

MongoDB Exercise

```
ukistu14@ukipc14: ~  
ukistu14@ukipc14: ~  
ukistu14@ukipc14: ~  
ukistu14@ukipc14:~$ sudo mongo  
[sudo] password for ukistu14:  
MongoDB shell version v3.6.5  
connecting to: mongodb://127.0.0.1:27017  
MongoDB server version: 3.6.5  
Server has startup warnings:  
2018-07-06T11:25:42.460+0530 I STORAGE [initandlisten] ** WARNING: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine  
2018-07-06T11:25:42.460+0530 I STORAGE [initandlisten] ** See http://dochub.mongodb.org/core/prodnotes-filesystem  
2018-07-06T11:25:54.564+0530 I CONTROL [initandlisten] ** WARNING: Access control is not enabled for the database.  
2018-07-06T11:25:54.578+0530 I CONTROL [initandlisten] ** Read and write access to data and configuration is unrestricted.  
2018-07-06T11:25:54.578+0530 I CONTROL [initandlisten] ** WARNING: You are running this process as the root user, which is not recommended.  
2018-07-06T11:25:54.578+0530 I CONTROL [initandlisten] ** WARNING: This server is bound to localhost.  
2018-07-06T11:25:54.578+0530 I CONTROL [initandlisten] ** Remote systems will be unable to connect to this server.  
2018-07-06T11:25:54.578+0530 I CONTROL [initandlisten] ** Start the server with --bind_ip <address> to specify which IP addresses it should serve responses from, or with --bind_ip_all to bind to all interfaces. If this behavior is desired, start the server with --bind_ip 127.0.0.1 to disable this warning.  
> show dbs  
admin 0.000GB  
config 0.000GB  
local 0.000GB  
marks 0.000GB  
music 0.000GB  
person 0.000GB  
uki3 0.000GB  
> use student  
switched to db student  
>
```

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':'lucky','Maths_marks':66,'English_marks':90,'Science_marks':45},{'Name':'Gva','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" : [ ]  
})
```

```

> db.studentmarks.find().pretty()
{
  "_id" : ObjectId("5b3f0d0c68e61db02645ba1e"),
  "Name" : "Mala",
  "Maths_marks" : 45,
  "English_marks" : 53,
  "Science_marks" : 72
}
{
  "_id" : ObjectId("5b3f0d0c68e61db02645ba1f"),
  "Name" : "Vanu",
  "Maths_marks" : 80,
  "English_marks" : 75,
  "Science_marks" : 85
}
{
  "_id" : ObjectId("5b3f0d0c68e61db02645ba20"),
  "Name" : "kala",
  "Maths_marks" : 32,
  "English_marks" : 46,
  "Science_marks" : 53
}
{
  "_id" : ObjectId("5b3f0d0c68e61db02645ba21"),
  "Name" : "Aruli",
  "Maths_marks" : 78,
  "English_marks" : 85,
  "Science_marks" : 80
}
{
  "_id" : ObjectId("5b3f0d0c68e61db02645ba22"),
  "Name" : "shayu",
  "Maths_marks" : 80,
  "English_marks" : 76,
  "Science_marks" : 65
}
{
  "_id" : ObjectId("5b3f0d0c68e61db02645ba23"),
  "Name" : "Kumaran",
  "Maths_marks" : 32,
  "English_marks" : 73,

```

4. Increase the maths marks of Mala by 6 marks

```

> db.studentmarks.update({'Maths_marks':45},{'$set':{'Maths_marks':51}})
WriteResult({'nMatched' : 1, 'nUpserted' : 0, 'nModified' : 1 })
> db.studentmarks.find().pretty()
{
  "_id" : ObjectId("5b3f0d0c68e61db02645ba1e"),
  "Name" : "Mala",
  "Maths_marks" : 51,
  "English_marks" : 53,
  "Science_marks" : 72
}

```

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

