Assignment Solution-01

Find / Query Operations-

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

Sol-db.student.find({department:”IT”},{name:1,cgpa:1,\_id:0})

2.List all the students whose cgpa is greater than or equal to 8.5. Show only name,rollno and department.

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db.student.find({cgpa:{$gte:8.5}},{name:1,roll\_no:1,department:1,\_id:o})

3.Find the student who are in either “ECE” or “ME” department using $in.

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db.student.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.

Sol- db.student.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.

sol-db.student.find({$and:[{department:{$ne:”CSE”}},{cgpa:{$lte:7.5}}]})

Sort / Pagination

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

Sol-db.student.find().sort({cgpa:-1}).limit(3)

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

Sol-db.student.find().sort({cgpa:-1}).skip(3).limit(3)

Update Operations

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

Sol-db.student.updateMany({department:”CSE”},{$inc:{cgpa:0.2}})

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

Sol-db.student.updateMany({cgpa:{$lt:7.0}},{$set:{department:”Probation”}})

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

Sol-db.student.updateMany({department:”ME”},{$unset:{email=” ”}})

Bonus (Advanced)

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

Sol-db.student.updateMany({},{$rename:{“cgpa”:”gpa”}})

12.Repalce the entire document of a student with roll no “CSE2104”with anew record containing updated values.

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" }  
]);

Sol-db.student.replaceOne({roll\_no:”CSE2104”},

{name:”Shreya”,

roll\_no:”CSE2118”,

department:”CSE”,

cgpa:8.5,

year:3})