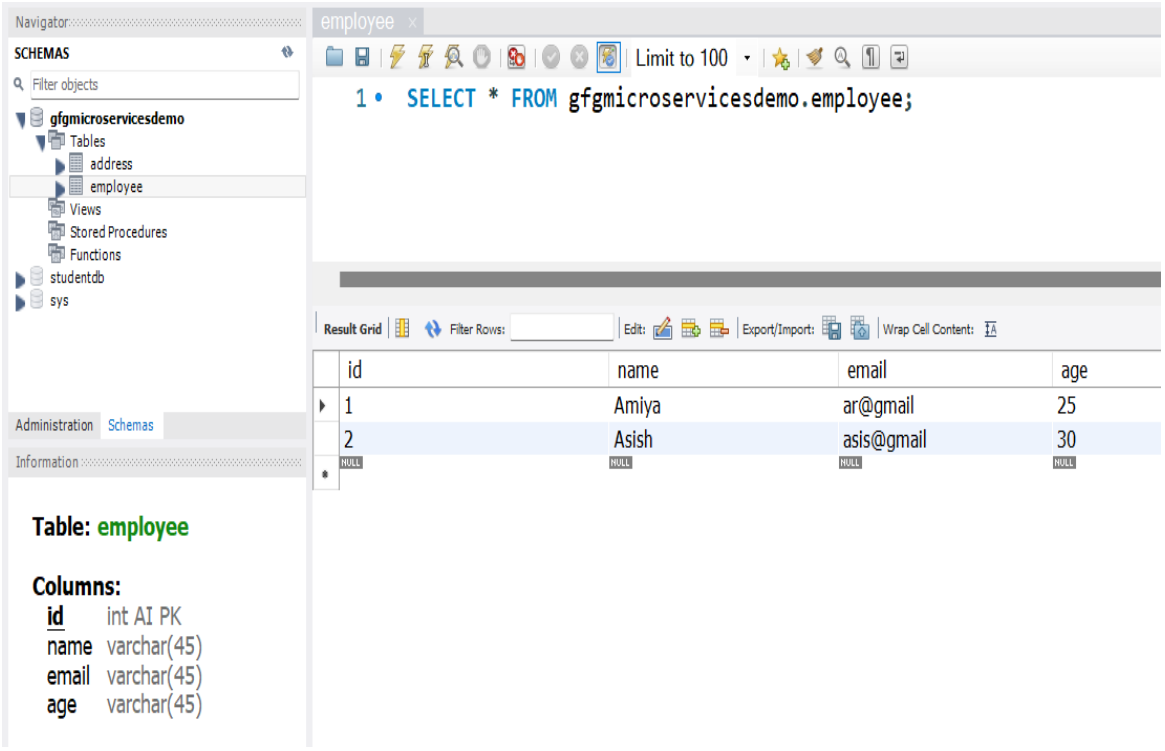
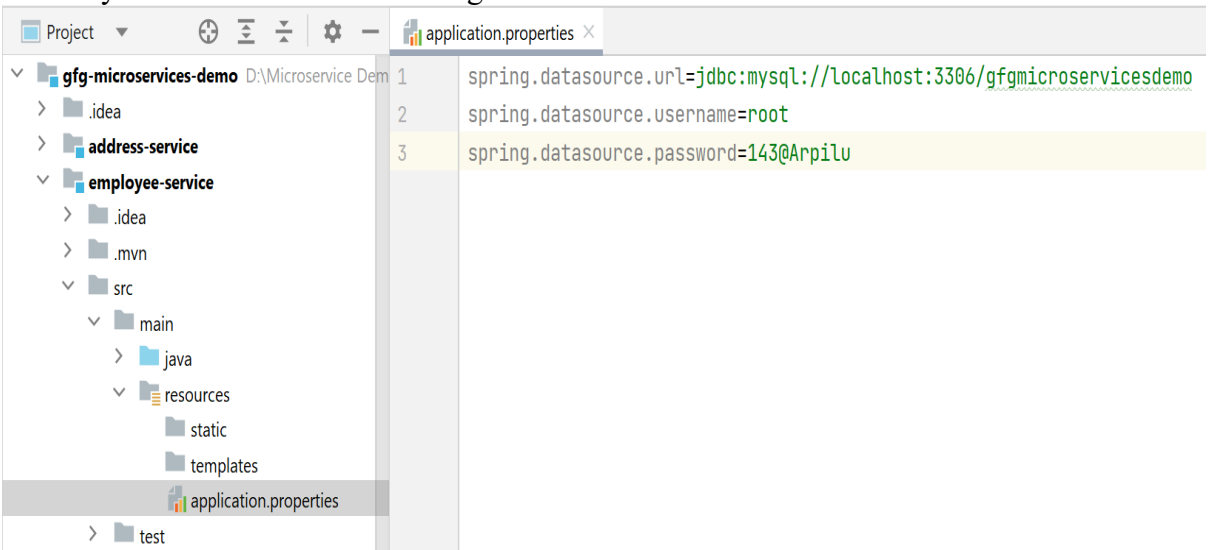
Step 1: Create a New Spring Boot Project in Spring Initializer
To create a new Spring Boot project. For this project choose the following things
Project: Maven
Language: Java
Packaging: Jar
Java: 17
Please choose the following dependencies while creating the project.
Spring Boot DevTools
Spring Data JPA
MySQL Driver
Spring Web

