

# 1) Create a Database called student

A screenshot of a terminal window titled "node exercise". The window shows a file tree on the left with a file named "node2.js" selected. The main pane contains the following code:

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/students";
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  console.log("Database created!");
  db.close();
});
```

The status bar at the bottom indicates the file is "node2.js" and has 7:4 lines. The terminal tab bar shows the command "node node2.js" was run, resulting in the output "Database created!".

A screenshot of a terminal window titled "node exercise 2". The window shows a file tree on the left with a file named "node2.js" selected. The main pane contains the following code:

```
var MongoClient = require('mongodb').MongoClient;
var url = "mongodb://localhost:27017/students";
MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  console.log("Database created!");
  db.close();
});
```

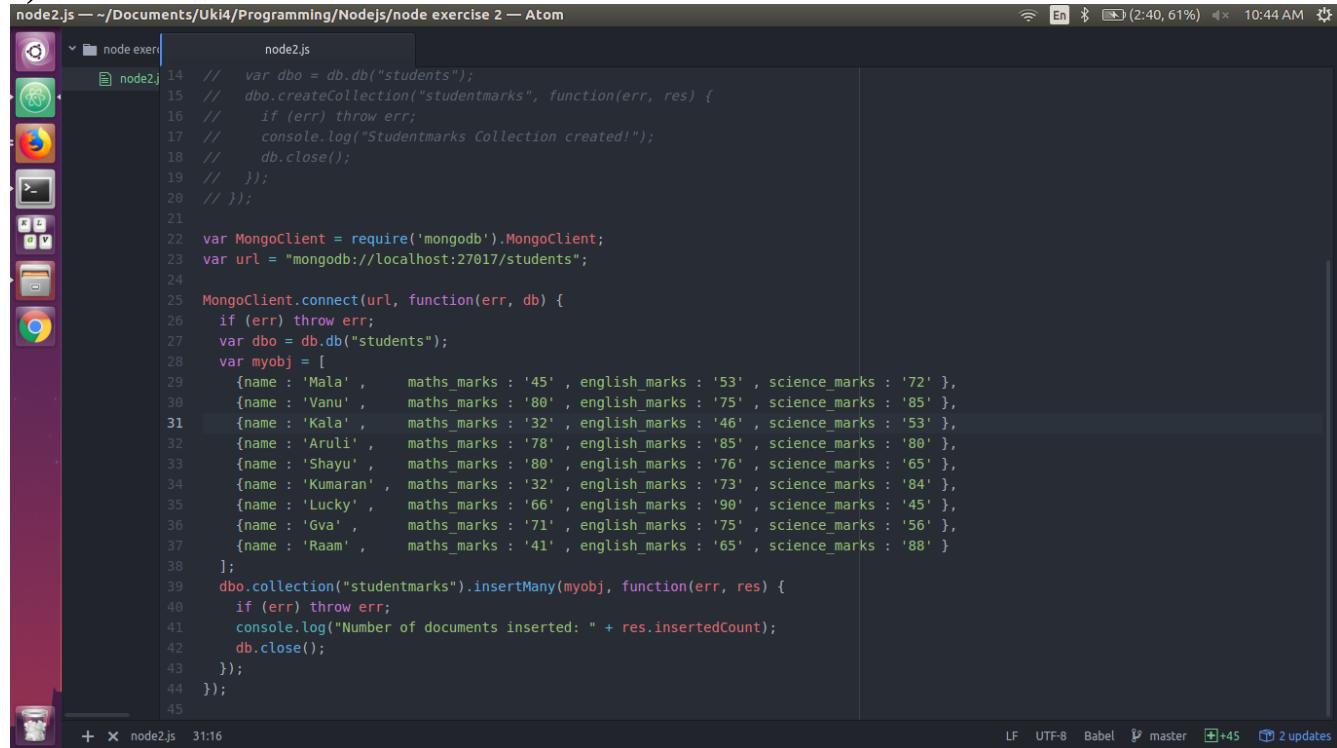
The status bar at the bottom indicates the file is "node2.js" and has 7:4 lines. The terminal tab bar shows the command "node node2.js" was run, resulting in the output "Database created!".

## 2) Create a collection called studentmarks

```
node2.js -- ~/Documents/Uki4/Programming/Nodejs/node exercise 2 — Atom
node2.js
1 // var MongoClient = require('mongodb').MongoClient;
2 // var url = "mongodb://localhost:27017/students";
3 // MongoClient.connect(url, function(err, db) {
4 //   if (err) throw err;
5 //   console.log("Database created!");
6 //   db.close();
7 // });
8
9 var MongoClient = require('mongodb').MongoClient;
10 var url = "mongodb://localhost:27017/students";
11
12 MongoClient.connect(url, function(err, db) {
13   if (err) throw err;
14   var dbo = db.db("students");
15   dbo.createCollection("studentmarks", function(err, res) {
16     if (err) throw err;
17     console.log("Studentmarks Collection created!");
18     db.close();
19   });
20 });
21
```

```
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5020) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Database created!
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5144) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Studentmarks collection created!
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ |
```

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

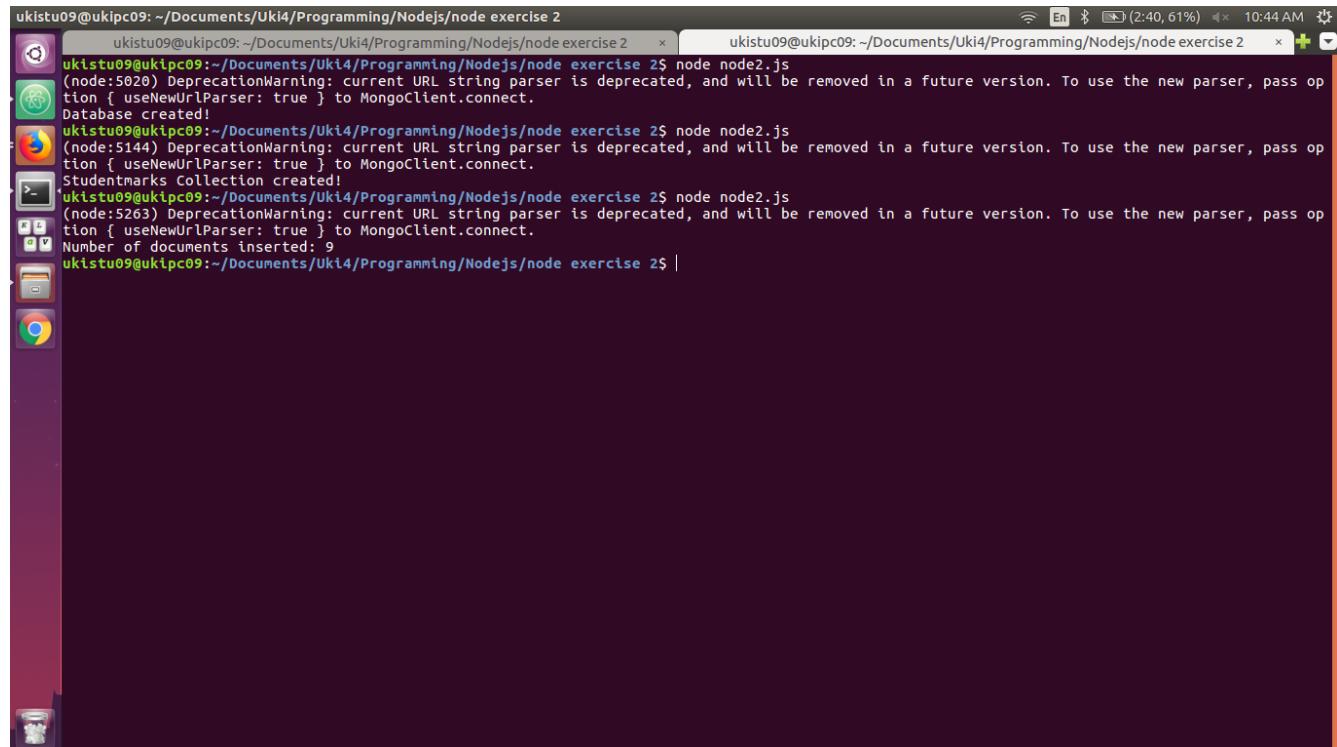


The screenshot shows the Atom code editor with a file named 'node2.js' open. The code creates a MongoDB collection named 'studentmarks' and inserts nine student documents. The code uses the MongoClient module to connect to a local MongoDB instance at port 27017. It defines a variable 'myobj' containing an array of student objects, each with name, maths\_marks, english\_marks, and science\_marks fields. Finally, it inserts the array into the 'studentmarks' collection and logs the number of inserted documents.

