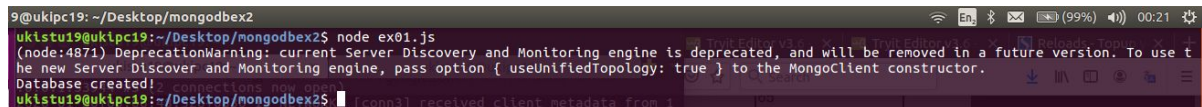
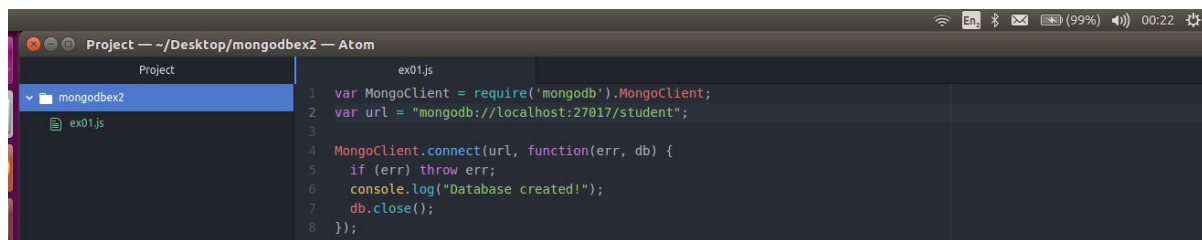


## 1) Create a Database called student

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/student";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  console.log("Database created!");
  db.close();
});
```



## 2) Create a collection called studentmarks

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  dbo.createCollection("studentmarks", function(err, res) {
    if (err) throw err;
    console.log("Collection created!");
    db.close();
  });
});
```

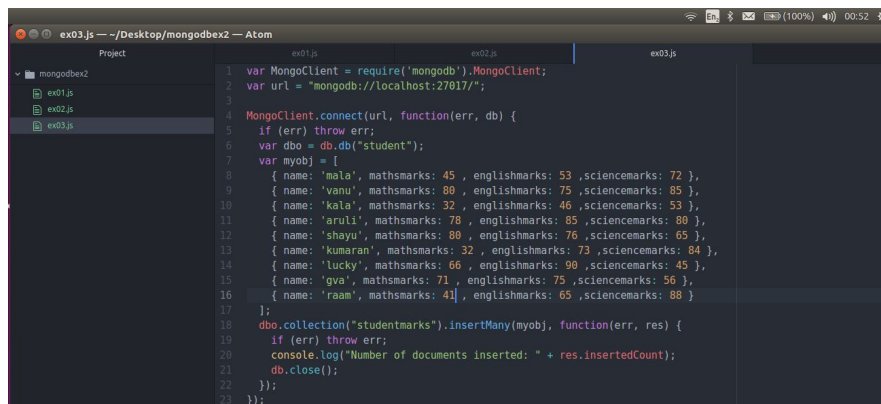
```
ex02.js -- ~/Desktop/mongodbex2 — Atom
Project
  mongodbex2
    ex01.js
    ex02.js
ex02.js
1 var MongoClient = require('mongodb').MongoClient;
2 var url = 'mongodb://localhost:27017/';
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db('student');
7   dbo.createCollection('studentmarks', function(err, res) {
8     if (err) throw err;
9     console.log('Collection created!');
10    db.close();
11  });
12 });
```

```
Database created!
ukistu19@uklpc19:~/Desktop/mongodbex2$ node ex02.js
(node:5124) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
Collection created!
ukistu19@uklpc19:~/Desktop/mongodbex2$
```

