Name : Aamir Saudagar

Roll Number: 2205041

Enrollment Number: MITU20BTIT0001

Q1) Create database Institute

Q2) Create collection Students.

```
Institute> use Institute
```

```
Institute> db.Student.insert({id: 2205041, name: "Aamir", branch:"IT", address:{city:"Hadapsar", pincode: 411028}, subjects: [{subName:"TOC",score:13},{subName:"SAD",score:12}, {subName:"DSA",score:18}, {subName:"DAA",score:19},{subName:"MC",score:20}], areaOfInterest: ["DAA","DSA"]})
```

```
Institute> show dbs
Institute   40.00 KiB
admin       40.00 KiB
config     108.00 KiB
local       40.00 KiB
Institute> db.Student.find()
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    id: 2205041,
    name: 'Aamir',
    branch: 'IT',
    address: { city: 'Hadapsar', pincode: 411028 },
    subjects: [
      { subName: 'TOC', score: 13 },
      { subName: 'SAD', score: 12 },
      { subName: 'DSA', score: 18 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 20 }
    ],
    areaOfInterest: [ 'DAA', 'DSA' ]
  }
]
Institute>
```

Q4) Display all students information

```
Institute> db.Student.find()
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    id: 2205041,
    name: 'Aamir',
    branch: 'IT',
    address: { city: 'Hadapsar', pincode: 411028 },
    subjects: [
      { subName: 'TOC', score: 13 },
      { subName: 'SAD', score: 12 },
      { subName: 'DSA', score: 18 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 20 }
    ],
    areaOfInterest: [ 'DAA', 'DSA' ]
  },
  {
    _id: ObjectId("63711793520f91ee46cae004"),
    id: 2205074,
    name: 'Arun',
    branch: 'IT',
    address: { city: 'Kharadi', pincode: 306308 },
    subjects: [
      { subName: 'TOC', score: 17 },
      { subName: 'SAD', score: 17 },
      { subName: 'DSA', score: 18 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 17 }
    ],
    areaOfInterest: [ 'MC', 'SAD' ]
  },
```

```
    id: 2205080,
    name: 'Varun',
    branch: 'IT',
    address: { city: 'Solapur', pincode: 413
005 },
    subjects: [
      { subName: 'TOC', score: 14 },
      { subName: 'SAD', score: 15 },
      { subName: 'DSA', score: 16 },
      { subName: 'DAA', score: 17 },
      { subName: 'MC', score: 18 }
    ],
    areaOfInterest: [ 'DAA', 'SAD' ]
  },
  {
    _id: ObjectId("637118e8520f91ee46cae006"
),
    id: 2205036,
    name: 'Md.Bhatiya',
    branch: 'IT',
    address: { city: 'Dahod', pincode: 38916
0 },
    subjects: [
      { subName: 'TOC', score: 13 },
      { subName: 'SAD', score: 15 },
      { subName: 'DSA', score: 17 },
      { subName: 'DAA', score: 18 },
      { subName: 'MC', score: 14 }
    ],
    areaOfInterest: [ 'MC', 'TOC' ]
  },
  {
    _id: ObjectId("63711930520f91ee46cae007"
),
```

```
  {
    _id: ObjectId("63711930520f91ee46cae007"),
    id: 2205045,
    name: 'Girish',
    branch: 'CSE',
    address: { city: 'Chennai', pincode: 347181 },
    subjects: [
      { subName: 'TOC', score: 17 },
      { subName: 'SAD', score: 18 },
      { subName: 'DSA', score: 17 },
      { subName: 'DAA', score: 15 },
      { subName: 'MC', score: 11 }
    ],
    areaOfInterest: [ 'DAA', 'TOC' ]
  },
  {
    _id: ObjectId("63711a52cfb884f3fe709904"),
    id: 2205027,
    name: 'Suresh',
    branch: 'CSE',
    address: { city: 'Darjeeling', pincode: 734101
},
    subjects: [
      { subName: 'TOC', score: 17 },
      { subName: 'SAD', score: 13 },
      { subName: 'DSA', score: 12 },
      { subName: 'DAA', score: 10 },
      { subName: 'MC', score: 13 }
    ],
    areaOfInterest: [ 'DSA', 'MC' ]
  },
```

Q5) Update student branch from IT to Computer of studentid 2205080

```
Institute> db.Student.updateOne({id:2205080},{$set: {branch: "CSE"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

```
  {
    _id: ObjectId("63711835520f91ee46cae005"),
    id: 2205080,
    name: 'Varun',
    branch: 'CSE',
    address: { city: 'Solapur', pincode: 413005 },
    subjects: [
      { subName: 'TOC', score: 14 },
      { subName: 'SAD', score: 15 },
      { subName: 'DSA', score: 16 },
      { subName: 'DAA', score: 17 },
      { subName: 'MC', score: 18 }
    ],
    areaOfInterest: [ 'DAA', 'SAD' ]
  },
```

Q6) Add interest Robotics in studentid 5

