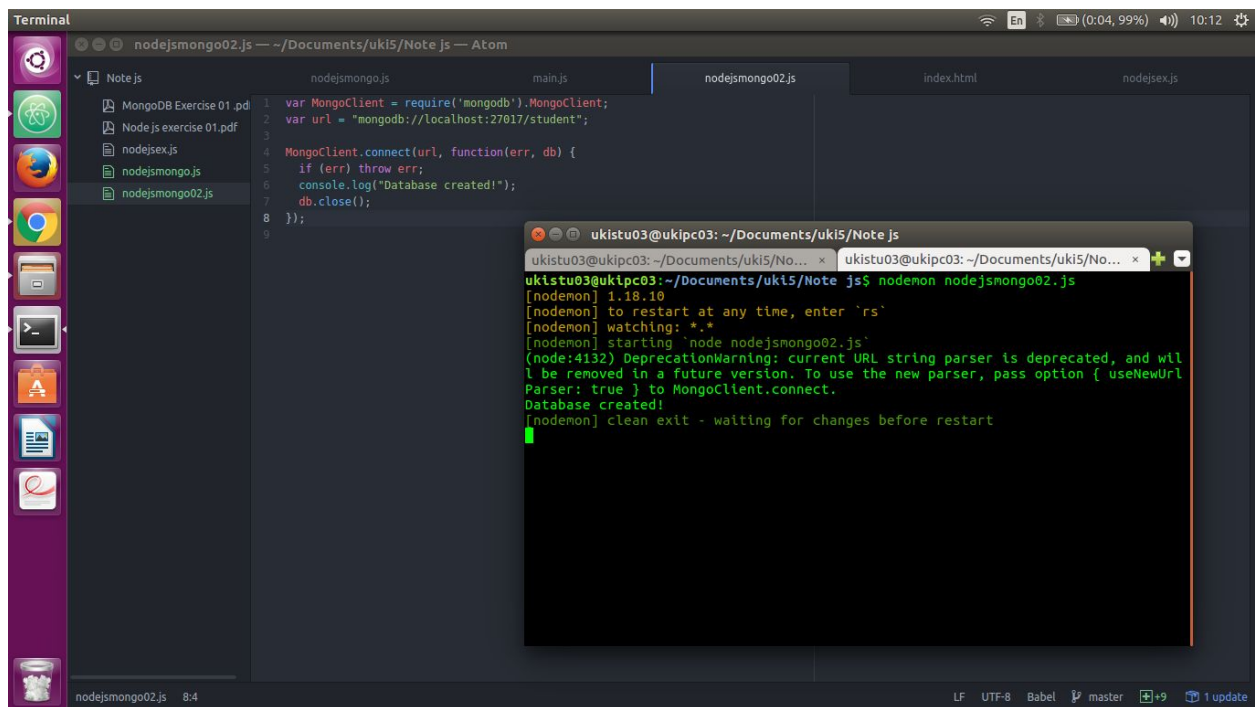


1) Create a Database called student

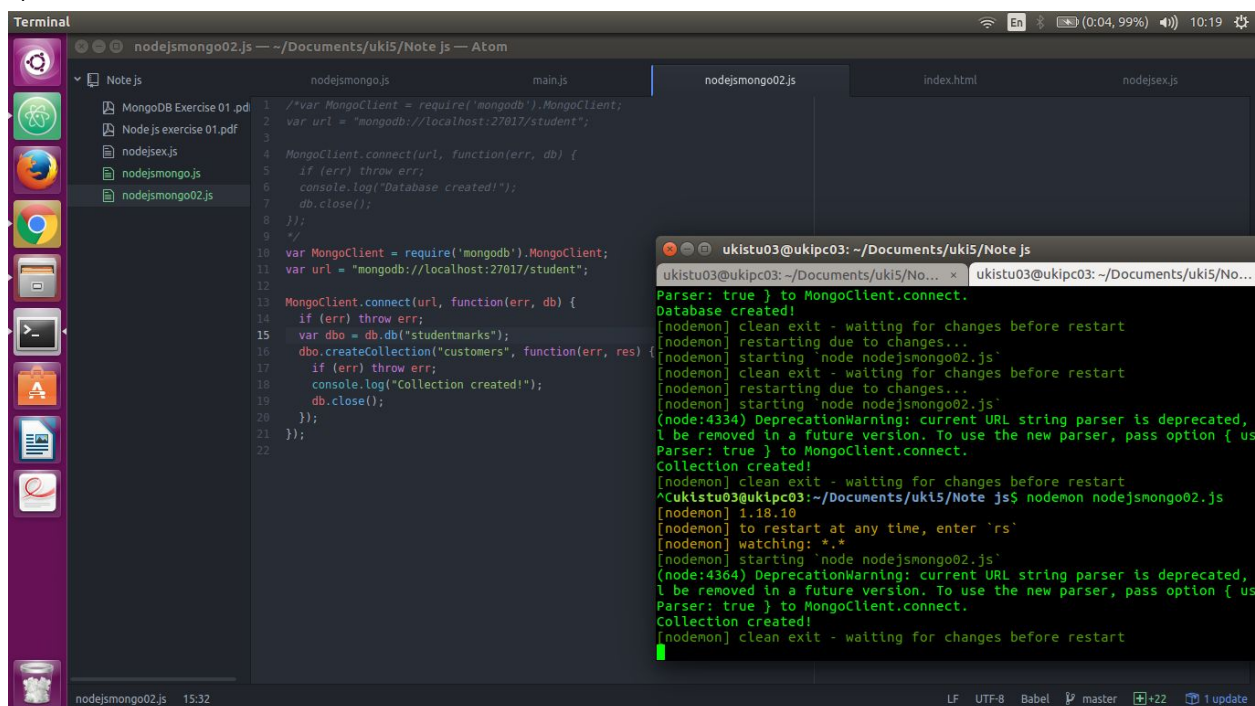


The screenshot shows the Atom editor with a file named `nodejsmongo02.js` open. The code in the editor is as follows:

```
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   console.log("Database created!");
7   db.close();
8 });
```

The terminal window shows the command `nodejsmongo02.js` being executed, which results in the output: `Database created!`. The terminal also shows the Node.js version `1.18.10` and the command `nodejsmongo02.js` being executed.

