Employee Student Management

H2 DB + Swagger + Lombok

File Structure

```
+ emp-mgnt\
    |---  pom.xml
    + \src\main\resources
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        |---  data.sql
    + \src\main\java\com\suji\empmgnt
        |---  EmpMgntApplication.java
    + \src\test\java\com\suji\empmgnt
        |---  EmpMgntApplicationTests.java
    + \src\main\java\com\suji\empmgnt\model
        |---  Address.java
        |---  Employee.java
        |---  Gender.java
        |---  Student.java
    + \src\main\java\com\suji\empmgnt\controller
        |---  EmployeeController.java
        |---  StudentController.java
    + \src\main\java\com\suji\empmgnt\service
        |---  EmployeeService.java
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    + \src\main\java\com\suji\empmgnt\repository
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```

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```
16. resources\data.sql
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```

1. application.properties

application.properties

```
# Server Settings
server.port=8080
spring.application.name=Project_Name

# Open API Available at http://localhost:8080/api-docs/
springdoc.api-docs.path=/api-docs

# Swagger
# Default URL: http://localhost:8080/swagger-ui/index.html
# Custom URL: http://localhost:8080/swagger.html
springdoc.swagger-ui.path=/swagger.html

# DateTimeFormatters
spring.mvc.format.date=yyyy-MM-dd
spring.mvc.format.date-time=yyyy-MM-dd HH:mm:ss
spring.mvc.format.time=HH:mm:ss

# H2 Data Source
# H2DB URL: http://localhost:8080/h2-console

spring.datasource.url=jdbc:h2:mem:testdb
spring.datasource.driverClassName=org.h2.Driver
spring.datasource.username=sujith
spring.datasource.password=password

# H2 Database Settings
# H2DB URL: http://localhost:8080/h2-console
# Custom URL:      http://localhost:8080/h2db
# spring.h2.console.path=/h2db

spring.jpa.database-platform=org.hibernate.dialect.H2Dialect
spring.jpa.defer-datasource-initialization=true
spring.h2.console.enabled=true

# JPA Props
spring.jpa.show-sql=true
spring.jpa.properties.hibernate.format_sql=true
spring.jpa.hibernate.ddl-auto = create

# Error Message
server.error.include-message=always
server.error.include-exception=true
```

2. pom.xml

pom.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>
    <parent>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-parent</artifactId>
        <version>2.7.2</version>
        <relativePath /> <!-- lookup parent from repository -->
    </parent>
    <groupId>com.suji</groupId>
    <artifactId>emp-mgnt</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <name>emp-mgnt</name>
    <description>Employee Management</description>
    <properties>
        <java.version>11</java.version>
    </properties>
    <dependencies>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-data-jpa</artifactId>
        </dependency>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-web</artifactId>
        </dependency>

        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-devtools</artifactId>
            <scope>runtime</scope>
            <optional>true</optional>
        </dependency>
        <dependency>
            <groupId>com.h2database</groupId>
            <artifactId>h2</artifactId>
            <scope>runtime</scope>
        </dependency>
        <dependency>
            <groupId>org.projectlombok</groupId>
            <artifactId>lombok</artifactId>
            <optional>true</optional>
        </dependency>
```

```
        <dependency>
            <groupId>org.springdoc</groupId>
            <artifactId>springdoc-openapi-ui</artifactId>
            <version>1.6.4</version>
        </dependency>

        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-test</artifactId>
            <scope>test</scope>
        </dependency>
    </dependencies>

    <build>
        <plugins>
            <plugin>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-maven-plugin</artifactId>
                <configuration>
                    <excludes>
                        <exclude>
                            <groupId>org.projectlombok</groupId>
                            <artifactId>lombok</artifactId>
                        </exclude>
                    </excludes>
                </configuration>
            </plugin>
        </plugins>
    </build>

</project>
```

3. Address.java

model\Address.java

```
package com.suji.empmgnt.model;

import javax.persistence.Entity;
import javax.persistence.Id;
import javax.persistence.Table;

import lombok.AllArgsConstructor;
import lombok.Data;
import lombok.NoArgsConstructor;

@Data
@NoArgsConstructor
@AllArgsConstructor
// @Entity
// @Table(name = "addrs")
```

```java
public class Address {

//    @Id
//    private int id;
    private String pinCode;
    private String street;

}
```

