

1. Find the names and CGPAs of all students from the "IT" department.

```
db.students.find({ department: "IT" }, { name: 1, cgpa: 1, _id: 0 })
```

**Name = Rahul Pundhir**

2. List all students whose CGPA is greater than or equal to 8.5. Show only their name, roll number, and department.

```
db.students.find({ cgpa: { $gte: 8.5 } }, { name: 1, roll_no: 1, department: 1, _id: 0 })
```

3. Find students who are in either the "ECE" or "ME" department using \$in.

```
db.students.find({ department: { $in: ["ECE", "ME"] } })
```

4. Get the name and CGPA of students who are in the 4th year and have a CGPA greater than 8.0.

```
db.students.find({ year: 4, cgpa: { $gt: 8.0 } }, { name: 1, cgpa: 1, _id: 0 })
```

5. Find all students who are not in the "CSE" department and have a CGPA less than or equal to 7.5 using \$and and \$ne.

```
db.students.find({ $and: [ { department: { $ne: "CSE" } }, { cgpa: { $lte: 7.5 } } ] })
```

6. Display the top 3 students with the highest CGPA across all departments.

```
db.students.find().sort({ cgpa: -1 }).limit(3)
```

7. Show the next 3 students after skipping the top 3 based on CGPA (pagination).

```
db.students.find().sort({ cgpa: -1 }).skip(3).limit(3)
```

8. Increase the CGPA by 0.2 for all students in the "CSE" department.

```
db.students.updateMany({ department: "CSE" }, { $inc: { cgpa: 0.2 } })
```

9. Set the department to "Probation" for all students with CGPA less than 7.0.

```
db.students.updateMany({ cgpa: { $lt: 7.0 } }, { $set: { department: "Probation" } })
```

10. Remove the email field from all students in the "ME" department.

```
db.students.updateMany({ department: "ME" }, { $unset: { email: "" } })
```

11. Rename the field cgpa to gpa for all students.

```
db.students.updateMany({}, { $rename: { "cgpa": "gpa" } })
```

12. Replace the entire document of a student with roll number "CSE2104" with a new record containing updated values.

```
db.students.replaceOne({ roll_no: "CSE2104" }, { roll_no: "CSE2104", name: "Simran Kaur", year: 3,  
department: "CSE", cgpa: 9.5, email: "simran.new@univ.edu" })
```