

WEEK – 3

Spring Data JPA - Quick Example

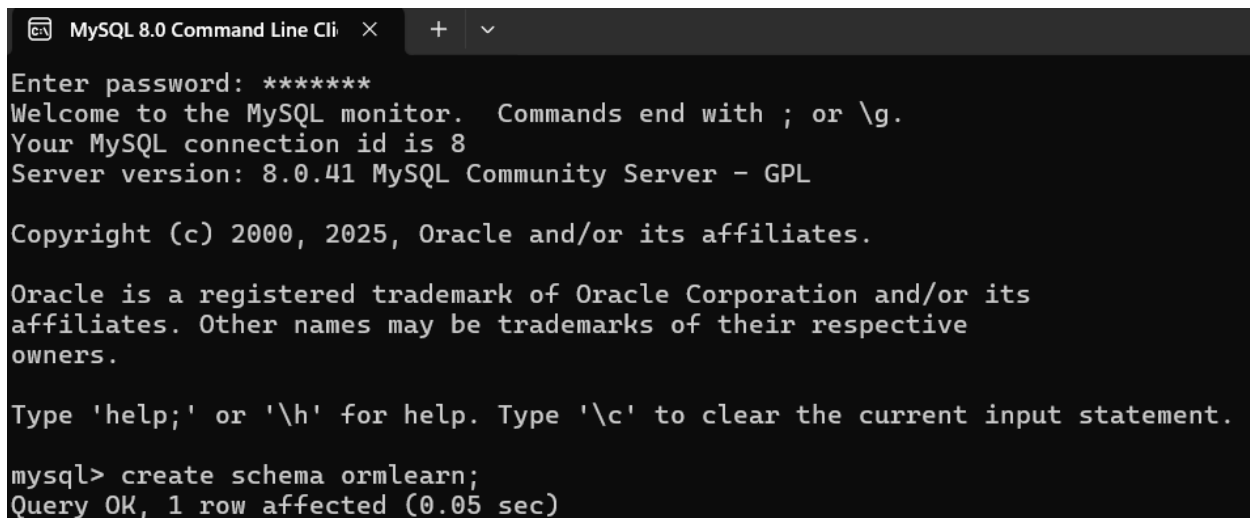
Software Pre-requisites

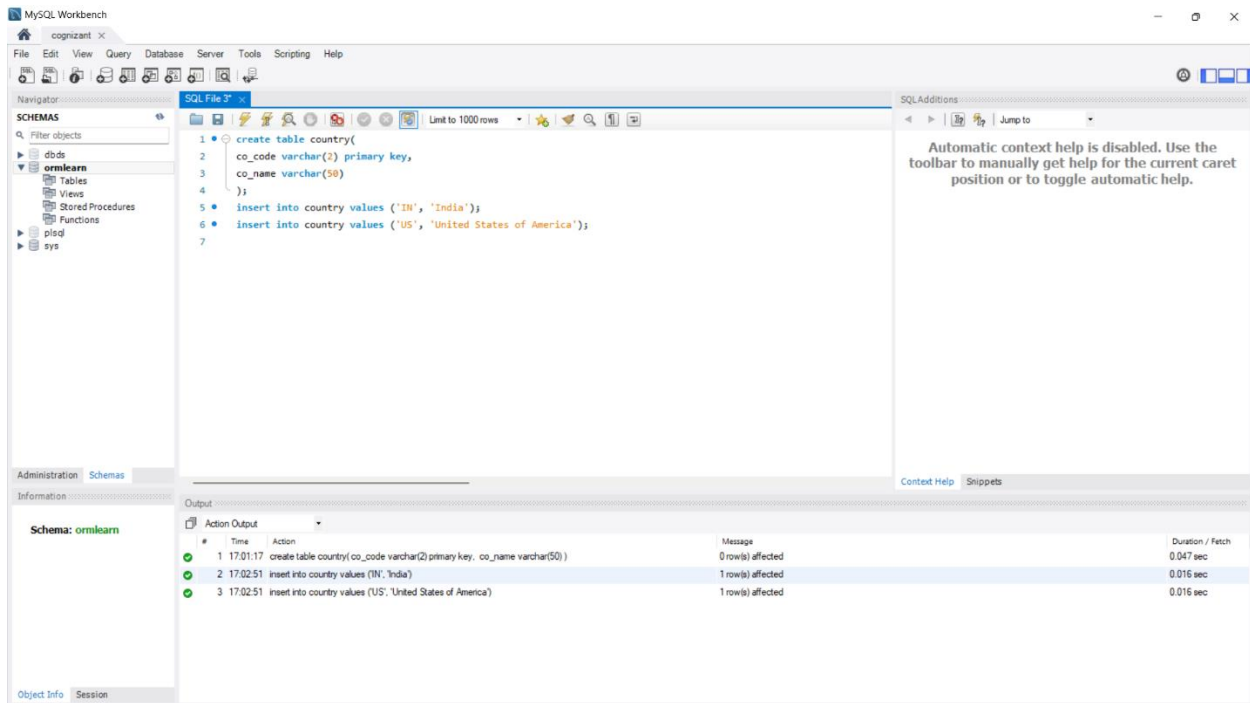
- MySQL Server 8.0
- MySQL Workbench 8
- Eclipse IDE for Enterprise Java Developers 2019-03 R
- Maven 3.6.2

