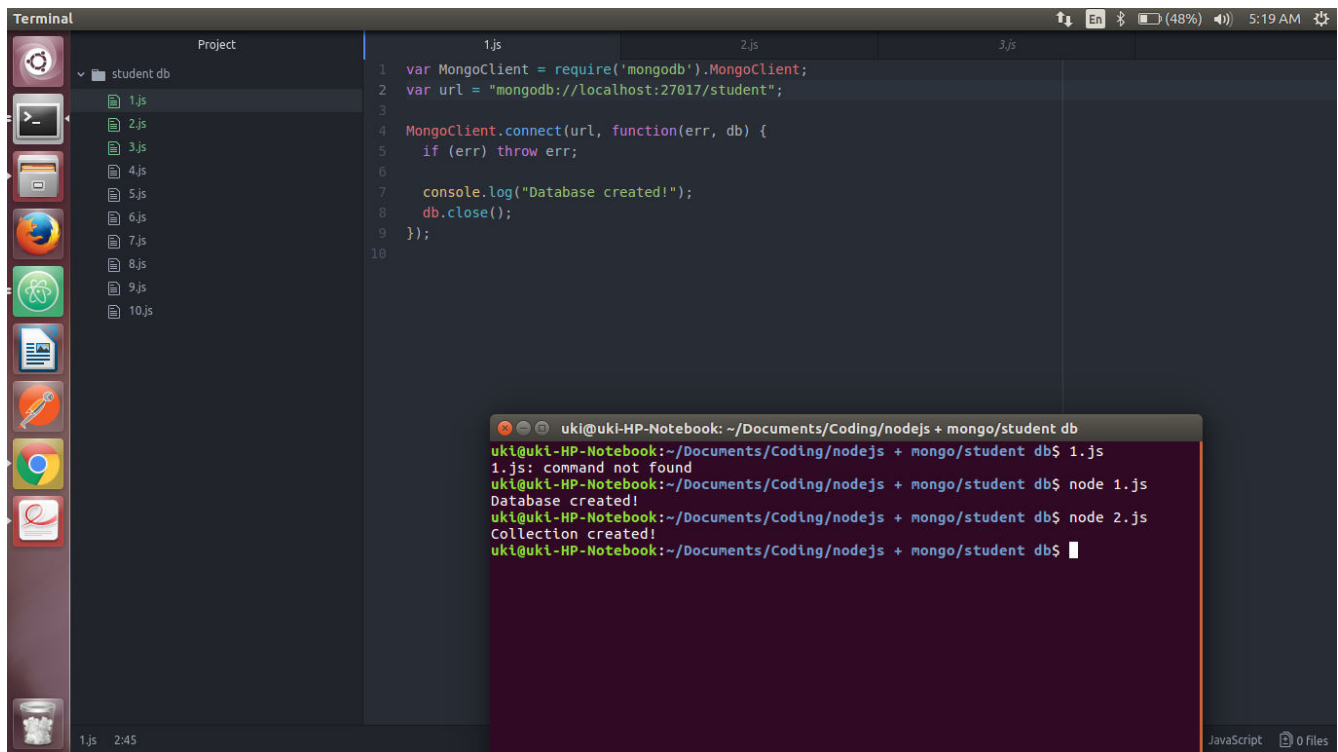


## 1) Create a Database called student



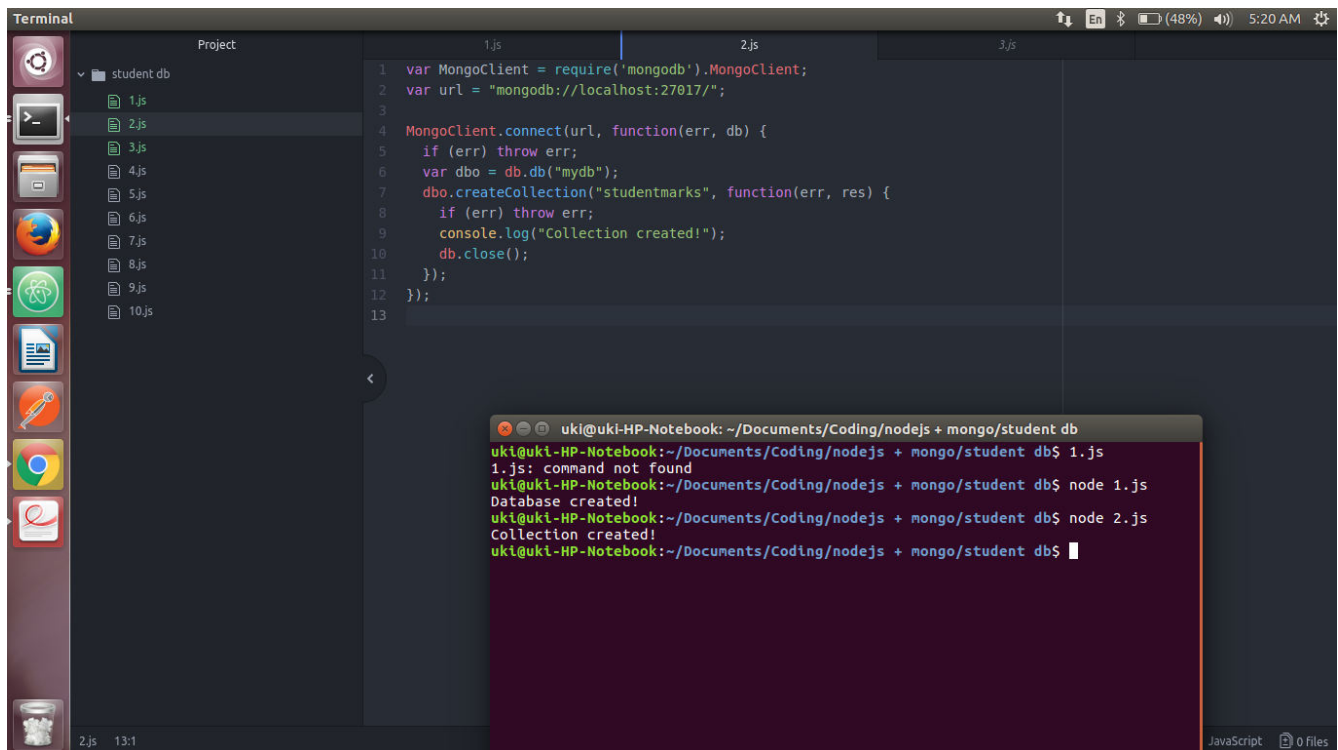
The screenshot shows a VS Code editor with a project named 'student db' containing files 1.js through 10.js. The editor is open to 1.js, which contains the following JavaScript code:

```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/student";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6
7   console.log("Database created!");
8   db.close();
9 });
10
```

