Phase – 3 Practice Project: Assisted Practice

17. You are given a project to demonstrate RESTful with Spring Boot.

- **Code**

✓ **pom.xml**

```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>3.1.0</version>
        <relativePath/> <!-- lookup parent from repository -->
    </parent>
    <groupId>com.test</groupId>
    <artifactId>RestApiTest</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <name>RestApiTest</name>
    <description>Test project for Spring Boot</description>
    <properties>
        <java.version>20</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-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>
```

```xml
          </plugins>
     </build>

</project>
```

✓ RestApiTestApplication.java

```java
package com.test.example;

import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication
public class RestApiTestApplication {

     public static void main(String[] args) {
          SpringApplication.run(RestApiTestApplication.class, args);
     }

}
```

✓ ProductEntity.java

```java
package com.test.example;

import jakarta.persistence.Column;
import jakarta.persistence.Entity;
import jakarta.persistence.GeneratedValue;
import jakarta.persistence.GenerationType;
import jakarta.persistence.Id;

@Entity
public class ProductEntity {

    @Id
    @GeneratedValue(strategy = GenerationType.AUTO)
    @Column(name = "id", updatable = false, nullable = false)
    private int id;
    @Column
    private String name;
    @Column
    private String description;

    public ProductEntity() {
        super();
    }
    public ProductEntity(int id, String name, String description) {
        super();
        this.id = id;
        this.name = name;
        this.description = description;
    }
    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 String getDescription() {
        return description;
    }
    public void setDescription(String description) {
        this.description = description;
    }
}
```

✓ ProductRepository.java

```
package com.test.example;

import org.springframework.data.jpa.repository.JpaRepository;

public interface ProductRepository extends JpaRepository<ProductEntity, 
Integer>{

}
```

✓ ProductService.java

```
package com.test.example;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Service;

@Service
public class ProductService {

    @Autowired
    ProductRepository productRepository;

    public List<ProductEntity> getAllProduct(){
        return productRepository.findAll();
    }

    public ProductEntity getProduct(int id){
        return productRepository.findById(id).get();
    }

    public void addProduct(ProductEntity pe){
        productRepository.save(pe);
    }

    public void updateProduct(int id, ProductEntity pe){
        if(productRepository.findById(id).isPresent()) {
            ProductEntity
oldProductEntity=productRepository.findById(id).get();
            oldProductEntity.setName(pe.getName());
            oldProductEntity.setDescription(pe.getDescription());
            productRepository.save(oldProductEntity);
        }
    }

    public void deleteProduct(int id){
        productRepository.deleteById(id);
    }
}
```

✓ ProductController.java

```
package com.test.example;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.annotation.RestController;

@RestController
@RequestMapping(path = "/webapi")
public class ProductController {

    @Autowired
    ProductService productService;

    @RequestMapping("/allproduct")
    public List<ProductEntity> getAllProduct(){
        return productService.getAllProduct();
    }

    @RequestMapping("/product/{id}")
    public ProductEntity getProduct(@PathVariable int id){
        return productService.getProduct(id);
    }

    @RequestMapping(method=RequestMethod.POST, value="/product")
    public void addProduct(@RequestBody ProductEntity pe ) {
        productService.addProduct(pe);
    }

    @RequestMapping(method=RequestMethod.PUT, value="/product/{id}")
    public void updateProduct(@PathVariable int id, @RequestBody
ProductEntity pe ) {
        productService.updateProduct(id, pe);
    }

    @RequestMapping(method=RequestMethod.DELETE, value="/product/{id}")
    public void deleteProduct(@PathVariable int id)  {
        productService.deleteProduct(id);
    }
}
```