Create a Eclipse Project using Spring Initializr:

- Group: com.cognizant
- Artifact ID: orm-learn
- Description: Demo project for Spring Data JPA and Hibernate
- Dependencies: Select Spring Boot DevTools, Spring Data JPA, and MySQL Driver

MySQL Schema and table creation:

A screenshot of the MySQL 8.0 Command Line Client window. The title bar shows 'MySQL 8.0 Command Line Cli' with a close button and window controls. The terminal text shows the user entering a password, followed by a welcome message: 'Welcome to the MySQL monitor. Commands end with ; or \g. Your MySQL connection id is 8. Server version: 8.0.41 MySQL Community Server - GPL. Copyright (c) 2000, 2025, Oracle and/or its affiliates. Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners. Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.' The user then enters the command 'mysql> create schema ormllearn;' and receives the response 'Query OK, 1 row affected (0.05 sec)'.



Code :

application.properties :

```

1spring.application.name=orm-learn
2
3#Spring Framework and application log
4
5logging.level.org.springframework=info
6logging.level.com.cognizant=debug
7
8# Hibernate logs for displaying executed SQL, input and output
9logging.level.org.hibernate.SQL=trace
10logging.level.org.hibernate.type.descriptor.sql=trace
11
12# Log patter
13logging.pattern.console=%d{dd-MM-yy} %d{HH:mm:ss.SSS} %-20.20thread %5p %-25.25logger{25} %25M %4L %m%n
14
15# Database configuration
16spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver
17spring.datasource.url=jdbc:mysql://localhost:3306/ormlearn
18spring.datasource.username=root
19spring.datasource.password=root123
20
21# Hibernate configuration
22spring.jpa.hibernate.ddl-auto=validate
23spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.MySQLDialect
24

```

Persistence Class – Country :

```

OrmLearnApplication.java Country.java CountryRepository.java CountryService.java
1 package com.cognizant.orm_learn.model;
2
3 import jakarta.persistence.Column;
4 import jakarta.persistence.Entity;
5 import jakarta.persistence.Id;
6 import jakarta.persistence.Table;
7
8 @Entity
9 @Table(name = "country")
10 public class Country {
11     @Id
12     @Column(name = "co_code", columnDefinition = "CHAR(2)")
13     private String code;
14
15     @Column(name = "co_name")
16     private String name;
17
18     public String getCode() {
19         return code;
20     }
21
22     public void setCode(String code) {
23         this.code = code;
24     }
25
26     public String getName() {
27         return name;
28     }
29
30     public void setName(String name) {
31         this.name = name;
32     }
33
34     @Override
35     public String toString() {
36         return "Country [code=" + code + ", name=" + name + "]";
37     }
38 }

```

Repository Class – CountryRepository:

```

OrmLearnApplication.java Country.java CountryRepository.java CountryService.java
1 package com.cognizant.orm_learn.repository;
2
3 import org.springframework.data.jpa.repository.JpaRepository;
4 import org.springframework.stereotype.Repository;
5
6 import com.cognizant.orm_learn.model.Country;
7 @Repository
8
9 public interface CountryRepository extends JpaRepository<Country, String> {
10
11 }