Below the editor, a terminal window shows the execution of the code:

```
uki@uki-HP-Notebook: ~/Documents/Coding/nodejs + mongo/student db
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ 1.js
1.js: command not found
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 1.js
Database created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 2.js
Collection created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

## 2) Create a collection called studentmarks



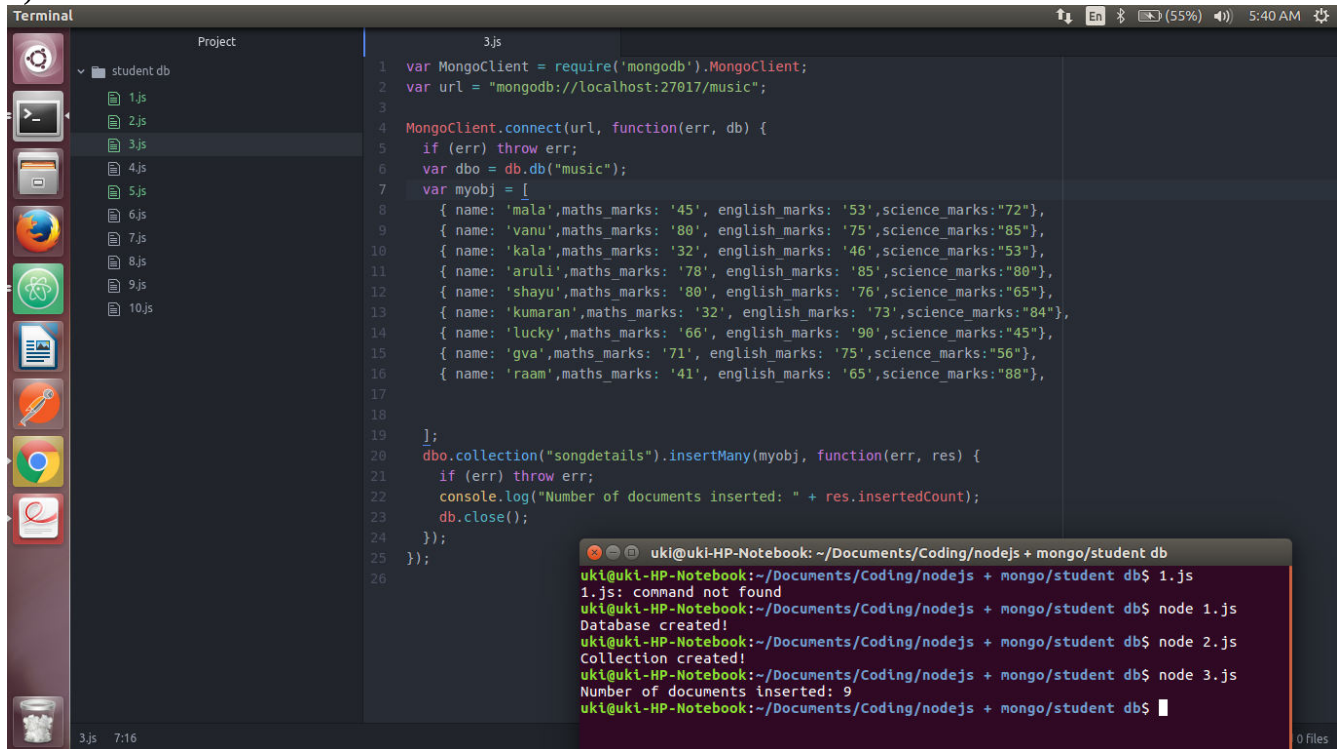
The screenshot shows the same VS Code editor with the 'student db' project. The editor is now open to 2.js, which contains the following JavaScript code:

