

### 1) Create a Database called student

```
>use student
```

### 2) Create a collection called studentmarks

```
>db.createCollection(studentmarks)
```

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

```
>db.studentmarks.insert({"name":"Mala","maths_marks":45,"english_marks":43,"science_marks":72})
```

```
>db.studentmarks.insert({"name":"Vanu","maths_marks":80,"english_marks":75,"science_marks":85})
```

```
>db.studentmarks.insert({"name":"Kala","maths_marks":32,"english_marks":46,"science_marks":53})
```

```
>db.studentmarks.insert({"name":"Aruli","maths_marks":78,"english_marks":85,"science_marks":80})
```

```
>db.studentmarks.insert({"name":"Shayu","maths_marks":80,"english_marks":76,"science_marks":65})
```

```
db.studentmarks.insert({"name":"Kumaran","maths_marks":32,"english_marks":73,"science_marks":84})
```

```
db.studentmarks.insert({"name":"Lucky","maths_marks":66,"english_marks":90,"science_marks":45})
```

```
db.studentmarks.insert({"name":"Gva","maths_marks":71,"english_marks":75,"science_marks":56})
```

```
db.studentmarks.insert({"name":"Raam","maths_marks":41,"english_marks":65,"science_marks":88})
```

```
ukistu07@ukipc07: ~
> {
  "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
}
2019-01-14T15:07:31.182+0530 E QUERY [thread1] SyntaxError: missing ; before statement @(shell):1:7
> {
  "name": "Luck", "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
}
2019-01-14T15:07:31.185+0530 E QUERY [thread1] SyntaxError: expected expression, got ',' @(shell):1:0
> db.studentmarks.insert({"name": "Mala", "maths_marks": 45, "english_marks": 72, "science_marks": 72})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Vanu", "maths_marks": 80, "english_marks": 75, "science_marks": 85})
2019-01-14T15:09:16.394+0530 E QUERY [thread1] SyntaxError: illegal character @(shell):1:24
> db.studentmarks.insert({"name": "Vanu", "maths_marks": 80, "english_marks": 75, "science_marks": 85})
2019-01-14T15:12:08.148+0530 E QUERY [thread1] SyntaxError: illegal character @(shell):1:24
