

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": 0})
```

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": "5d0362732f947074e9009f8b", "name": "Mala", "maths_marks": 57, "english_marks": 53, "science_marks": 72, "average": 55 }
{"_id": "5d0362732f947074e9009f8c", "name": "Vanu", "maths_marks": 80, "english_marks": 75, "science_marks": 85, "average": 77.5 }
{"_id": "5d0362732f947074e9009f8d", "name": "Kala", "maths_marks": 32, "english_marks": 46, "science_marks": 53, "average": 39 }
{"_id": "5d0362732f947074e9009f8e", "name": "Aruli", "maths_marks": 78, "english_marks": 85, "science_marks": 80, "average": 81.5 }
{"_id": "5d0362732f947074e9009f8f", "name": "shayu", "maths_marks": 80, "english_marks": 76, "science_marks": 65, "average": 78 }
{"_id": "5d0362732f947074e9009f90", "name": "Kumaran", "maths_marks": 32, "english_marks": 73, "science_marks": 84, "average": 52.5 }
{"_id": "5d0362732f947074e9009f91", "name": "Lucky", "maths_marks": 66, "english_marks": 90, "science_marks": 75, "average": 78 }
{"_id": "5d0362732f947074e9009f92", "name": "Gva", "maths_marks": 71, "english_marks": 75, "science_marks": 56, "average": 73 }
{"_id": "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
}
>
```