**Exercise 4: Spring Data JPA Quick Example**

LibraryBook.java

package com.example.library.model;

import jakarta.persistence.\*;

@Entity

public class LibraryBook {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Long bookId;

private String name;

private String writer;

public LibraryBook() {

}

public LibraryBook(String name, String writer) {

this.name = name;

this.writer = writer;

}

public Long getBookId() { return bookId; }

public String getName() { return name; }

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

public String getWriter() { return writer; }

public void setWriter(String writer) { this.writer = writer; }

}

LibraryBookRepository.java

package com.example.library.repository;

import com.example.library.model.LibraryBook;

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

public interface LibraryBookRepository extends JpaRepository<LibraryBook, Long> {

LibraryBook findByName(String name);

}

LibraryService.java

package com.example.library.service;

import com.example.library.model.LibraryBook;

import com.example.library.repository.LibraryBookRepository;

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

import org.springframework.stereotype.Service;

import java.util.List;

@Service

public class LibraryService {

@Autowired

private LibraryBookRepository repository;

public LibraryBook addBook(LibraryBook book) {

return repository.save(book);

}

public List<LibraryBook> listAllBooks() {

return repository.findAll();

}

}

LibraryApp.java

package com.example.library;

import com.example.library.model.LibraryBook;

import com.example.library.service.LibraryService;

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

import org.springframework.boot.CommandLineRunner;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class LibraryApp implements CommandLineRunner {

@Autowired

private LibraryService service;

public static void main(String[] args) {

SpringApplication.run(LibraryApp.class, args);

}

@Override

public void run(String... args) {

service.addBook(new LibraryBook("The Pragmatic Programmer", "Andrew Hunt"));

service.addBook(new LibraryBook("Refactoring", "Martin Fowler"));

service.listAllBooks().forEach(book ->

System.out.println(book.getName() + " by " + book.getWriter()));

}

}

LibraryController.java

package com.example.library.controller;

import com.example.library.model.LibraryBook;

import com.example.library.repository.LibraryBookRepository;

import org.springframework.web.bind.annotation.\*;

import java.util.List;

@RestController

@RequestMapping("/library")

public class LibraryController {

private final LibraryBookRepository repository;

public LibraryController(LibraryBookRepository repository) {

this.repository = repository;

}

@GetMapping("/books")

public List<LibraryBook> fetchBooks() {

return repository.findAll();

}

@PostMapping("/books")

public LibraryBook insertBook(@RequestBody LibraryBook book) {

return repository.save(book);

}

}



