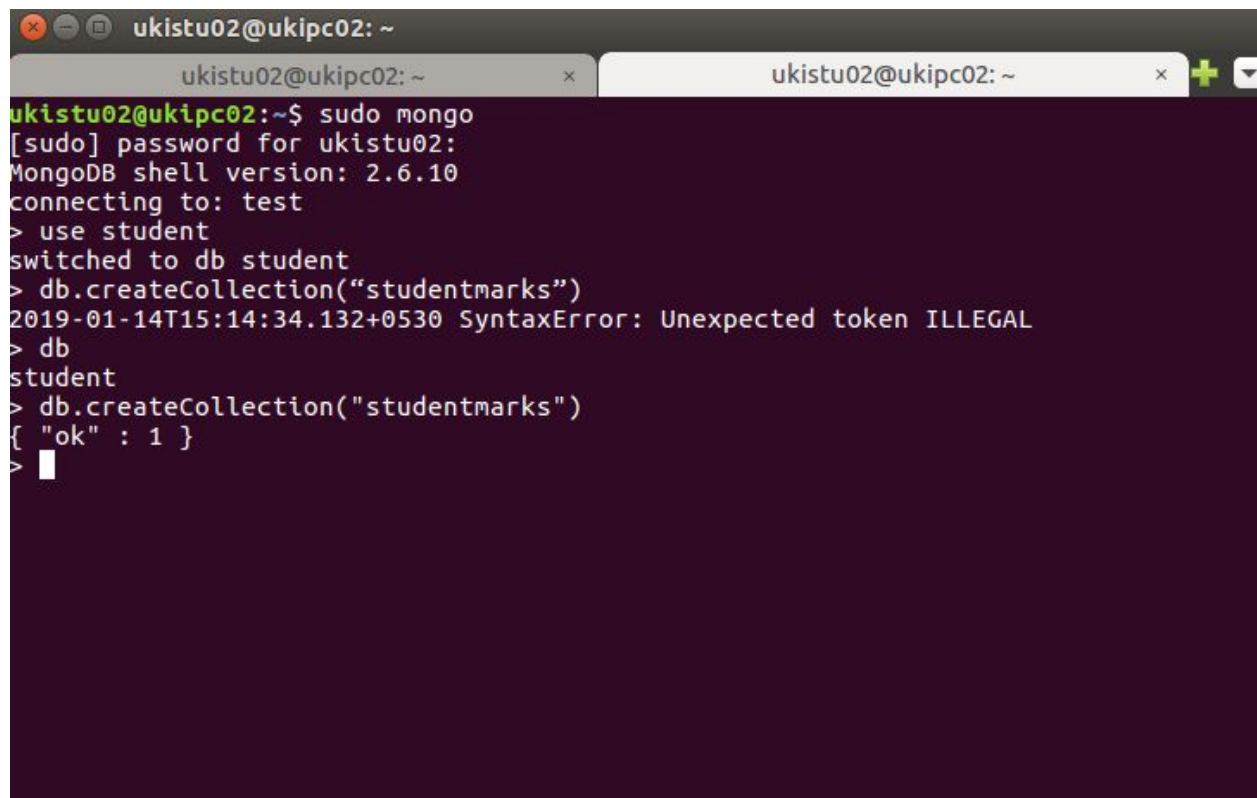


1. Create a Database called student?

ANS: >use student

Screen shot :

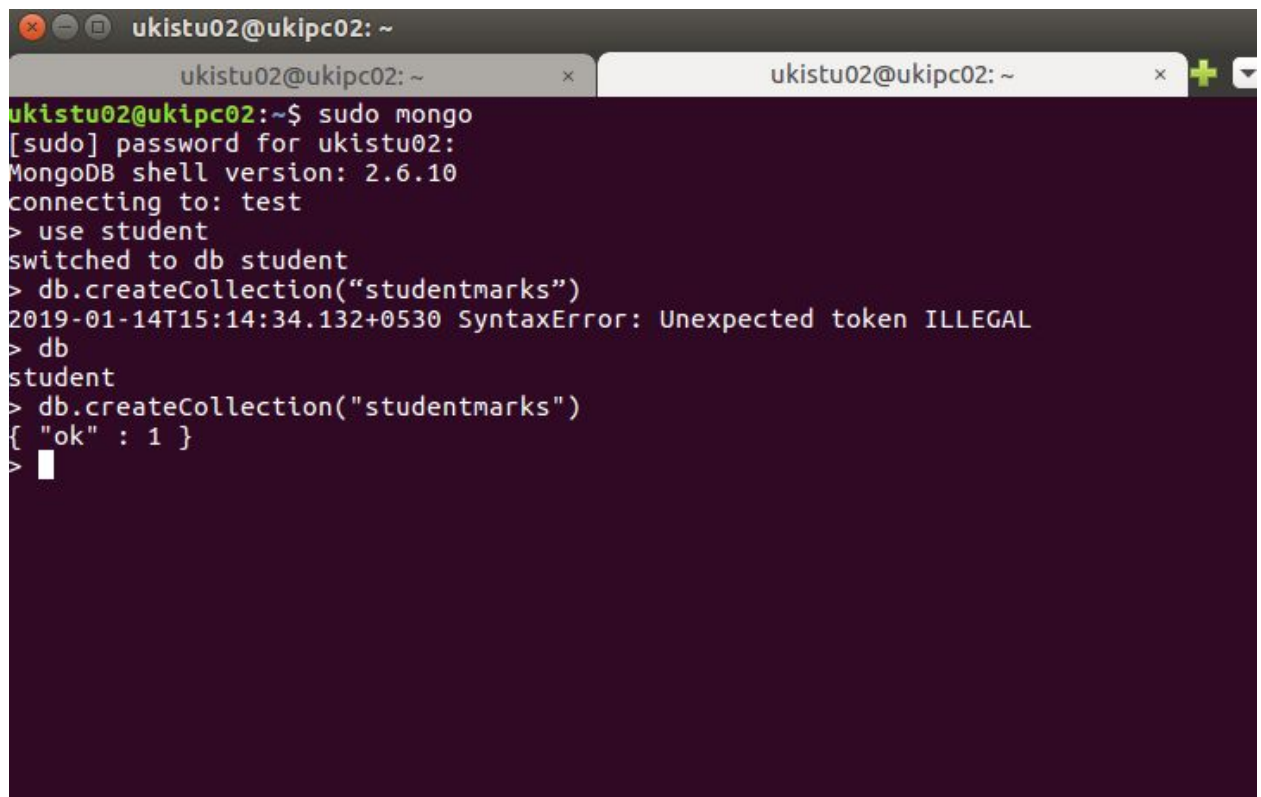
A terminal window with a dark purple background. The title bar shows two tabs, both labeled 'ukistu02@ukipc02: ~'. The terminal content shows a user running 'sudo mongo', entering a password, and connecting to the 'test' database. They then switch to the 'student' database. The first attempt to create a collection 'studentmarks' fails with a 'SyntaxError: Unexpected token ILLEGAL' message. After pressing 'db', the command is re-executed successfully, returning '{ "ok" : 1 }'.

```
ukistu02@ukipc02:~$ sudo mongo
[sudo] password for ukistu02:
MongoDB shell version: 2.6.10
connecting to: test
> use student
switched to db student
> db.createCollection("studentmarks")
2019-01-14T15:14:34.132+0530 SyntaxError: Unexpected token ILLEGAL
> db
student
> db.createCollection("studentmarks")
{ "ok" : 1 }
>
```