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

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  var myobj = [
    { name: 'mala', mathsmarks: 45 , englishmarks: 53 ,sciencemarks: 72 },
    { name: 'vanu', mathsmarks: 80 , englishmarks: 75 ,sciencemarks: 85 },
    { name: 'kala', mathsmarks: 32 , englishmarks: 46 ,sciencemarks: 53 },
    { name: 'aruli', mathsmarks: 78 , englishmarks: 85 ,sciencemarks: 80 },
    { name: 'shayu', mathsmarks: 80 , englishmarks: 76 ,sciencemarks: 65 },
    { name: 'kumaran', mathsmarks: 32 , englishmarks: 73 ,sciencemarks: 84 },
    { name: 'lucky', mathsmarks: 66 , englishmarks: 90 ,sciencemarks: 45 },
    { name: 'gva', mathsmarks: 71 , englishmarks: 75 ,sciencemarks: 56 },
    { name: 'raam', mathsmarks: 41 , englishmarks: 65 ,sciencemarks: 88 }
  ];
  dbo.collection("studentmarks").insertMany(myobj, function(err, res) {
    if (err) throw err;
    console.log("Number of documents inserted: " + res.insertedCount);
    db.close();
  });
});
```

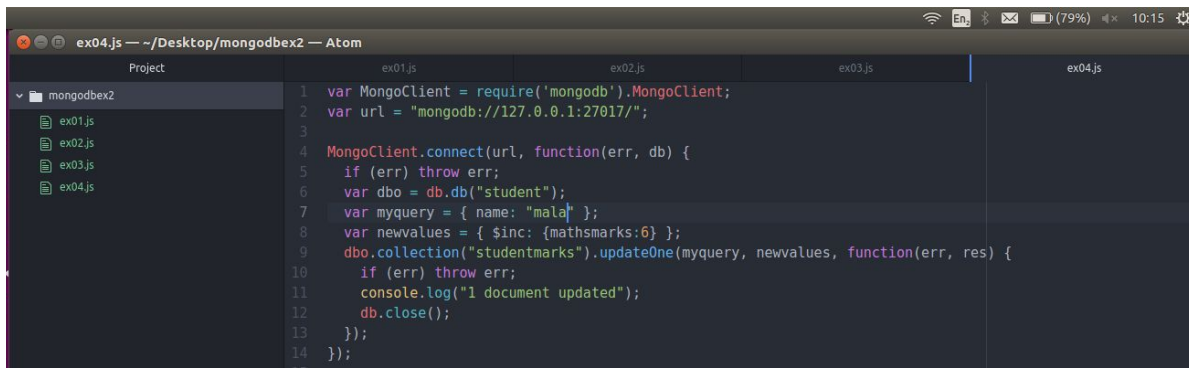


```
Collection created!
ukistu19@ukipc19:~/Desktop/mongodbex2$ node ex03.js
(node:5926) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
Number of documents inserted: 9
ukistu19@ukipc19:~/Desktop/mongodbex2$
```

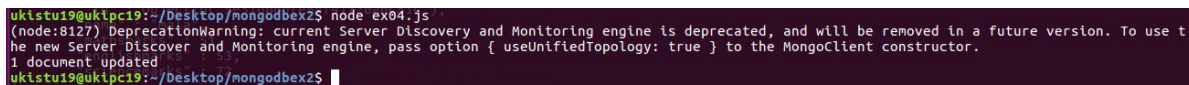
## 4) Increase the maths marks of Mala by 6 marks

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://127.0.0.1:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  var myquery = { name: "mala" };
  var newvalues = { $inc: {mathsmarks:6} };
  dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
    if (err) throw err;
    console.log("1 document updated");
    db.close();
  });
});
```

A screenshot of the Atom code editor interface. The title bar shows 'ex04.js -- ~/Desktop/mongodbex2 - Atom'. The left sidebar shows a project tree with a folder 'mongodbex2' containing files 'ex01.js', 'ex02.js', 'ex03.js', and 'ex04.js'. The main editor area shows the code for 'ex04.js' with line numbers 1 through 16. The code is identical to the one provided in the previous blocks.

```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://127.0.0.1:27017/";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db("student");
7   var myquery = { name: "mala" };
8   var newvalues = { $inc: {mathsmarks:6} };
9   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
10     if (err) throw err;
11     console.log("1 document updated");
12     db.close();
13   });
14 });
15
```

