

## 1. Create a Database called the student

- use student

```
> show dbs
admin    0.000GB
config  0.000GB
local    0.000GB
music    0.000GB
student  0.000GB
> use student
switched to db student
>
```

## 2. Create a collection called studentmarks

- db.createCollection(studentmarks)

```
> use student
switched to db student
> show collections
studentmarks
>
```

## 3. Create the documents listed in above table.

- db.studentmarks.insert( [ { 01 }, { 02 }, { 03 }, { 04 }, { 05 }, { 06 }, { 07 }, { 08 }, { 09 } ] )

```
> db.studentmarks.find().pretty()
{
  "_id" : ObjectId("5d071e41946c16ad2b47ec44"),
  "name" : "Mala",
  "maths_marks" : 51,
  "english_marks" : 53,
  "science_marks" : 72
}
{
  "_id" : ObjectId("5d071e8c946c16ad2b47ec45"),
  "name" : "Mala",
  "maths_marks" : 45,
  "english_marks" : 53,
  "science_marks" : 72
}
{
  "_id" : ObjectId("5d071eef946c16ad2b47ec46"),
  "name" : "vanu",
  "maths_marks" : 80,
  "english_marks" : 75,
  "science_marks" : 85
}
{
  "_id" : ObjectId("5d071f2f946c16ad2b47ec47"),
  "name" : "Kala",
  "maths_marks" : 32,
  "english_marks" : 46,
  "science_marks" : 53
}
{
  "_id" : ObjectId("5d072079946c16ad2b47ec48"),
  "name" : "aruli",
  "maths_marks" : 78,
  "english_marks" : 85,
  "science_marks" : 80
}
```

```
{
  "_id" : ObjectId("5d0720a5946c16ad2b47ec49"),
  "name" : "shayu",
  "maths_marks" : 80,
  "english_marks" : 76,
  "science_marks" : 65
}
{
  "_id" : ObjectId("5d0720cc946c16ad2b47ec4a"),
  "name" : "kumaran",
  "maths_marks" : 32,
  "english_marks" : 73,
  "science_marks" : 84
}
{
  "_id" : ObjectId("5d072102946c16ad2b47ec4b"),
  "name" : "lucky",
  "maths_marks" : 66,
  "english_marks" : 90,
  "science_marks" : 45
}
{
  "_id" : ObjectId("5d072143946c16ad2b47ec4c"),
  "name" : "gva",
  "maths_marks" : 71,
  "english_marks" : 75,
  "science_marks" : 56
}
{
  "_id" : ObjectId("5d07216c946c16ad2b47ec4d"),
  "name" : "raan",
  "maths_marks" : 41,
  "english_marks" : 65,
  "science_marks" : 88
}
>
```

#### 4. Increase the maths marks of Mala by 6 marks

- db.studentmarks.update({"name": "Mala"}, { \$inc: {"maths\_marks": 6} })

```
> db.studentmarks.update({ "name": "Mala" }, { $inc: { "maths_marks": 6 } })
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 1 })
```

#### 5. List the names of students who got more than 50 marks in Maths Subject

- db.studentmarks.find( { "maths\_marks" : { \$gt: 50 } }, {"name": 1, \_id: 0}).pretty()

```
> db.studentmarks.find( { "maths_marks" : { $gt: 50 }, "english_marks" : { $gt: 50 }, "science_marks" : { $gt: 50 } }, {"name": 1, _id: 0 }).pretty()
{ "name" : "Mala" }
{ "name" : "Vanu" }
{ "name" : "Aruli" }
{ "name" : "shayu" }
{ "name" : "Lucky" }
{ "name" : "Gva" }
```

#### 6. Add a new column(field) for Average for all students.

- db.studentmarks.aggregate( [ { \$group : { \_id: "id", Average : { \$avg : "\$maths\_marks" } } } ] )

```
> db.studentmarks.aggregate({$addFields:{average:{$avg:["$maths_marks","$english_marks","$science_marks"]}}})
{ "_id" : ObjectId("5d0362732f947074e9009f8b"), "name" : "Mala", "maths_marks" : 57, "english_marks" : 53, "science_marks" : 72, "average" : 55 }
{ "_id" : ObjectId("5d0362732f947074e9009f8c"), "name" : "Vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85, "average" : 77.5 }
{ "_id" : ObjectId("5d0362732f947074e9009f8d"), "name" : "Kala", "maths_marks" : 32, "english_marks" : 46, "science_marks" : 53, "average" : 39 }
{ "_id" : ObjectId("5d0362732f947074e9009f8e"), "name" : "Aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80, "average" : 81.5 }
{ "_id" : ObjectId("5d0362732f947074e9009f8f"), "name" : "shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65, "average" : 78 }
{ "_id" : ObjectId("5d0362732f947074e9009f90"), "name" : "Kumaran", "maths_marks" : 32, "english_marks" : 73, "science_marks" : 84, "average" : 52.5 }
{ "_id" : ObjectId("5d0362732f947074e9009f91"), "name" : "Lucky", "maths_marks" : 66, "english_marks" : 90, "science_marks" : 75, "average" : 78 }
{ "_id" : ObjectId("5d0362732f947074e9009f92"), "name" : "Gva", "maths_marks" : 71, "english_marks" : 75, "science_marks" : 56, "average" : 73 }
{ "_id" : ObjectId("5d0362732f947074e9009f93"), "name" : "Raam", "maths_marks" : 41, "english_marks" : 65, "science_marks" : 88, "average" : 53 }
```