```
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("mydb");
7   dbo.createCollection("studentmarks", function(err, res) {
8     if (err) throw err;
9     console.log("Collection created!");
10    db.close();
11  });
12 });
13
```

The terminal window below shows the execution of the code:

```
uki@uki-HP-Notebook: ~/Documents/Coding/nodejs + mongo/student db
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ 1.js
1.js: command not found
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 1.js
Database created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 2.js
Collection created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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



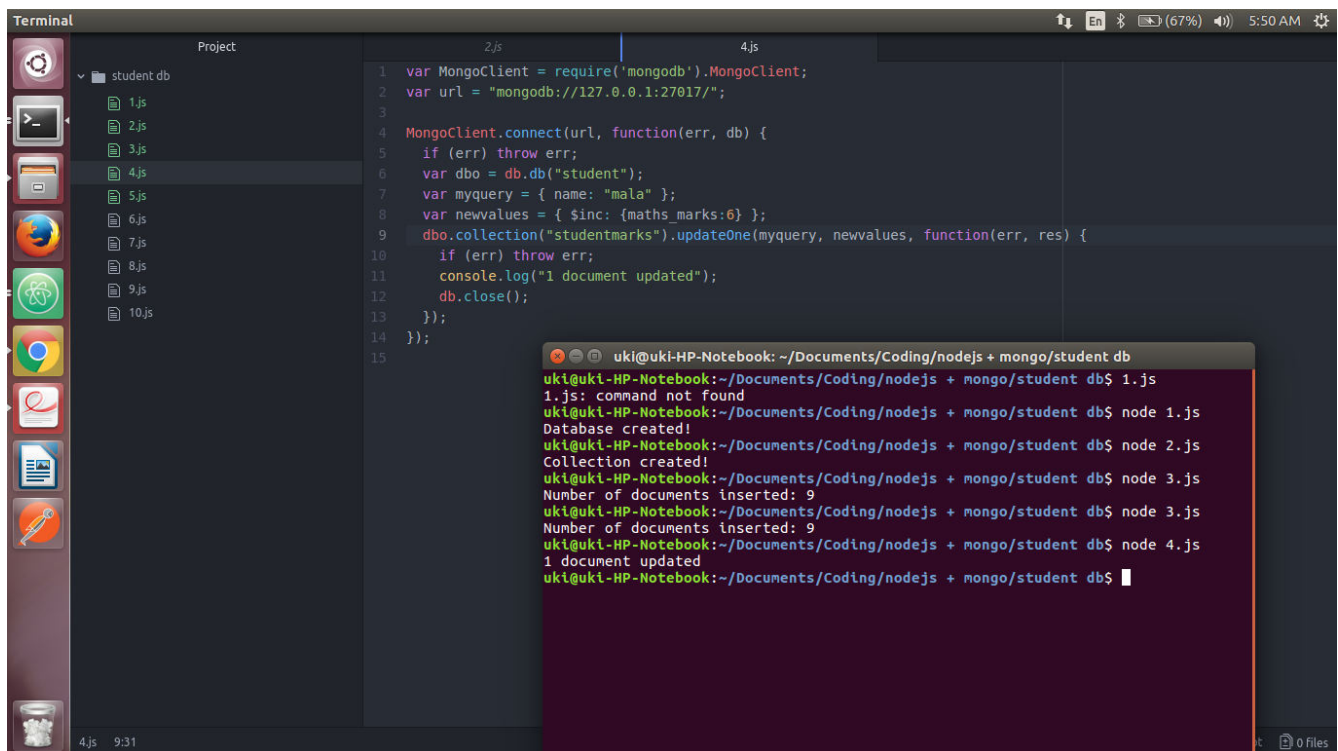
The screenshot shows a VS Code editor with a file explorer on the left containing files 1.js through 10.js. The main editor displays the code for 3.js, which connects to a MongoDB instance at localhost:27017/music and inserts nine documents into the 'songdetails' collection. The documents are objects with 'name' and 'marks' for 'maths', 'english', and 'science'.

```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/music";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db("music");
7   var myobj = [
8     { name: 'mala', maths_marks: '45', english_marks: '53', science_marks: "72"},
9     { name: 'vanu', maths_marks: '80', english_marks: '75', science_marks: "85"},
10    { name: 'kala', maths_marks: '32', english_marks: '46', science_marks: "53"},
11    { name: 'aruli', maths_marks: '78', english_marks: '85', science_marks: "80"},
12    { name: 'shayu', maths_marks: '80', english_marks: '76', science_marks: "65"},
13    { name: 'kumaran', maths_marks: '32', english_marks: '73', science_marks: "84"},
14    { name: 'lucky', maths_marks: '66', english_marks: '90', science_marks: "45"},
15    { name: 'gva', maths_marks: '71', english_marks: '75', science_marks: "56"},
16    { name: 'raam', maths_marks: '41', english_marks: '65', science_marks: "88"},
17  ];
18
19  dbo.collection("songdetails").insertMany(myobj, function(err, res) {
20    if (err) throw err;
21    console.log("Number of documents inserted: " + res.insertedCount);
22    db.close();
23  });
24 });
25
26
```