> db.studentmarks.insert({"name": "Vanu", "maths_marks": 80, "english_marks": 75, "science_marks": 85})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Kala", "maths_marks": 32, "english_marks": 46, "science_marks": 53})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Aruli", "maths_marks": 78, "english_marks": 85, "science_marks": 80})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Shayu", "maths_marks": 80, "english_marks": 76, "science_marks": 65})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Kumaran", "maths_marks": 32, "english_marks": 73, "science_marks": 84})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Luck", "maths_marks": 66, "english_marks": 90, "science_marks": 45})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Gva", "maths_marks": 71, "english_marks": 75, "science_marks": 56})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name": "Raam", "maths_marks": 41, "english_marks": 65, "science_marks": 88})
WriteResult({ "nInserted" : 1 })
> {
  "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": "Raam", "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}})
```

```
ukistu07@ukipc07: ~
{
  "id": "5c3c59d0d3dd79b4b7f5ac0c",
  "name": "Luck",
  "maths_marks": 66,
  "english_marks": 90,
  "science_marks": 75
}

{
  "id": "5c3c59d9d3dd79b4b7f5ac0d",
  "name": "Gva",
  "maths_marks": 71,
  "english_marks": 75,
  "science_marks": 56
}

4) Increase the maths marks of Mala by 6 marks

> db.studentmarks.update({"name":"Mala"},{$inc:{"maths_marks":+6}})

{
  "id": "5c3c59e4d3dd79b4b7f5ac0e",
  "name": "Raam",
  "maths_marks": 41,
  "english_marks": 65
}

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})

{
  "id": "5c3ecb6dacb33c9b17e4a8af",
  "name": "John",
  "maths_marks": 87,
  "science_marks": 23
}

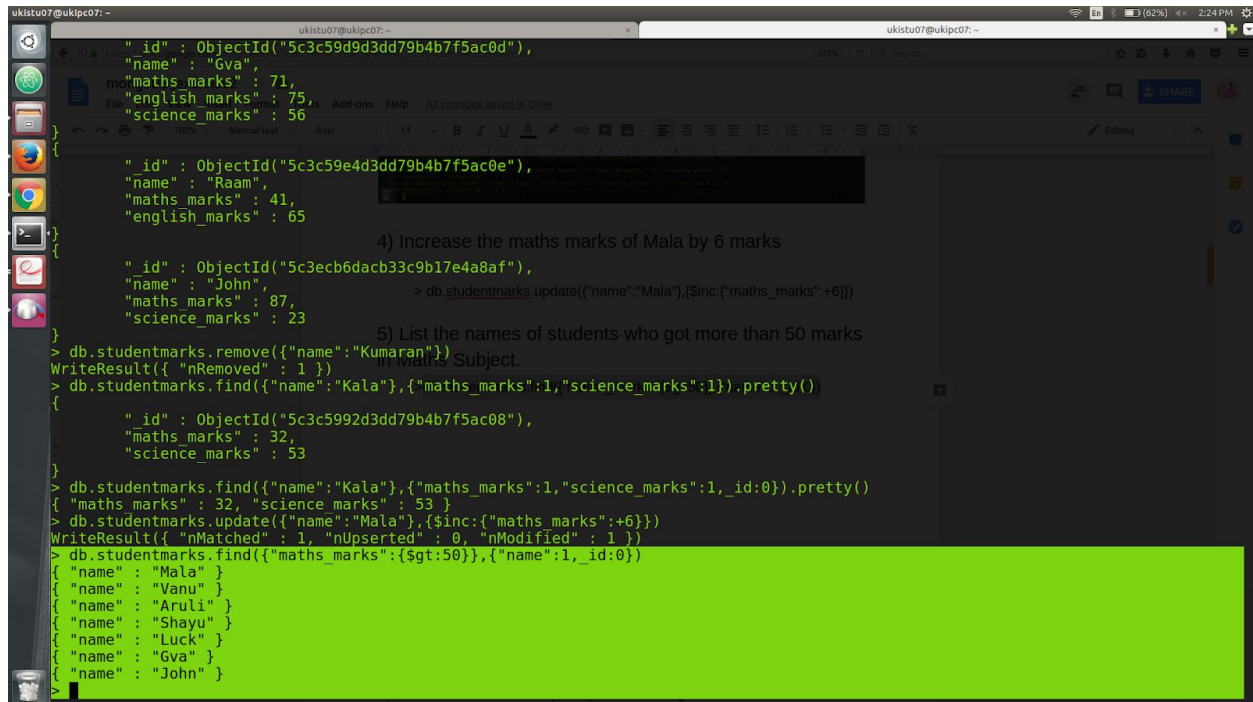
> db.studentmarks.remove({"name":"Kumaran"})
WriteResult({ "nRemoved" : 1 })
> db.studentmarks.find({"name":"Kala"},{"maths_marks":1,"science_marks":1}).pretty()
{
  "id": "5c3c5992d3dd79b4b7f5ac08",
  "maths_marks": 32,
  "science_marks": 53
}

> db.studentmarks.find({"name":"Kala"},{"maths_marks":1,"science_marks":1,"_id":0}).pretty()
{
  "maths_marks": 32, "science_marks": 53
}

> 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})
```