```
// var dbo = db.db("students");
// dbo.createCollection("studentmarks", function(err, res) {
//   if (err) throw err;
//   console.log("Studentmarks Collection created!");
//   db.close();
// });
// });

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

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("students");
  var myobj = [
    {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' }
  ];
  dbo.collection("studentmarks").insertMany(myobj, function(err, res) {
    if (err) throw err;
    console.log("Number of documents inserted: " + res.insertedCount);
    db.close();
  });
});
});
```



The screenshot shows a terminal window with two tabs. The current tab is running the command 'node node2.js'. The output shows the creation of the 'studentmarks' collection and the insertion of 9 documents. The final message indicates 9 documents were inserted.

```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5020) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Database created!
(node:5144) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Studentmarks collection created!
(node:5263) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Number of documents inserted: 9
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ |
```

4) Increase the maths marks of Mala by 6 marks

```
node2.js -- ~/Documents/Uki4/Programming/Nodejs/node exercise 2 — Atom
node exerc
node2.js
node2.js
30 //      {name : 'Vanu' ,   maths_marks : '80' , english_marks : '75' , science_marks : '85' },
31 //      {name : 'Kala' ,   maths_marks : '32' , english_marks : '46' , science_marks : '53' },
32 //      {name : 'Aruli' ,  maths_marks : '78' , english_marks : '85' , science_marks : '80' },
33 //      {name : 'Shayu' ,  maths_marks : '80' , english_marks : '76' , science_marks : '65' },
34 //      {name : 'Kumaran' , maths_marks : '32' , english_marks : '73' , science_marks : '84' },
35 //      {name : 'Lucky' ,  maths_marks : '66' , english_marks : '90' , science_marks : '45' },
36 //      {name : 'Gva' ,    maths_marks : '71' , english_marks : '75' , science_marks : '56' },
37 //      {name : 'Raam' ,   maths_marks : '41' , english_marks : '65' , science_marks : '88' }
38 //  ];
39 //  dbo.collection("studentmarks").insertMany(myobj, function(err, res) {
40 //    if (err) throw err;
41 //    console.log("Number of documents inserted: " + res.insertedCount);
42 //    db.close();
43 //  });
44 // });
45 //
46
47 var MongoClient = require('mongodb').MongoClient;
48 var url = "mongodb://127.0.0.1:27017/students";
49
50 MongoClient.connect(url, function(err, db) {
51   if (err) throw err;
52   var dbo = db.db("students");
53   var myquery = { maths_marks: '45' };
54   var newvalues = { $set: {name: "Mala", maths_marks: "51"} };
55   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
56     if (err) throw err;
57     console.log("1 document updated");
58     db.close();
59   });
60 });
61
```

```
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5020) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.

ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5144) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
          collection created!
Terminal  xc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5263) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Number of documents inserted: 9
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5357) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
1 document updated
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ |
```

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

```
node2.js -- ~/Documents/Uki4/Programming/Nodejs/node exercise 2 — Atom
node2.js
  44 // });
  45 //
  46 //
  47 // var MongoClient = require('mongodb').MongoClient;
  48 // var url = "mongodb://127.0.0.1:27017/students";
  49 //
  50 // MongoClient.connect(url, function(err, db) {
  51 //   if (err) throw err;
  52 //   var dbo = db.db("students");
  53 //   var myquery = { maths_marks: '45' };
  54 //   var newvalues = { $set: { name: "Mala", maths_marks: "51" } };
  55 //   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
  56 //     if (err) throw err;
  57 //     console.log("1 document updated");
  58 //     db.close();
  59 //   });
  60 // });
  61 //
  62
  63 var MongoClient = require('mongodb').MongoClient;
  64 var url = "mongodb://localhost:27017/students";
  65
  66 MongoClient.connect(url, function(err, db) {
  67   if (err) throw err;
  68   var dbo = db.db("students");
  69   dbo.collection("studentmarks").find({maths_marks:{$gt:'50'}}).toArray(function(err, result) {
  70     if (err) throw err;
  71     console.log(result);
  72     db.close();
  73   });
  74 });
  75
```

```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2
  ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2 $ node node2.js
(node:5263) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Number of documents inserted: 9
1 document updated
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2 $ node node2.js
(node:5357) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2 $ node node2.js
(node:5444) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
[ { _id: 5c5132bc79ca5b148f18bca2,
  name: 'Mala',
  maths_marks: '51',
  english_marks: '53',
  science_marks: '72' },
{ _id: 5c5132bc79ca5b148f18bca3,
  name: 'Vanu',
  maths_marks: '80',
  english_marks: '75',
  science_marks: '85' },
{ _id: 5c5132bc79ca5b148f18bca5,
  name: 'Arull',
  maths_marks: '78',
  english_marks: '85',
  science_marks: '80' },
{ _id: 5c5132bc79ca5b148f18bca6,
  name: 'Shayu',
  maths_marks: '80',
  english_marks: '76',
  science_marks: '65' },
{ _id: 5c5132bc79ca5b148f18bca8,
  name: 'Lucky',
  maths_marks: '66',
  english_marks: '98',
  science_marks: '45' },
{ _id: 5c5132bc79ca5b148f18bca9,
  name: 'Gva',
  maths_marks: '71',
  english_marks: '75',
  science_marks: '56' } ]
```

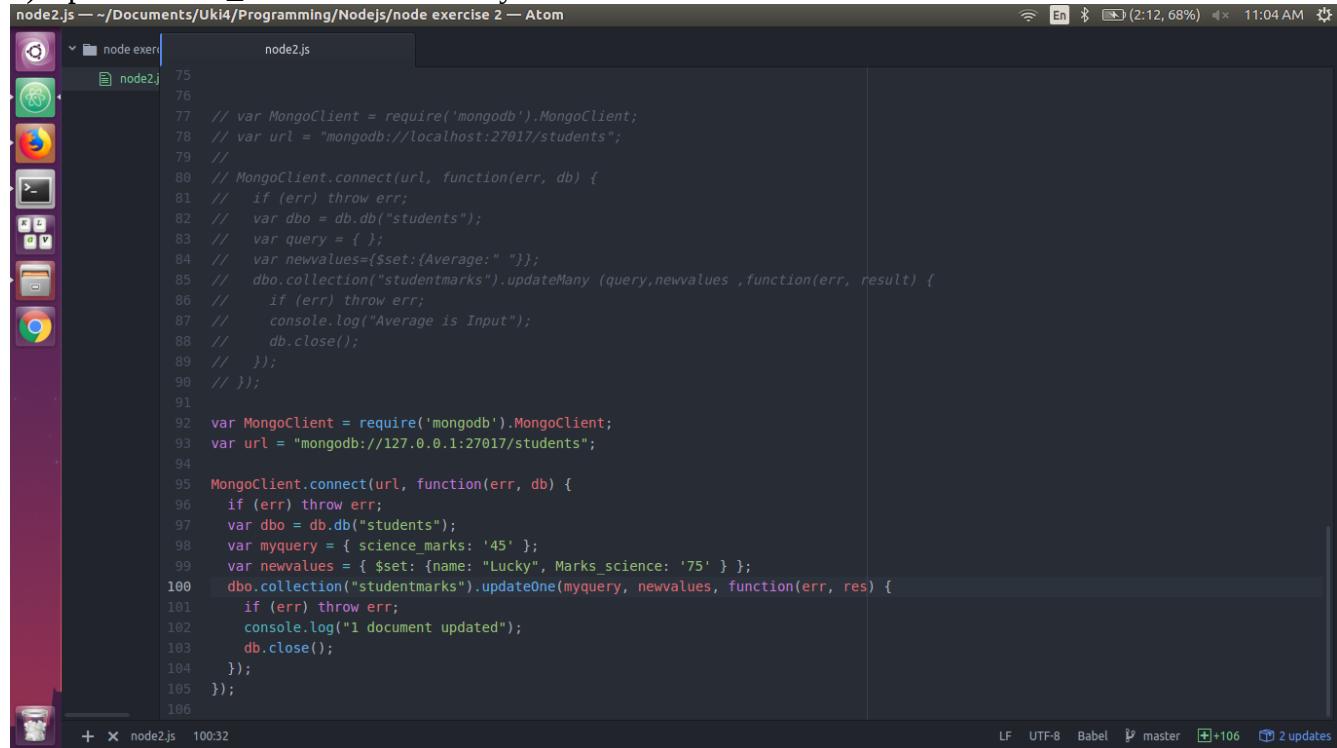
## 6) Add a new column(field) for Average for all students.

