Assignment 1

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

Solution: db.students.find({department:"IT"},{name:1,cgpa:1}

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

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

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

Solution: 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.

Solution: db.students.find({year:4,cgpa:{$gt:8}},{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.

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

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

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

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

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

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

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

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

Solution:
db.students.updateMany({cgpa:{$lt:7}},{$set:{department:"Probation"}})

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

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

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

Solution: 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.

Solution: db.students.updateOne({roll_no:"CSE2104"},{$set:{name:"Yash Maheshwari", year: 3, email:"yash.maheshwari_cs23@gla.ac.in", gpa:7.93}})