**Exercise 7: Employee Management System - Enabling Entity Auditing**

**Business Scenario:**

**Implement auditing to track the creation and modification of employees and departments.**

**Instructions:**

1. **Entity Auditing:**
   * **Enable auditing in your application by configuring auditing properties.**
   * **Use annotations like @CreatedBy, @LastModifiedBy, @CreatedDate, and @LastModifiedDate.**

**Solution**

**EmployeeManagementApplication.java**

package com.employee.employeemanagement;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

import org.springframework.data.jpa.repository.config.EnableJpaAuditing;

@SpringBootApplication

@EnableJpaAuditing // Enable JPA Auditing

public class EmployeeManagementApplication {

public static void main(String[] args) {

SpringApplication.run(EmployeeManagementApplication.class, args);

}

}

**Employee.java**

package com.employee.employeemanagement.entity;

import jakarta.persistence.\*;

import org.springframework.data.annotation.CreatedBy;

import org.springframework.data.annotation.CreatedDate;

import org.springframework.data.annotation.LastModifiedBy;

import org.springframework.data.annotation.LastModifiedDate;

import org.springframework.data.jpa.domain.support.AuditingEntityListener;

import java.time.LocalDateTime;

@Entity

@Table(name = "employees")

@EntityListeners(AuditingEntityListener.class)

public class Employee {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Long id;

private String name;

private String email;

@ManyToOne

@JoinColumn(name = "department\_id")

private Department department;

@CreatedBy

@Column(updatable = false)

private String createdBy;

@CreatedDate

@Column(updatable = false)

private LocalDateTime createdDate;

@LastModifiedBy

private String lastModifiedBy;

@LastModifiedDate

private LocalDateTime lastModifiedDate;

}

**Department.java**

package com.employee.employeemanagement.entity;

import jakarta.persistence.\*;

import org.springframework.data.annotation.CreatedBy;

import org.springframework.data.annotation.CreatedDate;

import org.springframework.data.annotation.LastModifiedBy;

import org.springframework.data.annotation.LastModifiedDate;

import org.springframework.data.jpa.domain.support.AuditingEntityListener;

import java.time.LocalDateTime;

@Entity

@Table(name = "departments")

@EntityListeners(AuditingEntityListener.class)

public class Department {

@Id

@GeneratedValue(strategy = GenerationType.IDENTITY)

private Long id;

private String name;

@CreatedBy

@Column(updatable = false)

private String createdBy;

@CreatedDate

@Column(updatable = false)

private LocalDateTime createdDate;

@LastModifiedBy

private String lastModifiedBy;

@LastModifiedDate

private LocalDateTime lastModifiedDate;

}

**AuditAwareImpl.java**

package com.employee.employeemanagement.audit;

import org.springframework.data.domain.AuditorAware;

import org.springframework.stereotype.Component;

import java.util.Optional;

@Component

public class AuditorAwareImpl implements AuditorAware<String> {

@Override

public Optional<String> getCurrentAuditor() {

return Optional.of("Admin"); // Hardcoded for simplicity

}

}

**AuditConfig.java**

package com.employee.employeemanagement.config;

import com.employee.employeemanagement.audit.AuditorAwareImpl;

import org.springframework.context.annotation.Bean;

import org.springframework.context.annotation.Configuration;

import org.springframework.data.domain.AuditorAware;

import org.springframework.data.jpa.repository.config.EnableJpaAuditing;

@Configuration

@EnableJpaAuditing(auditorAwareRef = "auditorAware")

public class AuditConfig {

@Bean

public AuditorAware<String> auditorAware() {

return new AuditorAwareImpl();

}

}