```
File Edit View Selection Find Packages Help
node exercise 2
node2.js
60 // });
61
62
63 // var MongoClient = require('mongodb').MongoClient;
64 // var url = "mongodb://localhost:27017/students";
65 //
66 // MongoClient.connect(url, function(err, db) {
67 //   if (err) throw err;
68 //   var dbo = db.db("students");
69 //   dbo.collection("studentmarks").find({maths_marks:{$gt:'50'}}).toArray(function(err, result) {
70 //     if (err) throw err;
71 //     console.log(result);
72 //     db.close();
73 //   });
74 // });
75
76
77 var MongoClient = require('mongodb').MongoClient;
78 var url = "mongodb://localhost:27017/students";
79
80 MongoClient.connect(url, function(err, db) {
81   if (err) throw err;
82   var dbo = db.db("students");
83   var query = {};
84   var newvalues={$set:{Average:" "}};
85   dbo.collection("studentmarks").updateMany (query,newvalues ,function(err, result) {
86     if (err) throw err;
87     console.log("Average is Input");
88     db.close();
89   });
90 });
91
```

+ x node2.js 87:34 LF UTF-8 Babel master +91 2 updates

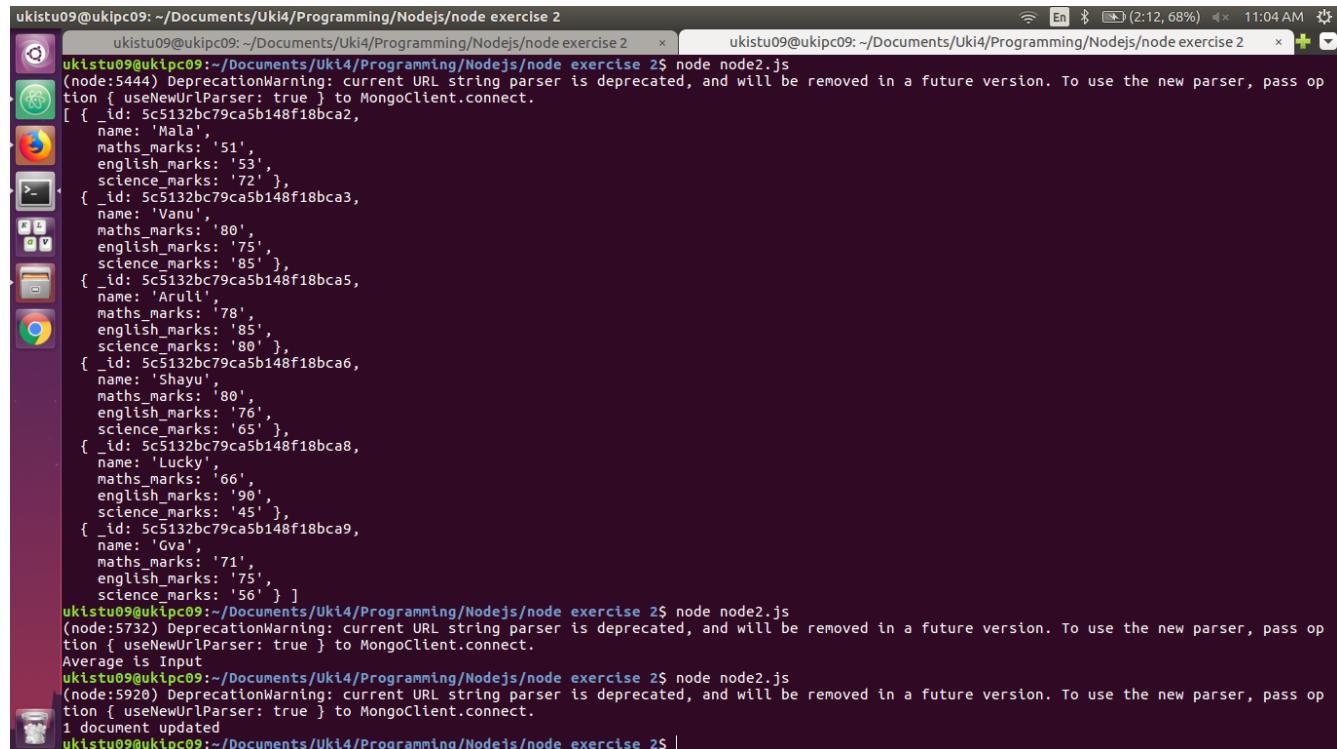
```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5357) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
1 document updated
[ { _id: 5c5132bc79ca5b148f18bca2,
  name: 'Mala',
  maths_marks: '51',
  english_marks: '53',
  science_marks: '72' },
{ _id: 5c5132bc79ca5b148f18bca3,
  name: 'Vanu',
  maths_marks: '80',
  english_marks: '75',
  science_marks: '85' },
{ _id: 5c5132bc79ca5b148f18bca5,
  name: 'Aruli',
  maths_marks: '78',
  english_marks: '85',
  science_marks: '80' },
{ _id: 5c5132bc79ca5b148f18bca6,
  name: 'Shayu',
  maths_marks: '80',
  english_marks: '76',
  science_marks: '65' },
{ _id: 5c5132bc79ca5b148f18bca8,
  name: 'Lucky',
  maths_marks: '66',
  english_marks: '90',
  science_marks: '45' },
{ _id: 5c5132bc79ca5b148f18bca9,
  name: 'Gva',
  maths_marks: '71',
  english_marks: '75',
  science_marks: '56' } ]
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5732) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Average is Input
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$
```

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



The screenshot shows the Atom code editor with a file named 'node2.js' open. The code is written in JavaScript and uses the MongoClient module from MongoDB. It connects to a database at 'localhost:27017/students'. The script then updates documents in the 'studentmarks' collection where the 'name' field is 'Lucky' to set the 'Marks\_science' field to '75'. Finally, it logs a message to the console and closes the database connection.

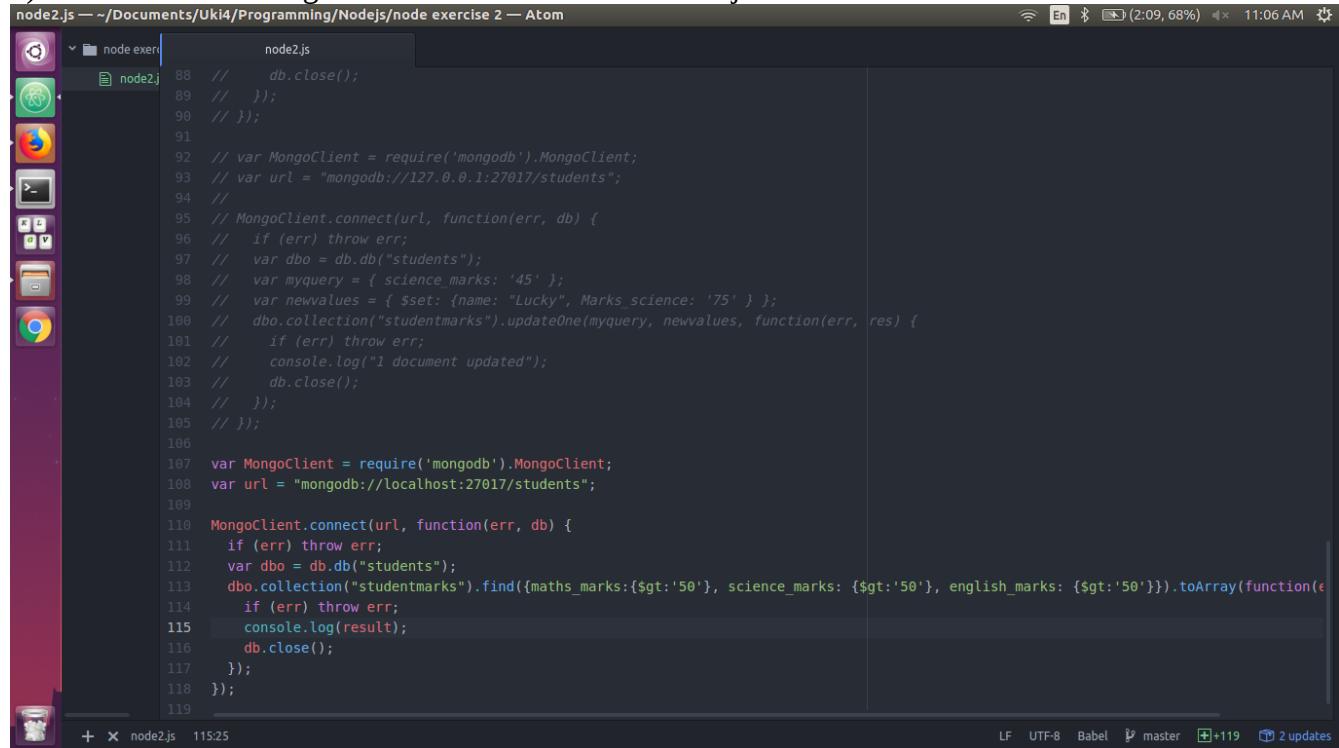
```
node2.js
75
76
77 // var MongoClient = require('mongodb').MongoClient;
78 // var url = "mongodb://localhost:27017/students";
79 //
80 // MongoClient.connect(url, function(err, db) {
81 //   if (err) throw err;
82 //   var dbo = db.db("students");
83 //   var query = { };
84 //   var newvalues={$set:{Average: " "}};
85 //   dbo.collection("studentmarks").updateMany (query,newvalues ,function(err, result) {
86 //     if (err) throw err;
87 //     console.log("Average is Input");
88 //     db.close();
89 //   });
90 // });
91
92 var MongoClient = require('mongodb').MongoClient;
93 var url = "mongodb://127.0.0.1:27017/students";
94
95 MongoClient.connect(url, function(err, db) {
96   if (err) throw err;
97   var dbo = db.db("students");
98   var myquery = { science_marks: '45' };
99   var newvalues = { $set: {name: "Lucky", Marks_science: '75' } };
100  dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
101    if (err) throw err;
102    console.log("1 document updated");
103    db.close();
104  });
105 });
106
```



The screenshot shows a terminal window with the command 'node node2.js' run. The output shows the database connection, the update operation, and the final log message '1 document updated'.

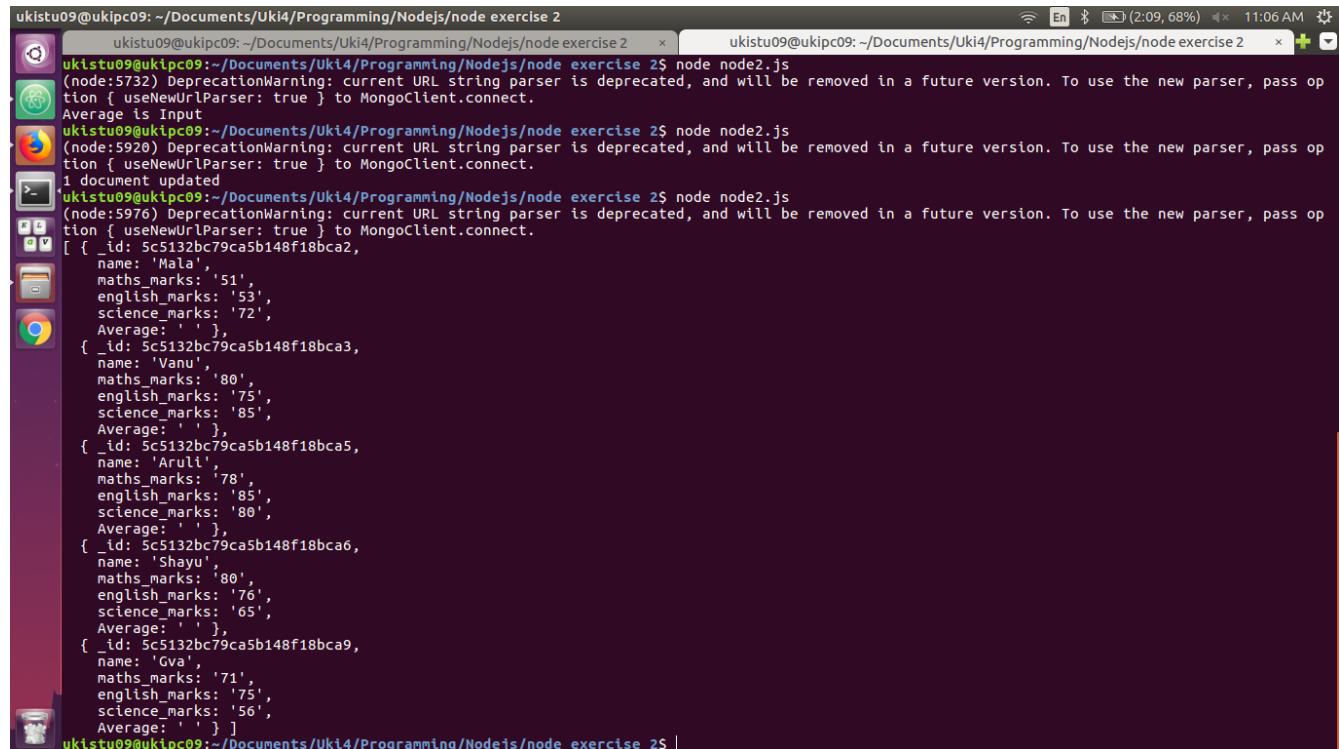
```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5444) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
[ { _id: 5c5132bc79ca5b148f18bca2,
  name: 'Mala',
  maths_marks: '51',
  english_marks: '53',
  science_marks: '72' },
{ _id: 5c5132bc79ca5b148f18bca3,
  name: 'Vanu',
  maths_marks: '80',
  english_marks: '75',
  science_marks: '85' },
{ _id: 5c5132bc79ca5b148f18bca5,
  name: 'Arull',
  maths_marks: '78',
  english_marks: '85',
  science_marks: '80' },
{ _id: 5c5132bc79ca5b148f18bca6,
  name: 'Shayu',
  maths_marks: '80',
  english_marks: '76',
  science_marks: '65' },
{ _id: 5c5132bc79ca5b148f18bca8,
  name: 'Lucky',
  maths_marks: '66',
  english_marks: '90',
  science_marks: '45' },
{ _id: 5c5132bc79ca5b148f18bca9,
  name: 'Gva',
  maths_marks: '71',
  english_marks: '75',
  science_marks: '56' } ]
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5732) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Average is Input
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5920) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
1 document updated
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$
```

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



The screenshot shows the Atom code editor with a file named 'node2.js' open. The code is a Node.js script that interacts with a MongoDB database to update and query student marks. It uses the MongoClient module to connect to a database at 'mongodb://127.0.0.1:27017/students'. The script first updates a document in the 'studentmarks' collection with a science mark of 45 to 75. Then, it finds documents where all three subjects (maths, science, English) have marks greater than 50. The results are printed to the console. The code editor interface includes a sidebar with icons for file operations, a status bar at the bottom, and a system tray at the top right.

```
node2.js
88 //     db.close();
89 //   });
90 // });
91
92 // var MongoClient = require('mongodb').MongoClient;
93 // var url = "mongodb://127.0.0.1:27017/students";
94 //
95 // MongoClient.connect(url, function(err, db) {
96 //   if (err) throw err;
97 //   var dbo = db.db("students");
98 //   var myquery = { science_marks: '45' };
99 //   var newvalues = { $set: {name: "Lucky", Marks_science: '75'} };
100 //   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
101 //     if (err) throw err;
102 //     console.log("1 document updated");
103 //     db.close();
104 //   });
105 // });
106
107 var MongoClient = require('mongodb').MongoClient;
108 var url = "mongodb://localhost:27017/students";
109
110 MongoClient.connect(url, function(err, db) {
111   if (err) throw err;
112   var dbo = db.db("students");
113   dbo.collection("studentmarks").find({maths_marks:{$gt:'50'}, science_marks: {$gt:'50'}, english_marks: {$gt:'50'}}).toArray(function(e
114     if (err) throw err;
115     console.log(result);
116     db.close();
117   });
118 });
119
```



The screenshot shows a terminal window with two tabs. The left tab shows the command 'node2.js' being run, and the right tab shows the output. The output displays the average marks for each student: Mala (51), Vanu (80), Arull (78), Shaya (80), and Gva (71). The terminal interface includes a sidebar with icons for file operations, a status bar at the bottom, and a system tray at the top right.

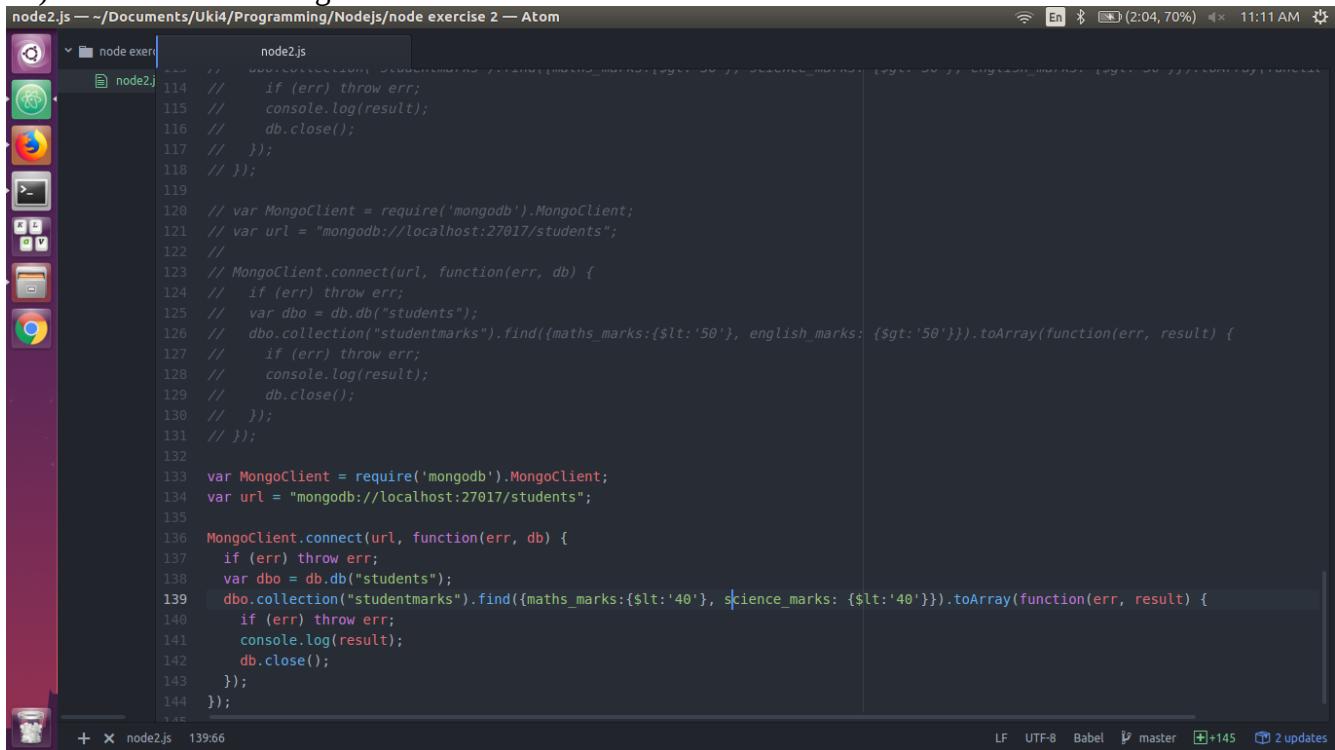
```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5732) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
Average is Input
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5920) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
1 document updated
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:5976) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
[ { _id: 5c5132bc79ca5b148f18bca2,
  name: 'Mala',
  maths_marks: '51',
  english_marks: '53',
  science_marks: '72',
  Average: ' ' },
  { _id: 5c5132bc79ca5b148f18bca3,
  name: 'Vanu',
  maths_marks: '80',
  english_marks: '75',
  science_marks: '85',
  Average: ' ' },
  { _id: 5c5132bc79ca5b148f18bca5,
  name: 'Arull',
  maths_marks: '78',
  english_marks: '85',
  science_marks: '80',
  Average: ' ' },
  { _id: 5c5132bc79ca5b148f18bca6,
  name: 'Shaya',
  maths_marks: '80',
  english_marks: '76',
  science_marks: '65',
  Average: ' ' },
  { _id: 5c5132bc79ca5b148f18bca9,
  name: 'Gva',
  maths_marks: '71',
  english_marks: '75',
  science_marks: '56',
  Average: ' ' } ]
```

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

