## **WEEK 3 EXERCISES**

#### SPRING CORE AND MAVEN

Exercise 1: Configuring a Basic Spring Application

#### Exercise 2: Implementing Dependency Injection

```
File Edit Source Refactor Navigate Search Project Run Window Help
                                                                                                                                                                                            Q 🔡 <Java FE> 🐉

    Package Explorer ×
    Package Explorer ×
    Package Explorer ×
    Package Explorer ×
    Package Explorer ×

                                                                             DS( ^
                                                       1 package com.library.main;
  ► All ► Activate... ② 📦
                                                      2 simport org.springframework.context.ApplicationContext; 4 import org.springframework.context.support.ClassPathXmlApplicationContext; 5 import con.library.service.BookService;

    # com.library.mail
                                                        public class LibraryApp {
public static void main(String[] args) {
        LibraryApp.java

→ # com.library.repository

                                                                  // Load Spring context from XML
ApplicationContext context = new ClassPathXmlApplicationContext("applicationContext")
          BookRepository.java

→ ■ com.library.service
→ ② BookService.java
                                                                   // Get the BookService bean
BookService = (BookService) context.getBean("bookService");

    src/main/resources

    applicationContext.xml
src/test/java
                                                                 service.addBook("Ikigai");
service.addBook("Atomic Habits");
     src/test/resources

■ JRE System Library [JavaSE-1.8]

■ Maven Dependencies
                                                                   // Close the context (good practice)
((ClassPathXmlApplicationContext) context).close();
                                                                                                                                                                                           9 B B R X • X 1
   > 🍅 src
                                                                                                                                                                              # com.library.main

∨ Θ<sub>P</sub> LibraryApp
     • 1 main(String[]) : void
  Servers
  Week1-Excercise1
                                                    <terminated> LibraryApp [Java Application] C:\Program Files\Java\jdk-19\bin\javaw.exe (06-Jul-2025, 3:38:41 pm – 3:38:41 pm) [pid: 85]
                                                    Book 'Ikigai' saved to the database.
Book 'Atomic Habits' saved to the database.
```

### Exercise 4: Creating and Configuring a Maven Project

```
      □ Package Explorer ×
      □ SookService.java
      □ LibraryManagement/pom.xml
      × □ applicationContext.xml
      □ BookRepository.java
      □ BookService.java
      □ LibraryApp.java

  > 🐸 DemoProject
                                                                                                                                                                                                <!-- Spring Core and Context -->
<dependency>
                                                                                                                                                                                                                 <groupId>org.springframework</groupId>

LibraryManagement

Visit 1988

LibraryManagement

LibraryManagemen
                                                                                                                                                                                             <artifactid>spring-context/artifactid>
<artifactid>spring-context/artifactid>
<version>5.3.32</version>
</er>

<pre
                                                                                                                                                         15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
40
41

> 

Src/main/java

                          LibraryApp.java

→ # com.library.repository

                          ▶ BookRepository.java
                                                                                                                                                                                          <artifactId>spring-aop</artifactId>
<version>5.3.32</version>

→ 
⊕ com.library.service

                           </dependency>
         applicationContext.xml
                src/test/java
               src/test/resources
         > ■ JRE System Library [JavaSE-1.8]
         > Maven Dependencies
         > 🗁 src
                                                                                                                                                                                    <!-- Servlet API (required for Spring MVC) -->

    target

                                                                                                                                                                                  lmx.mog
         Servers
        Week1-Excercise1
                                                                                                                                                                                    <plugins>
```