The terminal window shows the execution of the script:

```
uki@uki-HP-Notebook: ~/Documents/Coding/nodejs + mongo/student db
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ 1.js
1.js: command not found
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 1.js
Database created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 2.js
Collection created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 3.js
Number of documents inserted: 9
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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



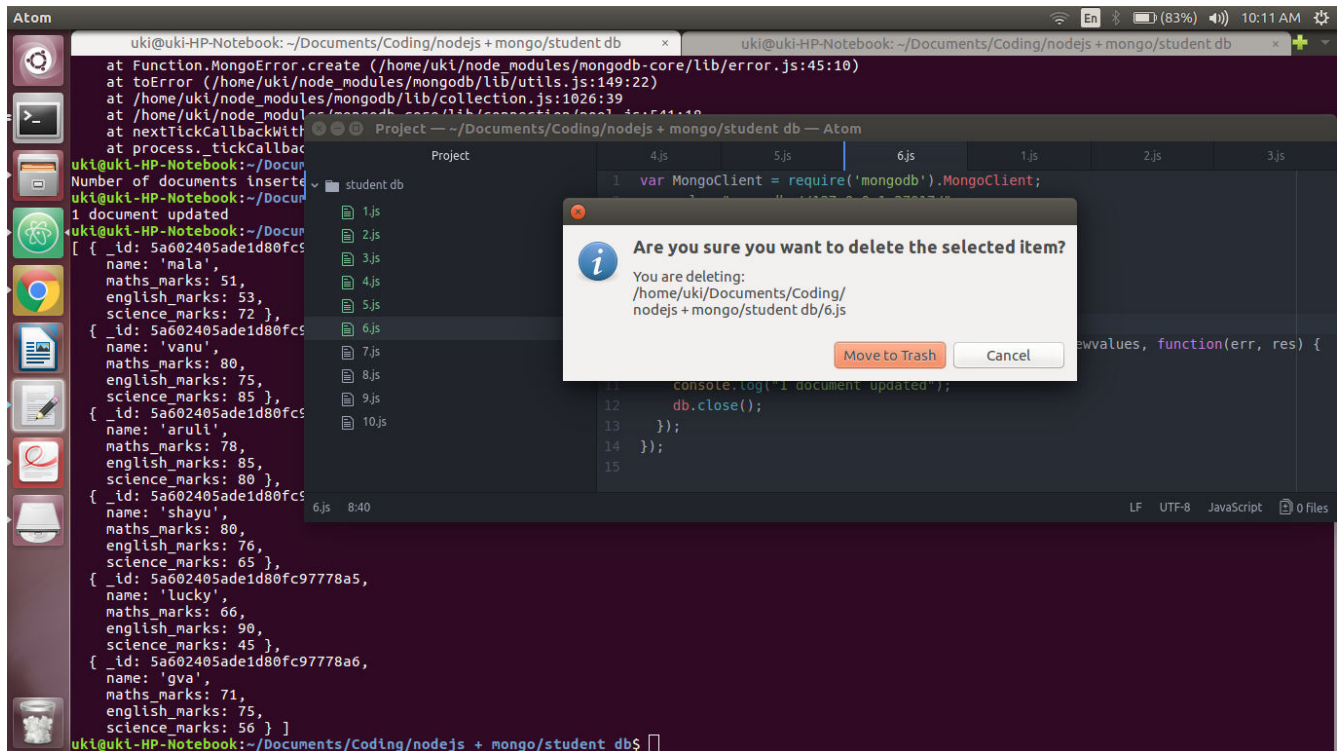
The screenshot shows a VS Code editor with a file explorer on the left containing files 1.js through 10.js. The main editor displays the code for 4.js, which connects to a MongoDB instance at 127.0.0.1:27017 and updates the 'maths\_marks' of the document with 'name: mala' by 6 marks.

```
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: { maths_marks: 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
```

The terminal window shows the execution of the script:

```
uki@uki-HP-Notebook: ~/Documents/Coding/nodejs + mongo/student db
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ 1.js
1.js: command not found
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 1.js
Database created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 2.js
Collection created!
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 3.js
Number of documents inserted: 9
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 3.js
Number of documents inserted: 9
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 4.js
1 document updated
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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