Step 2: Create Schema in MySQL Workbench and Put Some Sample Data
Go to your MySQL Workbench and create a schema named gfgmicroservicesdemo and inside that create a table called employee and put some sample data as shown in the below image. Here we have created 4 columns and put some sample data.
id
name
email
age



Now we are going to fetch Employee Data from Employee Table in our Spring Boot project. To do it refer to the following steps. Before moving to IntelliJ IDEA let's have a look at the complete project structure for our Microservices.

Step 3: Make Changes in Your application.properties File
Now make the following changes in your application.properties file.
spring.datasource.url=jdbc:mysql://localhost:3306/gfgmicroservicesdemo
spring.datasource.username=put your username here
spring.datasource.password=put your password here
You may also refer to the below image



Step 4: Create Your Entity/Model Class
Go to the src > main > java > entity and create a class Employee and put the below code. This is our model class.

```java
import jakarta.persistence.*;

@Entity
@Table(name = "employee")
public class Employee {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    @Column(name = "id")
    private int id;

    @Column(name = "name")
    private String name;

    @Column(name = "email")
    private String email;

    @Column(name = "age")
    private String age;

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getEmail() {
        return email;
    }

    public void setEmail(String email) {
        this.email = email;
    }

    public String getAge() {
        return age;
    }

    public void setAge(String age) {
```

```
        this.age = age;
    }
}
```

Step 5: Create Your Repository Interface
Go to the src > main > java > repository and create an interface EmployeeRepo and put the below code. This is our repository where we write code for all the database-related stuff.

```
import com.gfg.employeeaap.entity.Employee;
import org.springframework.data.jpa.repository.JpaRepository;

public interface EmployeeRepo extends JpaRepository<Employee, Integer> {

}
```

Step 6: Create an EmployeeResponse Class
Go to the src > main > java > response and create a class EmployeeResponse and put the below code.

```
public class EmployeeResponse {

    private int id;
    private String name;
    private String email;
    private String age;

    public int getId() {
        return id;
    }

    public void setId(int id) {
        this.id = id;
    }

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public String getEmail() {
        return email;
    }

    public void setEmail(String email) {
```

```
        this.email = email;
    }

    public String getAge() {
        return age;
    }

    public void setAge(String age) {
        this.age = age;
    }
}
```

Step 7: Create Your Service Class
Go to the src > main > java > service and create a class EmployeeService and put the below code.

```
import com.gfg.employeeaap.entity.Employee;
import com.gfg.employeeaap.repository.EmployeeRepo;
import com.gfg.employeeaap.response.EmployeeResponse;
import org.modelmapper.ModelMapper;
import org.springframework.beans.factory.annotation.Autowired;

import java.util.Optional;

public class EmployeeService {

    @Autowired
    private EmployeeRepo employeeRepo;

    @Autowired
    private ModelMapper mapper;

    public EmployeeResponse getEmployeeById(int id) {
        Optional<Employee> employee = employeeRepo.findById(id);
        EmployeeResponse employeeResponse = mapper.map(employee, EmployeeResponse.class);
        return employeeResponse;
    }

}
```