2. Create a collection called studentmarks?

ANS: >db.createCollection("studentmarks")

Screen shot:

A terminal window titled 'ukistu02@ukipc02: ~' with two tabs. The active tab shows the following commands and output:

```
ukistu02@ukipc02:~$ sudo mongo
[sudo] password for ukistu02:
MongoDB shell version: 2.6.10
connecting to: test
> use student
switched to db student
> db.createCollection("studentmarks")
2019-01-14T15:14:34.132+0530 SyntaxError: Unexpected token ILLEGAL
> db
student
> db.createCollection("studentmarks")
{ "ok" : 1 }
>
```

3. Create the documents listed in above table.?

ANS:

```
>db.studentmarks.insert({"name":"Mala","maths_marks":45,"english_marks":53,"science_
_marks":72})
WriteResult({ "nInserted" : 1 })
>
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":"Lucky","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 })

```

Screen shot:

```

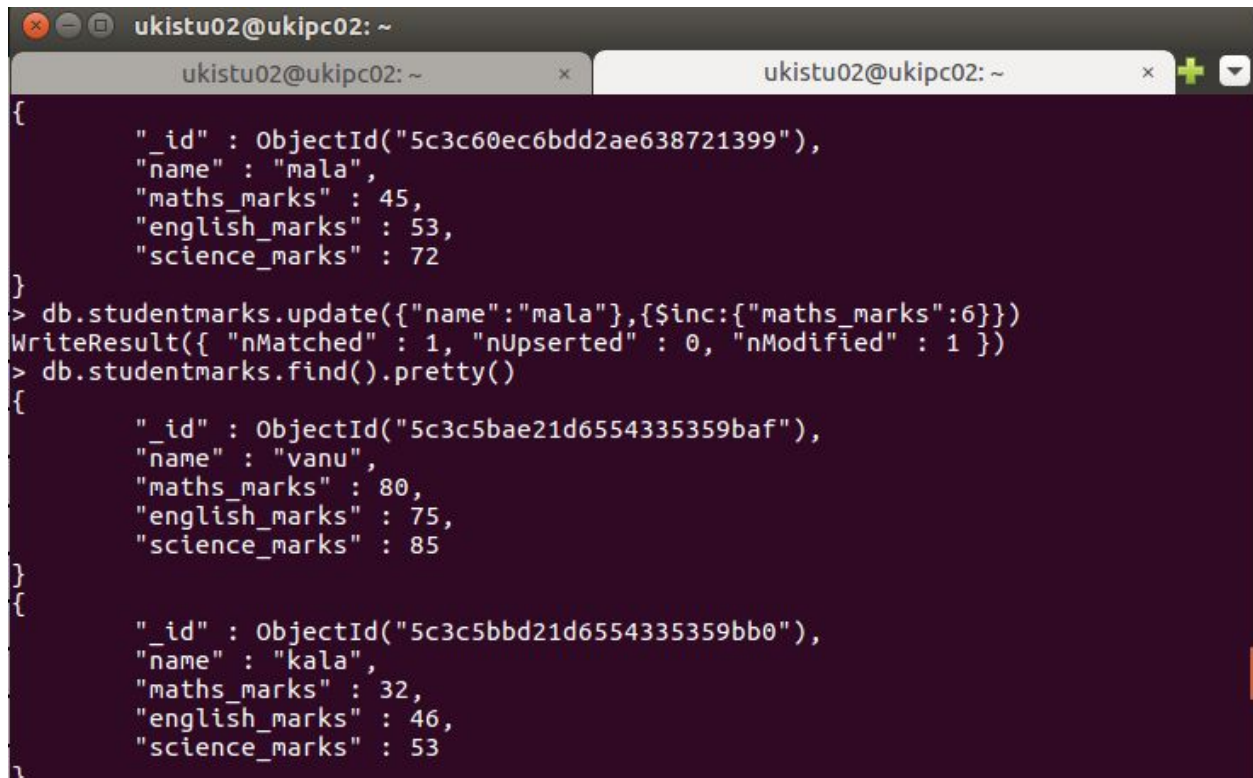
> db.studentmarks.insert({"name":"Mala","maths_marks":45,"english_marks":53,"science_marks":72})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name":"Vanu","maths_marks":80,"english_marks":75,"science_marks":85})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name":"Kala","maths_marks":32,"english_marks":46,"science_marks":53})
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":"Lucky","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 })

```

4. Increase the maths marks of Mala by 6 marks?

ANS: > db.studentmarks.update({"name":"Mala"},{\$inc:{"maths_marks":6}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })

Screen shot:

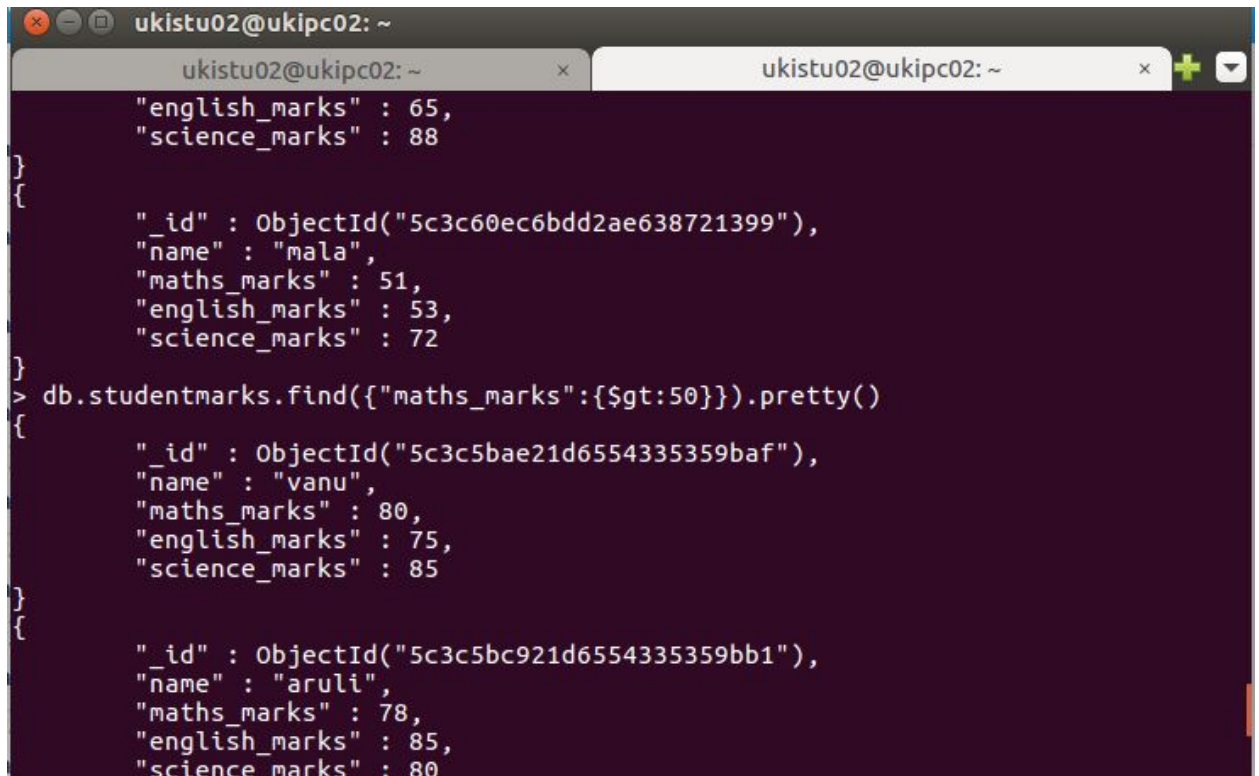


```
ukistu02@ukipc02: ~  
ukistu02@ukipc02: ~  
{  
  "_id" : ObjectId("5c3c60ec6bdd2ae638721399"),  
  "name" : "mala",  
  "maths_marks" : 45,  
  "english_marks" : 53,  
  "science_marks" : 72  
}  
> db.studentmarks.update({"name":"mala"},{$inc:{"maths_marks":6}})  
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })  
> db.studentmarks.find().pretty()  
{  
  "_id" : ObjectId("5c3c5bae21d6554335359baf"),  
  "name" : "vanu",  
  "maths_marks" : 80,  
  "english_marks" : 75,  
  "science_marks" : 85  
}  
{  
  "_id" : ObjectId("5c3c5bbd21d6554335359bb0"),  
  "name" : "kala",  
  "maths_marks" : 32,  
  "english_marks" : 46,  
  "science_marks" : 53  
}
```