```

Service Class – CountryService:

```
OrmLearnApplication.java Country.java CountryRepository.java CountryService.java ×
1 package com.cognizant.orm_learn.service;
2 import java.util.List;
3
4 import org.springframework.beans.factory.annotation.Autowired;
5 import org.springframework.stereotype.Service;
6 import org.springframework.transaction.annotation.Transactional;
7
8 import com.cognizant.orm_learn.model.Country;
9 import com.cognizant.orm_learn.repository.CountryRepository;
10 @Service
11 public class CountryService {
12     @Autowired
13     private CountryRepository countryRepository;
14
15     @Transactional
16     public List<Country> getAllCountries() {
17         return countryRepository.findAll();
18     }
19 }
```

OrmLearnApplication.java:

```
OrmLearnApplication.java × Country.java CountryRepository.java CountryService.java application.properties
1 package com.cognizant.orm_learn;
2
3 import org.springframework.boot.SpringApplication;
4 import org.springframework.boot.autoconfigure.SpringBootApplication;
5 import com.cognizant.orm_learn.service.CountryService;
6 import com.cognizant.orm_learn.model.Country;
7 import org.springframework.context.ApplicationContext;
8 import java.util.List;
9 import org.slf4j.Logger;
10 import org.slf4j.LoggerFactory;
11
12 @SpringBootApplication
13 public class OrmLearnApplication {
14
15     private static final Logger LOGGER = LoggerFactory.getLogger(OrmLearnApplication.class);
16     private static CountryService countryService;
17     public static void main(String[] args) {
18         ApplicationContext context = SpringApplication.run(OrmLearnApplication.class, args);
19         countryService = context.getBean(CountryService.class);
20         testGetAllCountries();
21     }
22     private static void testGetAllCountries() {
23         LOGGER.info("Start");
24         List<Country> countries = countryService.getAllCountries();
25         LOGGER.debug("countries={}", countries);
26         LOGGER.info("End");
27     }
28 }
29
```