```
node2.js -- ~/Documents/Uki4/Programming/Nodejs/node exercise 2 — Atom
(node:6093) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
[ { _id: 5c5132bc79ca5b148f18bcaa,
  name: 'Kumaran',
  maths_marks: '32',
  english_marks: '73',
  science_marks: '84',
  Average: ' ' },
  { _id: 5c5132bc79ca5b148f18bcab,
  name: 'Raam',
  maths_marks: '41',
  english_marks: '65',
  science_marks: '88',
  Average: ' ' } ]
```

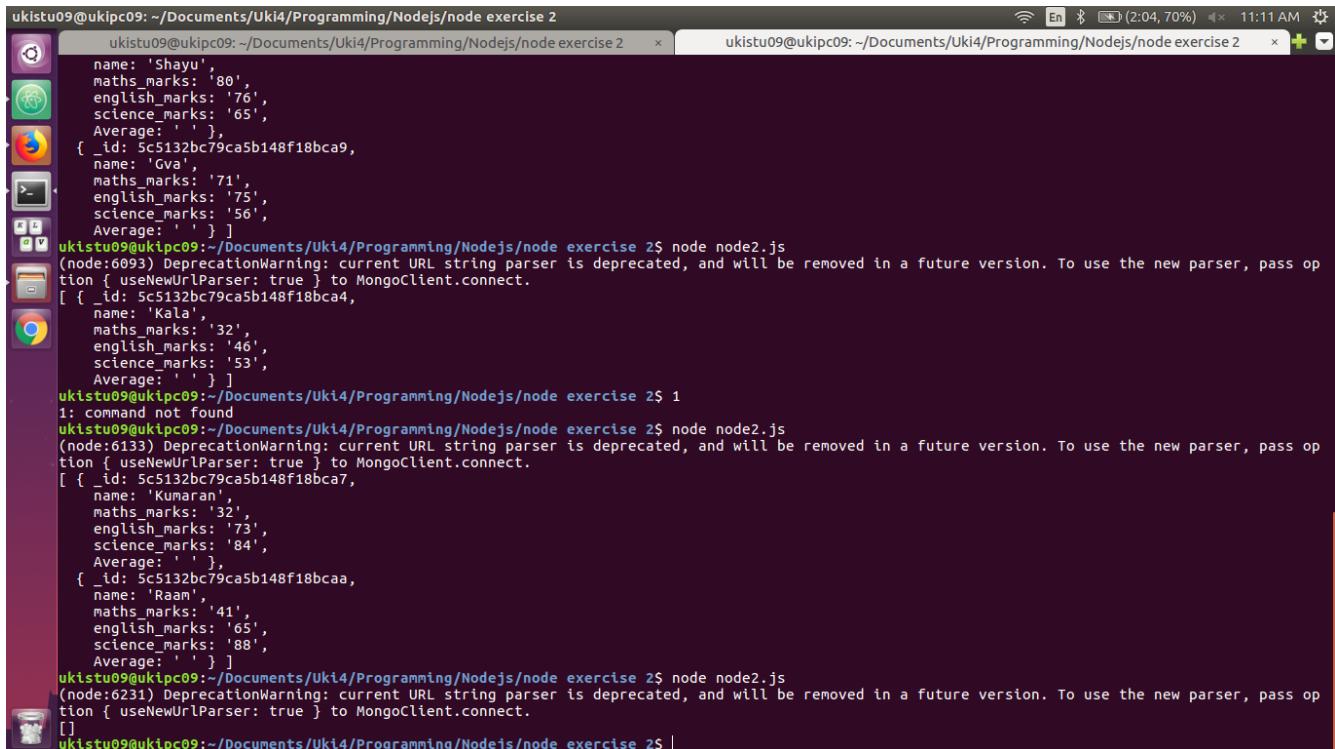
```
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2 ~ ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2
(node:6133) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
[ { _id: 5c5132bc79ca5b148f18bcaa,
  name: 'Kumaran',
  maths_marks: '32',
  english_marks: '73',
  science_marks: '84',
  Average: ' ' },
  { _id: 5c5132bc79ca5b148f18bcab,
  name: 'Raam',
  maths_marks: '41',
  english_marks: '65',
  science_marks: '88',
  Average: ' ' } ]
```

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



The screenshot shows the Atom code editor with a file named 'node2.js' open. The code is a Node.js script using MongoDB to find students with marks less than 40 in both Maths and Science. It includes error handling and logging. The code editor interface includes a sidebar with icons for file operations, a status bar at the bottom, and a system tray at the top.

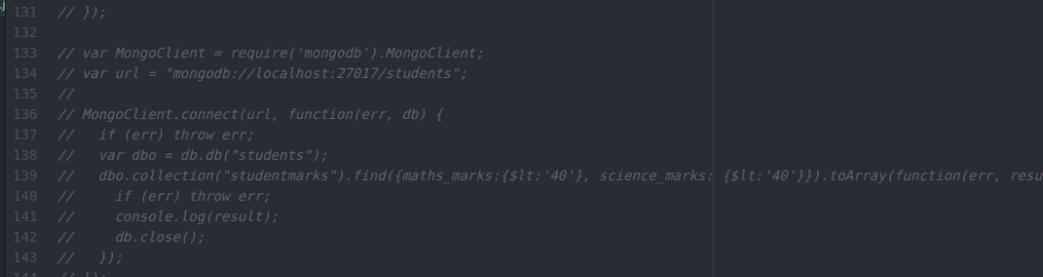
```
node2.js
114 //     if (err) throw err;
115 //     console.log(result);
116 //     db.close();
117 //   });
118 // });
119
120 // var MongoClient = require('mongodb').MongoClient;
121 // var url = "mongodb://localhost:27017/students";
122 //
123 // MongoClient.connect(url, function(err, db) {
124 //   if (err) throw err;
125 //   var dbo = db.db("students");
126 //   dbo.collection("studentmarks").find({maths_marks:{$lt:'50'}, english_marks: {$gt:'50'}}).toArray(function(err, result) {
127 //     if (err) throw err;
128 //     console.log(result);
129 //     db.close();
130 //   });
131 // });
132
133 var MongoClient = require('mongodb').MongoClient;
134 var url = "mongodb://localhost:27017/students";
135
136 MongoClient.connect(url, function(err, db) {
137   if (err) throw err;
138   var dbo = db.db("students");
139   dbo.collection("studentmarks").find({maths_marks:{$lt:'40'}, science_marks: {$lt:'40'}}).toArray(function(err, result) {
140     if (err) throw err;
141     console.log(result);
142     db.close();
143   });
144 });
145
```



The screenshot shows a terminal window with two tabs. Both tabs show the output of running the 'node2.js' script. The output lists student documents where both Maths and Science marks are less than 40. The terminal interface includes a sidebar with icons for file operations, a status bar at the bottom, and a system tray at the top.

