1. Create a Database called the student

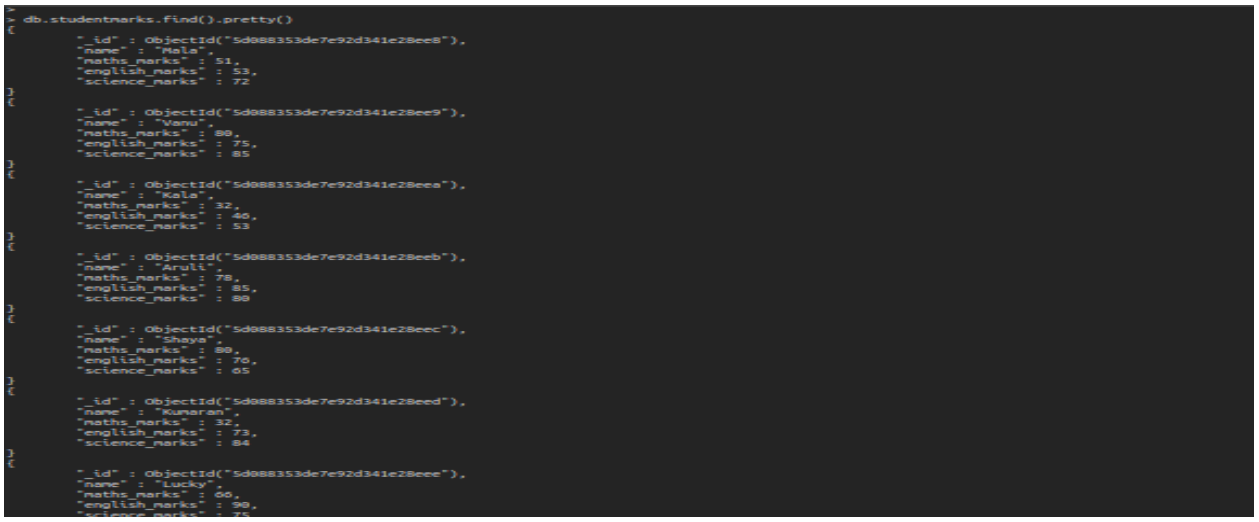
```
>
> use student
switched to db student
>
```

2. Create a collection called studentmarks

```
>
>
>
> db.createCollection("studentsmarks")
{ "ok" : 1 }
>
>
```

3. Create the documents listed in the above table.

```
>
> db.studentmarks.insert([{"name":"Mala","maths_marks":45,"english_marks":53,"science_mark
s":72},{"name":"Vanu","maths_marks":80,"english_marks":75,"science_marks":85},{"name":"Kal
a","maths_marks":32,"english_marks":46,"science_marks":53},{"name":"Aruli","maths_marks":7
8,"english_marks":85,"science_marks":80},{"name":"Shaya","maths_marks":80,"english_marks":
76,"science_marks":65},{"name":"Kumaran","maths_marks":32,"english_marks":73,"science_mark
s":84},{"name":"Lucky","maths_marks":66,"english_marks":90,"science_marks":45},{"name":"Gv
a","maths_marks":71,"english_marks":75,"science_marks":56},{"name":"Raam","maths_marks":41
,"english_marks":65,"science_marks":88}])
BulkWriteResult({
        "writeErrors" : [ ],
        "writeConcernErrors" : [ ],
        "nInserted" : 9,
        "nUpserted" : 0,
        "nMatched" : 0,
        "nModified" : 0,
        "nRemoved" : 0,
        "upserted" : [ ]
})
```



4. Increase the maths marks of Mala by 6 marks

```
>
>
>
>
> db.studentmarks.update({"name":"Mala"},{$inc:{"maths_marks":6}})
WriteResult({ "nMatched" : 1, "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()
{ "name" : "Mala" }
{ "name" : "Vanu" }
{ "name" : "Aruli" }
{ "name" : "Shaya" }
{ "name" : "Lucky" }
{ "name" : "Gva" }
{ "name" : "John" }
>
>
```

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

```
>
>
> db.studentmarks.aggregate({$addFields:{Average:{$avg:["$maths_marks","$english_marks","$science_marks"]}}}).pretty()
{
        "_id" : ObjectId("5d088353de7e92d341e28ee8"),
        "name" : "Mala",
        "maths_marks" : 51,
        "english_marks" : 53,
        "science_marks" : 72,
        "Average" : 58.666666666666664
}
{
        "_id" : ObjectId("5d088353de7e92d341e28ee9"),
        "name" : "Vanu",
        "maths_marks" : 80,
        "english_marks" : 75,
        "science_marks" : 85,
        "Average" : 80
}
{
        "_id" : ObjectId("5d088353de7e92d341e28eea"),
        "name" : "Kala",
        "maths_marks" : 32,
        "english_marks" : 46,
```

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}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
>
>
>
>
```

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()
{ "name" : "Mala" }
{ "name" : "Vanu" }
{ "name" : "Aruli" }
{ "name" : "Shaya" }
{ "name" : "Lucky" }
{ "name" : "Gva" }
>
>
>
```

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()
{ "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()
>
>
>
>
```

11. Remove Science column/field for Raam

```
>
>
>
>
>
> db.studentmarks.update({"_id":ObjectId("5cfeab8edbbb15d418e074a5")},{$unset:{"science_ma
rks":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}},{upser
t:true})
WriteResult({
        "nMatched" : 0,
        "nUpserted" : 1,
        "nModified" : 0,
        "_id" : ObjectId("5d0885e85afca693c4def5fe")
})
>
```

13. Rename the english_marks column/field for John to science_marks

```
>
>
> db.studentmarks.update( {"_id" : ObjectId("5d0885e85afca693
c4def5fe") }, { $rename: {"english_marks" :"science_marks" }
} )
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" :
1 })
>
```

14. Remove Kumaran's document from the collection

```
>
>
> db.studentmarks.remove({"_id":ObjectId("5cfeab8edbbb15d418e
074a2")})
WriteResult({ "nRemoved" : 0 })
>
```

15. Find Kala's or Aruli's math_marks and science_marks

```
>
>  db.studentmarks.find({"_id" : ObjectId("5d088353de7e92d341e28eeb")},{"ma
ths_marks" : 1,"science_marks" : 1}).pretty()
{
        "_id" : ObjectId("5d088353de7e92d341e28eeb"),
        "maths_marks" : 78,
        "science_marks" : 80
}
> db.studentmarks.find({"_id" : ObjectId("5d088353de7e92d341e28eea")},{"mat
hs_marks" : 1,"science_marks" : 1}).pretty()
{
        "_id" : ObjectId("5d088353de7e92d341e28eea"),
        "maths_marks" : 32,
        "science_marks" : 53
}
```