

1) Create a Database called student

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

2) Create a collection called studentmarks

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

3) Create the documents listed in above table.

```
> db.studentmarks.insert([{'name':'mala','maths_marks':45,'english_marks':53,'science_marks':72},{'name':'vanu','maths_marks':80,'english_marks':75,'science_marks':85},{'name':'kala','maths_marks':32,'english_marks':46,'science_marks':53},{'name':'aruli','maths_marks':78,'english_marks':85,'science_marks':80},{'name':'shayu','maths_marks':80,'english_marks':76,'science_marks':65},{'name':'kumaran','maths_marks':32,'english_marks':73,'science_marks':84},{'name':'luck','maths_marks':66,'english_marks':90,'science_marks':45},{'name':'gva','maths_marks':71,'english_marks':75,'science_marks':56},{'name':'raan','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 })
> db.studentmarks.find().pretty()
```

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

```
> db.studentmarks.find({'maths_marks':{$gt:50}})
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edce"), "name" : "mala", "maths_marks" : 51, "english_marks" : 53, "science_marks" : 72 }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edcf"), "name" : "vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85 }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd1"), "name" : "aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80 }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd2"), "name" : "shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65 }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd4"), "name" : "luck", "maths_marks" : 66, "english_marks" : 90, "science_marks" : 45 }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd5"), "name" : "gva", "maths_marks" : 71, "english_marks" : 75, "science_marks" : 56 }
```

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

```
> db.studentmarks.update({},{$set: {'average':null}},{multi:true})
WriteResult({ "nMatched" : 9, "nUpserted" : 0, "nModified" : 9 })
> db.studentmarks.find().pretty()
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edce"),
  "name" : "mala",
  "maths_marks" : 51,
  "english_marks" : 53,
  "science_marks" : 72,
  "average" : null
}
```

7) Update Marks_Science=75 to Lucky .

```
"_id" : ObjectId("5b3f0db6c2fe2450fd07edd4"),
"name" : "luck",
"maths_marks" : 66,
"english_marks" : 90,
"average" : null,
"marks_science" : 75
```

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

```
writesuccess({ "nInserted" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find().pretty()
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edce"),
  "name" : "mala",
  "maths_marks" : 51,
  "english_marks" : 53,
  "science_marks" : 72,
  "average" : null
}
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edcf"),
  "name" : "vanu",
  "maths_marks" : 80,
  "english_marks" : 75,
  "science_marks" : 85,
  "average" : null
}
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd0"),
  "name" : "kala",
  "maths_marks" : 32,
  "english_marks" : 46,
  "science_marks" : 53,
  "average" : null
}
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd1"),
  "name" : "aruli",
  "maths_marks" : 78,
  "english_marks" : 85,
  "science_marks" : 80,
  "average" : null
}
```

```
> db.studentmarks.find({'english_marks':{$gt:50}})
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edce"), "name" : "mala", "maths_marks" : 51, "english_marks" : 53, "science_marks" : 72, "average" : null }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edcf"), "name" : "vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85, "average" : null }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd1"), "name" : "aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80, "average" : null }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd2"), "name" : "shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65, "average" : null }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd3"), "name" : "kumaran", "maths_marks" : 32, "english_marks" : 73, "science_marks" : 84, "average" : null }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd4"), "name" : "luck", "maths_marks" : 66, "english_marks" : 90, "average" : null, "marks_science" : 75 }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd5"), "name" : "gva", "maths_marks" : 71, "english_marks" : 75, "science_marks" : 56, "average" : null }
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd6"), "name" : "raan", "maths_marks" : 41, "english_marks" : 65, "science_marks" : 88, "average" : null }
> db.studentmarks.find({'marks_science':{$gt:50}})
{ "_id" : ObjectId("5b3f0db6c2fe2450fd07edd4"), "name" : "luck", "maths_marks" : 66, "english_marks" : 90, "average" : null, "marks_science" : 75 }
```

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

```
> db.studentmarks.find({$and:[{'maths_marks':{'$lt':50}},{'english_marks':{'$gt':50}}]}).pretty()
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd3"),
  "name" : "kumaran",
  "maths_marks" : 32,
  "english_marks" : 73,
  "science_marks" : 84,
  "average" : null
}
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd6"),
  "name" : "raam",
  "maths_marks" : 41,
  "english_marks" : 65,
  "science_marks" : 88,
  "average" : null
}
>
```

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

```
> db.studentmarks.find({$or:[{'maths_marks':{'$lt':40}},{'science_marks':{'$lt':40}}]}).pretty()
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd0"),
  "name" : "kala",
  "maths_marks" : 32,
  "english_marks" : 46,
  "science_marks" : 53,
  "average" : null
}
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd3"),
  "name" : "kumaran",
  "maths_marks" : 32,
  "english_marks" : 73,
  "science_marks" : 84,
  "average" : null
}
>
```

11) Remove Science column/field for Raam

```
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd6"),
  "name" : "raam",
  "maths_marks" : 41,
  "english_marks" : 65,
  "average" : null
}
>
```

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

```
> var bulk = db.studentmarks.initializeUnorderedBulkOp()
> bulk.find({'name':'john'}).upsert().updateOne({'name':'john','maths_marks':87,'english_marks':23})
> bulk.execute()
BulkWriteResult({
  "writeErrors" : [ ],
  "writeConcernErrors" : [ ],
  "nInserted" : 0,
  "nUpserted" : 1,
  "nMatched" : 0,
  "nModified" : 0,
  "nRemoved" : 0,
  "upserted" : [
    {
      "index" : 0,
      "_id" : ObjectId("5b444b5953feaeb590fb236f")
    }
  ]
})
>
```

```
{
  "_id" : ObjectId("5b444b5953feaeb590fb236f"),
  "name" : "john",
  "maths_marks" : 87,
  "english_marks" : 23
}
>
```

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

```
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 0 })
> db.studentmarks.update({'name':'john'},{ $rename:{'english_marks':'scienc_marks'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find().pretty()
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd1"),
  "name" : "john",
  "maths_marks" : 78,
  "english_marks" : 85,
  "science_marks" : 80,
  "average" : null
}
```

14) Remove Kumaran's document from collection

```
> db.studentmarks.remove({'name':'kumaran'})
WriteResult({ "nRemoved" : 1 })
>
```

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

```
> db.studentmarks.find({'$or':[{"name":"kala","name":"aruli"}, {"science_marks":"","maths_marks":""}]}).pretty()
{
  "_id" : ObjectId("5b3f0db6c2fe2450fd07edd1"),
  "name" : "aruli",
  "maths_marks" : 78,
  "english_marks" : 85,
  "science_marks" : 80,
  "average" : null
}
```