```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
[{"name": "Shayu", "maths_marks": "80", "english_marks": "76", "science_marks": "65", "Average": "71"}, {"_id": "5c5132bc79ca5b148f18bca9", "name": "Gva", "maths_marks": "71", "english_marks": "75", "science_marks": "56", "Average": "68"}, {"_id": "5c5132bc79ca5b148f18bcaa", "name": "Kala", "maths_marks": "32", "english_marks": "46", "science_marks": "53", "Average": "42"}, {"_id": "5c5132bc79ca5b148f18bcaa", "name": "Kumaran", "maths_marks": "32", "english_marks": "73", "science_marks": "84", "Average": "63"}, {"_id": "5c5132bc79ca5b148f18bcaa", "name": "Raam", "maths_marks": "41", "english_marks": "65", "science_marks": "88", "Average": "71"}]
```

11) Remove Science column/field for Raam



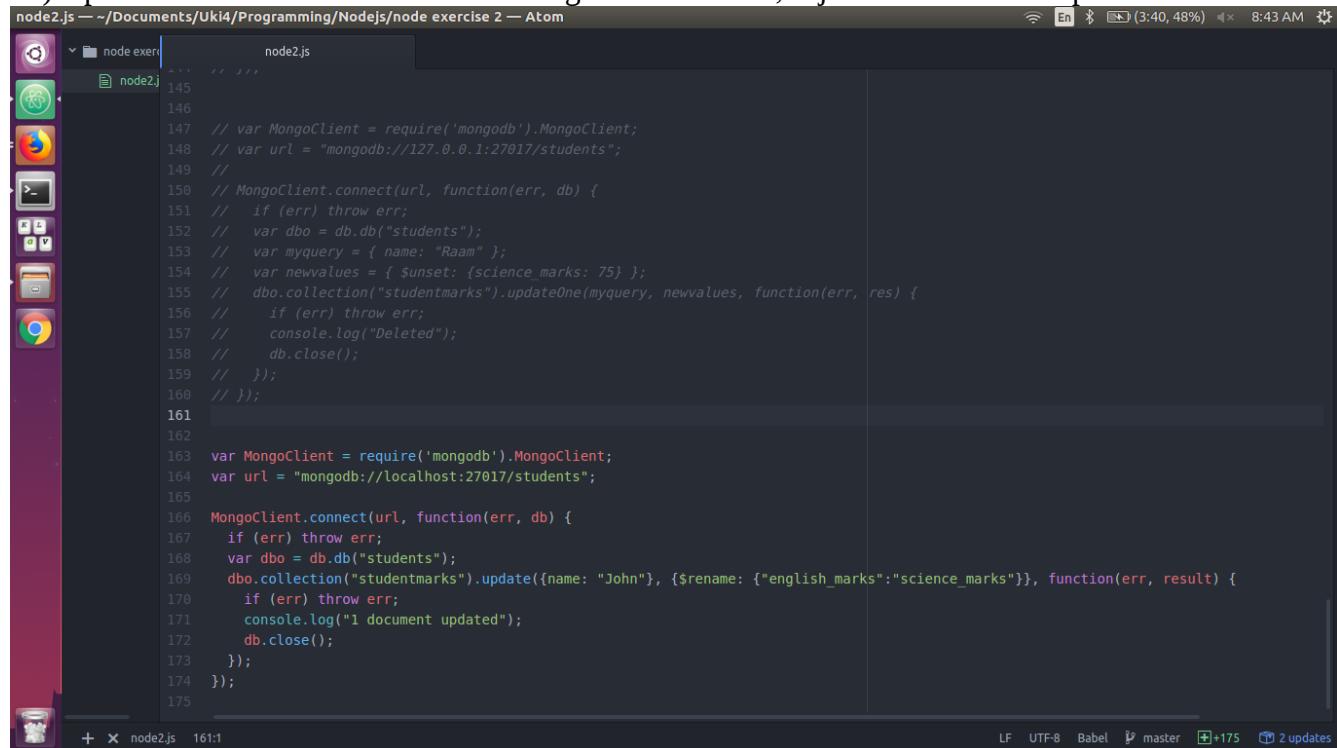
The screenshot shows the Atom code editor with a file named 'node2.js' open. The code performs several MongoDB operations using the MongoClient module. It connects to a local MongoDB instance at port 27017, finds documents where both 'maths\_marks' and 'science\_marks' are less than or equal to 40, logs the results, and then updates a document where 'name' is 'Raam' to set 'science\_marks' to 75. Finally, it logs a message and closes the database connection.

```
node2.js
131 // });
132
133 // var MongoClient = require('mongodb').MongoClient;
134 // var url = "mongodb://localhost:27017/students";
135 //
136 // MongoClient.connect(url, function(err, db) {
137 //   if (err) throw err;
138 //   var dbo = db.db("students");
139 //   dbo.collection("studentmarks").find({maths_marks:{$lt:'40'}, science_marks: {$lt:'40'}}).toArray(function(err, result) {
140 //     if (err) throw err;
141 //     console.log(result);
142 //   db.close();
143 // });
144 // );
145
146
147 var MongoClient = require('mongodb').MongoClient;
148 var url = "mongodb://127.0.0.1:27017/students";
149
150 MongoClient.connect(url, function(err, db) {
151   if (err) throw err;
152   var dbo = db.db("students");
153   var myquery = { name: "Raam" };
154   var newvalues = { $unset: {science_marks: 75} };
155   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
156     if (err) throw err;
157     console.log("Deleted");
158     db.close();
159   });
160 });
161
```

