**Practical MongoDB Questions**

# Find / Query Operations

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

🡪db.students.find({"department":"IT"},{\_id:0,name:1,cgps:1})

1. 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}},{\_id:0,name:1,roll\_no:1,department:1})

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

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

1. 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:{$gte:8.0}},{\_id:0,name:1,cgpa:1})

1. 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}}]})

# Sort / Pagination

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

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

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

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

# Update Operations

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

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

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

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

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

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

# Bonus (Advanced)

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

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

1. 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: "CSE2114", name: "Simran", year: 3, department: "ECE", cgpa: 8.0,

email: "simran.cse12@university.edu"})

DataSet:

db.students.insertMany([

{ roll\_no: "CSE2101", name: "Aarav Sharma", year: 2, department: "CSE", cgpa: 8.5, email: "aarav.cse@univ.edu" },

{ roll\_no: "ECE2102", name: "Priya Verma", year: 2, department: "ECE", cgpa: 8.2, email: "priya.ece@univ.edu" },

{ roll\_no: "ME2103", name: "Rahul Singh", year: 2, department: "ME", cgpa: 7.8, email: "rahul.me@univ.edu" },

{ roll\_no: "CSE2104", name: "Simran Kaur", year: 2, department: "CSE", cgpa: 9.0, email: "simran.cse@univ.edu" },

{ roll\_no: "IT2105", name: "Aditya Patel", year: 2, department: "IT", cgpa: 8.7, email: "aditya.it@univ.edu" },

{ roll\_no: "CSE2201", name: "Neha Jain", year: 3, department: "CSE", cgpa: 9.1, email: "neha.cse@univ.edu" },

{ roll\_no: "ECE2202", name: "Rohan Mehta", year: 3, department: "ECE", cgpa: 8.3, email: "rohan.ece@univ.edu" },

{ roll\_no: "ME2203", name: "Sneha Reddy", year: 3, department: "ME", cgpa: 7.6, email: "sneha.me@univ.edu" },

{ roll\_no: "IT2204", name: "Vikas Nair", year: 3, department: "IT", cgpa: 8.4, email:

"vikas.it@univ.edu" },

{ roll\_no: "CSE2301", name: "Meera Joshi", year: 4, department: "CSE", cgpa: 9.3, email: "meera.cse@univ.edu" },

{ roll\_no: "ECE2302", name: "Ankit Bansal", year: 4, department: "ECE", cgpa: 8.1, email: "ankit.ece@univ.edu" },

{ roll\_no: "ME2303", name: "Pooja Yadav", year: 4, department: "ME", cgpa: 7.5, email: "pooja.me@univ.edu" },

{ roll\_no: "IT2304", name: "Karan Gupta", year: 4, department: "IT", cgpa: 8.9, email: "karan.it@univ.edu" },

{ roll\_no: "CSE2401", name: "Riya Malhotra", year: 1, department: "CSE", cgpa: 8.0, email: "riya.cse@univ.edu" },

{ roll\_no: "ECE2402", name: "Aman Khan", year: 1, department: "ECE", cgpa: 7.9, email: "aman.ece@univ.edu" },

{ roll\_no: "ME2403", name: "Ishita Desai", year: 1, department: "ME", cgpa: 8.1, email: "ishita.me@univ.edu" },

{ roll\_no: "IT2404", name: "Dev Mishra", year: 1, department: "IT", cgpa: 8.6, email:

"dev.it@univ.edu" },

{ roll\_no: "CSE2405", name: "Tanya Roy", year: 1, department: "CSE", cgpa: 8.7, email: "tanya.cse@univ.edu" },

{ roll\_no: "ECE2406", name: "Nikhil Rao", year: 1, department: "ECE", cgpa: 7.8, email: "nikhil.ece@univ.edu" },

{ roll\_no: "ME2407", name: "Shreya Pandey", year: 1, department: "ME", cgpa: 8.2, email: "shreya.me@univ.edu" }

]);