**Pom.xml**

<?xml version="1.0" encoding="UTF-8"?>  
<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 https://maven.apache.org/xsd/maven-4.0.0.xsd">  
 <modelVersion>4.0.0</modelVersion>  
 <parent>  
 <groupId>org.springframework.boot</groupId>  
 <artifactId>spring-boot-starter-parent</artifactId>  
 <version>3.4.5</version>  
 <relativePath/> <!-- lookup parent from repository -->  
 </parent>  
 <groupId>com.example</groupId>  
 <artifactId>task2demo</artifactId>  
 <version>0.0.1-SNAPSHOT</version>  
 <name>task2demo</name>  
 <description>Demo project for Spring Boot</description>  
 <url/>  
 <licenses>  
 <license/>  
 </licenses>  
 <developers>  
 <developer/>  
 </developers>  
 <scm>  
 <connection/>  
 <developerConnection/>  
 <tag/>  
 <url/>  
 </scm>  
 <properties>  
 <java.version>17</java.version>  
 </properties>  
 <dependencies>  
 <dependency>  
 <groupId>org.springframework.boot</groupId>  
 <artifactId>spring-boot-starter-data-jpa</artifactId>  
 </dependency>  
 <dependency>  
 <groupId>org.springframework.boot</groupId>  
 <artifactId>spring-boot-starter-thymeleaf</artifactId>  
 </dependency>  
 <dependency>  
 <groupId>org.springframework.boot</groupId>  
 <artifactId>spring-boot-starter-web</artifactId>  
 </dependency>  
  
 <dependency>  
 <groupId>com.h2database</groupId>  
 <artifactId>h2</artifactId>  
 <scope>runtime</scope>  
 </dependency>  
 <dependency>  
 <groupId>org.springframework.boot</groupId>  
 <artifactId>spring-boot-starter-test</artifactId>  
 <scope>test</scope>  
 </dependency>  
 </dependencies>  
  
 <build>  
 <plugins>  
 <plugin>  
 <groupId>org.springframework.boot</groupId>  
 <artifactId>spring-boot-maven-plugin</artifactId>  
 </plugin>  
 </plugins>  
 </build>  
  
</project>

**Task2demo.application**

package com.example.task2demo;  
  
import org.springframework.boot.SpringApplication;  
import org.springframework.boot.autoconfigure.SpringBootApplication;  
  
@SpringBootApplication  
public class Task2demoApplication {  
  
 public static void main(String[] args) {  
 SpringApplication.*run*(Task2demoApplication.class, args);  
 }  
  
}

**Product.java**

package com.example.task2demo.entity;  
  
import jakarta.persistence.\*;  
  
@Entity  
@Table(name = "products")  
public class Product {  
  
 @Id  
 @GeneratedValue(strategy = GenerationType.*IDENTITY*)  
 private Long id;  
  
 private String name;  
 private Double price;  
 private String category;  
  
 // Constructors  
 public Product() {}  
  
 public Product(String name, Double price, String category) {  
 this.name = name;  
 this.price = price;  
 this.category = category;  
 }  
  
 // Getters and Setters  
 // ...  
}

**ProductRepository.java**

package com.example.task2demo.repository;  
  
import com.example.task2demo.entity.Product;  
import org.springframework.data.jpa.repository.JpaRepository;  
import java.util.List;  
  
public interface ProductRepository extends JpaRepository<Product, Long> {  
 List<Product> findByCategory(String category);  
}

**ProductService.java**

package com.example.task2demo.service;  
  
import com.example.task2demo.entity.Product;  
import com.example.task2demo.repository.ProductRepository;  
import org.springframework.stereotype.Service;  
import java.util.List;  
  
@Service  
public class ProductService {  
  
 private final ProductRepository productRepository;  
  
 public ProductService(ProductRepository productRepository) {  
 this.productRepository = productRepository;  
 }  
  
 public Product saveProduct(Product product) {  
 return productRepository.save(product);  
 }  
  
 public List<Product> getAllProducts() {  
 return productRepository.findAll();  
 }  
  
 public List<Product> getProductsByCategory(String category) {  
 return productRepository.findByCategory(category);  
 }  
}

**ProductController.java**

package com.example.task2demo.controller;  
  
import com.example.task2demo.entity.Product;  
import com.example.task2demo.service.ProductService;  
import org.springframework.stereotype.Controller;  
import org.springframework.ui.Model;  
import org.springframework.web.bind.annotation.\*;  
  
import java.util.List;  
  
@Controller  
public class ProductController {  
  
 private final ProductService productService;  
  
 public ProductController(ProductService productService) {  
 this.productService = productService;  
 }  
  
 @GetMapping("/")  
 public String home() {  
 return "home";  
 }  
  
 @GetMapping("/add-product")  
 public String showAddProductForm(Model model) {  
 model.addAttribute("product", new Product());  
 return "add-product";  
 }  
  
 @PostMapping("/add-product")  
 public String addProduct(@ModelAttribute Product product) {  
 productService.saveProduct(product);  
 return "redirect:/products";  
 }  
  
 @GetMapping("/products")  
 public String viewProducts(Model model) {  
 List<Product> products = productService.getAllProducts();  
 model.addAttribute("products", products);  
 return "product-list";  
 }  
}

**Appllication.properties**

spring.application.name=task2demo  
spring.datasource.url=jdbc:h2:mem:testdb  
spring.datasource.driverClassName=org.h2.Driver  
spring.datasource.username=sa  
spring.datasource.password=  
spring.jpa.database-platform=org.hibernate.dialect.H2Dialect  
spring.h2.console.enabled=true  
spring.jpa.hibernate.ddl-auto=update

**home.html**

<!DOCTYPE html>  
<html xmlns:th="http://www.thymeleaf.org">  
<head><title>Home</title></head>  
<body>  
<h2>Product Catalog</h2>  
<a th:href="@{/add-product}"><button>Add Product</button></a><br><br>  
<a th:href="@{/products}"><button>Display Product</button></a>  
</body>  
</html>

**Add-product.html**

!DOCTYPE html>  
<html xmlns:th="http://www.thymeleaf.org">  
<head><title>Add Product</title></head>  
<body>  
<h2>Add Product</h2>  
<form th:action="@{/add-product}" th:object="${product}" method="post">  
 <label>Product Name: </label>  
 <input type="text" th:field="\*{name}" /><br><br>  
  
 <label>Price: </label>  
 <input type="number" th:field="\*{price}" step="0.01" /><br><br>  
  
 <label>Category: </label>  
 <input type="text" th:field="\*{category}" /><br><br>  
  
 <button type="submit">Add</button>  
</form>  
</body>  
</html>

**Product-list.html**

<!DOCTYPE html>  
<html xmlns:th="http://www.thymeleaf.org">  
<head><title>Product List</title></head>  
<body>  
<h2>Product List</h2>  
<table border="1">  
 <tr>  
 <th>Name</th><th>Price</th><th>Category</th>  
 </tr>  
 <tr th:each="product : ${products}">  
 <td th:text="${product.name}"></td>  
 <td th:text="${product.price}"></td>  
 <td th:text="${product.category}"></td>  
 </tr>  
</table>  
</body>  
</html>