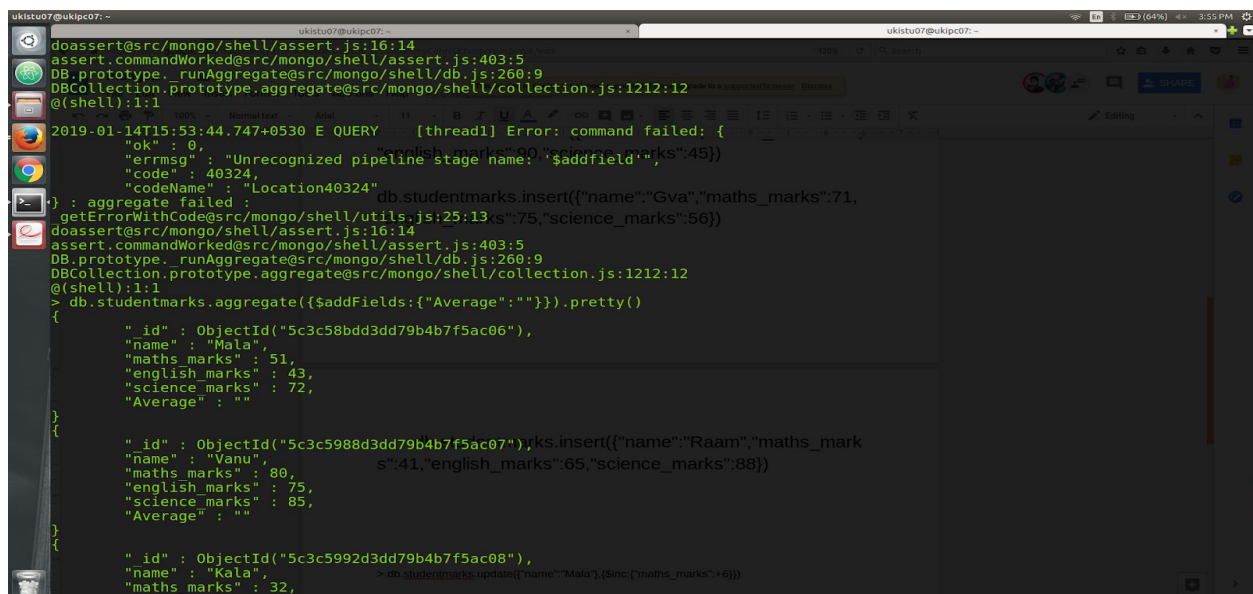


The screenshot shows a MongoDB shell session with the following commands and results:

```
> db.studentmarks.remove({"name":"Kumaran"})
WriteResult({"nRemoved": 1})
> db.studentmarks.find({"name":"Kala"}, {"maths_marks":1,"science_marks":1}).pretty()
{
  "_id" : ObjectId("5c3c5992d3dd79b4b7f5ac08"),
  "maths_marks" : 32,
  "science_marks" : 53
}
> db.studentmarks.find({"name":"Kala"}, {"maths_marks":1,"science_marks":1,_id:0}).pretty()
{
  "maths_marks" : 32, "science_marks" : 53
}
> db.studentmarks.update({"name":"Mala"}, {"$inc":{"maths_marks":+6}})
WriteResult({"nMatched" : 1, "nUpserted" : 0, "nModified" : 1})
> db.studentmarks.find({"maths_marks":{"$gt:50}}, {"name":1,_id:0})
{
  "name" : "Mala"
}
{
  "name" : "Vanu"
}
{
  "name" : "Aruli"
}
{
  "name" : "Shayu"
}
{
  "name" : "Luck"
}
{
  "name" : "Gva"
}
{
  "name" : "John"
}
```

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

```
> db.studentmarks.aggregate({$addFields:{"Average":""}}).pretty()
```