### SPRING DATA JPA WITH SPRING BOOT, HIBERNATE

# Spring Data JPA - Quick Example

```
File Edit Source Refactor Navigate Search Project Run Window Help
# Package Explorer × 🕒 🖲 🖟 🔭 🗖 🗎 orm-learn/pom.xml 🗎 application.prope... 🗵 OrmLearnApplicatio... × 🗵 Country,java 🗵 CountryRepository.j... 🗵 CountryService.java
                                                                1 package com.cognizant.ormlearn;

☑ DemoProject

   3@import java.util.List:
  Library Management
                                                              import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.boot.CommandLineRunner;
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

∨ Worm-learn

✓ 
Ø src/main/java

     # com.cognizant.ormlearn
           OrmLearnApplication.java
                                                           10 import com.cognizant.ormlearn.model.Country;
11 import com.cognizant.ormlearn.repository.CountryRepository;
12

→ # com.cognizant.ormlearn.model

    Country.java

                                                             11 import com.cognizant.ormlearn.repository.CountryRepository;
12
13 @SpringBootApplication
14 public class OrmLearnApplication implements CommandLineRunner {
15
16# @Autowired
17 private CountryRepository countryRepository;

→ 

# com.cognizant.ormlearn.repository

    CountryRepository.java

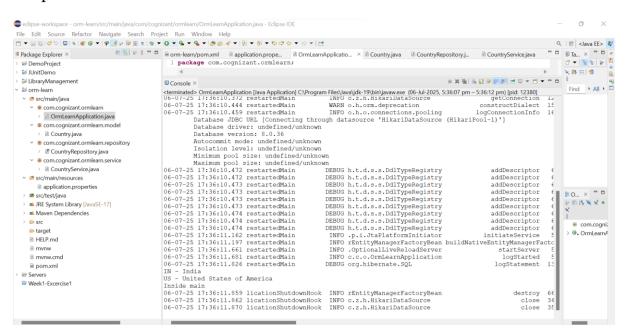
→ 

⊕ com.cognizant.ormlearn.service

→ CountryService.java

   18
19
20
21
22
23
24
25
26
27
28
29 }
        application.properties
                                                                      public static void main(String[] args) {
   > B src/test/iava
                                                                              SpringApplication.rum(OrmLearnApplication.class, args);
System.out.println("Inside main");
    > ■ JRE System Library [JavaSE-17]
   Maven Dependencies
   > 🗁 src
                                                                       @override
public void run(String... args) throws Exception {
   List<Country> list = countryRepository.findAll();
   list.forEach(c -> System.out.println(c.getCode() + " - " + c.getName()));
     HELP.md
      mvnw.cmd
> 🐸 Servers
```

#### Output:



### Difference between JPA, Hibernate and Spring Data JPA

```
File Edit Source Refactor Navigate Search Project Run Window Help
 Package Explorer × 🕒 🖲 👂 🖟 👛 " OrmLearnApp... × ② Country Java  ② CountryRepos... ② CountryServ... ② EmployeeServ... ③ EmployeeServ... ③ EmployeeServ... ③ EmployeeServ... ③ EmployeeServ... ③ EmployeeServ... ③ EmployeeServ... ④ EmployeeSe
                                                                                                                                                                                                                                                                                                       15 @SpringBootApplication
16 public class OrmLearnApplication implements CommandLineRunner {
          > 🐸 JUnitDemo
            LibraryManagement
                                                                                                                                                                                                                                                                                                                                                      @Autowired
private CountryRepository countryRepository;

> 
    src/main/java

                                                                                                                                                                                                                                                                                                                                                      @Autowired private EmployeeService employeeService;

→ 
B com.cognizant.ormlearn

→ 
B cognizant.ormlearn

→ 

→ 

D cognizant.ormlearn

→ 

→ 

D cognizant.ormlearn

→ 

→ 

D cognizant.ormlearn

→ 

D co
                                             > 🕖 OrmLearnApplication.java

→ # com.cognizant.ormlearn.model

                                                                                                                                                                                                                                                                                                                                                      public static void main(String[] args) {
    SpringApplication.run(OrmLearnApplication.class, args);
    System.out.println("Inside main");
                                             > ② Country.java
                                                > 

Employee.java

→ # com.cognizant.ormlearn.repository

                                                                                                                                                                                                                                                                                           27 / C28 // C29 // Pu
30 // 31 // 33 // 33 // 33 // 33 // 33 // 33 // 34 Publ
35 36 // 37 38 // 39 // 41 }
41 }
                                           public void run(String... args) throws Exception {
   List<Country> list = countryRepository.findAll();
   list.forEach(c -> System.out.println(c.getCode() + " - " + c.getName()));

→ 

⊕ com.cognizant.ormlearn.service

    CountryService.java

                                               > 

EmployeeService.java
                                                                                                                                                                                                                                                                                                                                                      @Override
public void run(String... args) throws Exception {
   Employee e = new Employee();
   e.setId(101);
   e.setName("Lakshmanan");
   e.setSalary(50000);
   employeeService.addEmployee(e);

> 

src/main/resources

                                        application.properties
                 > 🏿 src/test/java
                 > ■ JRE System Library [JavaSE-17]
                 > Maven Dependencies

    barget
    barget
    barget
    barget
    contact    co
```

### Output: