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})
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.update({"name":"mala"},{$set :{"name":"Mala"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find()
{ "_id" : ObjectId("6295c9b690c4b3e043142388"), "name" : "Mala", "maths_marks" : 45, "english_marks" : 53, "science_marks" : 72 }
{ "_id" : ObjectId("6295cab690c4b3e043142389"), "name" : "Vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85 }
{ "_id" : ObjectId("6295cb2890c4b3e04314238a"), "name" : "Kala", "maths_marks" : 32, "english_marks" : 46, "science_marks" : 53 }
{ "_id" : ObjectId("6295cb8490c4b3e04314238b"), "name" : "Aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80 }
{ "_id" : ObjectId("6295cbe390c4b3e04314238c"), "name" : "Shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65 }
{ "_id" : ObjectId("6295cc1490c4b3e04314238d"), "name" : "Kumaran", "maths_marks" : 32, "english_marks" : 73, "science_marks" : 84 }
{ "_id" : ObjectId("6295d0c690c4b3e04314238e"), "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})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.insert({"name":"Raam","maths_marks":41,"english_marks":65,"science_marks":88})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.find()
{ "_id" : ObjectId("6295c9b690c4b3e043142388"), "name" : "Mala", "maths_marks" : 45, "english_marks" : 53, "science_marks" : 72 }
{ "_id" : ObjectId("6295cab690c4b3e043142389"), "name" : "Vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85 }
{ "_id" : ObjectId("6295cb2890c4b3e04314238a"), "name" : "Kala", "maths_marks" : 32, "english_marks" : 46, "science_marks" : 53 }
{ "_id" : ObjectId("6295cb8490c4b3e04314238b"), "name" : "Aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80 }
{ "_id" : ObjectId("6295cbe390c4b3e04314238c"), "name" : "Shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65 }
{ "_id" : ObjectId("6295cc1490c4b3e04314238d"), "name" : "Kumaran", "maths_marks" : 32, "english_marks" : 73, "science_marks" : 84 }
{ "_id" : ObjectId("6295d0c690c4b3e04314238e"), "name" : "Lucky", "maths_marks" : 66, "english_marks" : 90, "science_marks" : 45 }
{ "_id" : ObjectId("6295d2e690c4b3e04314238f"), "name" : "Gva", "maths_marks" : 71, "english_marks" : 75, "science_marks" : 56 }
{ "_id" : ObjectId("6295d33490c4b3e043142390"), "name" : "Raam", "maths_marks" : 41, "english_marks" : 65, "science_marks" : 88 }
> db.studentmarks.update({"name":"mala"},"maths_marks":71,"english_marks":75,"science_marks":56})^C
```

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()
{ "_id" : ObjectId("6295c9b690c4b3e043142388"), "name" : "Mala", "maths_marks" : 51, "english_marks" : 53, "science_marks" : 72 }
{ "_id" : ObjectId("6295cab690c4b3e043142389"), "name" : "Vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85 }
{ "_id" : ObjectId("6295cb2890c4b3e04314238a"), "name" : "Kala", "maths_marks" : 32, "english_marks" : 46, "science_marks" : 53 }
{ "_id" : ObjectId("6295cb8490c4b3e04314238b"), "name" : "Aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80 }
{ "_id" : ObjectId("6295cbe390c4b3e04314238c"), "name" : "Shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65 }
{ "_id" : ObjectId("6295cc1490c4b3e04314238d"), "name" : "Kumaran", "maths_marks" : 32, "english_marks" : 73, "science_marks" : 84 }
{ "_id" : ObjectId("6295d0c690c4b3e04314238e"), "name" : "Lucky", "maths_marks" : 66, "english_marks" : 90, "science_marks" : 45 }
{ "_id" : ObjectId("6295d2e690c4b3e04314238f"), "name" : "Gva", "maths_marks" : 71, "english_marks" : 75, "science_marks" : 56 }
{ "_id" : ObjectId("6295d33490c4b3e043142390"), "name" : "Raam", "maths_marks" : 41, "english_marks" : 65, "science_marks" : 88 }
>
```

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

```
> db.studentmarks.find({"maths_marks":{$gt:50}})
{ "_id" : ObjectId("6295c9b690c4b3e043142388"), "name" : "Mala", "maths_marks" : 51, "english_marks" : 53, "science_marks" : 72 }
{ "_id" : ObjectId("6295cab690c4b3e043142389"), "name" : "Vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85 }
{ "_id" : ObjectId("6295cb8490c4b3e04314238b"), "name" : "Aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80 }
{ "_id" : ObjectId("6295cbe390c4b3e04314238c"), "name" : "Shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65 }
{ "_id" : ObjectId("6295d0c690c4b3e04314238e"), "name" : "Lucky", "maths_marks" : 66, "english_marks" : 90, "science_marks" : 45 }
{ "_id" : ObjectId("6295d2e690c4b3e04314238f"), "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}},{upset:false,multi:true})
WriteResult({ "nMatched" : 9, "nUpserted" : 0, "nModified" : 9 })
>
```

7) Update Marks_Science=75 to Lucky .

```
> db.studentmarks.update({"name":"Lucky"},{$inc:{"science_marks":30}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find({"name":"Lucky"})
{ "_id" : ObjectId("6295d0c690c4b3e04314238e"), "name" : "Lucky", "maths_marks" : 66, "english_marks" : 90, "science_marks" : 75, "average" : 1 }
>
```

