

1.Create a new database called student_management.

Use student_management

2.Create a collection called students in the student_mangement database.

db.createCollection("students")

3.Insert at least five student records into the students collection. Each record should have the following fields:

Student_id(integer)

Name(string)

Age(integer)

Department(string)

Courses(array of strings)

Grade(string)

```
db.students.insertMany([{"student_id":101,name:"swati",age:21,department:"Data science",courses:["C++","python"],grade:"A"},
```

```
{"student_id":102,name:"raj",age:22,department:"Computer Science",course:["PowerBI","Mysql"],grade:"C"},
```

{student_id:103,name:"rohit",age:25,department:"ComputerApplications",courses:["Bigdata","cloud computing"],grade:"B"},

{student_id:104,name:"aakash",age:27,department:"ComputerScience",courses:["bigdata","cloud computing"],grade:"C"},

{student_id:105,name:"tarun",age:29,department:"artificial intelligence",courses:["database systems"],grade:"A"}])

```
acknowledged: true,  
insertedIds: {  
  '0': ObjectId('67ea5440c4cf281579b7124c'),  
  '1': ObjectId('67ea5440c4cf281579b7124d'),  
  '2': ObjectId('67ea5440c4cf281579b7124e'),  
  '3': ObjectId('67ea5440c4cf281579b7124f'),  
  '4': ObjectId('67ea5440c4cf281579b71250')  
}
```

4.Query the collection:

Write queries to perform the following tasks:

.Retrieve all students who are in the “Computer Science” department.

db.students.find({department:"Computer Science"})

```
_id: ObjectId('67ea5440c4cf281579b7124d'),
student_id: 102,
name: 'raj',
age: 22,
department: 'Computer Science',
course: [ 'PowerBI', 'Mysql' ],
grade: 'C'
},
{
  _id: ObjectId('67ea5440c4cf281579b7124f'),
  student_id: 104,
  name: 'aakash',
  age: 27,
  department: 'Computer Science',
  courses: [ 'big data', 'cloud computing' ],
  grade: 'C'
}
```

.Retrieve students who have an age greater than 21.

db.students.find({age:{\$gt:21}})

```

{
  _id: ObjectId('67ea4f7fc4cf281579b71243'),
  student_id: 102,
  name: 'raj',
  age: 22,
  department: 'Computer Science',
  course: [ 'PowerBI', 'Mysql' ],
  grade: 'C'
},
{
  _id: ObjectId('67ea4f7fc4cf281579b71244'),
  student_id: 103,
  name: 'rohit',
  age: 25,
  department: 'Computer Applications',
  courses: [ 'Big data', 'cloud computing' ],
  grade: 'B'
},
{
  _id: ObjectId('67ea4f7fc4cf281579b71245'),
  student_id: 104,
  name: 'aakash',
  age: 27,
  department: 'Computer science',
  courses: [ 'big data', 'cloud computing' ],
  grade: 'C'
},
{
  _id: ObjectId('67ea4f7fc4cf281579b71246'),
  student_id: 105,
  name: 'tarun',
  age: 29,
  department: 'artificial intelligence',
  courses: [ 'database systems' ],
  grade: 'A'
}

```

.Retrieve students who are taking the “Database systems” course.

db.students.find({courses:"database systems"})

```
{
  _id: ObjectId('67ea4f7fc4cf281579b71246'),
  student_id: 105,
  name: 'tarun',
  age: 29,
  department: 'artificial intelligence',
  courses: [ 'database systems' ],
  grade: 'A'
}
```

.Retrieve students with a grade of “A”.

db.students.find({grade:"A"})

```
{
  _id: ObjectId('67ea5440c4cf281579b7124c'),
  student_id: 101,
  name: 'swati',
  age: 21,
  department: 'Data science',
  courses: [ 'C++', 'python' ],
  grade: 'A'
},
{
  _id: ObjectId('67ea5440c4cf281579b71250'),
  student_id: 105,
  name: 'tarun',
  age: 29,
  department: 'artificial intelligence',
  courses: [ 'database systems' ],
  grade: 'A'
}
```

5.Update documents:

.Update the age of a student with student_id 101 to 21.

**db.students.updateOne({student_id:101},{ \$set:{age:21
}})**

db.students.find({student_id:101})

```
{
  _id: ObjectId('67ea410cc4cf281579b71236'),
  student_id: 101,
  name: 'swati',
  age: 21,
  department: 'Data science',
  courses: [ 'C++', 'python' ],
  grade: 'A'
},
```

.Add a new course,"Machine learning",to the courses array for students in the "Computer Science"department.

```
db.students.updateMany({department:"Computer
Science"},{$push:{courses:"machine learning"}})
```

db.students.find({department:"Computer Science"})

```
_id: ObjectId('67ea5440c4cf281579b7124d'),
student_id: 102,
name: 'raj',
age: 22,
department: 'Computer Science',
course: [ 'PowerBI', 'Mysql' ],
grade: 'C',
courses: [ 'machine learning' ]

_id: ObjectId('67ea5440c4cf281579b7124f'),
student_id: 104,
name: 'aakash',
age: 27,
department: 'Computer Science',
courses: [ 'big data', 'cloud computing', 'machine learning' ],
grade: 'C'
```

6.Delete Documents:

.Delete a student record with student_id 105.

db.students.deleteOne({student_id:105})

```
{ acknowledged: true, deletedCount: 1 }
```

.Delete all students who have a grade lower than "C".

db.students.deleteMany({grade:{\$lt:"C"}})