```
> db.studentmarks.find({'Maths_marks':{'$gt':50}})
{ "_id" : ObjectId("5b3f0d0c68e61db02645ba1e"), "Name" : "Mala", "Maths_marks" : 51, "English_marks" : 53, "Science_marks" : 72 }
{ "_id" : ObjectId("5b3f0d0c68e61db02645ba1f"), "Name" : "Vanu", "Maths_marks" : 80, "English_marks" : 75, "Science_marks" : 85 }
{ "_id" : ObjectId("5b3f0d0c68e61db02645ba21"), "Name" : "Aruli", "Maths_marks" : 78, "English_marks" : 85, "Science_marks" : 80 }
{ "_id" : ObjectId("5b3f0d0c68e61db02645ba22"), "Name" : "shayu", "Maths_marks" : 80, "English_marks" : 76, "Science_marks" : 65 }
{ "_id" : ObjectId("5b3f0d0c68e61db02645ba24"), "Name" : "lucky", "Maths_marks" : 66, "English_marks" : 90, "Science_marks" : 45 }
{ "_id" : ObjectId("5b3f0d0c68e61db02645ba25"), "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':'1'}},{upsert:false,multi:true})
WriteResult({ "nMatched" : 9, "nUpserted" : 0, "nModified" : 9 })
>
```

```
> db.studentmarks.find({'Maths_marks':{'$gt':50}})
{ "_id" : ObjectId("5b445c76a22de985b74d9f25"), "Name" : "Mala", "Maths_marks" : 63, "English_marks" : 53, "Science_marks" : 72, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f26"), "Name" : "Vanu", "Maths_marks" : 80, "English_marks" : 75, "Science_marks" : 85, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f28"), "Name" : "Aruli", "Maths_marks" : 78, "English_marks" : 85, "Science_marks" : 80, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f29"), "Name" : "Shaya", "Maths_marks" : 80, "English_marks" : 76, "Science_marks" : 65, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2b"), "Name" : "lucky", "Maths_marks" : 66, "English_marks" : 90, "Science_marks" : 45, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2c"), "Name" : "Gva", "Maths_marks" : 71, "English_marks" : 75, "Science_marks" : 56, "average" : "1" }
```

7. Update Marks_Science=75 to Lucky .

```
> db.studentmarks.update({'Science_marks':45},{$set:{'Science_marks':75}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find().pretty()
```

```
{
  "_id" : ObjectId("5b423ce0dad1b5da335a90ef"),
  "Name" : "lucky",
  "Maths_marks" : 66,
  "English_marks" : 90,
  "Science_marks" : 75
}
```

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

```
> db.studentmarks.find({'Maths_marks':{'$gt':50}})
{ "_id" : ObjectId("5b445c76a22de985b74d9f25"), "Name" : "Mala", "Maths_marks" : 63, "English_marks" : 53, "Science_marks" : 72, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f26"), "Name" : "Vanu", "Maths_marks" : 80, "English_marks" : 75, "Science_marks" : 85, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f28"), "Name" : "Aruli", "Maths_marks" : 78, "English_marks" : 85, "Science_marks" : 80, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f29"), "Name" : "Shaya", "Maths_marks" : 80, "English_marks" : 76, "Science_marks" : 65, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2b"), "Name" : "lucky", "Maths_marks" : 66, "English_marks" : 90, "Science_marks" : 45, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2c"), "Name" : "Gva", "Maths_marks" : 71, "English_marks" : 75, "Science_marks" : 56, "average" : "1" }
```