OUTPUT :

```
Week3 - orm-learn/src/main/java/com/cognizant/orm_learn/OrmLearnApplication.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
# Problems Servers Terminal Data Source Explorer Properties Console x
<-terminated> OrmLearnApplication [Java Application] C:\Users\salma.p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.21.0.6.v20250130-0529\jre\bin\javaw.exe (Jul 6, 2025, 5:20:20 PM - 5:20:25 PM elapsed: 000:04:616) [pid: 6476]

:: Spring Boot :: (v3.5.3)

06-07-25 17:20:21.992 restartedMain INFO c.c.o.OrmLearnApplication logStarting 53 Starting OrmLearnApplication using Java 21.0.6 with PID 6476 (C:\Users\salma\Downloads\orm-learn\tar
06-07-25 17:20:21.994 restartedMain DEBUG c.c.o.OrmLearnApplication logStarting 54 Running with Spring Boot v3.5.3, Spring v6.2.8
06-07-25 17:20:21.995 restartedMain INFO c.c.o.OrmLearnApplication logStartupProfileInfo 652 No active profile set, falling back to 1 default profile: "default"
06-07-25 17:20:22.031 restartedMain INFO ertyDefaultsPostProcessor logTo 252 Devtools property defaults active! Set 'spring.devtools.add-properties' to 'false' to disable
06-07-25 17:20:22.472 restartedMain INFO toryConfigurationDelegate registerRepositoriesIn 145 Bootstrapping Spring Data JPA repositories in DEFAULT mode.
06-07-25 17:20:22.522 restartedMain INFO toryConfigurationDelegate registerRepositoriesIn 213 Finished Spring Data repository scanning in 42 ms. Found 1 JPA repository interface.
06-07-25 17:20:22.823 restartedMain INFO o.h.j.i.util.LogHelper logPersistenceUnitInformation 31 HH#000204: Processing PersistenceUnitInfo [name: default]
06-07-25 17:20:22.879 restartedMain INFO org.hibernate.Version logVersion 44 HH#000412: Hibernate ORM core version 6.6.18.Final
06-07-25 17:20:22.914 restartedMain INFO i.RegionFactoryInitiator initiateService 50 HH#000026: Second-level cache disabled
06-07-25 17:20:23.211 restartedMain INFO SpringPersistenceUnitInfo addTransformer 87 No LoadTimeWeaver setup: ignoring JPA class transformer
06-07-25 17:20:23.237 restartedMain INFO c.z.h.HikariDataSource getConnection 109 HikariPool-1 - Starting...
06-07-25 17:20:23.589 restartedMain INFO c.z.h.pool.HikariPool checkFailFast 575 HikariPool-1 - Added connection com.mysql.cj.jdbc.ConnectionImpl@277e4499
06-07-25 17:20:23.591 restartedMain INFO c.z.h.HikariDataSource getConnection 122 HikariPool-1 - Start completed.
06-07-25 17:20:23.666 restartedMain WARN o.h.o.orm.deprecation constructDialect 153 HH#00000025: MySQLDialect does not need to be specified explicitly using 'hibernate.dialect' (remov
06-07-25 17:20:23.683 restartedMain INFO o.h.o.connections.pooling logConnectionInfo 163 HH#10001005: Database info:
Database JDBC URL [Connecting through datasource 'HikariDataSource (HikariPool-1)']
Database driver: undefined/unknown
Database versions: 8.0.41
Autocommit mode: undefined/unknown
Isolation level: undefined/unknown
Minimum pool size: undefined/unknown
Maximum pool size: undefined/unknown
06-07-25 17:20:23.693 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(12, org.hibernate.type.descriptor.sql.internal.CapacityDependentDdlType@4dc88ce6) rep
06-07-25 17:20:23.694 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(-9, org.hibernate.type.descriptor.sql.internal.CapacityDependentDdlType@563eb91e) rep
06-07-25 17:20:23.694 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(-3, org.hibernate.type.descriptor.sql.internal.CapacityDependentDdlType@86653a5) repli
06-07-25 17:20:23.694 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(4003, org.hibernate.type.descriptor.sql.internal.DdlTypeImpl@67e69211) replaced previo
06-07-25 17:20:23.694 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(4001, org.hibernate.type.descriptor.sql.internal.DdlTypeImpl@5e662c18) replaced previo
06-07-25 17:20:23.695 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(4002, org.hibernate.type.descriptor.sql.internal.DdlTypeImpl@5007e3de) replaced previo
06-07-25 17:20:23.695 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(2004, org.hibernate.type.descriptor.sql.internal.CapacityDependentDdlType@661213e3) ri
06-07-25 17:20:23.695 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(2005, org.hibernate.type.descriptor.sql.internal.CapacityDependentDdlType@1e2c4371) ri
06-07-25 17:20:23.695 restartedMain DEBUG h.t.d.s.s.DdlTypeRegistry addDescriptor 64 addDescriptor(2011, org.hibernate.type.descriptor.sql.internal.CapacityDependentDdlType@3e9fd964) ri
06-07-25 17:20:24.378 restartedMain INFO .p.i.JtaPlatformInitiator initiateService 59 HH#000489: No JTA platform available (set 'hibernate.transaction.jta.platform' to enable JTA platfor
06-07-25 17:20:24.422 restartedMain INFO rEntityManagerFactoryBean buildNativeEntityManagerFactory 447 Initialized JPA EntityManagerFactory for persistence unit 'default'
06-07-25 17:20:24.827 restartedMain INFO .OptionalLiveReloadServer startServer 59 LiveReload server is running on port 35729
06-07-25 17:20:24.842 restartedMain INFO c.c.o.OrmLearnApplication logStarted 59 Started OrmLearnApplication in 3.218 seconds (process running for 3.585)
06-07-25 17:20:24.846 restartedMain INFO c.c.o.OrmLearnApplication testGetAllCountries 23 Start
06-07-25 17:20:25.002 restartedMain DEBUG org.hibernate.SQL logStatement 135 select c1_0.co_code,c1_0.co_name from country c1_0
06-07-25 17:20:25.041 restartedMain DEBUG c.c.o.OrmLearnApplication testGetAllCountries 25 countries=[Country [code=IN, name=India], Country [code=US, name=United States of America]]
06-07-25 17:20:25.041 restartedMain INFO rEntityManagerFactoryBean destroy 660 Closing JPA EntityManagerFactory for persistence unit 'default'
06-07-25 17:20:25.050 licationShutdownHook INFO c.z.h.HikariDataSource close 349 HikariPool-1 - Shutdown initiated...
06-07-25 17:20:25.056 licationShutdownHook INFO c.z.h.HikariDataSource close 351 HikariPool-1 - Shutdown completed.
```