```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2 x
En (1:28, 72%) 12:52 PM
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2 x +
```

Average: ' ' },  
{ \_id: 5c5132bc79ca5b148f18bca9,  
name: 'Gva',  
maths\_marks: '71',  
english\_marks: '75',  
science\_marks: '56',  
Average: ' ' } ]  
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2\$ node node2.js  
(node:6093) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.  
[ { \_id: 5c5132bc79ca5b148f18bca4,  
name: 'Kala',  
maths\_marks: '32',  
english\_marks: '46',  
science\_marks: '53',  
Average: ' ' } ]  
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2\$ 1  
1: command not found  
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2\$ node node2.js  
(node:6133) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.  
[ { \_id: 5c5132bc79ca5b148f18bca7,  
name: 'Kumaran',  
maths\_marks: '32',  
english\_marks: '73',  
science\_marks: '84',  
Average: ' ' },  
{ \_id: 5c5132bc79ca5b148f18bcaa,  
name: 'Raam',  
maths\_marks: '41',  
english\_marks: '65',  
science\_marks: '88',  
Average: ' ' } ]  
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2\$ node node2.js  
(node:6231) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.  
[]  
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2\$ node node2.js  
(node:7404) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.  
Deleted  
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2\$ |

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

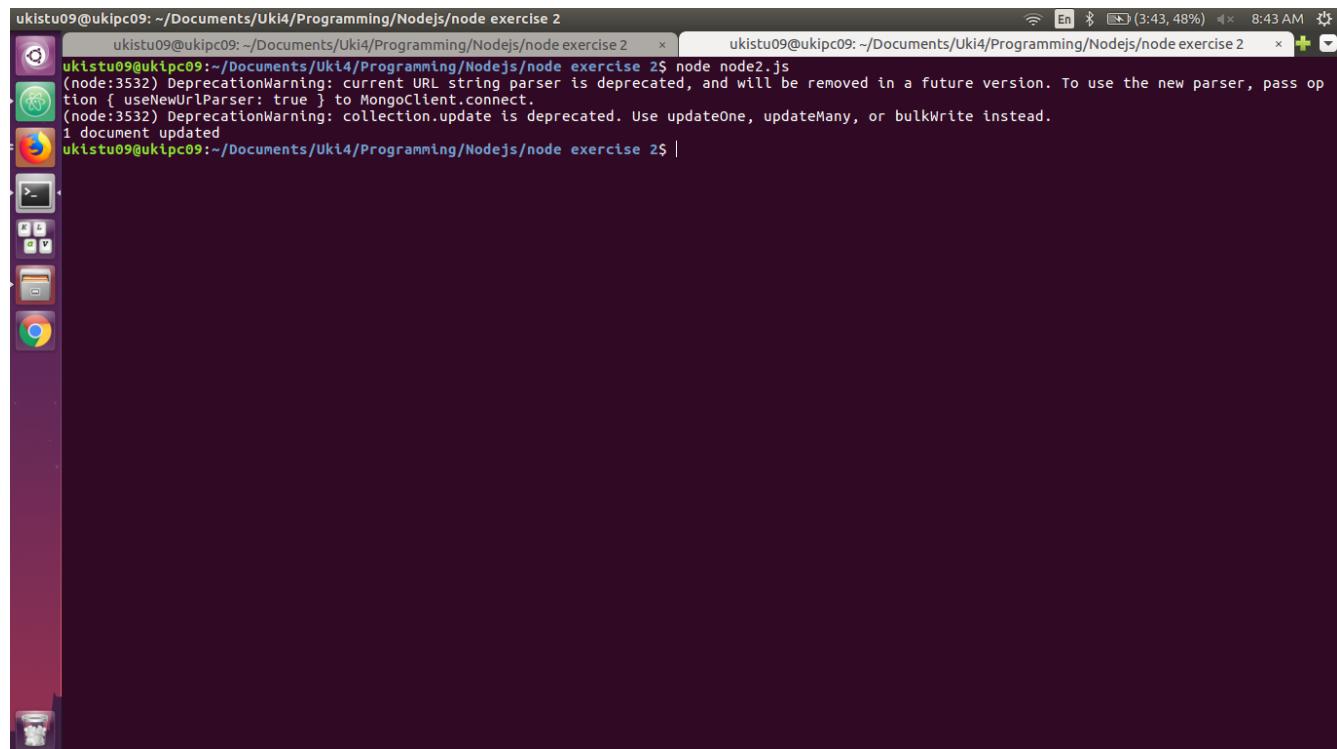


The screenshot shows the Atom code editor with a file named 'node2.js' open. The code is written in JavaScript and uses the MongoClient module from MongoDB. It connects to a database at 'mongodb://127.0.0.1:27017/students'. It first attempts to update a document for 'Raam' with science marks set to 75. If successful, it logs 'Deleted'. Then, it updates a document for 'John' by renaming 'english\_marks' to 'science\_marks'. If successful, it logs '1 document updated'. Finally, it closes the database connection. The code includes several comments and blank lines for readability.

```
// var MongoClient = require('mongodb').MongoClient;
// var url = "mongodb://127.0.0.1:27017/students";
//
// MongoClient.connect(url, function(err, db) {
//   if (err) throw err;
//   var dbo = db.db("students");
//   var myquery = { name: "Raam" };
//   var newvalues = { $unset: {science_marks: 75} };
//   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
//     if (err) throw err;
//     console.log("Deleted");
//   });
//   db.close();
// });

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

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("students");
  dbo.collection("studentmarks").update({name: "John"}, {$rename: {"english_marks": "science_marks"}}, function(err, result) {
    if (err) throw err;
    console.log("1 document updated");
    db.close();
  });
});
```



The screenshot shows a terminal window with two tabs. The left tab shows the command 'node node2.js' being run. The right tab shows the output of the script. The output indicates a DeprecationWarning about the URL string parser being deprecated, followed by a message stating '1 document updated'.

```
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:3532) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
(node:3532) DeprecationWarning: collection.update is deprecated. Use updateOne, updateMany, or bulkWrite instead.
1 document updated
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ |
```

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

```
node2.js -- ~/Documents/Uki4/Programming/Nodejs/node exercise 2 — Atom
node2.js
161
162
163 // var MongoClient = require('mongodb').MongoClient;
164 // var url = "mongodb://localhost:27017/students";
165 //
166 // MongoClient.connect(url, function(err, db) {
167 //   if (err) throw err;
168 //   var dbo = db.db("students");
169 //   dbo.collection("studentmarks").update({name: "John"}, {$rename: {"english_marks": "science_marks"}}, function(err, result) {
170 //     if (err) throw err;
171 //     console.log("1 document updated");
172 //     db.close();
173 //   });
174 // });
175
176
177 var MongoClient = require('mongodb').MongoClient;
178 var url = "mongodb://127.0.0.1:27017/students";
179
180 MongoClient.connect(url, function(err, db) {
181   if (err) throw err;
182   var dbo = db.db("students");
183   var myquery = { name: "John" };
184   var newvalues = { $rename: {english_marks: "science_marks"} };
185   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
186     if (err) throw err;
187     console.log("Data Updated");
188     db.close();
189   });
190 });
191
```

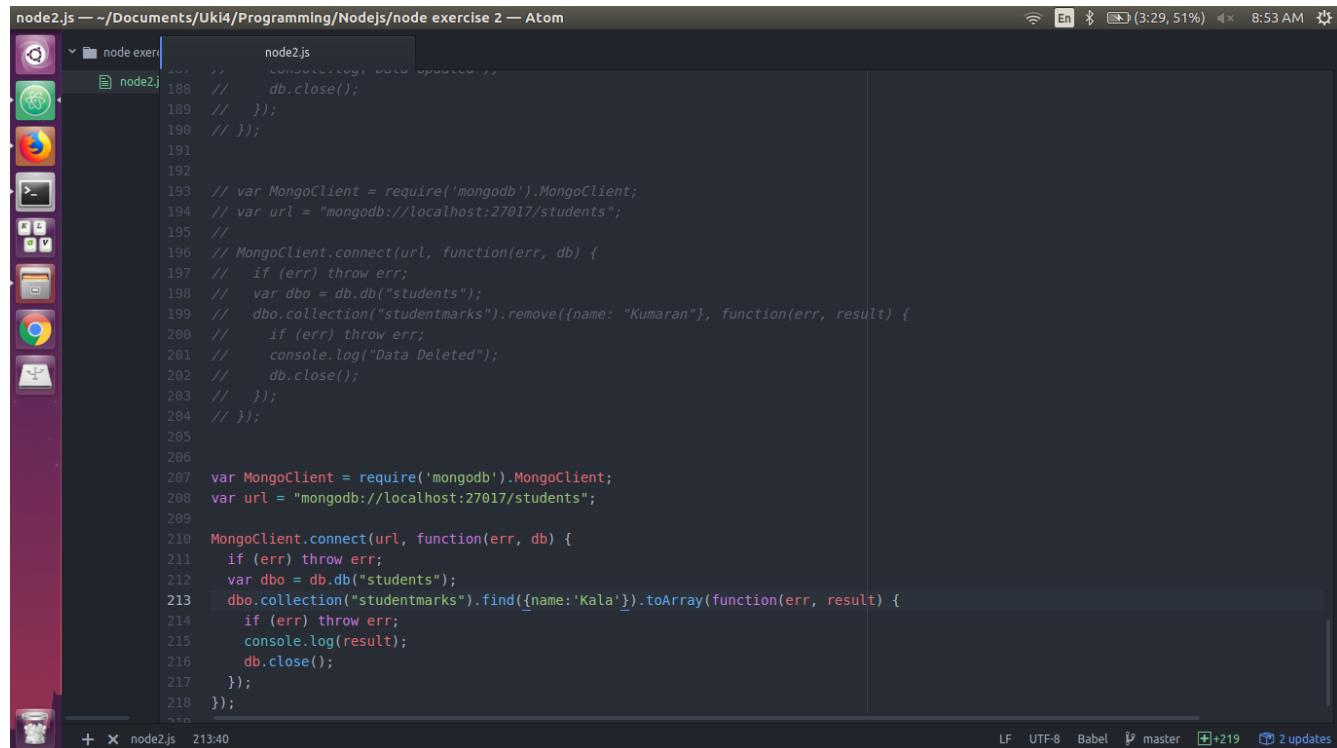
```
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:3861) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass options { useNewUrlParser: true } to MongoClient.connect.
Data Updated
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$ |
```

## 14) Remove Kumaran's document from collection