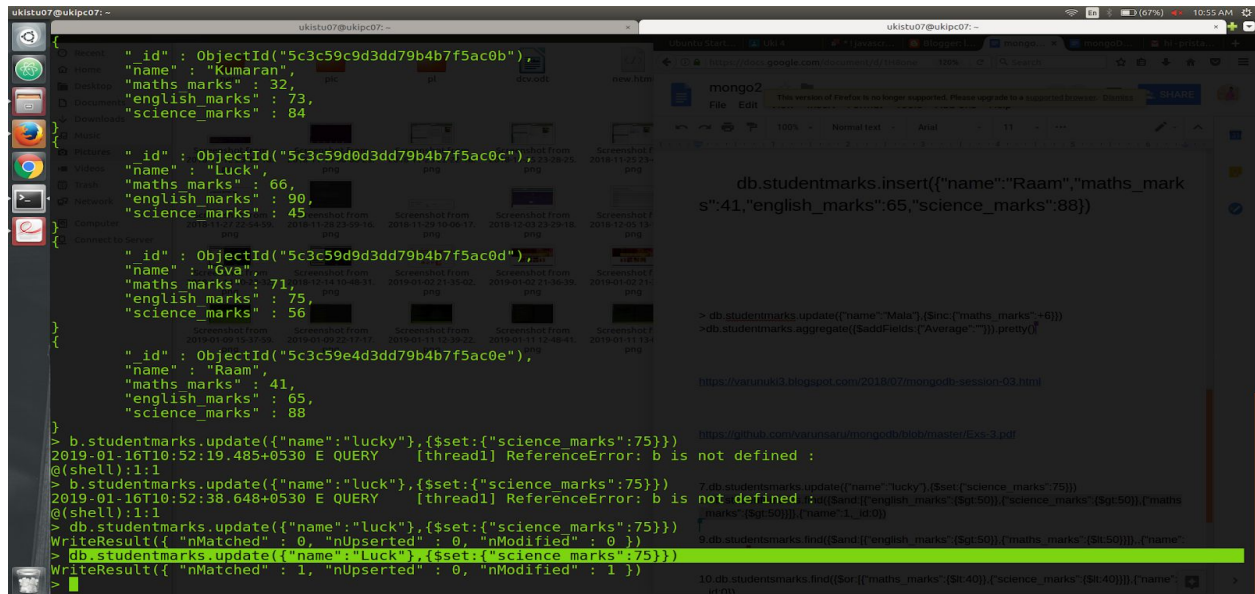


The screenshot shows a MongoDB shell session with the following commands and results:

```
doassert@src/mongo/shell/assert.js:16:14
assert.commandWorked@src/mongo/shell/assert.js:403:5
DB.prototype.runAggregate@src/mongo/shell/db.js:260:9
DBCollection.prototype.aggregate@src/mongo/shell/collection.js:1212:12
@(<shell>):1:1
2019-01-14T15:53:44.747+0530 E QUERY [thread1] Error: command failed: {
  "ok" : 0,
  "errmsg" : "Unrecognized pipeline stage name: '$addfield'",
  "code" : 40324,
  "codeName" : "Location40324"
} : aggregate failed :
getErrorWithCode@src/mongo/shell/utils.js:25:13
doassert@src/mongo/shell/assert.js:16:14
assert.commandWorked@src/mongo/shell/assert.js:403:5
DB.prototype.runAggregate@src/mongo/shell/db.js:260:9
DBCollection.prototype.aggregate@src/mongo/shell/collection.js:1212:12
@(<shell>):1:1
> db.studentmarks.insert({"name":"Gva","maths_marks":71,
                           "english_marks":75,"science_marks":56})
{
  "_id" : ObjectId("5c3c58bdd3dd79b4b7f5ac06"),
  "name" : "Mala",
  "maths_marks" : 51,
  "english_marks" : 43,
  "science_marks" : 72,
  "Average" : ""
}
{
  "_id" : ObjectId("5c3c5988d3dd79b4b7f5ac07"),
  "name" : "Vanu",
  "maths_marks" : 80,
  "english_marks" : 65,
  "science_marks" : 85,
  "Average" : ""
}
{
  "_id" : ObjectId("5c3c5992d3dd79b4b7f5ac08"),
  "name" : "Kala",
  "maths_marks" : 32,
  "Average" : ""
}
```