Step 8: Create an Employee Controller
Go to the src > main > java > controller and create a class EmployeeController and put the below code. Here we are going to create an endpoint "*/employees/{id}*" to find an employee using id.

```
import com.gfg.employeeaap.response.EmployeeResponse;
import com.gfg.employeeaap.service.EmployeeService;
import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.http.HttpStatus;
import org.springframework.http.ResponseEntity;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RestController;

@RestController
public class EmployeeController {

    @Autowired
    private EmployeeService employeeService;

    @GetMapping("/employees/{id}")
    private ResponseEntity<EmployeeResponse> getEmployeeDetails(@PathVariable("id") int
id) {
        EmployeeResponse employee = employeeService.getEmployeeById(id);
        return ResponseEntity.status(HttpStatus.OK).body(employee);
    }

}
```

Step 9: Create a Configuration Class

Go to the src > main > java > configuration and create a class EmployeeConfig and put the below code.

```
mport com.gfg.employeeaap.service.EmployeeService;
import org.modelmapper.ModelMapper;
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.Configuration;

@Configuration
public class EmployeeConfig {

    @Bean
    public EmployeeService employeeBean() {
        return new EmployeeService();
    }

    @Bean
    public ModelMapper modelMapperBean() {
        return new ModelMapper();
    }

}
```

Before running the Microservice below is the complete **pom.xml** file. Please cross-verify if you have missed some dependencies.

```
<?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>3.0.2</version>
        <relativePath/> <!-- lookup parent from repository -->
    </parent>
    <groupId>com.gfg.employeeaap</groupId>
    <artifactId>employee-service</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <name>employee-service</name>
    <description>Employee Service</description>
    <properties>
        <java.version>17</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.mysql</groupId>
            <artifactId>mysql-connector-j</artifactId>
            <scope>runtime</scope>
        </dependency>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-test</artifactId>
            <scope>test</scope>
        </dependency>
        <dependency>
            <groupId>org.modelmapper</groupId>
            <artifactId>modelmapper</artifactId>
```

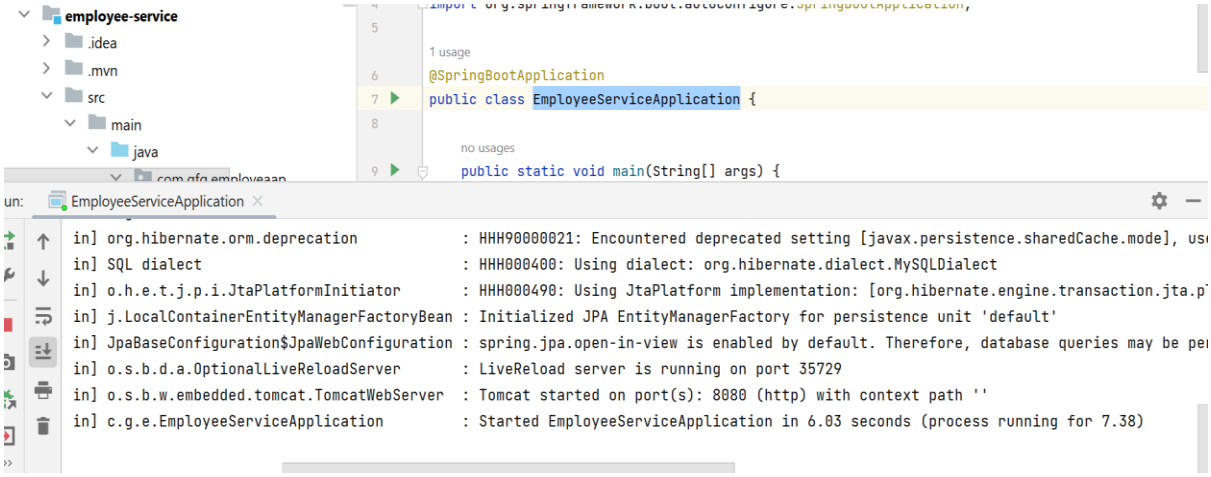
```
        <version>3.1.1</version>
      </dependency>
    </dependencies>

    <build>
      <plugins>
        <plugin>
          <groupId>org.springframework.boot</groupId>
          <artifactId>spring-boot-maven-plugin</artifactId>
        </plugin>
      </plugins>
    </build>

</project>
```