---

4. Employee.java

model\Employee.java

```java
package com.suji.empmgnt.model;

import java.time.LocalDate;
import java.util.List;

import javax.persistence.CollectionTable;
import javax.persistence.ElementCollection;
import javax.persistence.Embedded;
import javax.persistence.Entity;
import javax.persistence.FetchType;
import javax.persistence.GeneratedValue;
import javax.persistence.GenerationType;
import javax.persistence.Id;
import javax.persistence.Table;

import lombok.Data;
import lombok.NoArgsConstructor;

@Data
@NoArgsConstructor
@Entity
@Table(name = "employees")
public class Employee {

    @Id
    @GeneratedValue(strategy = GenerationType.AUTO)
    private int id;
    private String name;
    private String email;
    private String dept;
    private double salary;
    private Gender gender;
    private LocalDate dateOfJoin;
    private boolean active;

    //@OneToOne
    //@JoinColumn(name = "addr_id")
```

```java
    @Embedded
    private Address address;

    @CollectionTable(name="emp_langs")
    @ElementCollection(fetch = FetchType.LAZY)
    private List<String> languages;


    public Employee(int id, String name, String dept, double salary) {
        this.id = id;
        this.name = name;
        this.dept = dept;
        this.salary = salary;
    }
}
```

5. Gender.java

model\Gender.java

```java
package com.suji.empmgnt.model;

public enum Gender {
    MALE, FEMALE
}
```

6. Student.java

model\Student.java

```java
package com.suji.empmgnt.model;

import javax.persistence.Entity;
import javax.persistence.GeneratedValue;
import javax.persistence.GenerationType;
import javax.persistence.Id;
import javax.persistence.Table;

import lombok.AllArgsConstructor;
import lombok.Data;
import lombok.NoArgsConstructor;

@Data
@NoArgsConstructor
@AllArgsConstructor

@Entity
@Table(name = "students")
```

```java
public class Student {

    @Id
    @GeneratedValue(strategy = GenerationType.AUTO)
    private int id;

    private String name;
    private String email;
    private int marks;
    private double cgpa;
}
```

7. EmployeeController.java

controller\EmployeeController.java

```java
package com.suji.empmgnt.controller;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;

import com.suji.empmgnt.model.Employee;
import com.suji.empmgnt.service.EmployeeService;

@RestController
@RequestMapping(path = "/employees")
public class EmployeeController {

    @Autowired
    private EmployeeService service;

    @GetMapping
    public List<Employee> getAllEmployees(){
        return service.getAllEmployee();
    }

    @PostMapping
    public Employee saveEmployee(@RequestBody Employee employee) {
        return service.addEmployee(employee);
    }

}
```

8. StudentController.java

controller\StudentController.java

```java
package com.suji.empmgnt.controller;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PostMapping;
import org.springframework.web.bind.annotation.RequestBody;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;

import com.suji.empmgnt.model.Employee;
import com.suji.empmgnt.model.Student;
import com.suji.empmgnt.service.StudentService;

@RestController
@RequestMapping(path = "/students")
public class StudentController {

    @Autowired
    private StudentService service;

    @GetMapping
    public List<Student> getAllEmployees(){
        return service.getAllStudents();
    }

    @PostMapping
    public Student saveEmployee(@RequestBody Student student) {
        return service.saveStudent(student);
    }

}
```

9. EmployeeService.java

service\EmployeeService.java

```java
package com.suji.empmgnt.service;

import java.util.List;

import org.springframework.stereotype.Service;

import com.suji.empmgnt.model.Employee;

@Service
public interface EmployeeService  {
```

```
    public Employee addEmployee(Employee emp);
    public List<Employee> getAllEmployee();

}
```

10. StudentService.java

service\StudentService.java

```
package com.suji.empmgnt.service;

import java.util.List;

import org.springframework.stereotype.Service;

import com.suji.empmgnt.model.Student;

@Service
public interface StudentService  {

    public Student saveStudent(Student student);
    public List<Student> getAllStudents();

}
```

11. EmployeeRepository.java

repository\EmployeeRepository.java

```
package com.suji.empmgnt.repository;

import org.springframework.data.jpa.repository.JpaRepository;
import org.springframework.stereotype.Repository;

import com.suji.empmgnt.model.Employee;

@Repository
public interface EmployeeRepository extends JpaRepository<Employee, Integer> {


}
```

12. StudentRepository.java

repository\StudentRepository.java

```
package com.suji.empmgnt.repository;

import org.springframework.data.jpa.repository.JpaRepository;
import org.springframework.stereotype.Repository;

import com.suji.empmgnt.model.Student;

@Repository
public interface StudentRepository extends JpaRepository<Student, Integer> {


}
```