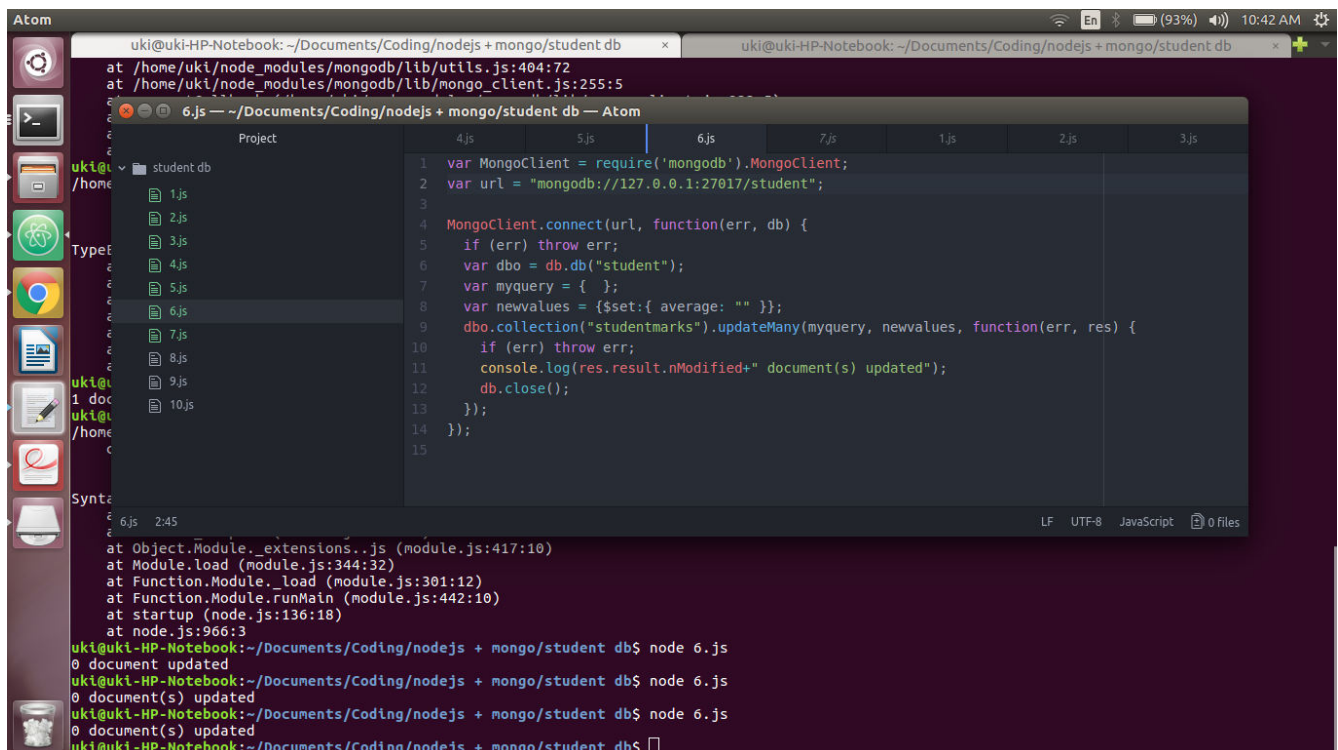


The screenshot shows the Atom editor interface with a project named 'student db'. The left sidebar displays a file explorer with files 1.js through 10.js. The main editor area shows a JavaScript file (6.js) with the following code:

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

A confirmation dialog box is displayed in the center of the screen, asking: "Are you sure you want to delete the selected item?". The dialog also shows the path: "/home/uki/Documents/Coding/nodes + mongo/student db/6.js". The dialog has two buttons: "Move to Trash" and "Cancel".