Step 10: Run Your Employee Microservice

To run your Employee Microservice src > main > java > EmployeeServiceApplication and click on the Run button. If everything goes well then you may see the following screen in your console. Please refer to the below image.



Step 11: Test Your Endpoint in Postman

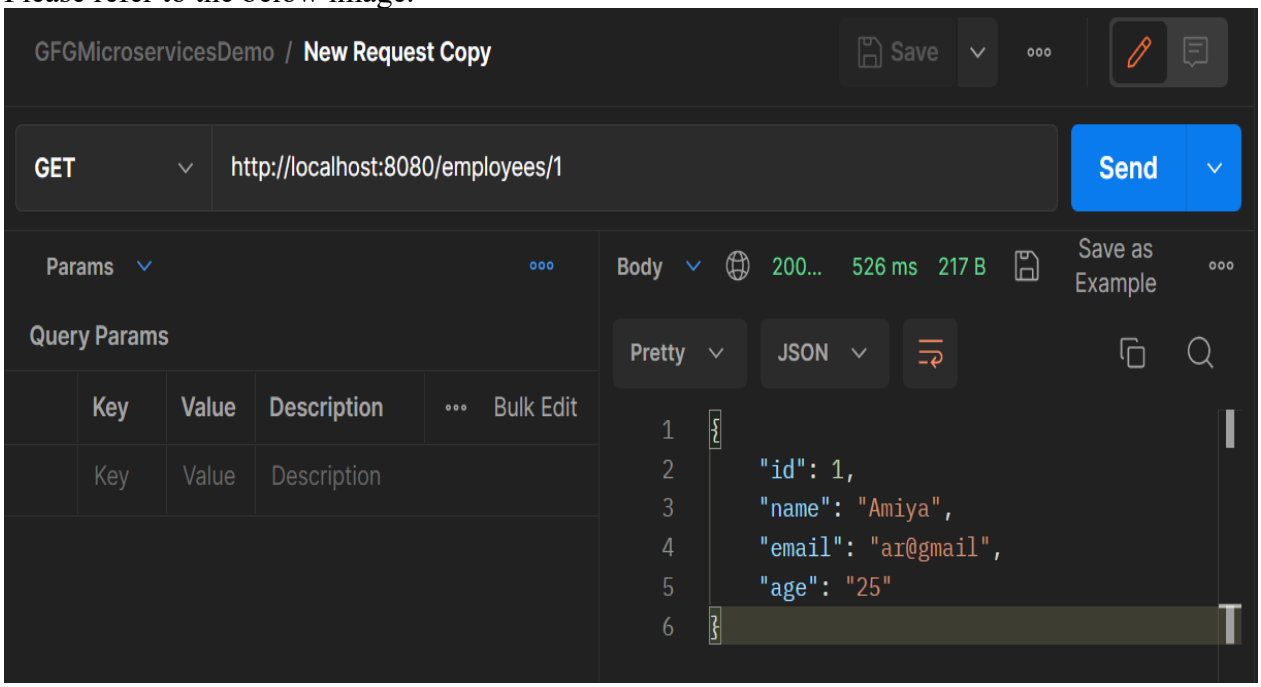
Now open Postman and hit the following URL

GET: http://localhost:8080/employees/1

And you can see the following response

```
{
   "id": 1,
   "name": "Amiya",
   "email": "ar@gmail",
   "age": "25"
}
```

Please refer to the below image.



This is how we have built our Employee Microservice with the help of Java and Spring Boot. And you can also design all your endpoints and write all the business logic, database logic, etc in the corresponding files.