#### 7. Update Marks\_Science=75 to Lucky.

- db.studentmarks.update({"science\_marks": 45}, {\$set: {"name": "Lucky", "maths\_marks": 66, "english\_marks": 90, "science\_marks": 75}})

```
> db.studentmarks.update({"science_marks": 45}, {$set: {"name": "Lucky", "maths_marks": 66, "english_marks": 90, "science_marks": 75}})
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 })
```

#### 8. List the names who got more than 50 marks in all subjects.

- db.studentmarks.find( { "maths\_marks": { \$gt: 50 }, "english\_marks": { \$gt: 50 }, "science\_marks": { \$gt: 50 } }, {"name": 1, \_id: 0}).pretty()

```
> db.studentmarks.find( { "maths_marks" : { $gt: 50 }, "english_marks" : { $gt: 50 }, "science_marks" : { $gt: 50 } }, {"name": 1, _id: 0 }).pretty()
{ "name" : "Mala" }
{ "name" : "Vanu" }
{ "name" : "Aruli" }
{ "name" : "shayu" }
{ "name" : "Lucky" }
{ "name" : "Gva" }
> db.studentmarks.find( { "maths_marks" : { $lt: 50 }, "english_marks" : { $gt: 50 } }, {"name": 1, _id: 0 }).pretty()
{ "name" : "Kumaran" }
{ "name" : "Raam" }
```

#### 9. List the names who got less than 50 marks in Maths subject and more than 50 marks in English

- db.studentmarks.find( { "maths\_marks": { \$lt: 50 }, "english\_marks": { \$gt: 50 } }, {"name": 1, \_id: 0}).pretty()

```
> db.studentmarks.find( { "maths_marks": { $lt: 50 }, "english_marks": { $gt: 50 } }, { "name": 1, _id:0 } ).pretty()
{ "name" : "Kumaran" }
{ "name" : "Raam" }
```

#### 10. List the names who got less than 40 in both Maths and Science.

- `db.studentmarks.find({ "maths_marks": { $lt: 40 }, "science_marks": { $lt: 40 } }, { "name": 1, _id:0 } ).pretty()`

```
> db.studentmarks.find({ "maths_marks": { $lt: 40 }, "science_marks": { $lt: 40 } }, { "name": 1, _id:0 } ).pretty()
> db.studentmarks.find({ "maths_marks": { $lt: 40 }, "science_marks": { $lt: 40 } }, { "name": 1, _id:0 } ).pretty()
```

#### 11. Remove Science column/field for Raam

- `db.studentmarks.update({"_id" : ObjectId("5cfeab8edbbb15d418e074a5")}, {$unset: {"science_marks":1}}, false, true)`

```
> db.studentmarks.update({"_id" : ObjectId("5cfeab8edbbb15d418e074a5")}, {$unset: {"science_marks":1}}, false, true)
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 })
>
```

#### 12. Update John's Math mark as 87 and English mark as 23, if John not available upsert.

- `db.studentmarks.update({name: "John"},{$set: {"maths_marks" : 87,"english_marks" : 23}},{$upsert:true})`

```
> db.studentmarks.update({name: "John"},{$set: {"maths_marks" : 87,"english_marks" : 23}},{$upsert:true})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })
>
```

#### 13. Rename the english\_marks column/field for John to science\_marks

- `db.studentmarks.update( {"_id" : ObjectId("5d0897aa306e32f29720f498") }, { $rename: {"english_marks" : "science_marks" } } )`

```
{
  "_id" : ObjectId("5d0897aa306e32f29720f498"),
  "name" : "John",
  "english_marks" : 23,
  "maths_marks" : 87
}
> db.studentmarks.update({"_id":ObjectId("5d0897aa306e32f29720f498")},{ $rename: {"english_marks" : "science_marks" }})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
>
```

#### 14. Remove Kumaran's document from the collection

- `db.cows.remove ( {"_id" : ObjectId("5cfeab8edbbb15d418e074a2")})`

```
> db.studentmarks.remove ( {"_id" : ObjectId("5d0362732f947074e9009f90")})
WriteResult({ "nRemoved" : 1 })
>
```

#### 15. Find Kala's or Aruli's math\_marks and science\_marks

- `db.studentmarks.find({"_id" : ObjectId(""),{"maths_marks" : 1,"science_marks" : 1}).pretty()`

```
> db.studentmarks.find({"_id" : ObjectId("5d0362732f947074e9009f8d")}, {"maths_marks" : 1,"science_marks" : 1}).pretty()
{
  "_id" : ObjectId("5d0362732f947074e9009f8d"),
  "maths_marks" : 32,
  "science_marks" : 53
}
>
```