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

ANS: >db.studentmarks.find({"maths_marks":{\$gt:50}}).pretty()

Screen shot:

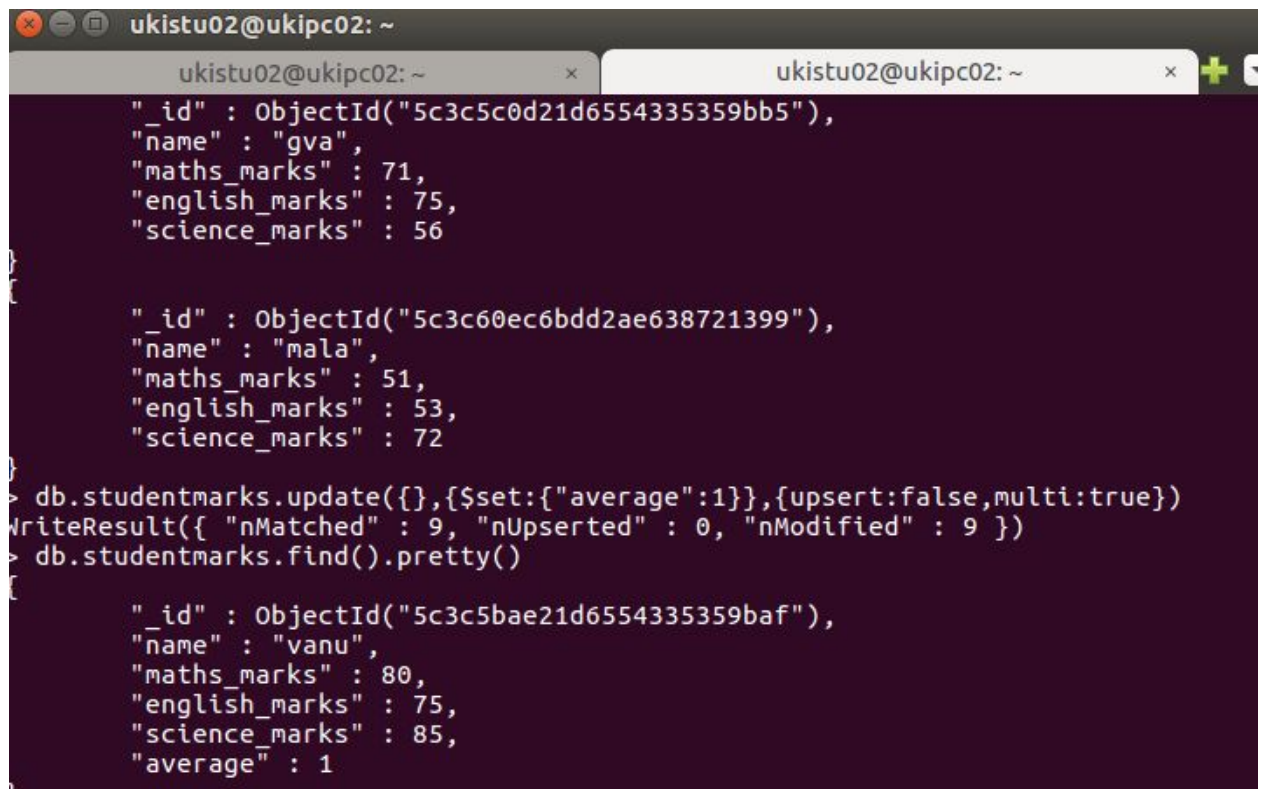


```
ukistu02@ukipc02: ~  
ukistu02@ukipc02: ~  
"english_marks" : 65,  
"science_marks" : 88  
}  
{  
  "_id" : ObjectId("5c3c60ec6bdd2ae638721399"),  
  "name" : "mala",  
  "maths_marks" : 51,  
  "english_marks" : 53,  
  "science_marks" : 72  
}  
> db.studentmarks.find({"maths_marks":{$gt:50}}).pretty()  
{  
  "_id" : ObjectId("5c3c5bae21d6554335359baf"),  
  "name" : "vanu",  
  "maths_marks" : 80,  
  "english_marks" : 75,  
  "science_marks" : 85  
}  
{  
  "_id" : ObjectId("5c3c5bc921d6554335359bb1"),  
  "name" : "aruli",  
  "maths_marks" : 78,  
  "english_marks" : 85,  
  "science_marks" : 80
```

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

ANS: >db.studentmarks.update({},{\$set:{"average":1}},{upsert:false,multi:true})

Screen shot:

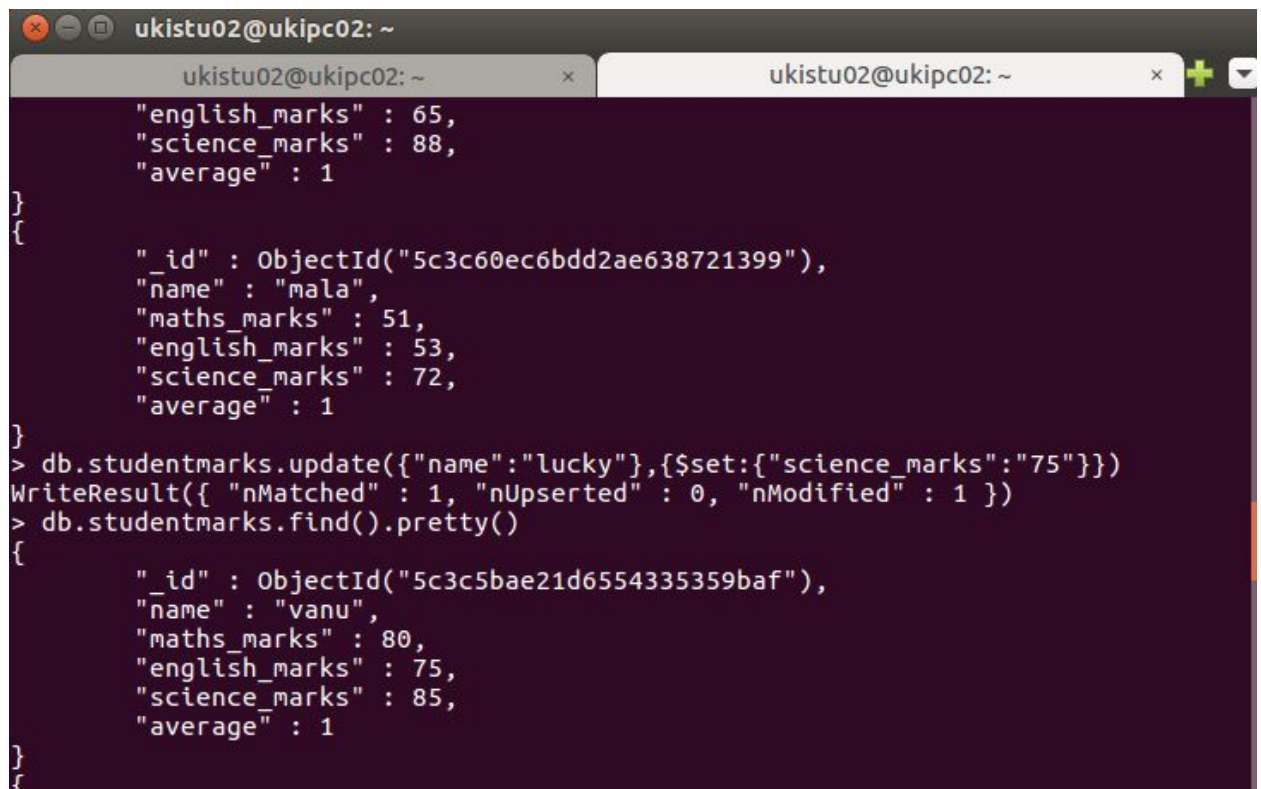


```
ukistu02@ukipc02: ~  
ukistu02@ukipc02: ~  
  "_id" : ObjectId("5c3c5c0d21d6554335359bb5"),  
  "name" : "gva",  
  "maths_marks" : 71,  
  "english_marks" : 75,  
  "science_marks" : 56  
}  
{  
  "_id" : ObjectId("5c3c60ec6bdd2ae638721399"),  
  "name" : "mala",  
  "maths_marks" : 51,  
  "english_marks" : 53,  
  "science_marks" : 72  
}  
> db.studentmarks.update({},{$set:{"average":1}},{upsert:false,multi:true})  
WriteResult({ "nMatched" : 9, "nUpserted" : 0, "nModified" : 9 })  
> db.studentmarks.find().pretty()  
{  
  "_id" : ObjectId("5c3c5bae21d6554335359baf"),  
  "name" : "vanu",  
  "maths_marks" : 80,  
  "english_marks" : 75,  
  "science_marks" : 85,  
  "average" : 1  
}
```

7. Update Marks_Science=75 to Lucky .?

ANS: >db.studentmarks.update({"name":"lucky"},{\$set:{"science_marks":"75"}})

Screen shot:



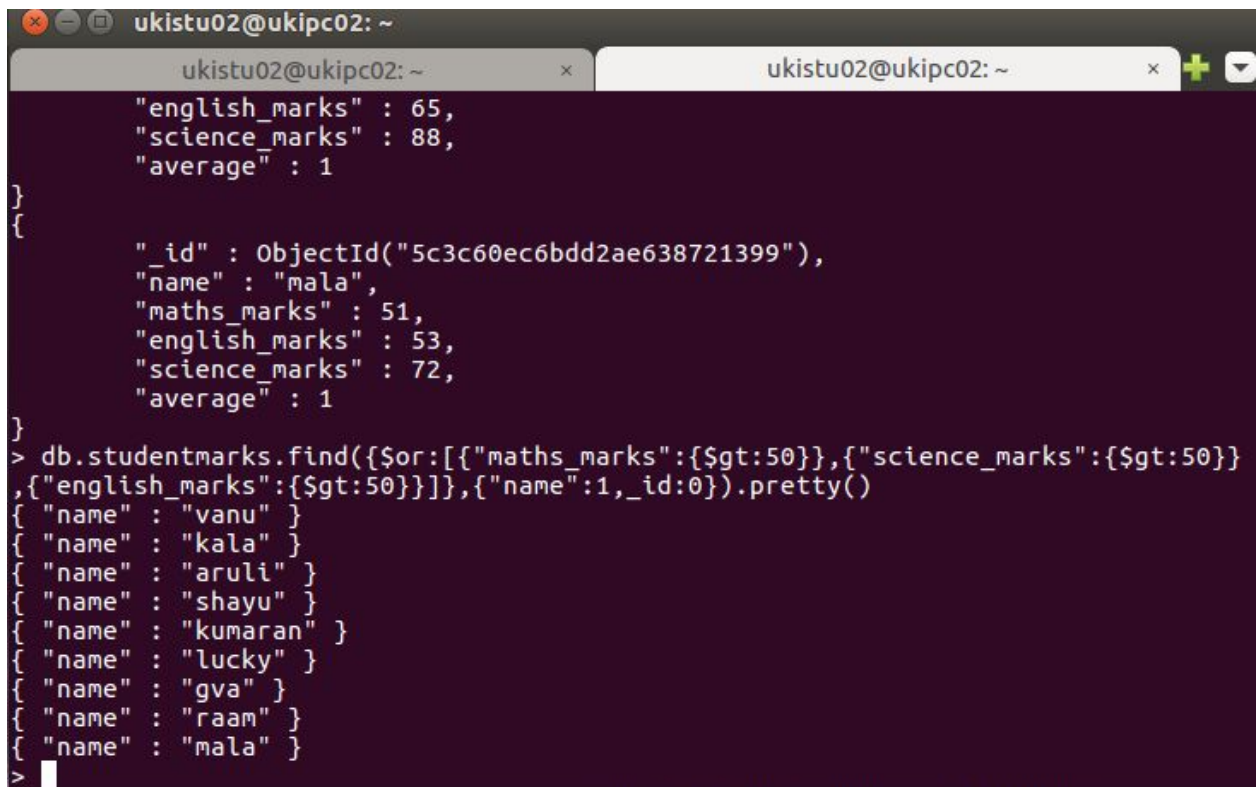
```
ukistu02@ukipc02: ~  
ukistu02@ukipc02: ~  
  "english_marks" : 65,  
  "science_marks" : 88,  
  "average" : 1  
}  
{  
  "_id" : ObjectId("5c3c60ec6bdd2ae638721399"),  
  "name" : "mala",  
  "maths_marks" : 51,  
  "english_marks" : 53,  
  "science_marks" : 72,  
  "average" : 1  
}  
> db.studentmarks.update({"name":"lucky"},{$set:{"science_marks":"75"}})  
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })  
> db.studentmarks.find().pretty()  
{  
  "_id" : ObjectId("5c3c5bae21d6554335359baf"),  
  "name" : "vanu",  
  "maths_marks" : 80,  
  "english_marks" : 75,  
  "science_marks" : 85,  
  "average" : 1  
}  
}
```