```
Institute> db.Student.update({id:2205045},{$push:{areaOfInterest:"Robotics"}})
DeprecationWarning: Collection.update() is deprecated. Use updateOne, updateMany, or bulkWrite.
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Institute> db.Student.find({},{name:1,areaOfInterest:1})
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    name: 'Aamir',
    areaOfInterest: [ 'DAA', 'DSA' ]
  },
  {
    _id: ObjectId("63711793520f91ee46cae004"),
    name: 'Arun',
    areaOfInterest: [ 'MC', 'SAD' ]
  },
  {
    _id: ObjectId("63711835520f91ee46cae005"),
    name: 'Varun',
    areaOfInterest: [ 'DAA', 'SAD' ]
  },
  {
    _id: ObjectId("637118e8520f91ee46cae006"),
    name: 'Md.Bhatiya',
    areaOfInterest: [ 'MC', 'TOC' ]
  },
  {
    _id: ObjectId("63711930520f91ee46cae007"),
    name: 'Girish',
    areaOfInterest: [ 'DAA', 'TOC', 'Robotics' ]
  },
  {
    _id: ObjectId("63711a52cfb884f3fe709904"),
    name: 'Suresh',
    areaOfInterest: [ 'DSA', 'MC' ]
  },
  {
    _id: ObjectId("63711aefcfb884f3fe709905"),
    name: 'Karim',
    areaOfInterest: [ 'DAA', 'TOC', 'DSA' ]
  },
  {
    _id: ObjectId("63711baacfb884f3fe709906"),
    name: 'A.Navid',
    areaOfInterest: [ 'MC', 'DAA' ]
  }
]
```

Q7) Add one subject name and its score for Student Id 3

```
Institute> db.Student.updateOne({id:2205080},{$push: {subjects:{subName:"SCIL", score:20}}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
```

```
  {
    _id: ObjectId("63711835520f91ee46cae005"),
    id: 2205080,
    name: 'Varun',
    subjects: [
      { subName: 'TOC', score: 14 },
      { subName: 'SAD', score: 15 },
      { subName: 'DSA', score: 16 },
      { subName: 'DAA', score: 17 },
      { subName: 'MC', score: 18 },
      { subName: 'SCIL', score: 20 }
    ]
  },
```

Q8) Change City name from Madras to Chennai.(for all occurances)

```
Institute> db.Student.updateMany({"address.city":"Hadapsar"},{$set:{"address.city":"Pune"}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Institute> db.Student.find({},{name:1,address:1})
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    name: 'Aamir',
    address: { city: 'Pune', pincode: 411028 }
  },
```

Q9) Remove record with student id 3.

```
Institute> db.Student.deleteOne({id:2205080})
{ acknowledged: true, deletedCount: 1 }
Institute> db.Student.find({},{id:1})
[
  { _id: ObjectId("637113d4520f91ee46cae001"), id: 2205041 },
  { _id: ObjectId("63711793520f91ee46cae004"), id: 2205074 },
  { _id: ObjectId("637118e8520f91ee46cae006"), id: 2205036 },
  { _id: ObjectId("63711930520f91ee46cae007"), id: 2205045 },
  { _id: ObjectId("63711a52cfb884f3fe709904"), id: 2205027 },
  { _id: ObjectId("63711aefcfb884f3fe709905"), id: 2205063 },
  { _id: ObjectId("63711baacfb884f3fe709906"), id: 2205066 }
]
```

Q10) Add new Key Hobbies with values

```
Institute> db.Student.updateMany({},{$set:{hobbies:["Coding","Music"]}})
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 7,
  modifiedCount: 7,
  upsertedCount: 0
}
Institute> db.Student.find({},{name:1,hobbies:1})
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    name: 'Aamir',
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711793520f91ee46cae004"),
    name: 'Arun',
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("637118e8520f91ee46cae006"),
    name: 'Md.Bhatiya',
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711930520f91ee46cae007"),
    name: 'Girish',
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711a52cfb884f3fe709904"),
    name: 'Suresh',
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711aefcfb884f3fe709905"),
    name: 'Karim',
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711baacfb884f3fe709906"),
    name: 'A.Navid',
    hobbies: [ 'Coding', 'Music' ]
  }
]
```

Q11) Create and Drop a temporary collection .