```
node2.js -- ~/Documents/Uki4/Programming/Nodejs/node exercise 2 — Atom
node2.js
175 // 
176 // 
177 // var MongoClient = require('mongodb').MongoClient;
178 // var url = "mongodb://127.0.0.1:27017/students";
179 // 
180 // MongoClient.connect(url, function(err, db) {
181 //   if (err) throw err;
182 //   var dbo = db.db("students");
183 //   var myquery = { name: "John" };
184 //   var newvalues = { $rename: {english_marks: "science_marks"} };
185 //   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
186 //     if (err) throw err;
187 //     console.log("Data Updated");
188 //     db.close();
189 //   });
190 // });
191 
192 
193 var MongoClient = require('mongodb').MongoClient;
194 var url = "mongodb://localhost:27017/students";
195 
196 MongoClient.connect(url, function(err, db) {
197   if (err) throw err;
198   var dbo = db.db("students");
199   dbo.collection("studentmarks").remove({name: "Kumaran"}, function(err, result) {
200     if (err) throw err;
201     console.log("Data Deleted");
202     db.close();
203   });
204 });
205 
```

```
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:3966) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
(node:3966) DeprecationWarning: collection.remove is deprecated. Use deleteOne, deleteMany, or bulkWrite instead.
Data Deleted
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ |
```

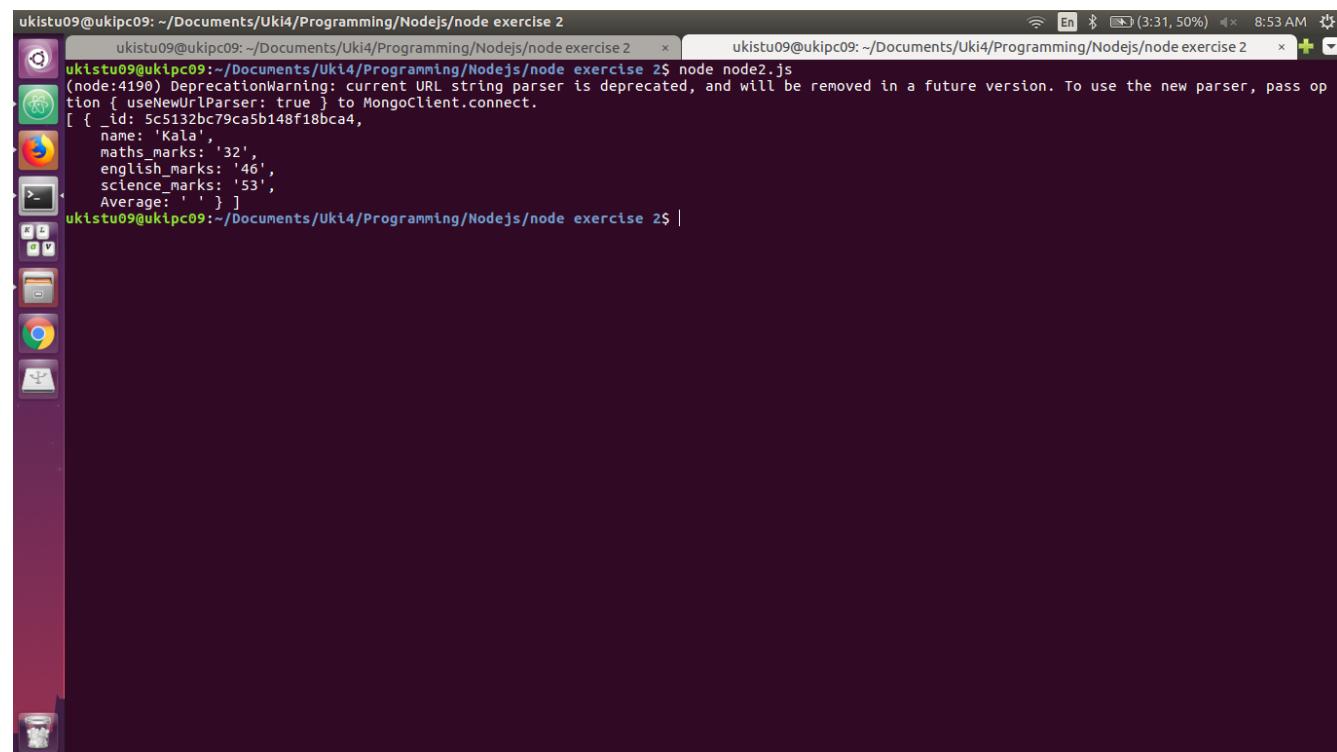
## 15) Find Kala's or Aruli's math\_marks and science\_marks



The screenshot shows the Atom code editor with a file named 'node2.js' open. The code is a Node.js script that interacts with a MongoDB database. It first removes a document from the 'studentmarks' collection where the name is 'Kumaran'. Then it connects to the database again and finds all documents where the name is 'Kala', logging the results to the console. The code uses the MongoClient module and the promise-based db API.

```
node2.js — ~/Documents/Uki4/Programming/Nodejs/node exercise 2 — Atom
node2.js
188 //     db.close();
189 //   });
190 // });
191
192
193 // var MongoClient = require('mongodb').MongoClient;
194 // var url = "mongodb://localhost:27017/students";
195 //
196 // MongoClient.connect(url, function(err, db) {
197 //   if (err) throw err;
198 //   var dbo = db.db("students");
199 //   dbo.collection("studentmarks").remove({name: "Kumaran"}, function(err, result) {
200 //     if (err) throw err;
201 //     console.log("Data Deleted");
202 //     db.close();
203 //   });
204 // });
205
206
207 var MongoClient = require('mongodb').MongoClient;
208 var url = "mongodb://localhost:27017/students";
209
210 MongoClient.connect(url, function(err, db) {
211   if (err) throw err;
212   var dbo = db.db("students");
213   dbo.collection("studentmarks").find({name:'Kala'}).toArray(function(err, result) {
214     if (err) throw err;
215     console.log(result);
216     db.close();
217   });
218 });

```



The screenshot shows a terminal window on a Linux desktop. The user has run the command 'node node2.js'. The output shows a single document from the MongoDB collection, which includes fields for name, maths\_marks, english\_marks, science\_marks, and Average.

```
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2
ukistu09@ukipc09: ~/Documents/Uki4/Programming/Nodejs/node exercise 2$ node node2.js
(node:4190) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.
[ { _id: 5c5132bc79ca5b148f18bca4,
  name: 'Kala',
  maths_marks: '32',
  english_marks: '46',
  science_marks: '53',
  Average: ' ' } ]
ukistu09@ukipc09:~/Documents/Uki4/Programming/Nodejs/node exercise 2$
```