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

ANS:

```
>db.studentmarks.find({$or:[{"maths_marks":{$gt:50}},{"science_marks":{$gt:50}},{"english_marks":{$gt:50}}]},{"name":1,_id:0}).pretty()
```

Screen shot:

A terminal window with a dark purple background and white text. The window title is 'ukistu02@ukipc02: ~'. It shows a MongoDB shell session. The first part shows a document with 'english_marks': 65, 'science_marks': 88, and 'average': 1. Then, another document for 'mala' is shown with 'maths_marks': 51, 'english_marks': 53, 'science_marks': 72, and 'average': 1. Finally, a query is executed: > db.studentmarks.find({\$or:[{"maths_marks":{\$gt:50}}, {"science_marks":{\$gt:50}}, {"english_marks":{\$gt:50}}]}, {"name":1, _id:0}).pretty(). The result is a list of names: vanu, kala, aruli, shayu, kumaran, lucky, gva, raam, and mala.

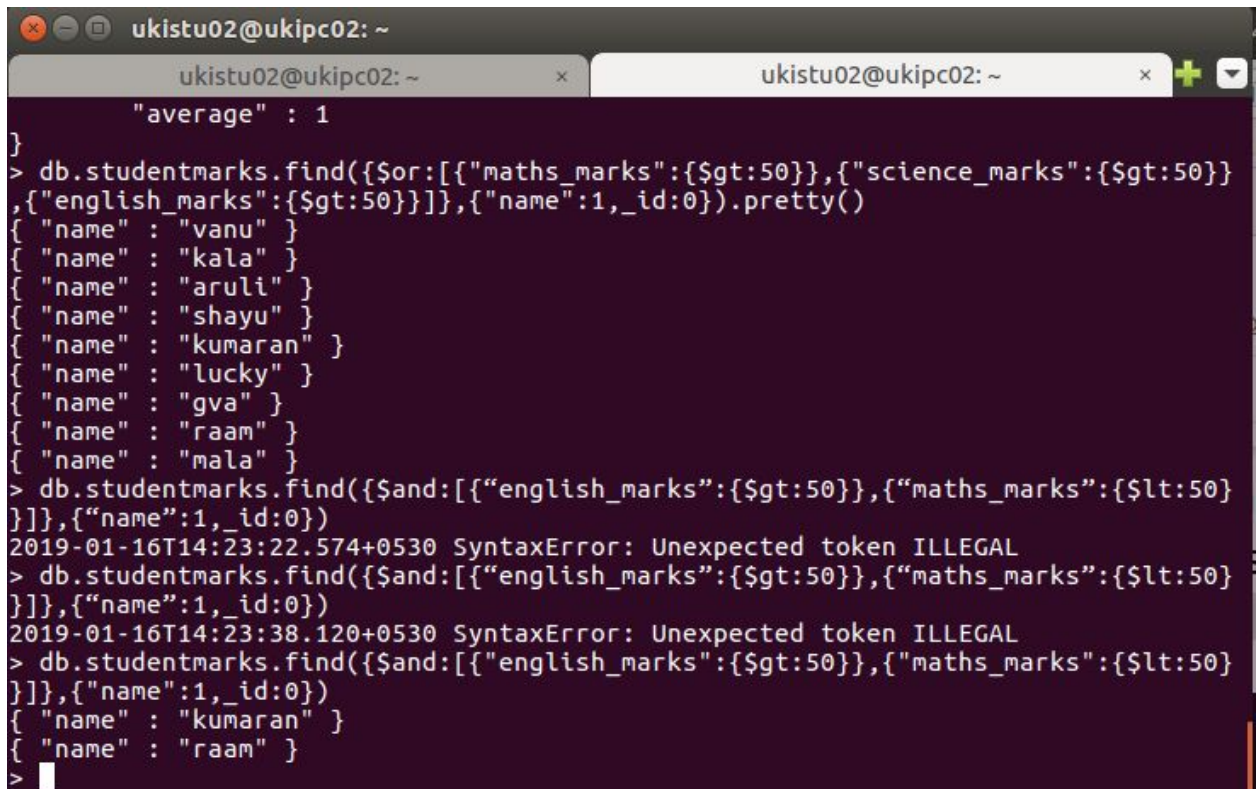
```
ukistu02@ukipc02: ~
{
  "english_marks" : 65,
  "science_marks" : 88,
  "average" : 1
}
{
  "_id" : ObjectId("5c3c60ec6bdd2ae638721399"),
  "name" : "mala",
  "maths_marks" : 51,
  "english_marks" : 53,
  "science_marks" : 72,
  "average" : 1
}
> db.studentmarks.find({$or:[{"maths_marks":{$gt:50}}, {"science_marks":{$gt:50}}, {"english_marks":{$gt:50}}]}, {"name":1, _id:0}).pretty()
{ "name" : "vanu" }
{ "name" : "kala" }
{ "name" : "aruli" }
{ "name" : "shayu" }
{ "name" : "kumaran" }
{ "name" : "lucky" }
{ "name" : "gva" }
{ "name" : "raam" }
{ "name" : "mala" }
>
```

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

ANS:

```
>db.studentmarks.find({$and:[{"english_marks":{$gt:50}}, {"maths_marks":{$lt:50}}]}, {"name":1, _id:0})
```


Screen shot:



A terminal window with a dark background and light-colored text. The window title is 'ukistu02@ukipc02: ~'. There are two tabs open, both with the same title. The terminal shows a series of MongoDB commands and their outputs. The first command is a query for students with marks greater than 50 in both maths and science, returning a list of names. The second command is a query for students with marks greater than 50 in English and less than 50 in maths, which results in a 'SyntaxError: Unexpected token ILLEGAL' message. The third command is a query for students with marks greater than 50 in English and less than 50 in maths, which also results in a 'SyntaxError: Unexpected token ILLEGAL' message. The fourth command is a query for students with marks greater than 50 in English and less than 50 in maths, which returns a list of names.

