**Hands on 1**

**Spring Data JPA - Quick Example**

**Code:**

**Country.java:**

package com.cognizant.orm\_learn.models;  
  
import jakarta.persistence.Column;  
import jakarta.persistence.Entity;  
import jakarta.persistence.Id;  
import jakarta.persistence.Table;  
  
@Entity  
@Table(name = "country")  
public class Country {  
  
 @Id  
 @Column(name = "code")  
 private String code;  
 @Column(name = "name")  
 private String name;  
 public String getCode() { return code; }  
 public void setCode(String code) { this.code = code; }  
 public String getName() { return name; }  
 public void setName(String name) { this.name = name; }  
   
 @Override  
 public String toString() {  
 return "Country{" + "code='" + code + '\'' + ", name='" + name + '\'' + '}';  
 }  
}

**CountryService.java:**

package com.cognizant.orm\_learn.service;  
  
import com.cognizant.orm\_learn.models.Country;  
import com.cognizant.orm\_learn.repository.CountryRepository;  
import org.springframework.beans.factory.annotation.Autowired;  
import org.springframework.stereotype.Service;  
import org.springframework.transaction.annotation.Transactional;  
  
import java.util.List;  
  
@Service  
public class CountryService {  
  
 @Autowired  
 private CountryRepository countryRepository;  
  
 @Transactional  
 public List<Country> getAllCountries() {  
 return countryRepository.findAll();  
 }  
}

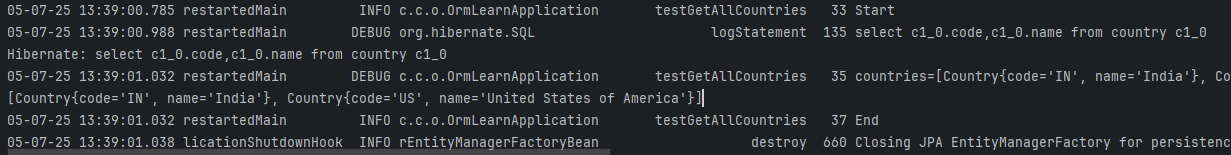
**CountryRepository.java:**

import com.cognizant.orm\_learn.models.Country;  
import org.springframework.data.jpa.repository.JpaRepository;  
import org.springframework.stereotype.Repository;  
  
@Repository  
public interface CountryRepository extends JpaRepository<Country, String> {  
}

**OrmLearnApplication.java:**

package com.cognizant.orm\_learn;  
  
import com.cognizant.orm\_learn.models.Country;  
import com.cognizant.orm\_learn.service.CountryService;  
import org.slf4j.Logger;  
import org.slf4j.LoggerFactory;  
import org.springframework.boot.SpringApplication;  
import org.springframework.boot.autoconfigure.SpringBootApplication;  
import org.springframework.context.ApplicationContext;  
import java.util.List;  
  
@SpringBootApplication  
public class OrmLearnApplication {  
 private static final Logger *LOGGER* = LoggerFactory.*getLogger*(OrmLearnApplication.class);  
 private static CountryService *countryService*;  
 public static void main(String[] args) {  
 ApplicationContext context = SpringApplication.*run*(OrmLearnApplication.class, args);  
 *countryService* = context.getBean(CountryService.class);  
 *LOGGER*.info("Inside main");  
 *testGetAllCountries*();  
 }  
 private static void testGetAllCountries() {  
 *LOGGER*.info("Start");  
 List<Country> countries = *countryService*.getAllCountries();  
 *LOGGER*.debug("countries={}", countries);  
 System.*out*.println(countries);  
 *LOGGER*.info("End");  
 }  
}

**Output:**

****

**Hands on 4**

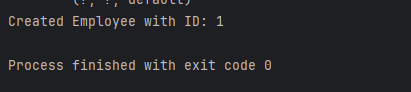
**Difference between JPA, Hibernate and Spring Data JPA**

**Hibernate:**

**Code:**

package org.example.dao;  
  
import org.example.model.Employee;  
import org.example.util.HibernateUtil;  
import org.hibernate.\*;  
  
public class HibernateDao {  
  
 public Integer addEmployee(Employee employee) {  
 Session session = HibernateUtil.*getSessionFactory*().openSession();  
 Transaction tx = null;  
 Integer employeeID = null;  
  
 try {  
 tx = session.beginTransaction();  
 employeeID = (Integer) session.save(employee); // ↩ your snippet  
 tx.commit();  
 } catch (HibernateException e) {  
 if (tx != null) tx.rollback();  
 e.printStackTrace();  
 } finally {  
 session.close();  
 }  
 return employeeID;  
 }  
}

**Output:**

****

**Spring Data JPA** :

**Code:**

**Employee.java:**

package com.cognizant.DataJpa.model;  
  
import jakarta.persistence.\*;  
  
@Entity  
public class Employee {  
 @Id  
 @GeneratedValue(strategy = GenerationType.*IDENTITY*)  
 private Integer id;  
 public Integer getId() {  
 return id;  
 }  
 public void setId(Integer id) {  
 this.id = id;  
 }  
 public String getName() {  
 return name;  
 }  
 public void setName(String name) {  
 this.name = name;  
 }  
 public String getDepartment() {  
 return department;  
 }  
 public void setDepartment(String department) {  
 this.department = department;  
 }  
 private String name;  
 private String department;  
}

**EmployeeService.java:**

@Service  
public class EmployeeService {  
  
 @Autowired  
 private EmployeeRepository employeeRepository;  
  
 @Transactional  
 public void addEmployee(Employee employee) {  
 employeeRepository.save(employee);  
 }  
}

**EmployeeRepository.java:**

import com.cognizant.DataJpa.model.Employee;  
import org.springframework.data.jpa.repository.JpaRepository;  
  
public interface EmployeeRepository extends JpaRepository<Employee, Integer> {  
 // All CRUD methods auto-generated  
}

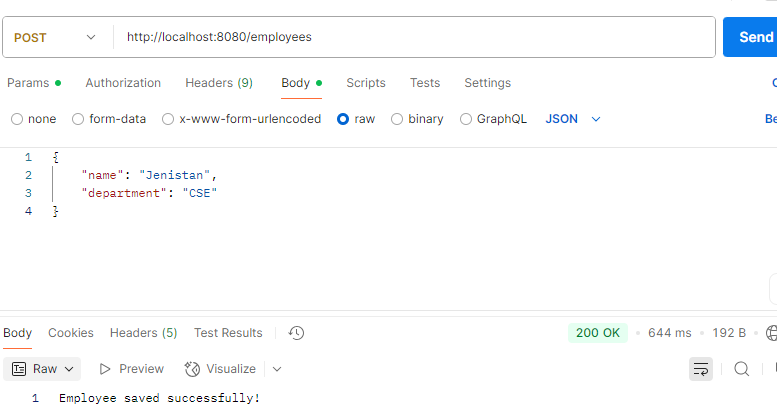
**EmployeeController.java:**

@RestController  
@RequestMapping("/employees")  
public class EmployeeController {  
 @Autowired  
 private EmployeeService employeeService;  
 @PostMapping  
 public String createEmployee(@RequestBody Employee employee) {  
 employeeService.addEmployee(employee);  
 return "Employee saved successfully!";  
 }  
}

**App.java:**

@SpringBootApplication  
public class DataJpaApplication {  
  
 public static void main(String[] args) {  
 SpringApplication.*run*(DataJpaApplication.class, args);  
 }  
  
}

**Output:**

****

**:**