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

```
> db.studentmarks.find({$or:[{"maths_marks":{$gt:50}},{"english_marks":{$gt:50}},{"science_marks":{$gt:50}}]})
{ "_id" : ObjectId("6295c9b690c4b3e043142388"), "name" : "Mala", "maths_marks" : 51, "english_marks" : 53, "science_marks" : 72, "average" : 1 }
{ "_id" : ObjectId("6295cab690c4b3e043142389"), "name" : "Vanu", "maths_marks" : 80, "english_marks" : 75, "science_marks" : 85, "average" : 1 }
{ "_id" : ObjectId("6295cb2890c4b3e04314238a"), "name" : "Kala", "maths_marks" : 32, "english_marks" : 46, "science_marks" : 53, "average" : 1 }
{ "_id" : ObjectId("6295cb8490c4b3e04314238b"), "name" : "Aruli", "maths_marks" : 78, "english_marks" : 85, "science_marks" : 80, "average" : 1 }
{ "_id" : ObjectId("6295cbe390c4b3e04314238c"), "name" : "Shayu", "maths_marks" : 80, "english_marks" : 76, "science_marks" : 65, "average" : 1 }
{ "_id" : ObjectId("6295cc1490c4b3e04314238d"), "name" : "Kumaran", "maths_marks" : 32, "english_marks" : 73, "science_marks" : 84, "average" : 1 }
{ "_id" : ObjectId("6295d0c690c4b3e04314238e"), "name" : "Lucky", "maths_marks" : 66, "english_marks" : 90, "science_marks" : 75, "average" : 1 }
{ "_id" : ObjectId("6295d2e690c4b3e04314238f"), "name" : "Gva", "maths_marks" : 71, "english_marks" : 75, "science_marks" : 56, "average" : 1 }
{ "_id" : ObjectId("6295d33490c4b3e043142390"), "name" : "Raam", "maths_marks" : 41, "english_marks" : 65, "science_marks" : 88, "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({$or:[{"maths_marks":{$lt:50}},{"english_marks":{$gt:50}}]},{"name":1,_id:0})
{ "name" : "Mala" }
{ "name" : "Vanu" }
{ "name" : "Kala" }
{ "name" : "Aruli" }
{ "name" : "Shayu" }
{ "name" : "Kumaran" }
{ "name" : "Lucky" }
{ "name" : "Gva" }
{ "name" : "Raam" }
>
```

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

```
> db.studentmarks.find({$or:[{"maths_marks":{$lt:50}},{"science_marks":{$lt:50}}]},{"name":1,_id:0})
{ "name" : "Kala" }
{ "name" : "Kumaran" }
{ "name" : "Raam" }
> db.studentmarks.find({$or:[{"maths_marks":{$lt:40}},{"science_marks":{$lt:40}}]},{"name":1,_id:0})
{ "name" : "Kala" }
{ "name" : "Kumaran" }
>
```

11) Remove Science column/field for Raam

```
> db.studentmarks.remove({"name":"Raam"},{"science_marks":88})
WriteResult({ "nRemoved" : 1 })
```

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})
WriteResult({ "nInserted" : 1 })
> db.studentmarks.find({"name":"John"})
{ "_id" : ObjectId("6291da2ceaaa90aed42b6e2c"), "name" : "John", "maths_marks" : 87, "english_marks"
: 23 }
>
```

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

```
> db.studentmarks.update({"name":"John"},{$rename:{"english_marks":"science_marks"}})
WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 })
> db.studentmarks.find({"name":"John"})
{ "_id" : ObjectId("6291da2ceaaa90aed42b6e2c"), "name" : "John", "maths_marks" : 87, "science_marks"
: 23 }
> db.studentmarks.find()
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e23"), "name" : "Mala", "maths_marks" : 45, "english_marks"
: 53, "science_marks" : 72 }
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e24"), "name" : "Vanu", "maths_marks" : 80, "english_marks"
: 75, "science_marks" : 85 }
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e25"), "name" : "Kala", "maths_marks" : 32, "english_marks"
: 46, "science_marks" : 53 }
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e26"), "name" : "Aruli", "maths_marks" : 78, "english_marks"
 : 85, "science_marks" : 80 }
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e27"), "name" : "Shayu", "maths_marks" : 80, "english_marks"
 : 76, "science_marks" : 65 }
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e28"), "name" : "Kumaran", "maths_marks" : 32, "english_mark
s" : 73, "science_marks" : 84 }
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e29"), "name" : "Lucky", "maths_marks" : 66, "english_marks"
 : 90, "science_marks" : 45 }
{ "_id" : ObjectId("6291d8cdeaaa90aed42b6e2a"), "name" : "Gva", "maths_marks" : 71, "english_marks" :
 75, "science_marks" : 56 }
{ "_id" : ObjectId("6291da2ceaaa90aed42b6e2c"), "name" : "John", "maths_marks" : 87, "science_marks"
: 23 }
>
```

14) Remove Kumaran's document from collection

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

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

```
> db.studentmarks.find({$or:[{"name":"Kala"},{"name":"Aruli"}]},{"science_marks":1,_id:0})
{ "science_marks" : 53 }
{ "science_marks" : 80 }
> db.studentmarks.find({$or:[{"name":"Kala"},{"name":"Aruli"}]},{"maths_marks":1,_id:0})
{ "maths_marks" : 32 }
{ "maths_marks" : 78 }
>
```