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

```
>db.studentmarks.update({"name":"Luck"},{$set:{"science_marks":75}})
```



```
ukistu07@ukipc07: ~
{
  "_id" : ObjectId("5c3c59c9d3dd79b4b7f5ac0b"),
  "name" : "Kumaran",
  "maths_marks" : 32,
  "english_marks" : 73,
  "science_marks" : 84
}
{
  "_id" : ObjectId("5c3c59d0d3dd79b4b7f5ac0c"),
  "name" : "Gva",
  "maths_marks" : 66,
  "english_marks" : 90,
  "science_marks" : 45
}
{
  "_id" : ObjectId("5c3c59d9d3dd79b4b7f5ac0d"),
  "name" : "Raam",
  "maths_marks" : 41,
  "english_marks" : 65,
  "science_marks" : 88
}
> b.studentmarks.update({"name":"lucky"},{$set:{"science_marks":75}})
2019-01-16T10:52:19.485+0530 E QUERY [thread1] ReferenceError: b is not defined :
@ (shell):1:1
> b.studentmarks.update({"name":"luck"},{$set:{"science_marks":75}})
2019-01-16T10:52:38.648+0530 E QUERY [thread1] ReferenceError: b is not defined :
@ (shell):1:1
> db.studentmarks.update({"name":"luck"},{$set:{"science_marks":75}})
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 })
> db.studentmarks.update({"name":"Luck"},{$set:{"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({'$and':[{"english_marks":{"$gt":50}}, {"science_marks":{"$gt":50}}, {"maths_marks":{"$gt":50}}], {"name":1, _id:0})
```



```

{
  "_id": "ObjectID('5c3c59d9d3dd79b4b7f5ac0e')",
  "name": "Luck",
  "maths_marks": 66,
  "english_marks": 90,
  "science_marks": 45
}

{
  "_id": "ObjectID('5c3c59d9d3dd79b4b7f5ac0e')",
  "name": "Gva",
  "maths_marks": 71,
  "english_marks": 75,
  "science_marks": 88
}

4) {"_id": "ObjectID('5c3c59d9d3dd79b4b7f5ac0e')",
  "name": "Raam",
  "maths_marks": 41,
  "english_marks": 65,
  "science_marks": 88
}

5) List the names of students who got more than 50 marks
> db.studentmarks.update({"name": "lucky"}, {$set: {"science_marks": 75}})
2019-01-16T10:52:19.485+0530 E QUERY [thread1] ReferenceError: b is not defined :
@ (shell):1:1
> b.studentmarks.update({"name": "luck"}, {$set: {"science_marks": 75}})
2019-01-16T10:52:38.648+0530 E QUERY [thread1] ReferenceError: b is not defined :
@ (shell):1:1 new column(field) for Average for all students.
> db.studentmarks.update({"name": "luck"}, {$set: {"science_marks": 75}})
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 })
> db.studentmarks.update({"name": "Luck"}, {$set: {"science_marks": 75}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find({'$and': [{'english_marks': {'$gt': 50}}, {'science_marks': {'$gt': 50}}, {'maths_marks': {'$gt': 50}}]}, {'name': 1, id: 0})
> db.studentmarks.find({'$and': [{'english_marks': {'$gt': 50}}, {'science_marks': {'$gt': 50}}, {'maths_marks': {'$gt': 50}}]}, {'name': 1, id: 0})
{
  "name": "Vanu"
}
{
  "name": "Aruli"
}
{
  "name": "Shayu"
}
{
  "name": "Luck"
}
{
  "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({'$and': [{"english_marks": {'$gt': 50}}, {"maths_marks": {'$lt': 50}}]}, {"name": 1, _id: 0})
```

```

"science_marks" : 45
{
  "_id": "ObjectID('5c3c59d9d3dd79b4b7f5ac0e')",
  "name": "Gva",
  "maths_marks": 71,
  "english_marks": 75,
  "science_marks": 88
}

7) db.studentmarks.update({"name": "lucky"}, {$set: {"science_marks": 75}})
2019-01-16T10:52:19.485+0530 E QUERY [thread1] ReferenceError: b is not defined :
@ (shell):1:1
> b.studentmarks.update({"name": "luck"}, {$set: {"science_marks": 75}})
2019-01-16T10:52:38.648+0530 E QUERY [thread1] ReferenceError: b is not defined :
@ (shell):1:1
> db.studentmarks.update({"name": "luck"}, {$set: {"science_marks": 75}})
WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 })
> db.studentmarks.update({"name": "Luck"}, {$set: {"science_marks": 75}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find({'$and': [{"english_marks": {'$gt': 50}}, {"science_marks": {'$gt': 50}}, {"maths_marks": {'$gt': 50}}]}, {"name": 1, id: 0})
> db.studentmarks.find({'$and': [{"english_marks": {'$gt': 50}}, {"science_marks": {'$gt': 50}}, {"maths_marks": {'$gt': 50}}]}, {"name": 1, id: 0})
{
  "name": "Vanu"
}
{
  "name": "Aruli"
}
{
  "name": "Shayu"
}
{
  "name": "Luck"
}
{
  "name": "Gva"
}

> db.studentmarks.find({'$and': [{"english_marks": {'$gt': 50}}, {"maths_marks": {'$lt': 50}}]}, {"name": 1, id: 0})
2019-01-16T10:57:10.101+0530 E QUERY [thread1] SyntaxError: expected expression, got ',', @ (shell):1:82
> db.studentmarks.find({'$and': [{"english_marks": {'$gt': 50}}, {"maths_marks": {'$lt': 50}}]}, {"name": 1, id: 0})
{
  "name": "Kumaran"
}
{
  "name": "Raam"
}

```

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}}]}, {"name": 1, _id: 0})
```

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



>  
db.studentmarks.insert({"name":"John","maths\_marks":87,"english\_marks":23})