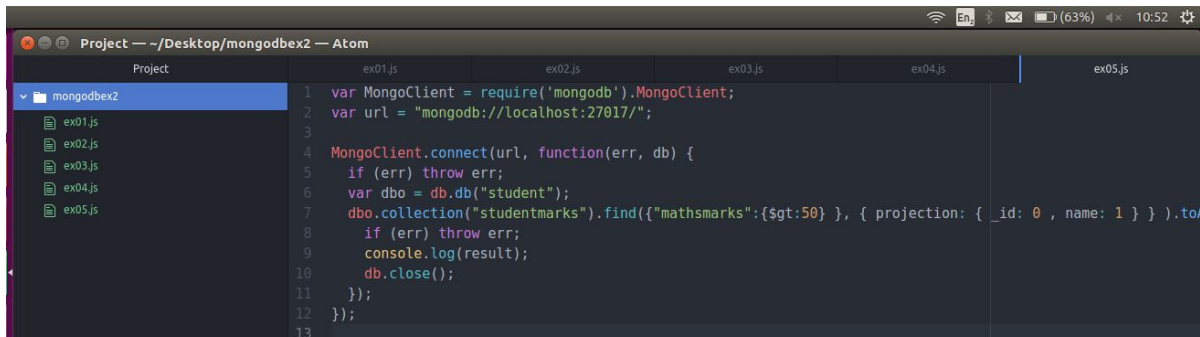
A screenshot of a terminal window. The prompt is 'uk1stui9@uk1tpc19:~/Desktop/mongodbex2\$'. The command 'node ex04.js' has been executed. The output shows a deprecation warning from Node.js and a confirmation message '1 document updated'.

```
uk1stui9@uk1tpc19:~/Desktop/mongodbex2$ node ex04.js
(node:8127) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document updated
uk1stui9@uk1tpc19:~/Desktop/mongodbex2$
```

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

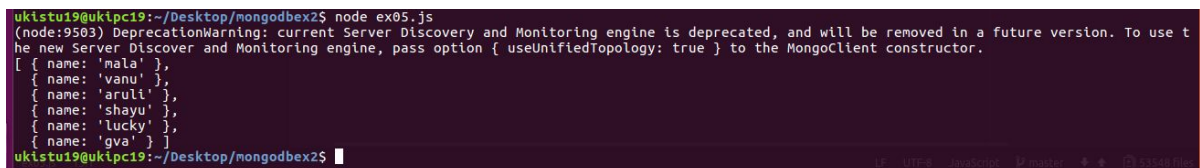
```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  dbo.collection("studentmarks").find({"mathsmarks":{$gt:50}}, { projection: { _id: 0 ,
name: 1 } }).toArray(function(err, result) {
    if (err) throw err;
    console.log(result);
    db.close();
  });
});
```



The screenshot shows the Atom code editor with a project named 'Project - ~/Desktop/mongodbex2'. The file explorer on the left shows a folder 'mongodbex2' containing files 'ex01.js', 'ex02.js', 'ex03.js', 'ex04.js', and 'ex05.js'. The editor is displaying the code in 'ex05.js', which is the same code as shown in the previous block. The code is as follows:

```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db("student");
7   dbo.collection("studentmarks").find({"mathsmarks":{$gt:50}}, { projection: { _id: 0 , name: 1 } }).toArray(function(err, result) {
8     if (err) throw err;
9     console.log(result);
10    db.close();
11  });
12 });
13
```



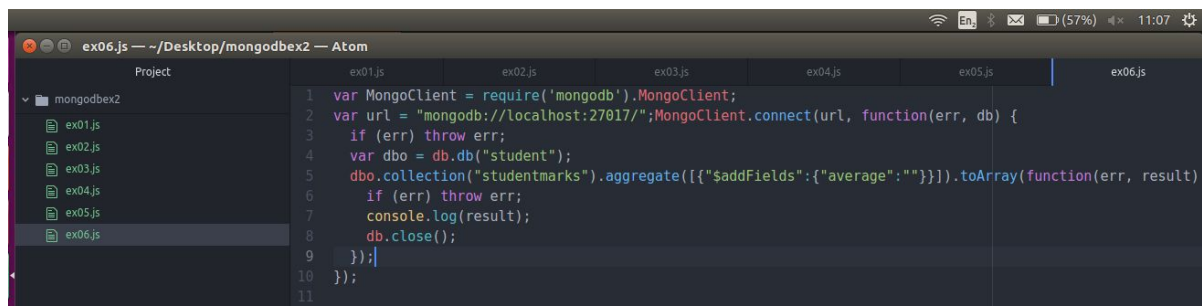
The screenshot shows a terminal window with the command 'node ex05.js' executed. The output is a JSON array of objects, each representing a student with a name and a mathsmarks value greater than 50. The output is as follows:

```
ukistu19@ukipc19:~/Desktop/mongodbex2$ node ex05.js
(node:9583) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
[ { name: 'mala' },
  { name: 'vanu' },
  { name: 'aruli' },
  { name: 'shayu' },
  { name: 'lucky' },
  { name: 'gva' } ]
ukistu19@ukipc19:~/Desktop/mongodbex2$
```