13. EmpMgntApplication.java

src\main\java\com\suji\empmgnt\EmpMgntApplication.java

```
package com.suji.empmgnt;

import java.time.LocalDate;
import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.boot.ApplicationArguments;
import org.springframework.boot.ApplicationRunner;
import org.springframework.boot.SpringApplication;
import org.springframework.boot.autoconfigure.SpringBootApplication;

import com.suji.empmgnt.model.Address;
import com.suji.empmgnt.model.Employee;
import com.suji.empmgnt.model.Gender;
import com.suji.empmgnt.model.Student;
import com.suji.empmgnt.repository.EmployeeRepository;
import com.suji.empmgnt.repository.StudentRepository;

@SpringBootApplication
public class EmpMgntApplication implements ApplicationRunner {

    @Autowired
    private StudentRepository studentRepository;

    @Autowired
    private EmployeeRepository employeeRepository;



    public static void main(String[] args) {
        SpringApplication.run(EmpMgntApplication.class, args);
    }
```

```java
        @Override
        public void run(ApplicationArguments args) throws Exception {


            Student student = new Student(101,"Sujith", "sujithmsjs@gmail.com", 78, 7.3);
            studentRepository.save(student);


            Address addr = new Address("507123", "Nehru nagar");

            Employee e = new Employee(1, "Sujith","IT", 50_000);
            e.setActive(true);
            e.setDateOfJoin(LocalDate.of(2014, 3, 3));
            e.setGender(Gender.MALE);
            e.setAddress(addr);
            e.setLanguages( List.of("Java", "Python", "C++"));

            employeeRepository.save(e);
        }

}
```

14. EmployeeServiceImpl.java

src\main\java\com\suji\empmgnt\service\impl\EmployeeServiceImpl.java

```java
package com.suji.empmgnt.service.impl;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Service;

import com.suji.empmgnt.model.Employee;
import com.suji.empmgnt.repository.EmployeeRepository;
import com.suji.empmgnt.service.EmployeeService;

@Service
public class EmployeeServiceImpl implements EmployeeService {

    @Autowired
    private EmployeeRepository repository;

    @Override
    public Employee addEmployee(Employee emp) {
        return repository.save(emp);
    }

    @Override
    public List<Employee> getAllEmployee() {
        return repository.findAll();
```

```
    }

}
```

15. StudentServiceImpl.java

src\main\java\com\suji\empmgnt\service\impl\StudentServiceImpl.java

```java
package com.suji.empmgnt.service.impl;

import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.stereotype.Service;

import com.suji.empmgnt.model.Employee;
import com.suji.empmgnt.model.Student;
import com.suji.empmgnt.repository.EmployeeRepository;
import com.suji.empmgnt.repository.StudentRepository;
import com.suji.empmgnt.service.EmployeeService;
import com.suji.empmgnt.service.StudentService;

@Service
public class StudentServiceImpl implements StudentService {

    @Autowired
    private StudentRepository repository;

    @Override
    public Student saveStudent(Student student) {
        return repository.save(student);
    }

    @Override
    public List<Student> getAllStudents() {
        return repository.findAll();
    }
}
```

16. data.sql

resources\data.sql

```sql
INSERT INTO students(id, name, email, marks, cgpa) values(2, 'Pranisha',
'pranisha@gmail.com', 82,7.9);

INSERT INTO students(id, name, email, marks, cgpa) values(3, 'Vineeth',
'vineeth@gmail.com', 61, 6.9);

INSERT INTO students(id, name, email, marks, cgpa) values(4, 'Vamshi',
'vams@gmail.com', 45 ,5.9);
```

```
INSERT INTO students(id, name, email, marks, cgpa) values(5, 'Ajay',
'ajaygulla@gmail.com', 35,3.9);

INSERT INTO students(id, name, email, marks, cgpa) values(6, 'Vinika',
'vinika@gmail.com', 92,9.1);
```

17. EmpMgntApplicationTests.java

src\test\java\com\suji\empmgnt\EmpMgntApplicationTests.java

```java
package com.suji.empmgnt;

import org.junit.jupiter.api.Test;
import org.springframework.boot.test.context.SpringBootTest;

@SpringBootTest
class EmpMgntApplicationTests {

    @Test
    void contextLoads() {
    }

}
```

Employee JSON

```json
{
    "id": 1,
    "name": "Sujith",
    "dept": "IT",
    "salary": 50000.0,
    "gender": "MALE",
    "dateOfJoin": "2014-03-03",
    "active": true,
    "address": {
        "pinCode": "507123",
        "street": "Nehru nagar"
    },
    "languages": [
        "Java",
        "Python",
        "C++"
    ]
}
```

Student JSON

```json
{
    "id": 3,
    "name": "Vineeth",
    "email": "vineeth@gmail.com",
    "marks": 61,
    "cgpa": 6.9
}
```