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**Find the following Queries**

**Design a 'COLLEGE'**

**collection and insert required documents.**

```
db.createCollection("college")
```

```
db.college.insertMany([
  {name:'sirisha',age:20,gender:'female',dept:"computer science",year_of_ad:2022,courses:['data structure','operating system','english','maths'],gpa:3.7},
  {name:'meena',age:30,gender:'female',dept:"mechanical engineering",year_of_ad:1999,courses:['operating system','maths','rdbms','fluid mechanics'],gpa:3.2},
  {name:'ramesht',age:16,gender:'male',dept:"business communications",year_of_ad:2024,courses:['english','business studies','maths'],gpa:2.9},
  {name:'vikas',age:44,gender:'male',dept:"mechanical engineering",year_of_ad:1994,courses:['operating system','maths','rdbms','fluid mechanics'],gpa:3.5}
])
```

**1. Retrieve the names and GPAs of the top 2 students with a GPA greater than 3.0**

```
db.college.find({gpa:{ $gt:3.0 }},{name:1,gpa:1}).sort({gpa:-1}).limit(2)
```

**2. Find the first 3 students enrolled in the "Mechanical Engineering" department, showing only their names and admission year.**

```
db.college.find({dept:"mechanicalengineering"},{name:1,year_of_ad:1}).sort({year_of_ad:1}).limit(3)
```

**3. Find the students who is taking both "Data Structures" and "Operating Systems" courses, and project their name, courses, and GPA.**

```
db.college.find({courses:{ $all:['operating system','data structure']}},{name:1,courses:1,gpa:1})
```

**4. Find 2 male students who are older than 23, projecting their name, age, and gender.**

```
db.college.find({gender:'male',age:{ $gt:23 }},{name:1,age:1,gender:1}).limit(2)
```

**5. Find all students who are aged between 18 and 24, and project their name, age, and department.**

```
db.college.find({age:{ $gte:18,$lte:24 }},{name:1,age:1,dept:1})
```