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

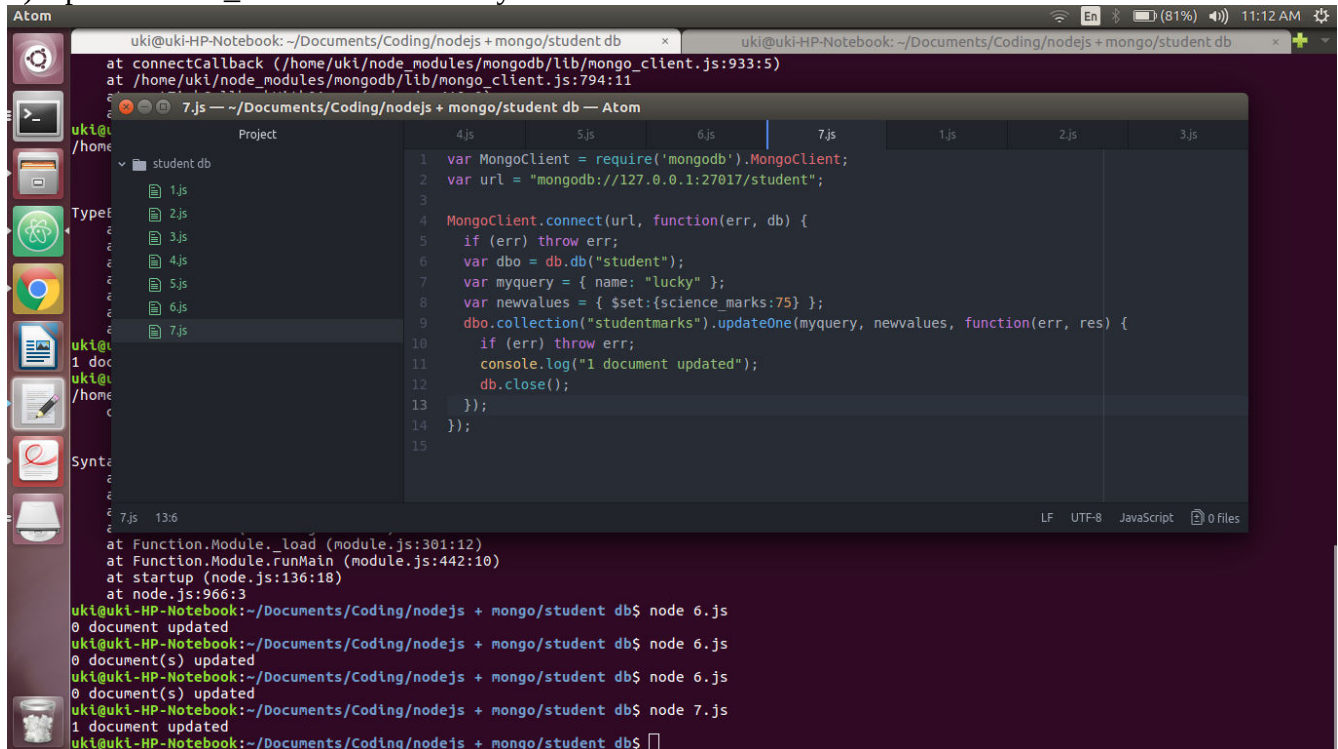


The screenshot shows the Atom editor interface with the same project 'student db'. The main editor area shows the same JavaScript file (6.js) as in the previous screenshot. The terminal output at the bottom shows the following commands and results:

```
uki@uki-HP-Notebook:~/Documents/Coding/nodes + mongo/student db$ node 6.js
0 document updated
uki@uki-HP-Notebook:~/Documents/Coding/nodes + mongo/student db$ node 6.js
0 document(s) updated
uki@uki-HP-Notebook:~/Documents/Coding/nodes + mongo/student db$ node 6.js
0 document(s) updated
uki@uki-HP-Notebook:~/Documents/Coding/nodes + mongo/student db$
```



7) Update Marks\_Science=75 to Lucky .

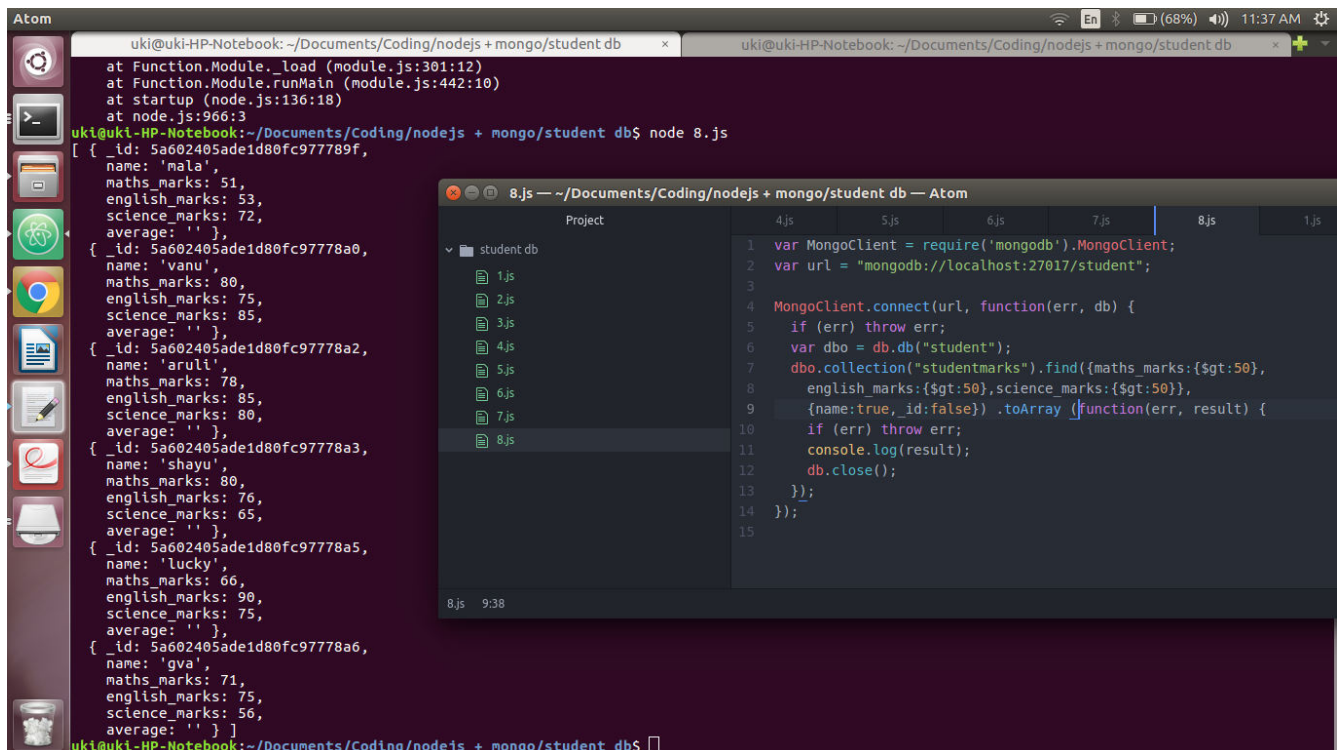


```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://127.0.0.1:27017/student";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db("student");
7   var myquery = { name: "Lucky" };
8   var newvalues = { $set: {science_marks:75} };
9   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
```

