**Spring Data JPA with Spring Boot, Hibernate**

**(Additional hands-on)**

**Demonstrate implementation of O/R Mapping**

**Source Code**

Run the following SQL using:

mysql> source D:\spring-data-jpa-files\payroll.sql

Employee.java:

@Entity

@Table(name = "employee")

public class Employee {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private int id;

@Column(name = "name")

private String name;

@Column(name = "salary")

private double salary;

@Column(name = "permanent")

private boolean permanent;

@Column(name = "date\_of\_birth")

private Date dateOfBirth;

// Relationships

@ManyToOne

@JoinColumn(name = "department\_id")

private Department department;

@ManyToMany

@JoinTable(name = "employee\_skill",

joinColumns = @JoinColumn(name = "employee\_id"),

inverseJoinColumns = @JoinColumn(name = "skill\_id"))

private List<Skill> skillList;

// Getters, Setters, toString()

}

Department.java:

@Entity

@Table(name = "department")

public class Department {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private int id;

@Column(name = "name")

private String name;

@OneToMany(mappedBy = "department")

private List<Employee> employeeList;

// Getters, Setters, toString()

}

Skill.java:

@Entity

@Table(name = "skill")

public class Skill {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private int id;

@Column(name = "name")

private String name;

@ManyToMany(mappedBy = "skillList")

private List<Employee> employeeList;

// Getters, Setters, toString()

}

EmployeeRepository.java:

@Repository

public interface EmployeeRepository extends JpaRepository<Employee, Integer> {

}

DepartmentRepository.java:

@Repository

public interface DepartmentRepository extends JpaRepository<Department, Integer> {

}

SkillRepository.java:

@Repository

public interface SkillRepository extends JpaRepository<Skill, Integer> {

}

OrmLearnApplication.java:

@SpringBootApplication

public class OrmLearnApplication {

private static final Logger LOGGER = LoggerFactory.getLogger(OrmLearnApplication.class);

private static EmployeeRepository employeeRepository;

private static DepartmentRepository departmentRepository;

private static SkillRepository skillRepository;

public static void main(String[] args) {

ApplicationContext context = SpringApplication.run(OrmLearnApplication.class, args);

employeeRepository = context.getBean(EmployeeRepository.class);

departmentRepository = context.getBean(DepartmentRepository.class);

skillRepository = context.getBean(SkillRepository.class);

LOGGER.info("Start");

testGetAllEmployees(); // Example test method

LOGGER.info("End");

}

public static void testGetAllEmployees() {

List<Employee> employees = employeeRepository.findAll();

LOGGER.debug("Employees: {}", employees);

}

}

**Output**

