**Exercise 2: Implementing Dependency Injection**

**Book.java**

package com.library.model;

public class Book {

    private String title;

    private String author;

    private int year;

    public Book(String title, String author, int year) {

        this.title = title;

        this.author = author;

        this.year = year;

    }

    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 int getYear() {

        return year;

    }

    public void setYear(int year) {

        this.year = year;

    }

    @Override

    public String toString() {

        return title + " by " + author + " (" + year + ")";

    }

}

**BookService.java**

package com.library.service;

import com.library.model.Book;

import com.library.repository.BookRepository;

public class BookService {

    private BookRepository bookRepository;

    public BookService() {}

    public BookService(BookRepository bookRepository) {

        this.bookRepository = bookRepository;

    }

    public void setBookRepository(BookRepository bookRepository) {

        this.bookRepository = bookRepository;

    }

    public void displayBooks() {

        bookRepository.getAllBooks();

    }

    public void addBook(Book book) {

        bookRepository.addBook(book);

    }package com.library.repository;

**BookRepository.java**

import java.util.ArrayList;

import java.util.List;

import com.library.model.Book;

public class BookRepository {

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

    public void getAllBooks() {

        System.out.println("Books in Repository:");

        for (Book book : books) {

            System.out.println(book);

        }

    }

    public void addBook(Book book) {

        books.add(book);

        System.out.println("Added book: " + book);

    }

}

}

**Main.java**

package com.library;

import com.library.model.Book;

import com.library.repository.BookRepository;

import com.library.service.BookService;

public class Main {

    public static void main(String[] args) {

       // ApplicationContext context = new ClassPathXmlApplicationContext("applicationContext.xml");

        //BookService bookService = (BookService) context.getBean("bookService");

        BookRepository repo = new BookRepository();

        BookService service = new BookService(repo);

        Book b1=new Book("Harry Potter", "JK Rowling",1988);

        Book b2=new Book("The Hobbit", "J.R.R. Tolkien",2018);

        service.addBook(b1);

        service.addBook(b2);

        service.displayBooks();

    }

}

**OUTPUT:**