```
Institute> db.createCollection( "tempCollection" )
{ ok: 1 }
Institute> show collections
Student
tempCollection
Institute> db.tempCollection.drop()
true
Institute> show collections
Student
Institute>
```

Q14) Display students staying in Pune city

```
Institute> db.Student.find({"address.city":"Pune"})
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    id: 2205041,
    name: 'Aamir',
    branch: 'IT',
    address: { city: 'Pune', pincode: 411028 },
    subjects: [
      { subName: 'TOC', score: 13 },
      { subName: 'SAD', score: 12 },
      { subName: 'DSA', score: 18 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 20 }
    ],
    areaOfInterest: [ 'DAA', 'DSA' ],
    hobbies: [ 'Coding', 'Music' ]
  }
]
```

Q15) Display students staying in Pune or Chennai

```
Institute> db.Student.find({$or:[{"address.city":"Pune"},{"address.city":"Chennai"}]})
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    id: 2205041,
    name: 'Aamir',
    branch: 'IT',
    address: { city: 'Pune', pincode: 411028 },
    subjects: [
      { subName: 'TOC', score: 13 },
      { subName: 'SAD', score: 12 },
      { subName: 'DSA', score: 18 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 20 }
    ],
    areaOfInterest: [ 'DAA', 'DSA' ],
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("6371193d520f91ee46cae007"),
    id: 2205045,
    name: 'Girish',
    branch: 'CSE',
    address: { city: 'Chennai', pincode: 347181 },
    subjects: [
      { subName: 'TOC', score: 17 },
      { subName: 'SAD', score: 18 },
      { subName: 'DSA', score: 17 },
      { subName: 'DAA', score: 15 },
      { subName: 'MC', score: 11 }
    ],
    areaOfInterest: [ 'DAA', 'TOC', 'Robotics' ],
    hobbies: [ 'Coding', 'Music' ]
  }
]
```

Q16) Display students with area of interest DSA and DAA.

```
Institute> db.Student.find(
...   {$and:[
...   {areaOfInterest:{$in: ["DSA"]}},
...   {areaOfInterest:{$in: ["DAA"]}},
...   ]
...   }
...   )
```

```
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    id: 2205041,
    name: 'Aamir',
    branch: 'IT',
    address: { city: 'Pune', pincode: 411028 },
    subjects: [
      { subName: 'TOC', score: 13 },
      { subName: 'SAD', score: 12 },
      { subName: 'DSA', score: 18 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 20 }
    ],
    areaOfInterest: [ 'DAA', 'DSA' ],
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711aefcfb884f3fe709905"),
    id: 2205063,
    name: 'Karim',
    branch: 'IT',
    address: { city: 'Bareilly', pincode: 234001 },
    subjects: [
      { subName: 'TOC', score: 20 },
      { subName: 'SAD', score: 19 },
      { subName: 'DSA', score: 20 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 18 }
    ],
    areaOfInterest: [ 'DAA', 'TOC', 'DSA' ],
    hobbies: [ 'Coding', 'Music' ]
  }
]
```

Q17) Display students with branch IT and area of interest DAA.

```
Institute> db.Student.find(
...    {$and:[
...    {branch:"IT"},
...    {areaOfInterest:{$in:["DAA"]}}
...    ]}
...    )
```

```
[
  {
    _id: ObjectId("637113d4520f91ee46cae001"),
    id: 2205041,
    name: 'Aamir',
    branch: 'IT',
    address: { city: 'Pune', pincode: 411028 },
    subjects: [
      { subName: 'TOC', score: 13 },
      { subName: 'SAD', score: 12 },
      { subName: 'DSA', score: 18 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 20 }
    ],
    areaOfInterest: [ 'DAA', 'DSA' ],
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711aefcfb884f3fe709905"),
    id: 2205063,
    name: 'Karim',
    branch: 'IT',
    address: { city: 'Bareilly', pincode: 234001 },
    subjects: [
      { subName: 'TOC', score: 20 },
      { subName: 'SAD', score: 19 },
      { subName: 'DSA', score: 20 },
      { subName: 'DAA', score: 19 },
      { subName: 'MC', score: 18 }
    ],
    areaOfInterest: [ 'DAA', 'TOC', 'DSA' ],
    hobbies: [ 'Coding', 'Music' ]
  },
  {
    _id: ObjectId("63711baacfb884f3fe709906"),
    id: 2205066,
    name: 'A.Navid',
    branch: 'IT',
    address: { city: 'Loni', pincode: 201102 },
    subjects: [
      { subName: 'TOC', score: 16 },
      { subName: 'SAD', score: 16 },
      { subName: 'DSA', score: 14 },
      { subName: 'DAA', score: 13 },
      { subName: 'MC', score: 17 }
    ],
    areaOfInterest: [ 'MC', 'DAA' ],
    hobbies: [ 'Coding', 'Music' ]
  }
]
```