product p)

{SessionFactory factory=HibernateUtil.*getSessionFactory*();

**try** {

Session session=factory.openSession();

session.beginTransaction();

session.save(p);

session.getTransaction().commit();

session.close();

}

**finally** {

//HibernateUtil.close();

}

}

**public** **void** UpdateProduct(**int** id,String name,**double** price)

{SessionFactory factory=HibernateUtil.*getSessionFactory*();

**try**

{

Session session=factory.openSession();

session.beginTransaction();

product update=session.get(product.**class**, id);

//update.setId(id);

update.setName(name);

update.setPrice(price);

session.saveOrUpdate(update);

session.getTransaction().commit();

session.close();

}

**finally** {

//HibernateUtil.close();

}

}

**public** **void** DeleteProduct(**int** id)

{SessionFactory factory=HibernateUtil.*getSessionFactory*();

**try**

{

Session session=factory.openSession();

session.beginTransaction();

product delete=session.get(product.**class**, id);

session.delete(delete);

session.getTransaction().commit();

session.close();

}

**finally**

{

//HibernateUtil.close();

}

}

**public** **boolean** Searchproduct(**int** id)

{

SessionFactory factory=HibernateUtil.*getSessionFactory*();

**try**

{

Session session=factory.openSession();

session.beginTransaction();

product search=session.get(product.**class**, id);

session.getTransaction().commit();

session.close();

**if**(search!=**null**)

**return** **true**;

**else**

**return** **false**;

}

**finally**

{

//HibernateUtil.close();

}

}

**public** **void** ViewProducts()

{

SessionFactory factory=HibernateUtil.*getSessionFactory*();

**try**

{

Session session=factory.openSession();

String hql="from product";

Query<product> qry=session.createQuery(hql,product.**class**);

List<product> list=qry.getResultList();

**for**(product p:list)

System.***out***.println(p);

}

**finally**

{

//HibernateUtil.close();

}

}

}

**ProductManagementApp.java**

**package** com.mphasis.app;

**import** java.util.InputMismatchException;

**import** java.util.Scanner;

**import** com.mphasis.dao.ProductManagementDAO;

**import** com.mphasis.dbutil.HibernateUtil;

**import** com.mphasis.domain.product;

**public** **class** ProductManagementApp {

**private** **static** **final** Scanner ***scanner*** = **new** Scanner (System.***in***);

**private** **static** **final** ProductManagementDAO ***dao*** = **new** ProductManagementDAO();

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

**while** (**true**) {

System.***out***.println("Product Management Application");

System.***out***.println("1. View Products");

System.***out***.println("2. Add Product");

System.***out***.println("3. Update Product");

System.***out***.println("4. Delete Product");

System.***out***.println("5. Search Product");

System.***out***.println("6. Exit");

System.***out***.print("Choose an option: ");

**int** choice;

**try** {

choice = ***scanner***.nextInt();

***scanner***.nextLine(); // consume newline

**switch** (choice) {

**case** 1:

*viewProducts*();

**break**;

**case** 2:

*addProduct*();

**break**;

**case** 3:

*updateProduct*();

**break**;

**case** 4:

*deleteProduct*();

**break**;

**case** 5:

*searchProduct*();

**break**;

**case** 6:

HibernateUtil.*close*();

System.***out***.println("Exiting...");

System.*exit*(0);

**default**:

System.***out***.println("Invalid option. Please try again.");

}

} **catch** (InputMismatchException e) {

System.***out***.println("Invalid input. Please enter a number.");

***scanner***.nextLine(); // consume invalid input

} } }

**private** **static** **void** viewProducts() {

***dao***.ViewProducts();

}

**private** **static** **void** addProduct() {

System.***out***.print("Enter product name: ");

String name = ***scanner***.nextLine();

System.***out***.print("Enter product price: ");

**double** price = ***scanner***.nextDouble();

***scanner***.nextLine();

product product = **new** product(name, price);

***dao***.AddProduct(product);

System.***out***.println("Product added successfully.");

}

**private** **static** **void** updateProduct() {

System.***out***.print("Enter product ID to update: ");

**int** id = ***scanner***.nextInt();

***scanner***.nextLine();

**boolean** exists = ***dao***.Searchproduct(id);

**if** (exists == **false**) {

System.***out***.println("Product not found.");

**return**;

}

System.***out***.print("Enter new product name: ");

String name = ***scanner***.nextLine();

System.***out***.print("Enter new product price: ");

**double** price = ***scanner***.nextDouble();

***scanner***.nextLine();

***dao***.UpdateProduct(id,name,price);

System.***out***.println("Product updated successfully.");

}

**private** **static** **void** deleteProduct() {

System.***out***.print("Enter product ID to delete: ");

**int** id = ***scanner***.nextInt();

***scanner***.nextLine();

***dao***.DeleteProduct(id);

System.***out***.println("Product deleted successfully.");

}

**private** **static** **void** searchProduct() {

System.***out***.print("Enter product ID to search: ");

**int** id = ***scanner***.nextInt();

***scanner***.nextLine();

**boolean** search = ***dao***.Searchproduct(id);

**if** (search == **false**) {

System.***out***.println("Product not found.");

} **else** {

System.***out***.println("Product found");

}

}

}

**SQL Commands**

create database productdb;

use productdb;

CREATE TABLE product (

product\_id INT AUTO\_INCREMENT PRIMARY KEY,

product\_name VARCHAR (255) NOT NULL,

product\_price DECIMAL (10, 2) NOT NULL

);

select \* from product;