```

> db.studentmarks.find({'Science_marks':{$gt:50}})
{ "_id" : ObjectId("5b445c76a22de985b74d9f25"), "Name" : "Mala", "Maths_marks" : 63, "English_marks" : 53, "Science_marks" : 72, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f26"), "Name" : "Vanu", "Maths_marks" : 80, "English_marks" : 75, "Science_marks" : 85, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f27"), "Name" : "Kala", "Maths_marks" : 32, "English_marks" : 46, "Science_marks" : 53, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f28"), "Name" : "Aruli", "Maths_marks" : 78, "English_marks" : 85, "Science_marks" : 80, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f29"), "Name" : "Shaya", "Maths_marks" : 80, "English_marks" : 76, "Science_marks" : 65, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2a"), "Name" : "Kumaran", "Maths_marks" : 32, "English_marks" : 73, "Science_marks" : 84, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2c"), "Name" : "Gva", "Maths_marks" : 71, "English_marks" : 75, "Science_marks" : 56, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2d"), "Name" : "Raam", "Maths_marks" : 41, "English_marks" : 65, "Science_marks" : 85, "average" : "1" }
> db.studentmarks.find({'English_marks':{$gt:50}})
{ "_id" : ObjectId("5b445c76a22de985b74d9f25"), "Name" : "Mala", "Maths_marks" : 63, "English_marks" : 53, "Science_marks" : 72, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f26"), "Name" : "Vanu", "Maths_marks" : 80, "English_marks" : 75, "Science_marks" : 85, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f28"), "Name" : "Aruli", "Maths_marks" : 78, "English_marks" : 85, "Science_marks" : 80, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f29"), "Name" : "Shaya", "Maths_marks" : 80, "English_marks" : 76, "Science_marks" : 65, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2a"), "Name" : "Kumaran", "Maths_marks" : 32, "English_marks" : 73, "Science_marks" : 84, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2b"), "Name" : "lucky", "Maths_marks" : 66, "English_marks" : 90, "Science_marks" : 45, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2c"), "Name" : "Gva", "Maths_marks" : 71, "English_marks" : 75, "Science_marks" : 56, "average" : "1" }
{ "_id" : ObjectId("5b445c76a22de985b74d9f2d"), "Name" : "Raam", "Maths_marks" : 41, "English_marks" : 65, "Science_marks" : 85, "average" : "1" }
>

```

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("5b423bb3dad1b5da335a90e0"),
  "Name" : "Mala",
  "Maths_marks" : 45,
  "English_marks" : 53,
  "Science_marks" : 72
}
{
  "_id" : ObjectId("5b423bb3dad1b5da335a90e5"),
  "Name" : "Kumaran",
  "Maths_marks" : 32,
  "English_marks" : 73,
  "Science_marks" : 84
}
{
  "_id" : ObjectId("5b423bb3dad1b5da335a90e8"),
  "Name" : "Raam",
  "Maths_marks" : 41,
  "English_marks" : 65,
  "Science_marks" : 85
}

```

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

```

> db.studentmarks.find({'$or':[{'Maths_marks':{$lt:40}},{'Science_marks':{$gt:40}}]}).pretty()
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e0"), "Name" : "Mala", "Maths_marks" : 45, "English_marks" : 53, "Science_marks" : 72 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e1"), "Name" : "Vanu", "Maths_marks" : 80, "English_marks" : 75, "Science_marks" : 85 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e2"), "Name" : "Kala", "Maths_marks" : 32, "English_marks" : 46, "Science_marks" : 53 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e3"), "Name" : "Aruli", "Maths_marks" : 78, "English_marks" : 85, "Science_marks" : 80 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e4"), "Name" : "Shaya", "Maths_marks" : 80, "English_marks" : 76, "Science_marks" : 65 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e5"), "Name" : "Kumaran", "Maths_marks" : 32, "English_marks" : 73, "Science_marks" : 84 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e6"), "Name" : "lucky", "Maths_marks" : 66, "English_marks" : 90, "Science_marks" : 45 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e7"), "Name" : "Gva", "Maths_marks" : 71, "English_marks" : 75, "Science_marks" : 56 }
{ "_id" : ObjectId("5b423bb3dad1b5da335a90e8"), "Name" : "Raam", "Maths_marks" : 41, "English_marks" : 65, "Science_marks" : 85 }

```

11.Remove Science column/field for Raam

```
> db.studentmarks.update({'Name':'Raam'},{$unset: {'Science_marks':''}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> 
```

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

```
> db.studentmarks.update({'Name':'Jhon'},{$unset: {'Science_marks':''}})
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 })
> db.studentmarks.update({'Name':'Raam'},{$unset: {'Science_marks':''}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.insert([{'Name':'Jhon','Maths_marks':87,'English_marks':23},{upsert:true}])
BulkWriteResult({
  "writeErrors" : [ ],
  "writeConcernErrors" : [ ],
  "nInserted" : 2,
  "nUpserted" : 0,
  "nMatched" : 0,
  "nModified" : 0,
  "nRemoved" : 0,
  "upserted" : [ ]
})
```

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

```
> db.studentmarks.update({'Name':'Jhon'},{$rename: {'English_marks':'Science_marks'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> 
```

14. Remove Kumaran's document from collection

```
> db.studentmarks.update({'Name':'Jhon'},{$rename: {'English_marks':'Science_marks'}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> 
```

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

```
> db.studentmarks.find({'$or':[{'Name':'kala','Name':'Aruli'},{'Maths_marks':'','Science_marks':''}]}).pretty()
{
  "_id" : ObjectId("5b445c76a22de985b74d9f28"),
  "Name" : "Aruli",
  "Maths_marks" : 78,
  "English_marks" : 85,
  "Science_marks" : 80,
  "average" : "1"
}
```