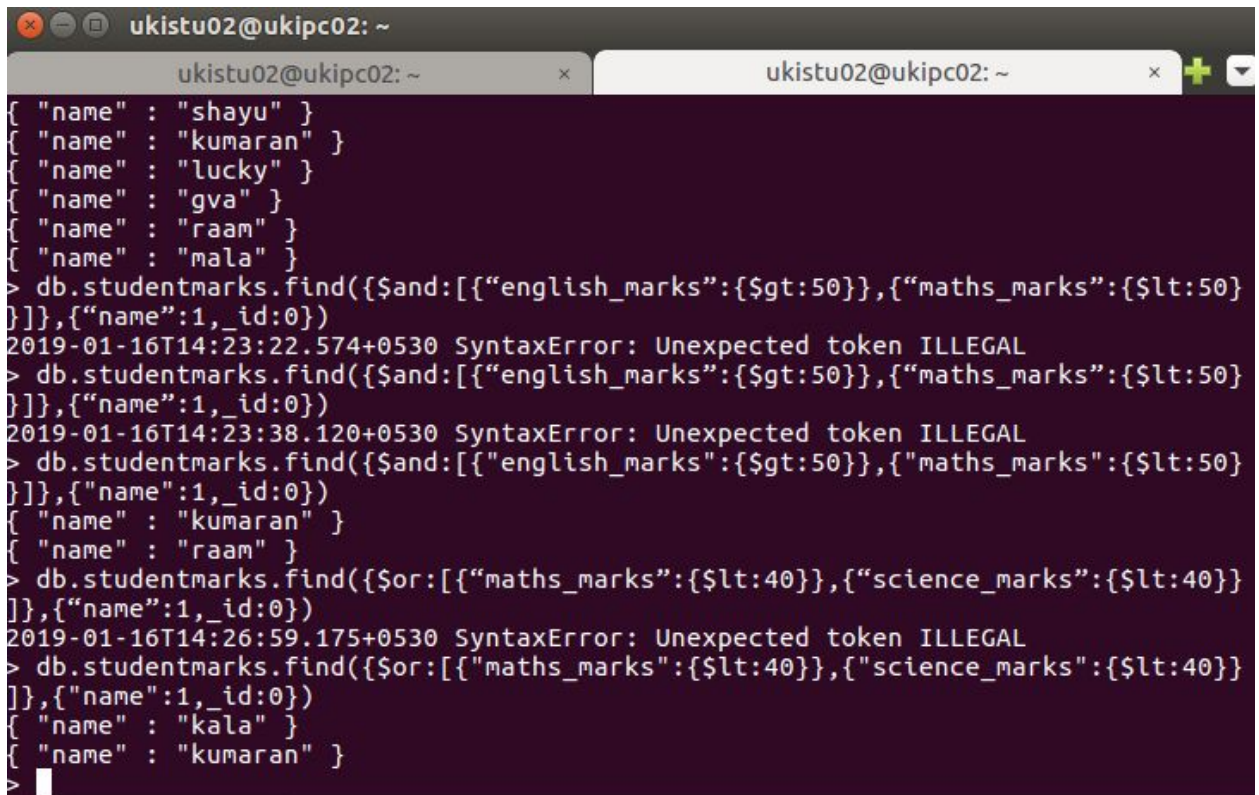
```
ukistu02@ukipc02: ~
"average" : 1
}
> db.studentmarks.find({$or:[{"maths_marks":{$gt:50}},{"science_marks":{$gt:50}}
,{"english_marks":{$gt:50}}]},{"name":1,_id:0}).pretty()
{ "name" : "vanu" }
{ "name" : "kala" }
{ "name" : "aruli" }
{ "name" : "shayu" }
{ "name" : "kumaran" }
{ "name" : "lucky" }
{ "name" : "gva" }
{ "name" : "raam" }
{ "name" : "mala" }
> db.studentmarks.find({$and:[{"english_marks":{$gt:50}},{"maths_marks":{$lt:50}
]}]},{"name":1,_id:0})
2019-01-16T14:23:22.574+0530 SyntaxError: Unexpected token ILLEGAL
> db.studentmarks.find({$and:[{"english_marks":{$gt:50}},{"maths_marks":{$lt:50}
]}]},{"name":1,_id:0})
2019-01-16T14:23:38.120+0530 SyntaxError: Unexpected token ILLEGAL
> 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.?

ANS:

```
>db.studentmarks.find({$or:[{"maths_marks":{$lt:40}},{"science_marks":{$lt:40}}]},{"name":1,_id:0})
```

Screen shot:



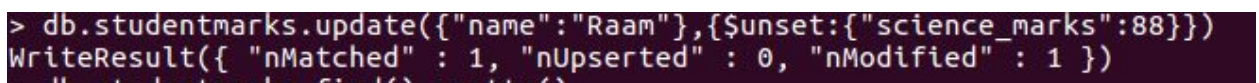
```
ukistu02@ukipc02: ~
ukistu02@ukipc02: ~
{ "name" : "shayu" }
{ "name" : "kumaran" }
{ "name" : "lucky" }
{ "name" : "gva" }
{ "name" : "raam" }
{ "name" : "mala" }
> db.studentmarks.find({$and:[{"english_marks":{$gt:50}},{"maths_marks":{$lt:50}}]},{"name":1,_id:0})
2019-01-16T14:23:22.574+0530 SyntaxError: Unexpected token ILLEGAL
> db.studentmarks.find({$and:[{"english_marks":{$gt:50}},{"maths_marks":{$lt:50}}]},{"name":1,_id:0})
2019-01-16T14:23:38.120+0530 SyntaxError: Unexpected token ILLEGAL
> db.studentmarks.find({$and:[{"english_marks":{$gt:50}},{"maths_marks":{$lt:50}}]},{"name":1,_id:0})
{ "name" : "kumaran" }
{ "name" : "raam" }
> db.studentmarks.find({$or:[{"maths_marks":{$lt:40}},{"science_marks":{$lt:40}}]},{"name":1,_id:0})
2019-01-16T14:26:59.175+0530 SyntaxError: Unexpected token ILLEGAL
> db.studentmarks.find({$or:[{"maths_marks":{$lt:40}},{"science_marks":{$lt:40}}]},{"name":1,_id:0})
{ "name" : "kala" }
{ "name" : "kumaran" }
>
```

11. Remove Science column/field for Raam?

ANS:

```
>db.studentmarks.update({"name":"Raam"},{$unset:{"science_marks":88}})
:88}}
```

Screen shot:



```
> db.studentmarks.update({"name":"Raam"},{$unset:{"science_marks":88}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
db.studentmarks.find().pretty()
```

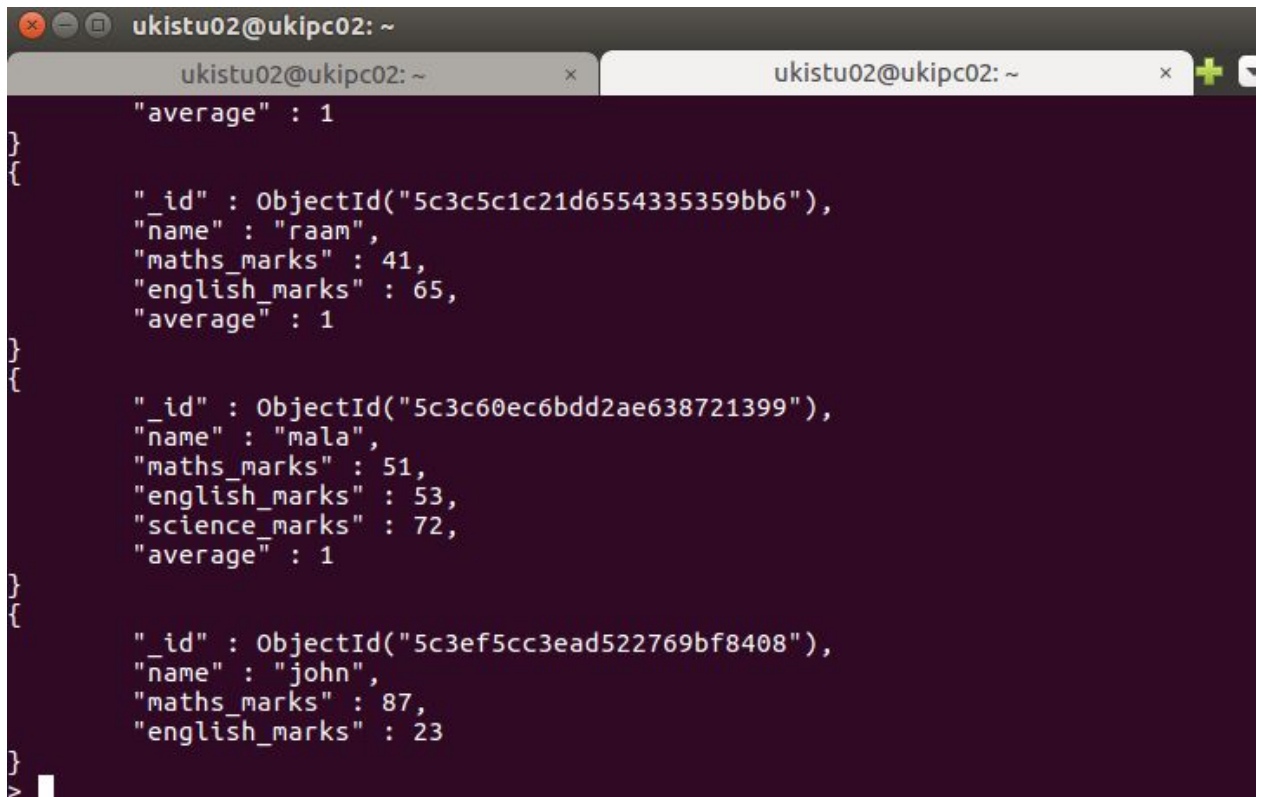
```
ukistu02@ukipc02: ~  
ukistu02@ukipc02: ~ x ukistu02@ukipc02: ~ x  
{  
  "_id" : ObjectId("5c3c5c0d21d6554335359bb5"),  
  "name" : "gva",  
  "maths_marks" : 71,  
  "english_marks" : 75,  
  "science_marks" : 56,  
  "average" : 1  
}  
{  
  "_id" : ObjectId("5c3c5c1c21d6554335359bb6"),  
  "name" : "raam",  
  "maths_marks" : 41,  
  "english_marks" : 65,  
  "average" : 1  
}  
{  
  "_id" : ObjectId("5c3c60ec6bdd2ae638721399"),  
  "name" : "mala",  
  "maths_marks" : 51,  
  "english_marks" : 53,  
  "science_marks" : 72,  
  "average" : 1  
}  
>
```

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

ANS:

```
>db.studentmarks.insert({"name":"john","maths_marks":87,"english_marks":23})
```

Screen shot:

A terminal window with a dark purple background and white text. The window title is 'ukistu02@ukipc02: ~'. The terminal shows a JSON array of three student records. The first record is for 'raam' with maths_marks: 41, english_marks: 65, and average: 1. The second record is for 'mala' with maths_marks: 51, english_marks: 53, science_marks: 72, and average: 1. The third record is for 'john' with maths_marks: 87 and english_marks: 23. The JSON is formatted with indentation and line breaks.

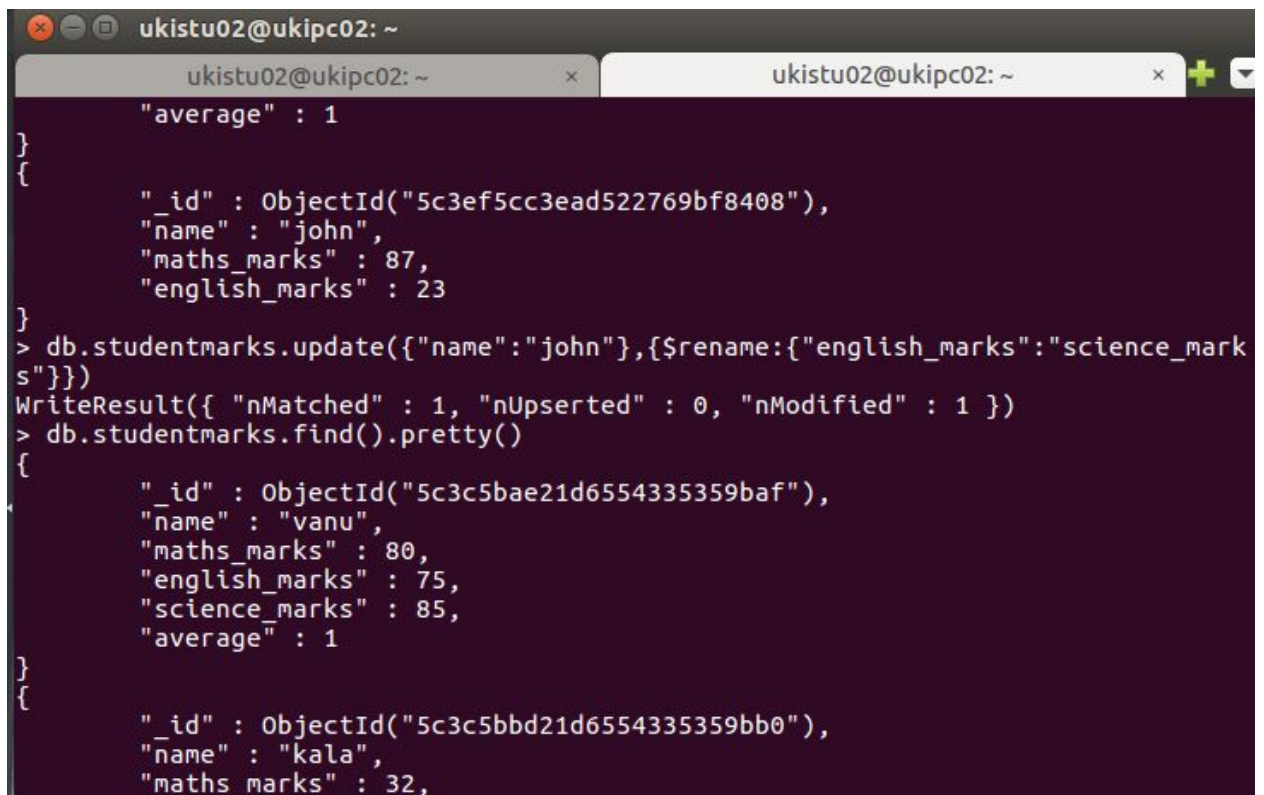
```
ukistu02@ukipc02: ~  
ukistu02@ukipc02: ~  
  "average" : 1  
}  
{  
  "_id" : ObjectId("5c3c5c1c21d6554335359bb6"),  
  "name" : "raam",  
  "maths_marks" : 41,  
  "english_marks" : 65,  
  "average" : 1  
}  
{  
  "_id" : ObjectId("5c3c60ec6bdd2ae638721399"),  
  "name" : "mala",  
  "maths_marks" : 51,  
  "english_marks" : 53,  
  "science_marks" : 72,  
  "average" : 1  
}  
{  
  "_id" : ObjectId("5c3ef5cc3ead522769bf8408"),  
  "name" : "john",  
  "maths_marks" : 87,  
  "english_marks" : 23  
}  
>
```

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

ANS:

```
>db.studentmarks.update({"name":"john"},{$rename:{"english_marks"  
:"science_marks"}})
```

Screen shot:

A terminal window with a dark background and light-colored text. The window title is 'ukistu02@ukipc02: ~'. There are two tabs open, both with the same title. The terminal shows a MongoDB shell session. It starts with a document for 'john' with 'maths_marks' of 87 and 'english_marks' of 23, and an 'average' of 1. Then, the command 'db.studentmarks.update({"name":"john"},{\$rename:{"english_marks":"science_marks"}})' is executed, resulting in 'WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })'. Next, 'db.studentmarks.find().pretty()' is run, displaying two documents: one for 'vanu' with 'maths_marks' of 80, 'english_marks' of 75, 'science_marks' of 85, and an 'average' of 1; and another for 'kala' with 'maths_marks' of 32.