Terminal output:

```
at Function.Module._load (module.js:301:12)
at Function.Module.runMain (module.js:442:10)
at startup (node.js:136:18)
at node.js:966:3
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 6.js
0 document updated
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 6.js
0 document(s) updated
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 6.js
0 document(s) updated
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 7.js
1 document updated
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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

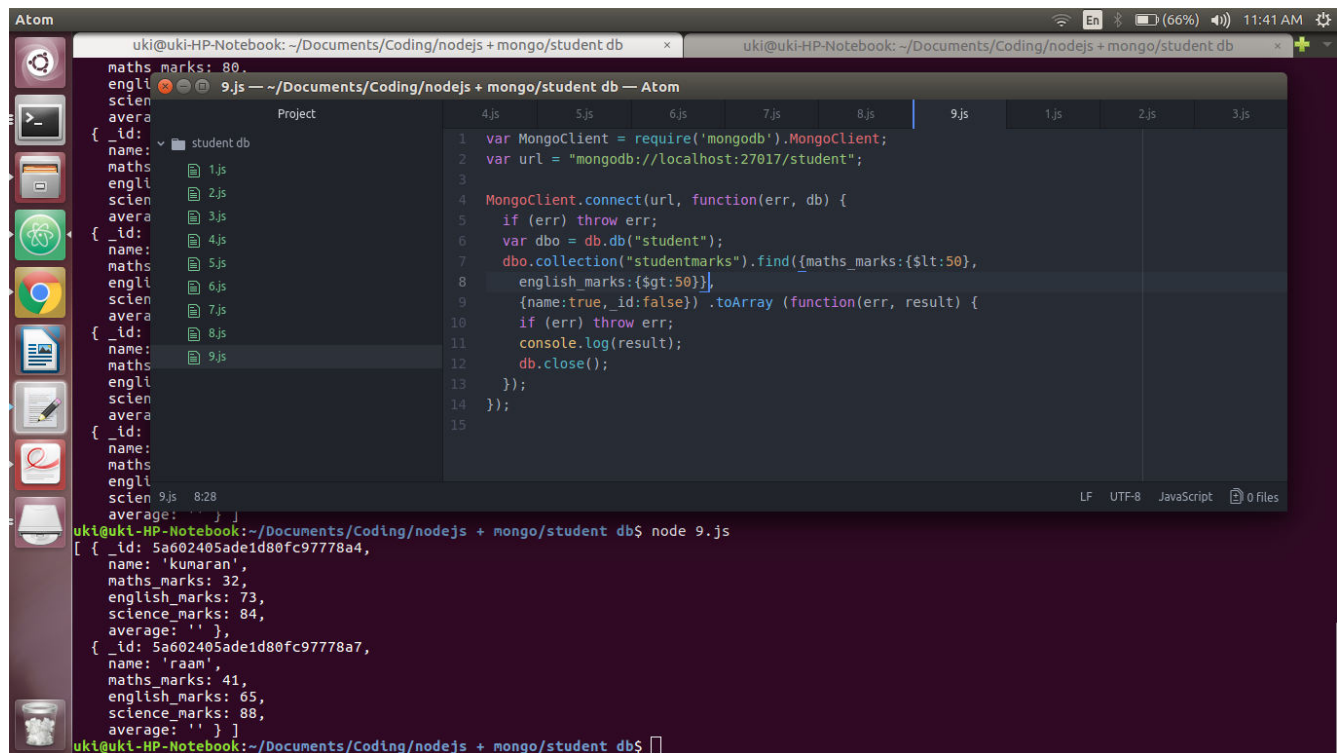


```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/student";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db("student");
7   dbo.collection("studentmarks").find({maths_marks:{$gt:50},
8     english_marks:{$gt:50},science_marks:{$gt:50}},
9     {name:true,id:false}).toArray(function(err, result) {
10    if (err) throw err;
11    console.log(result);
12    db.close();
13  });
14 });
15
```

Terminal output:

```
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 8.js
[ { _id: '5a602405ade1d80fc977789f',
  name: 'mala',
  maths_marks: 51,
  english_marks: 53,
  science_marks: 72,
  average: '' },
  { _id: '5a602405ade1d80fc97778a0',
  name: 'vanu',
  maths_marks: 80,
  english_marks: 75,
  science_marks: 85,
  average: '' },
  { _id: '5a602405ade1d80fc97778a2',
  name: 'aruli',
  maths_marks: 78,
  english_marks: 85,
  science_marks: 80,
  average: '' },
  { _id: '5a602405ade1d80fc97778a3',
  name: 'shayu',
  maths_marks: 80,
  english_marks: 76,
  science_marks: 65,
  average: '' },
  { _id: '5a602405ade1d80fc97778a5',
  name: 'lucky',
  maths_marks: 66,
  english_marks: 90,
  science_marks: 75,
  average: '' },
  { _id: '5a602405ade1d80fc97778a6',
  name: 'gva',
  maths_marks: 71,
  english_marks: 75,
  science_marks: 56,
  average: '' } ]
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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



```
maths_marks: 80,
english_marks: 73,
science_marks: 84,
average: 79 }
{
  _id: '5a602405ade1d80fc97778a7',
  name: 'raam',
  maths_marks: 41,
  english_marks: 65,
  science_marks: 88,
  average: 78 }
]
ukl@ukl-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 9.js
[ { _id: '5a602405ade1d80fc97778a4',
  name: 'kumaran',
  maths_marks: 32,
  english_marks: 73,
  science_marks: 84,
  average: 79 },
  { _id: '5a602405ade1d80fc97778a7',
  name: 'raam',
  maths_marks: 41,
  english_marks: 65,
  science_marks: 88,
  average: 78 } ]
ukl@ukl-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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

11) Remove Science column/field for Raam

```
SyntaxError: Unexpected token ,
    at exports.runInThisContext (vm.js:53:16)
    at Module._compile (module.js:374:25)
    at Object.Module._extensions..js (module.js:417:10)
    at Module.load (module.js:344:32)
    at Function.Module._load (module.js:301:12)
    at Function.Module.runMain (module.js:442:10)
    at startup (node.js:136:18)
    at node.js:966:3

10.js -- ~/Documents/Coding/nodejs + mongo/student db -- Atom
Project
  student db
    1.js
    2.js
    3.js
    4.js
    5.js
    6.js
    7.js
    8.js
    9.js
    10.js
    11.js
    12.js
    13.js
    14.js
  10.js* 5:22

1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/student";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db("student");
7   dbo.collection("studentmarks").find({maths_marks:{$lt:40},
8     ,science_marks:{$lt:40}},
9     {name:true,id:false}).toArray(function(err, result) {
10    if (err) throw err;
11    console.log(result);
12    db.close();
13  });
14 });
15

at startup (node.js:136:18)
at node.js:966:3
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 10.js
[]
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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

```
at Module._compile (module.js:374:25)
at Object.Module._extensions..js (module.js:417:10)
at Module.load (module.js:344:32)
at Function.Module._load (module.js:301:12)
at Function.Module.runMain (module.js:442:10)
at startup (node.js:136:18)
at node.js:966:3
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 10.js
/home/uki/Documents/Coding/nodejs + mongo/student db/10.js:8
,science_marks:{$lt:40}},
^
SyntaxError: Unexpected token ,
    at Module._compile (module.js:374:25)
    at Object.Module._extensions..js (module.js:417:10)
    at Module.load (module.js:344:32)
    at Function.Module._load (module.js:301:12)
    at Function.Module.runMain (module.js:442:10)
    at startup (node.js:136:18)
    at node.js:966:3

Project -- ~/Documents/Coding/nodejs + mongo/student db -- Atom
Project
  student db
    1.js
    2.js
    3.js
    4.js
    5.js
    6.js
    7.js
    8.js
    9.js
    10.js
    11.js
    12.js
    13.js
    14.js
  12.js 1:1

1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/student";
3
4 MongoClient.connect(url, function(err, db) {
5   if (err) throw err;
6   var dbo = db.db("student");
7   var myobj = {name: "john",maths_marks: 87,eng_marks: 27 };
8
9
10  dbo.collection("studentmarks").insertOne(myobj, function(err, res) {
11    if (err) throw err;
12    console.log("1 document inserted");
13    db.close();
14  });
15 });
16

12.js 1:1
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 11.js
1 document updated
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 12.js
1 document inserted
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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

#### 14) Remove Kumaran's document from collection

The screenshot shows the Atom editor interface with a project named "student db". The file explorer on the left lists files from 1.js to 14.js. The main editor displays the code for 14.js, which connects to a MongoDB instance at localhost:27017, selects the 'student' database, and deletes a document from the 'studentmarks' collection where the name is 'kumaran'. The terminal at the bottom shows the command prompt and the successful execution of the script, resulting in "1 document deleted".

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

Terminal output:

```
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 13.js
1 document updated
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$ node 14.js
1 document deleted
uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db$
```

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



Atom

uki@uki-HP-Notebook: ~/Documents/Coding/nodejs + mongo/student db

Project — ~/Documents/Coding/nodejs + mongo/student db — Atom

Project

uki@uki-HP-Notebook: ~/Documents/Coding/nodejs + mongo/student db

14.js

```
1 var MongoClient = require('mongodb').MongoClient;
2 var url = "mongodb://localhost:27017/student";
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 });
14
```

LF UTF-8 JavaScript 0 files

uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db\$ node 15.js

```
[ { _id: 5a602405ade1d80fc97778a1,
  name: 'kala',
  maths_marks: 32,
  english_marks: 46,
  science_marks: 53,
  average: '' },
  { _id: 5a602405ade1d80fc97778a2,
  name: 'arull',
  maths_marks: 78,
  english_marks: 85,
  science_marks: 80,
  average: '' } ]
```

uki@uki-HP-Notebook:~/Documents/Coding/nodejs + mongo/student db\$