```

> db.studentmarks.insert({"name":"John","maths_marks":87,"english_marks":23})
WriteResult({"nInserted": 1 })

```

Name	Maths	English	Science
Arul	78	65	80
Shayu	80	76	65
Kumaran	52	73	84
Lucky	68	90	45
Gva	55	50	50

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

>  
db.studentmarks.update({"name":"John"},{\$rename:{"english\_marks":"science\_marks"}})

```

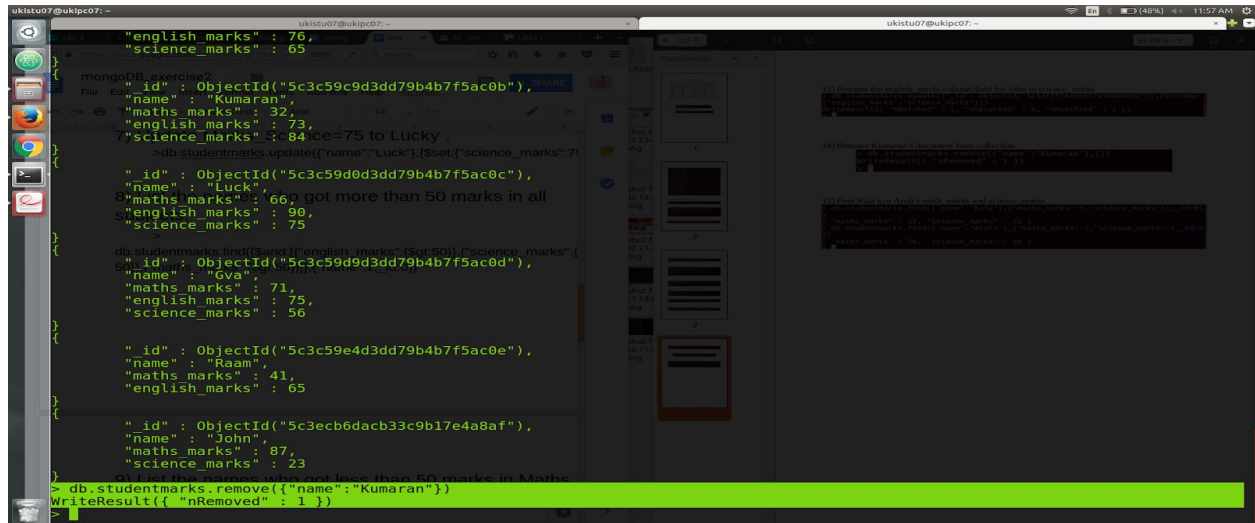
> db.studentmarks.update({"name":"John"},{$rename:{"english_marks":"science_marks"}})
WriteResult({"nMatched": 1, "nUpserted": 0, "nModified": 1 })

```

Name	Maths	English	Science
Arul	78	65	80
Shayu	80	76	65
Kumaran	52	73	84
Lucky	68	90	45
Gva	55	50	50

## 14) Remove Kumaran's document from collection

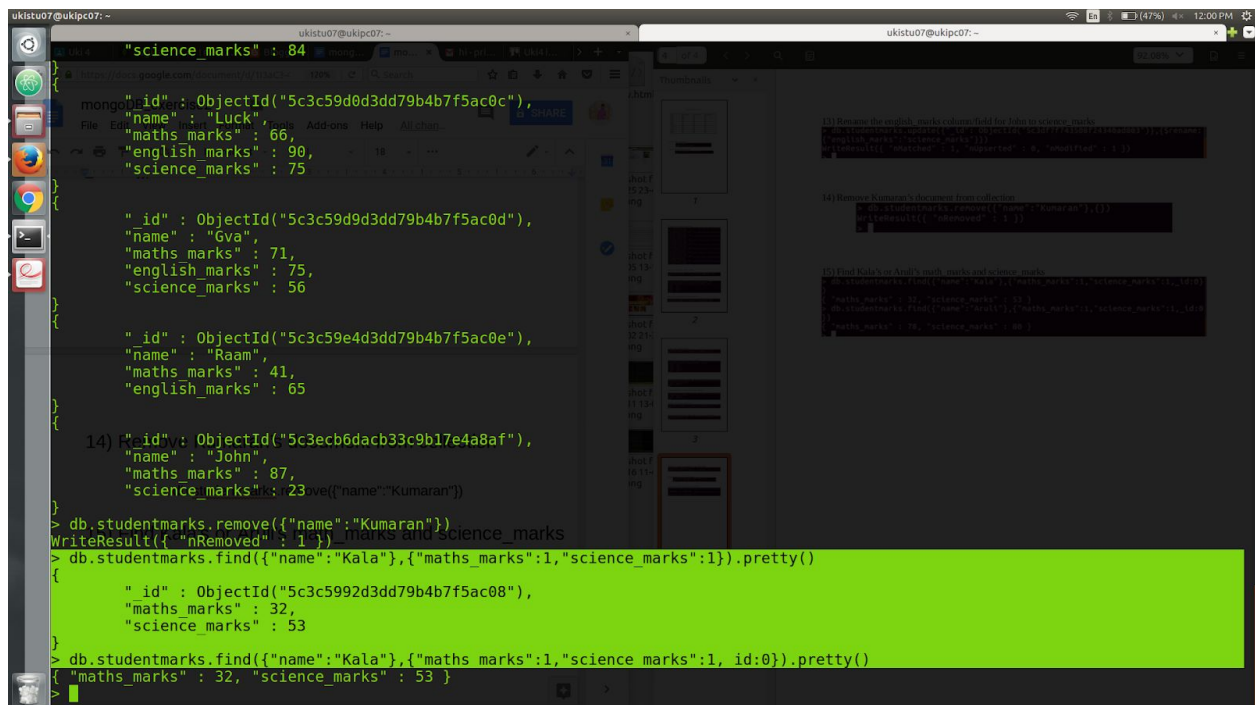
```
> db.studentmarks.remove({"name":"Kumaran"})
```



