

1. Names and CGPAs of all students from the "IT" department:

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

2. Students with CGPA ≥ 8.5 (showing name, roll number, department):

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

3. Students from either "ECE" or "ME" using \$in:

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

4. 4th year students with CGPA > 8.0 (name and CGPA only):

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

5. Students not in "CSE" and CGPA ≤ 7.5 using \$and and \$ne:

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

6. Top 3 students with the highest CGPA (all departments):

```
db.students.find()
  .sort({ cgpa: -1 }) // Sort by CGPA descending
  .limit(3)
```

7. Next 3 students after the top 3 (for pagination):

```
db.students.find()
  .sort({ cgpa: -1 }) // Same descending order
  .skip(3)           // Skip the top 3
  .limit(3)
```

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

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

9. Set department to "Probation" for students with CGPA < 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 the student with roll number "CSE2104" :

```
db.students.replaceOne(  
  { roll_no: "CSE2104" },  
  {  
    roll_no: "CSE2104",  
    name: "Simran Kaur",  
    year: 3,  
    department: "CSE",  
    gpa: 9.4,  
    email: "simrankaur.cse@univ.edu"  
  }  
)
```