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

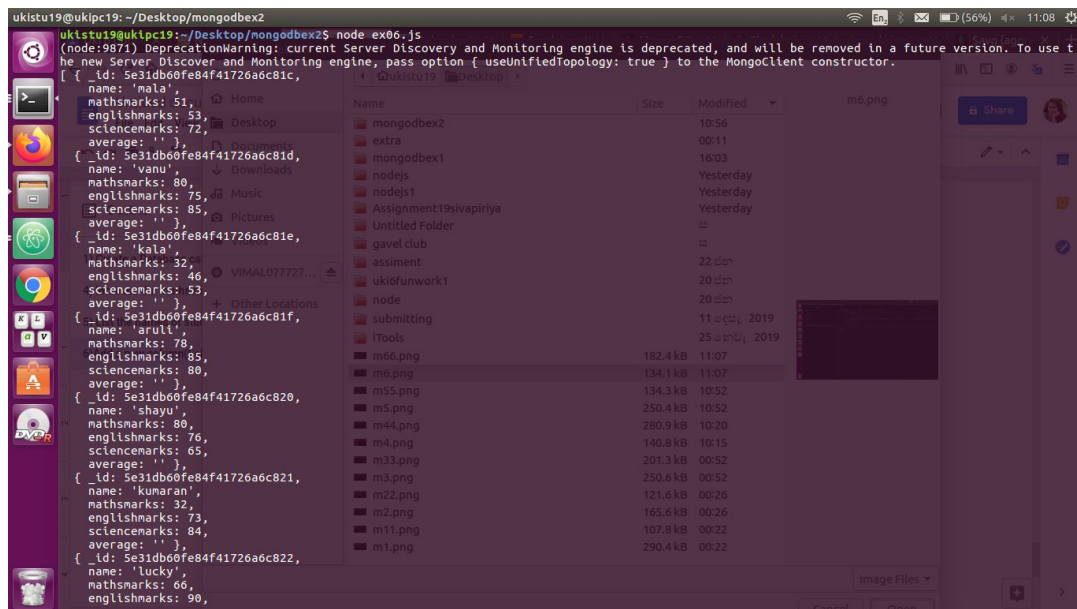
```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");

  dbo.collection("studentmarks").aggregate([{"$addFields":{"average":""}}]).toArray(function(err, result) {
    if (err) throw err;
    console.log(result);
    db.close();
  });
});
```



The screenshot shows the Atom editor with a project named 'mongodbex2'. The file 'ex06.js' is open and contains the following code:

```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/";MongoClient.connect(url, function(err, db) {
3   if (err) throw err;
4   var dbo = db.db("student");
5   dbo.collection("studentmarks").aggregate([{"$addFields":{"average":""}}]).toArray(function(err, result) {
6     if (err) throw err;
7     console.log(result);
8     db.close();
9   });
10 });
11
```

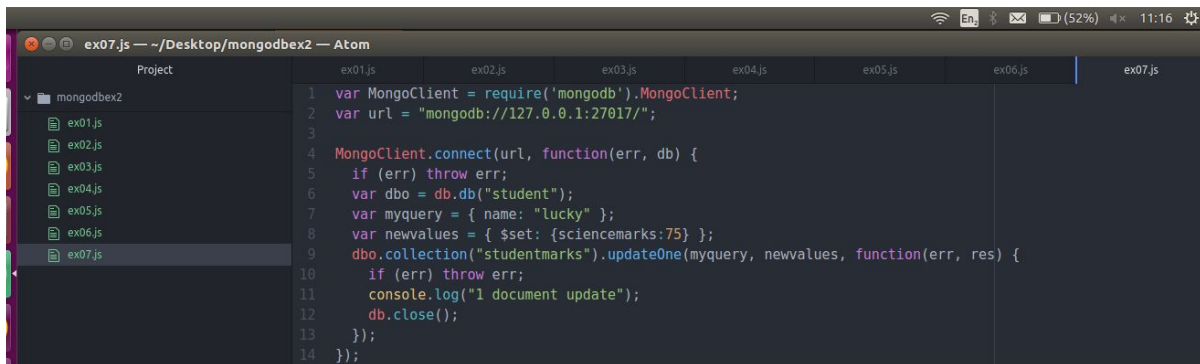


## 7) Update Marks\_Science=75 to Lucky

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://127.0.0.1:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  var myquery = { name: "lucky" };
  var newvalues = { $set: {sciencemarks:75} };
  dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
    if (err) throw err;
    console.log("1 document update");
    db.close();
  });
});
```