2) Create a collection called studentmarks

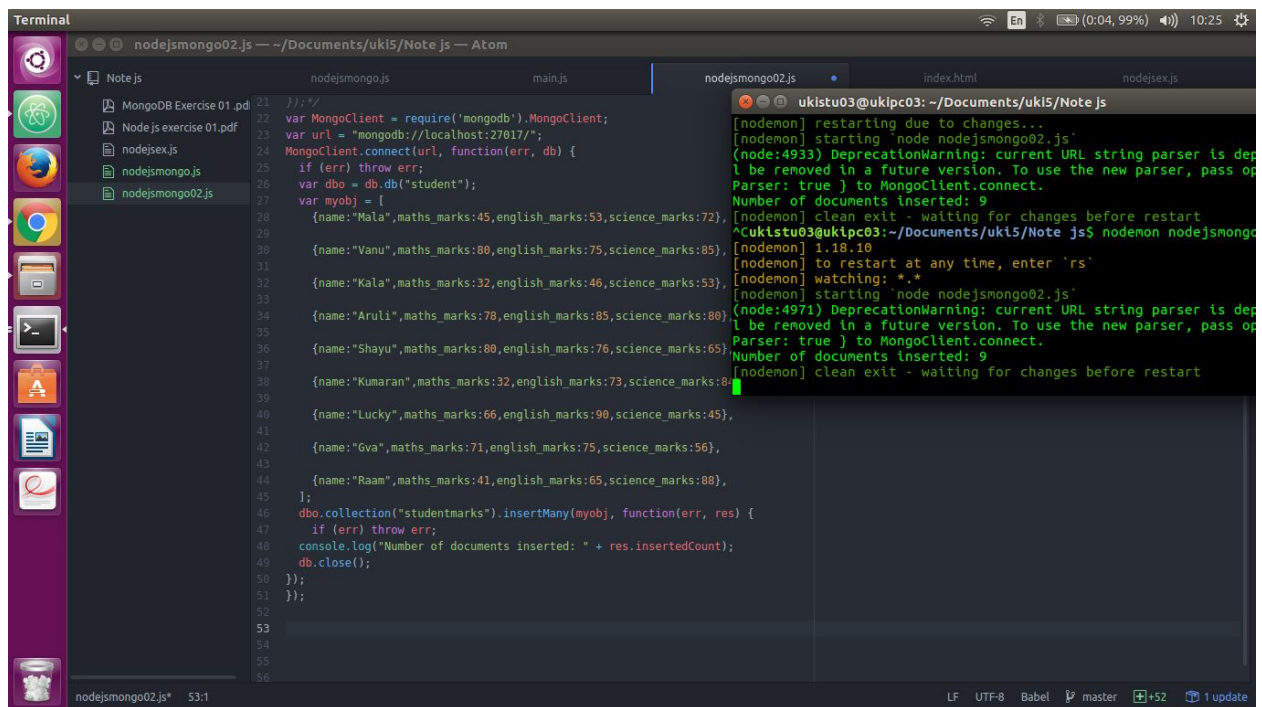


The screenshot shows the Atom editor with a file named `nodejsmongo02.js` open. The code in the editor is as follows:

```
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 //  console.log("Database created!");
7 //  db.close();
8 //});
9
10 var MongoClient = require('mongodb').MongoClient;
11 var url = "mongodb://localhost:27017/student";
12
13 MongoClient.connect(url, function(err, db) {
14   if (err) throw err;
15   var dbo = db.db("studentmarks");
16   dbo.createCollection("customers", function(err, res) {
17     if (err) throw err;
18     console.log("Collection created!");
19     db.close();
20   });
21 });
```

The terminal window shows the command `nodejsmongo02.js` being executed, which results in the output: `Collection created!`. The terminal also shows the Node.js version `1.18.10` and the command `nodejsmongo02.js` being executed.

3) Create the documents listed in above table.



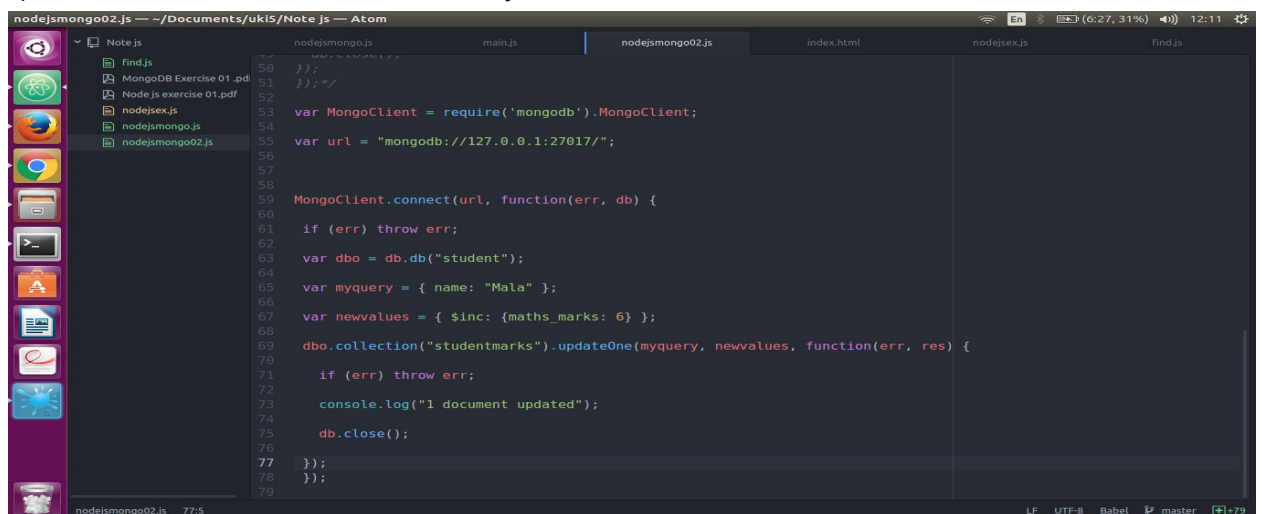
The screenshot shows the Atom editor with a file explorer on the left containing files like 'MongoDB Exercise 01.pdf', 'Node.js exercise 01.pdf', 'nodejssex.js', 'nodejsmongo.js', and 'nodejsmongo02.js'. The main editor displays 'nodejsmongo02.js' with the following code:

```
1 //
2
3 var MongoClient = require('mongodb').MongoClient;
4 var url = "mongodb://localhost:27017/";
5 MongoClient.connect(url, function(err, db) {
6   if (err) throw err;
7   var dbo = db.db("student");
8   var myobj = [
9     {name:"Mala",maths_marks:45,english_marks:53,science_marks:72},
10    {name:"Vanu",maths_marks:80,english_marks:75,science_marks:85},
11    {name:"Kala",maths_marks:32,english_marks:46,science_marks:53},
12    {name:"Aruli",maths_marks:78,english_marks:85,science_marks:80},
13    {name:"Shayu",maths_marks:80,english_marks:76,science_marks:65},
14    {name:"Kumaran",maths_marks:32,english_marks:73,science_marks:80},
15    {name:"Lucky",maths_marks:66,english_marks:90,science_marks:45},
16    {name:"Gva",maths_marks:71,english_marks:75,science_marks:56},
17    {name:"Raam",maths_marks:41,english_marks:65,science_marks:80},
18  ];
19  dbo.collection("studentmarks").insertMany(myobj, function(err, res) {
20    if (err) throw err;
21    console.log("Number of documents inserted: " + res.insertedCount);
22    db.close();
23  });
24 });
```

