

Roll no. 31145

Assignment No. 10

```
db.students.insertMany([
  {
    name: "Song Joong-ki",
    department: "CSE",
    marks: 85,
    city: "Seoul",
    skills: ["Java", "C++", "Python"]
  },
  {
    name: "Kim Seon-ho",
    department: "CSE",
    marks: 92,
    city: "Busan",
    skills: ["JavaScript", "React", "Node.js"]
  },
  {
    name: "Ji Chang-wook",
    department: "IT",
    marks: 78,
    city: "Busan",
    skills: ["HTML", "CSS", "JavaScript"]
  },
  {
    name: "Lee Do-hyun",
    department: "IT",
    marks: 88,
    city: "Jeju",
    skills: ["Python", "Django", "MongoDB"]
  },
  {
    name: "Park Hyung-shik",
    department: "ECE",
    marks: 95,
    city: "Seoul",
    skills: ["C", "Embedded Systems", "VHDL", "Java"]
  }
]);
```

```
db.students.aggregate([{$group: {_id: "$department", avgmarks: {$avg: "$marks"}}}]);  
db.students.aggregate([{$group: {_id: "$city", totalstudents: {$sum: 1}}}]);  
db.students.aggregate([{$match: { marks: { $gt: 80 } } }, {$sort: { marks: -1 } }]).pretty();  
db.students.aggregate([{$group: {_id: "$department", minMarks: {$min: "$marks" } } }]);  
db.students.aggregate([{$group: {_id: "$department", maxMarks: {$max: "$marks" } } }]);  
db.students.aggregate([{$group: {_id: "$department", students: {$push: "$name" } } }]);  
db.students.aggregate([{$count: "totalStudents" }]);  
db.students.aggregate([{$group: {_id: "$department", firstStudent: {$first: "$name" } } }]);  
db.students.aggregate([{$group: {_id: "$department", lastStudent: {$last: "$name" } } }]);  
db.students.aggregate([{$sort: { marks: -1 } }, {$limit: 3 }]).pretty();  
db.students.aggregate([{$sort: { marks: -1 } }, {$skip: 2 }]).pretty();
```

```
db.students.createIndex({ department: 1 });  
db.students.createIndex({ department: 1, marks: -1 });  
db.students.createIndex({ name: 1 }, { unique: true });  
db.students.createIndex({ name: "text", city: "text" });  
db.students.find({ $text: { $search: "Seoul" } });  
db.students.createIndex({ skills: 1 });  
db.students.find({ skills: "Java" });  
db.students.createIndex({ name: "hashed" });  
db.students.getIndexes();  
db.students.find({ department: "CSE" }).explain("executionStats");  
db.students.find().pretty();
```