```
uk1stui19@uk1pc19:~/Desktop/mongodbex2$ node ex07.js
(node:10137) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use
the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document update
uk1stui19@uk1pc19:~/Desktop/mongodbex2$
```



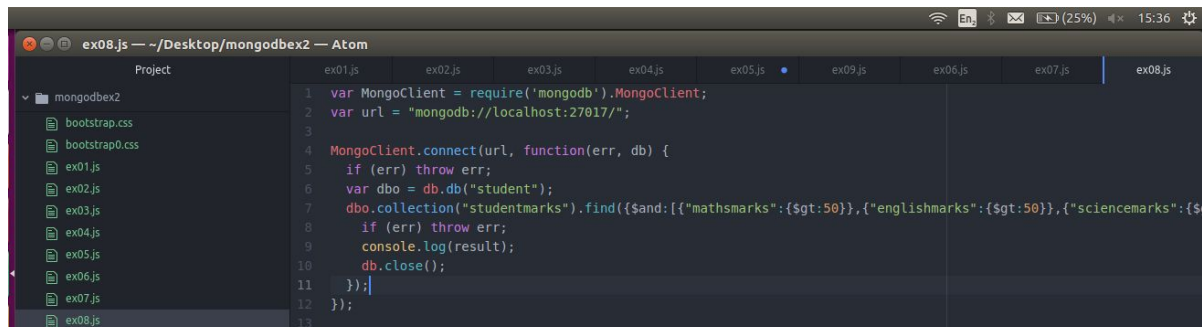


8) List the names who got more than 50 marks in all subjects.

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
```

```
  dbo.collection("studentmarks").find({$and:[{"mathsmarks":{$gt:50}},{"englishmarks":{$gt:
50}},{"sciencemarks":{$gt:50}}]}, { projection: { _id: 0, name: 1 } }).toArray(function(err,
result) {
    if (err) throw err;
    console.log(result);
    db.close();
  });
});
```





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

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
```

```
  dbo.collection("studentmarks").find({$and:[{"mathsmarks":{$lt:50}},{"englishmarks":{$gt:
  50}}]}, { projection: { _id: 0, name: 1 } }).toArray(function(err, result) {
    if (err) throw err;
    console.log(result);
    db.close();
  });
});
```

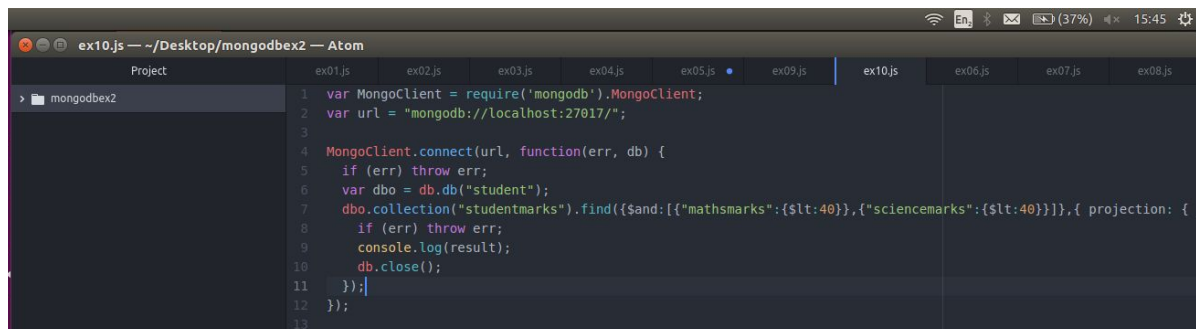
```
uk1stui9@uk1pc19:~/Desktop/mongodbex2$ node ex09.js
(node:13740) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use
the new Server Discovery and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
[ { name: 'kumaran' }, { name: 'raam' } ]
uk1stui9@uk1pc19:~/Desktop/mongodbex2$
```

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

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
```

```
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
```

```
  dbo.collection("studentmarks").find({$and:[{"mathsmarks":{$lt:40}},{"sciencemarks":{$lt:40}}]},{ projection: { _id: 0, name: 1 } }).toArray(function(err, result) {
    if (err) throw err;
    console.log(result);
    db.close();
  });
});
```



```
ex10.js -- ~/Desktop/mongodbex2 -- Atom
Project
  mongodbex2
    1 var MongoClient = require('mongodb').MongoClient;
    2 var url = "mongodb://localhost:27017/";
    3
    4 MongoClient.connect(url, function(err, db) {
    5   if (err) throw err;
    6   var dbo = db.db("student");
    7   dbo.collection("studentmarks").find({$and:[{"mathsmarks":{$lt:40}},{"sciencemarks":{$lt:40}}]},{ projection: {
    8     if (err) throw err;
    9     console.log(result);
   10     db.close();
   11   });
   12 });
   13
```



```
uk1stu19@uk1pc19:~/Desktop/mongodbex2$ node ex10.js
(node:13981) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use
the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
[]
uk1stu19@uk1pc19:~/Desktop/mongodbex2$
```

