**Exercise 5: Online Bookstore - Customizing Response Status and Headers**

import org.springframework.http.HttpHeaders;

import org.springframework.http.HttpStatus;

import org.springframework.http.ResponseEntity;

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

import java.util.ArrayList;

import java.util.List;

@RestController

@RequestMapping("/books")

public class BookController {

private List<Book> books = new ArrayList<>();

// Initialize with some books

public BookController() {

books.add(new Book(1, "Java Programming", "John Smith", 29.99, "1234567890"));

books.add(new Book(2, "Python Essentials", "Jane Doe", 39.99, "0987654321"));

}

// GET a book by ID with custom status and headers

@GetMapping("/{id}")

public ResponseEntity<Book> getBookById(@PathVariable int id) {

Book book = books.stream()

.filter(b -> b.getId() == id)

.findFirst()

.orElse(null);

if (book != null) {

HttpHeaders headers = new HttpHeaders();

headers.add("Custom-Header", "Book-Fetch-Success");

return new ResponseEntity<>(book, headers, HttpStatus.OK);

} else {

return new ResponseEntity<>(null, HttpStatus.NOT\_FOUND);

}

}

// POST a new book with custom status

@PostMapping

@ResponseStatus(HttpStatus.CREATED)

public Book createBook(@RequestBody Book newBook) {

books.add(newBook);

return newBook;

}

// DELETE a book by ID with custom headers

@DeleteMapping("/{id}")

public ResponseEntity<String> deleteBook(@PathVariable int id) {

boolean removed = books.removeIf(book -> book.getId() == id);

if (removed) {

HttpHeaders headers = new HttpHeaders();

headers.add("Custom-Header", "Book-Deletion-Success");

return new ResponseEntity<>("Book with id " + id + " has been deleted.", headers, HttpStatus.OK);

} else {

return new ResponseEntity<>("Book not found.", HttpStatus.NOT\_FOUND);

}

}

}

class Book {

private int id;

private String title;

private String author;

private double price;

private String isbn;

// Constructors, getters, and setters

public Book() {}

public Book(int id, String title, String author, double price, String isbn) {

this.id = id;

this.title = title;

this.author = author;

this.price = price;

this.isbn = isbn;

}

public int getId() {

return id;

}

public void setId(int id) {

this.id = id;

}

public String getTitle() {

return title;

}

public void setTitle(String title) {

this.title = title;

}

public String getAuthor() {

return author;

}

public void setAuthor(String author) {

this.author = author;

}

public double getPrice() {

return price;

}

public void setPrice(double price) {

this.price = price;

}

public String getIsbn() {

return isbn;

}

public void setIsbn(String isbn) {

this.isbn = isbn;

}

}