1. Introduction

The Student App is a backend application built using Spring Boot that provides a RESTful API for managing a students. This document provides an overview of the system architecture, technologies used, database schema, RESTful API endpoints, deployment instructions, and concluding remarks.
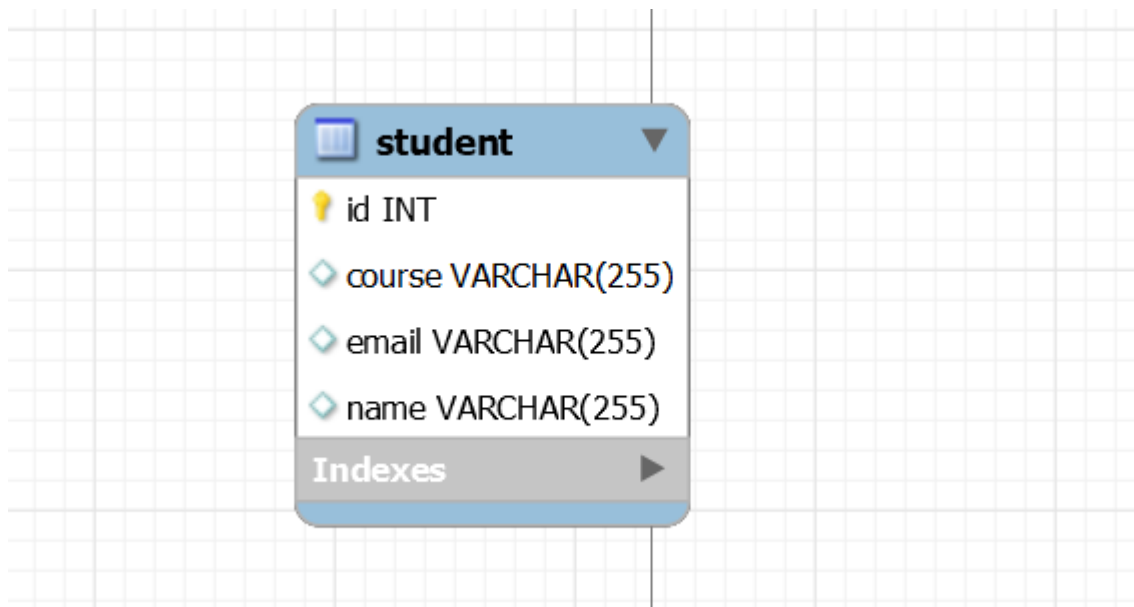
2. System Architecture

The system follows a simple architecture where Spring Boot serves as the backend, providing RESTful API endpoints for CRUD (Create, Read, Update, Delete) operations on student data. There is no frontend component included in this implementation.

3. Technologies Used

- Backend: Spring Boot, Spring Data JPA, Hibernate ORM

- Database: MySQL

- Postman : API development environment for testing and debugging API endpoints.

4. Database Schema

The database schema includes the following tables:

5. RESTful API Endpoints

The following RESTful API endpoints are available:

- **GET /http://localhost:1234/students**: Retrieve all students

- **GET /http://localhost:1234/students/2**:Retrieve a specific students by ID

- **POST /http://localhost:1234/students**: Create a new student

- **PUT / http://localhost:1234/students/2:** Update an existing students

- **DELETE / http://localhost:1234/students/2** Delete a students by ID

6. Deployment

Prerequisites

- Java Development Kit (JDK)

- Apache Maven

- MySQL Database

- Eclipse

Steps

1. Clone Repository:

- Begin by cloning the project repository from your Git source control platform.

2. Configure Database Settings:

- Open the application.properties file in your project.
- Configure the database connection settings, including URL, username, password, and driver class name.

3. Build Project with Maven:

- Open a terminal or command prompt in the project directory.
- Execute the Maven command mvn clean install to build the project and generate the executable JAR file.
- Save the updated pom.xml file in your project directory.

4 .Run Application:

- Once the build is successful, navigate to the target directory using the terminal.
- Execute the command java -jar target/product-catalogue-system.jar to run the Spring Boot application.

5 .Verify that your Spring Boot application is running by accessing http://localhost:1234 in your web browser. If your application uses a different port, replace 1234 with the correct port number.

7. Conclusion

The Student App backend provides a straightforward solution for managing student data through RESTful APIs.