## 11) Remove Science column/field for Raam

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://127.0.0.1:27017/";

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  var myquery = { name: "raam" };
  var newvalues = { $unset: {sciencemarks:88 } };
  dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
    if (err) throw err;
    console.log("1 document upset");
    db.close();
  });
});
```

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

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
```

```

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  var myobj = { name: 'john', mathsmarks: 87 , englishmarks: 23 };
  dbo.collection("studentmarks").insertOne(myobj, function(err, res) {
    if (err) throw err;
    console.log("1 document inserted");
    db.close();
  });
});

```

```

ukistu19@ukipc19:~/Desktop/mongodbex2$ node ex12.js
(node:14535) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use
the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document inserted
ukistu19@ukipc19:~/Desktop/mongodbex2$

```

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

```

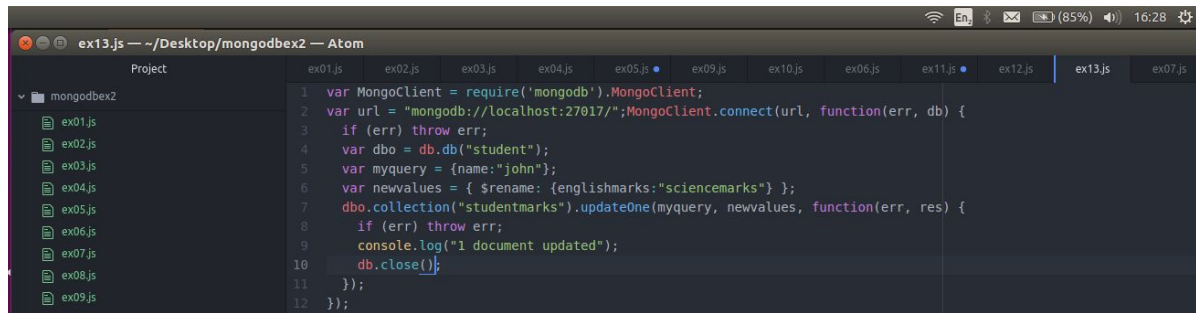
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student");
  var myquery = {name:"john"};

```

```

var newvalues = { $rename: {englishmarks:"sciencemarks"} };
dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
    if (err) throw err;
    console.log("1 document updated");
    db.close();
});
});

```

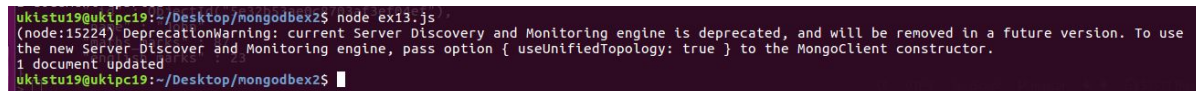


```

ex13.js -- ~/Desktop/mongodbex2 — Atom
Project
  mongodbex2
    ex01.js
    ex02.js
    ex03.js
    ex04.js
    ex05.js
    ex06.js
    ex07.js
    ex08.js
    ex09.js
    ex10.js
    ex11.js
    ex12.js
    ex13.js
    ex07.js

1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/";MongoClient.connect(url, function(err, db) {
3   if (err) throw err;
4   var dbo = db.db("student");
5   var myquery = {name:"john"};
6   var newvalues = { $rename: {englishmarks:"sciencemarks"} };
7   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
8     if (err) throw err;
9     console.log("1 document updated");
10    db.close();
11  });
12 });