```
mongosh> use studentmarks
studentmarks> find()
{
  "_id" : ObjectId("5c3c59c9d3dd79b4b7f5ac0b"),
  "name" : "Kumaran",
  "maths_marks" : 32,
  "english_marks" : 73,
  "science_marks" : 84
}
{
  "_id" : ObjectId("5c3c59d0d3dd79b4b7f5ac0d"),
  "name" : "Luck",
  "maths_marks" : 66,
  "english_marks" : 90,
  "science_marks" : 75
}
{
  "_id" : ObjectId("5c3c59d9d3dd79b4b7f5ac0e"),
  "name" : "Gva",
  "maths_marks" : 71,
  "english_marks" : 75,
  "science_marks" : 56
}
{
  "_id" : ObjectId("5c3c59e4d3dd79b4b7f5ac0e"),
  "name" : "Raam",
  "maths_marks" : 41,
  "english_marks" : 65
}
{
  "_id" : ObjectId("5c3ecb6dacb33c9b17e4a8af"),
  "name" : "John",
  "maths_marks" : 87,
  "science_marks" : 23
}
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"}]}, {"maths_marks":1,"science_marks":1}).pretty()
```



```
mongosh> use studentmarks
studentmarks> find()
{
  "_id" : ObjectId("5c3c59c9d3dd79b4b7f5ac0b"),
  "name" : "Luck",
  "maths_marks" : 66,
  "english_marks" : 90,
  "science_marks" : 75
}
{
  "_id" : ObjectId("5c3c59d9d3dd79b4b7f5ac0e"),
  "name" : "Gva",
  "maths_marks" : 71,
  "english_marks" : 75,
  "science_marks" : 56
}
{
  "_id" : ObjectId("5c3c59e4d3dd79b4b7f5ac0e"),
  "name" : "Raam",
  "maths_marks" : 41,
  "english_marks" : 65
}
{
  "_id" : ObjectId("5c3ecb6dacb33c9b17e4a8af"),
  "name" : "John",
  "maths_marks" : 87,
  "science_marks" : 23
}
studentmarks> remove({"name":"Kumaran"})
WriteResult({ "nRemoved" : 1 })
studentmarks> find({"name":"Kala"}, {"maths_marks":1,"science_marks":1}).pretty()
{
  "_id" : ObjectId("5c3c5992d3dd79b4b7f5ac08"),
  "maths_marks" : 32,
  "science_marks" : 53
}
studentmarks> find({"name":"Kala"}, {"maths_marks":1,"science_marks":1, id:0}).pretty()
{
  "maths_marks" : 32, "science_marks" : 53
}
```



