

Student Management System (MERN CRUD)

A simple MERN stack web app for managing student records (Create, Read, Update, Delete).

Features

- Add a student (Full Name, Email, Course)
- View students in a table/card layout
- Edit student details
- Delete a student

Tech Stack

- MongoDB
- Express.js
- React.js (Html + Css)
- Node.js

Project Structure (example)

student-management-system/

|

| — backend/ # Node.js + Express + MongoDB API

|

| | — config/

|

| | — db.js # MongoDB connection setup

|

|

|

| — controllers/

```
| | └─ studentController.js # Logic for CRUD operations
| |
| | └─ models/
| |   └─ Student.js # Mongoose schema for students
| |
| | └─ routes/
| |   └─ studentRoutes.js # API routes for student endpoints
| |
| | └─ server.js # Main backend entry point
| |
| | └─ .env.example # Example environment variables
| |
| | └─ package.json # Backend dependencies and scripts
| |
| | └─ .gitignore
| |
| └─ frontend/ # React (Vite) Frontend
|   └─ src/
|     └─ components/
|       └─ StudentForm.jsx # Form to add/edit students
|       └─ StudentList.jsx # Displays students table
|       |
|       └─ api/
|         └─ studentApi.js # Axios configuration & API calls
|         |
|         └─ App.jsx # Main application layout
|         |
|         └─ main.jsx # React entry point
|         |
|         └─ index.css # Styling
|         |
|         └─ public/
```

```
| |— package.json      # Frontend dependencies
| |— vite.config.js
|
|— README.md
|— .gitignore
```

Database Schema (MongoDB)

Each student document looks like:

```
{
  _id: ObjectId,
  fullName: String,  // required
  email: String,    // required, unique
  course: String,   // required
  createdAt: Date,
  updatedAt: Date
}
```

##Setup & Run

1) Backend

cd backend

npm install

Create a .env file:

PORT=5000

MONGO_URI=mongodb://127.0.0.1:27017/student_management

Run:

npm run dev

2) Frontend

cd ../frontend

npm install

npm run dev