```



```

uk1stu19@uk1pc19:~/Desktop/mongodbex2$ node ex13.js
(node:15224) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use
the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document updated
uk1stu19@uk1pc19:~/Desktop/mongodbex2$

```

## 14) Remove Kumaran's document from collection

```

var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";

MongoClient.connect(url, function(err, db) {
    if (err) throw err;
    var dbo = db.db("student");
    var myquery = { name: "m1kumaran" };

```

```

    dbo.collection("studentmarks").deleteOne(myquery, function(err, obj) {
        if (err) throw err;
        console.log("1 document deleted");
        db.close();
    });
});

```

```

1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/";
3
4 MongoClient.connect(url, function(err, db) {
5     if (err) throw err;
6     var dbo = db.db("student");
7     var myquery = { name: "kumaran" };
8     dbo.collection("studentmarks").deleteOne(myquery, function(err, obj) {
9         if (err) throw err;
10        console.log("1 document deleted");
11        db.close();
12    });
13 });

```

```

ukistui9@uklpc19:~/Desktop/mongodbex2$ node ex14.js
(node:15498) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use
the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
1 document deleted
ukistui9@uklpc19:~/Desktop/mongodbex2$

```

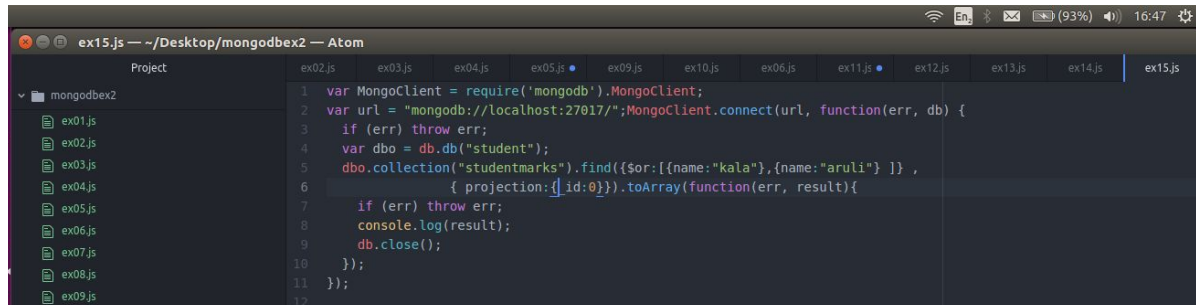
## 15) Find Kala's or Aruli's math\_marks and science\_marks

```

var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/";
MongoClient.connect(url, function(err, db) {
    if (err) throw err;
    var dbo = db.db("student");
    dbo.collection("studentmarks").find({$or:[{name:"kala"},{name:"aruli"} ]} ,
        { projection:{_id:0}}).toArray(function(err, result){
        if (err) throw err;

```

```
    console.log(result);
    db.close();
  });
});
```



```
ex15.js -- ~/Desktop/mongodbex2 — Atom

Project
  mongodbex2
    ex01.js
    ex02.js
    ex03.js
    ex04.js
    ex05.js
    ex06.js
    ex07.js
    ex08.js
    ex09.js

1  var MongoClient = require('mongodb').MongoClient;
2  var url = "mongodb://localhost:27017/"; MongoClient.connect(url, function(err, db) {
3    if (err) throw err;
4    var dbo = db.db("student");
5    dbo.collection("studentmarks").find({$or:[{name:"kala"},{name:"aruli"} ]} ,
6      { projection:{_id:0}}).toArray(function(err, result){
7      if (err) throw err;
8      console.log(result);
9      db.close();
10     });
11   });
12 }
```



```
ukistui9@uklpc19:~/Desktop/mongodbex2$ node ex15.js
(node:16012) DeprecationWarning: current Server Discovery and Monitoring engine is deprecated, and will be removed in a future version. To use
the new Server Discover and Monitoring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
[ { name: 'kala',
  mathsmarks: 32,
  englishmarks: 46,
  sciencemarks: 53 },
  { name: 'aruli',
  mathsmarks: 78,
  englishmarks: 85,
  sciencemarks: 80 } ]
ukistui9@uklpc19:~/Desktop/mongodbex2$
```