```
ukistu02@ukipc02: ~
{
  "average" : 1
}
{
  "_id" : ObjectId("5c3ef5cc3ead522769bf8408"),
  "name" : "john",
  "maths_marks" : 87,
  "english_marks" : 23
}
> db.studentmarks.update({"name":"john"},{$rename:{"english_marks":"science_marks"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find().pretty()
{
  "_id" : ObjectId("5c3c5bae21d6554335359baf"),
  "name" : "vanu",
  "maths_marks" : 80,
  "english_marks" : 75,
  "science_marks" : 85,
  "average" : 1
}
{
  "_id" : ObjectId("5c3c5bbd21d6554335359bb0"),
  "name" : "kala",
  "maths_marks" : 32,
```

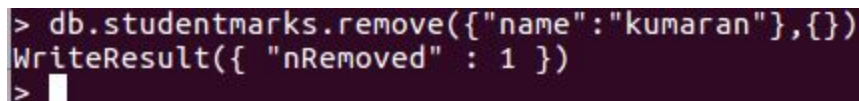
14. Remove Kumaran's document from collection?

ANS:

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

```
WriteResult({ "nRemoved" : 1 })
```

Screen shot:

A terminal window showing the execution of the MongoDB 'remove' command. The command is '> db.studentmarks.remove({"name":"kumaran"},{})', and the output is 'WriteResult({ "nRemoved" : 1 })'.

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

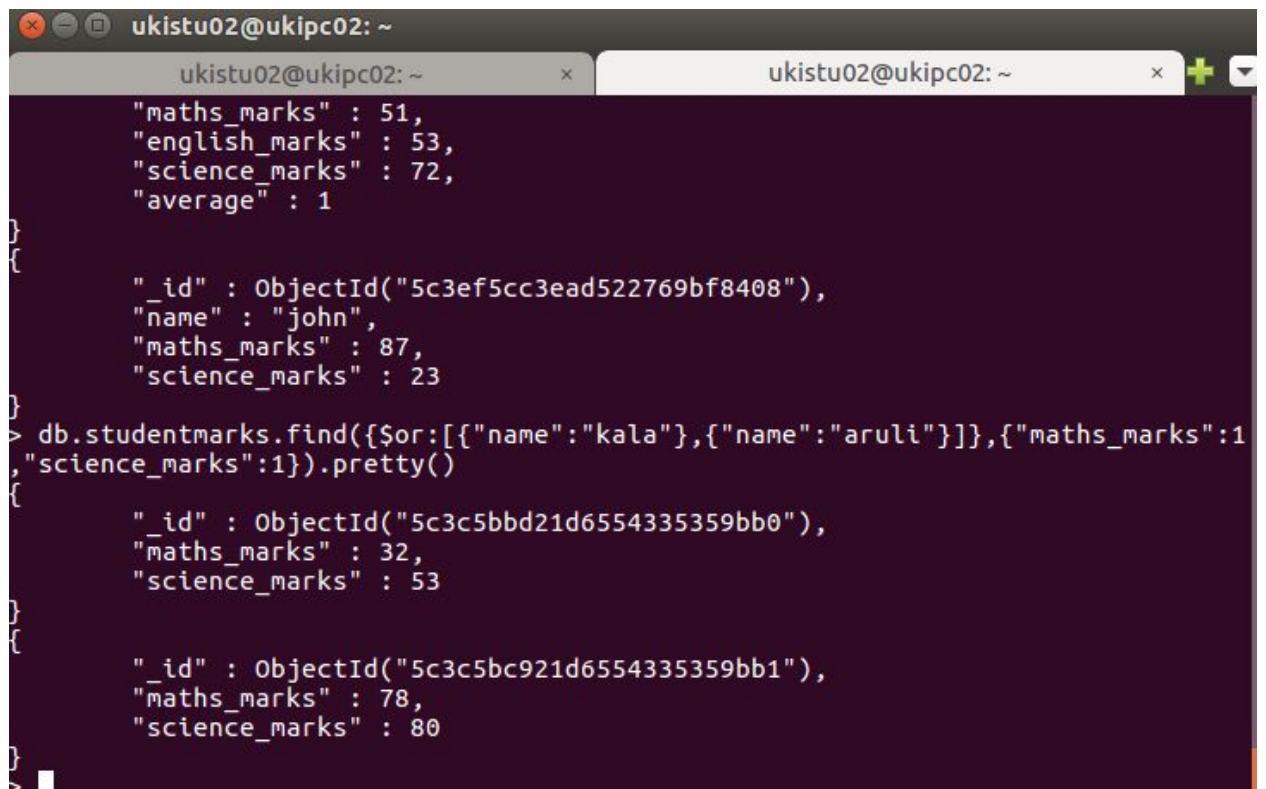
15. Find Kala's or Aruli's math_marks and science_marks?

ANS:

```
>db.studentmarks.find({$or:[{"name":"kala"},{"name":"aruli"}]},{"maths_marks":1,"science_marks":1}).pretty()
```

```
{
  "_id" : ObjectId("5c3c5ab0a04eedf995dba9ee"),
  "maths_marks" : 32,
  "science_marks" : 53
}
{
  "_id" : ObjectId("5c3c5b4fa04eedf995dba9ef"),
  "maths_marks" : 78,
  "science_marks" : 80
}
```


Screen shot:

A terminal window with a dark purple background and white text. The window title is 'ukistu02@ukipc02: ~'. It shows the output of a MongoDB query. The first part shows a document with marks for 'maths', 'english', 'science', and an 'average'. The second part shows the result of a query filtering by name and marks, returning two documents for 'kala' and 'aruli'.

```
ukistu02@ukipc02: ~  
ukistu02@ukipc02: ~  
  "maths_marks" : 51,  
  "english_marks" : 53,  
  "science_marks" : 72,  
  "average" : 1  
}  
{  
  "_id" : ObjectId("5c3ef5cc3ead522769bf8408"),  
  "name" : "john",  
  "maths_marks" : 87,  
  "science_marks" : 23  
}  
> db.studentmarks.find({$or:[{"name":"kala"}, {"name":"aruli"}]}, {"maths_marks":1  
, "science_marks":1}).pretty()  
{  
  "_id" : ObjectId("5c3c5bbd21d6554335359bb0"),  
  "maths_marks" : 32,  
  "science_marks" : 53  
}  
{  
  "_id" : ObjectId("5c3c5bc921d6554335359bb1"),  
  "maths_marks" : 78,  
  "science_marks" : 80  
}
```