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

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

2. Students with CGPA >= 8.5 (name, roll number, department):

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

3. Students in either "ECE" or "ME" department:

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

4. Name and CGPA of 4th year students with CGPA > 8.0:

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

5. Students not in "CSE" and CGPA <= 7.5:

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

6. Top 3 students with highest CGPA:

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

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

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

8. Increase CGPA by 0.2 for "CSE" students:

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

9. Set department to "Probation" for CGPA < 7.0:

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

10. Remove email field from "ME" department:

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

11. Rename field "cgpa" to "gpa":

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

12. Replace document for roll number "CSE2104":

```
db.students.replaceOne({ roll_no: "CSE2104" }, { roll_no: "CSE2104", name: "Simran Kaur", year: 3, department: "CSE", cgpa: 9.2, email: "simran.cse@univ.edu" })
```