

# EXP 4.2

## Student Management System using MongoDB + MVC

```
// Install dependencies: npm install express mongoose body-parser
```

```
const express = require("express");
const mongoose = require("mongoose");
const bodyParser = require("body-parser");

// ----- DB Connection -----
mongoose.connect("mongodb://127.0.0.1:27017/studentDB", {
  useNewUrlParser: true,
  useUnifiedTopology: true,
})
.then(() => console.log("✅ MongoDB Connected"))
.catch(err => console.error("❌ MongoDB Connection Failed", err));

// ----- Model -----
const studentSchema = new mongoose.Schema({
  name: { type: String, required: true },
  rollNo: { type: String, unique: true, required: true },
  course: { type: String, required: true },
  year: { type: Number, required: true },
  email: { type: String, unique: true, required: true }
}, { timestamps: true });

const Student = mongoose.model("Student", studentSchema);

// ----- Controller -----
const studentController = {
```

```
getAllStudents: async (req, res) => {  
  try {  
    const students = await Student.find();  
    res.status(200).json(students);  
  } catch (error) {  
    res.status(500).json({ message: error.message });  
  }  
},
```

```
addStudent: async (req, res) => {  
  try {  
    const student = new Student(req.body);  
    await student.save();  
    res.status(201).json(student);  
  } catch (error) {  
    res.status(400).json({ message: error.message });  
  }  
},
```

```
updateStudent: async (req, res) => {  
  try {  
    const student = await Student.findByIdAndUpdate(req.params.id, req.body, { new: true  
  });  
    res.status(200).json(student);  
  } catch (error) {  
    res.status(400).json({ message: error.message });  
  }  
},
```

```
deleteStudent: async (req, res) => {  
  try {  
    await Student.findByIdAndDelete(req.params.id);  
    res.status(200).json({ message: "Student deleted successfully" });  
  }  
}
```

```

    } catch (error) {
      res.status(500).json({ message: error.message });
    }
  }
};

```

// ----- Express App -----

```
const app = express();
```

```
const PORT = 5000;
```

```
app.use(bodyParser.json());
```

// Routes

```
app.get("/students", studentController.getAllStudents);
```

```
app.post("/students", studentController.addStudent);
```

```
app.put("/students/:id", studentController.updateStudent);
```

```
app.delete("/students/:id", studentController.deleteStudent);
```

// Start Server

```
app.listen(PORT, () => console.log(`🚀 Server running on http://localhost:${PORT}`));
```

ID	Name	Roll No	Course	Year	Email
6510a1	Rajesh Kumar	101	B.Tech	3	rajesh@example.com
6510a2	Anita Sharma	102	MBA	2	anita@example.com
6510a3	Vikram Singh	103	B.Sc	1	vikram@example.com