The terminal on the right shows the following output:

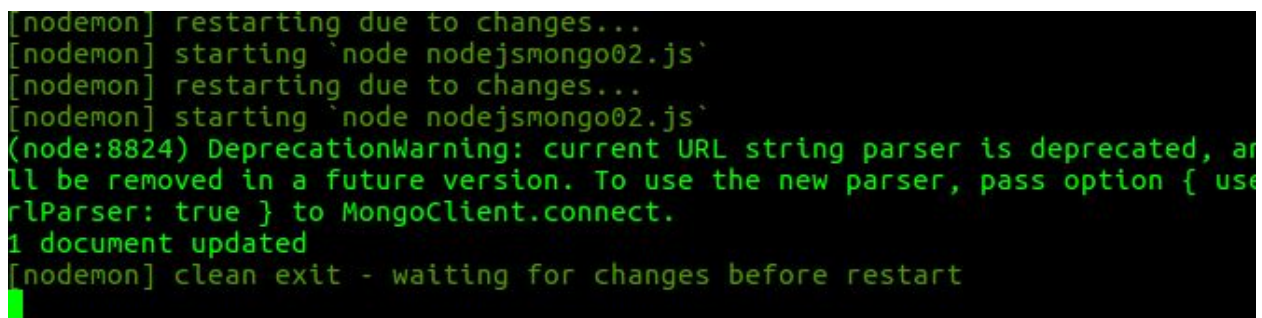
```
[nodemon] restarting due to changes...
[nodemon] starting 'node nodejsmongo02.js'
(node:4933) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { urlParser: true } to MongoClient.connect.
Number of documents inserted: 9
[nodemon] clean exit - waiting for changes before restart
ukistu03@ukipc03: ~/Documents/uk15/Note.js$ nodemon nodejsmongo02.js
[nodemon] 1.18.10
[nodemon] to restart at any time, enter 'rs'
[nodemon] watching: *.*
[nodemon] starting 'node nodejsmongo02.js'
(node:4971) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { urlParser: true } to MongoClient.connect.
Number of documents inserted: 9
[nodemon] clean exit - waiting for changes before restart
```

4) Increase the maths marks of Mala by 6 marks



The screenshot shows the Atom editor with 'nodejsmongo02.js' updated to use the updateOne method. The code is as follows:

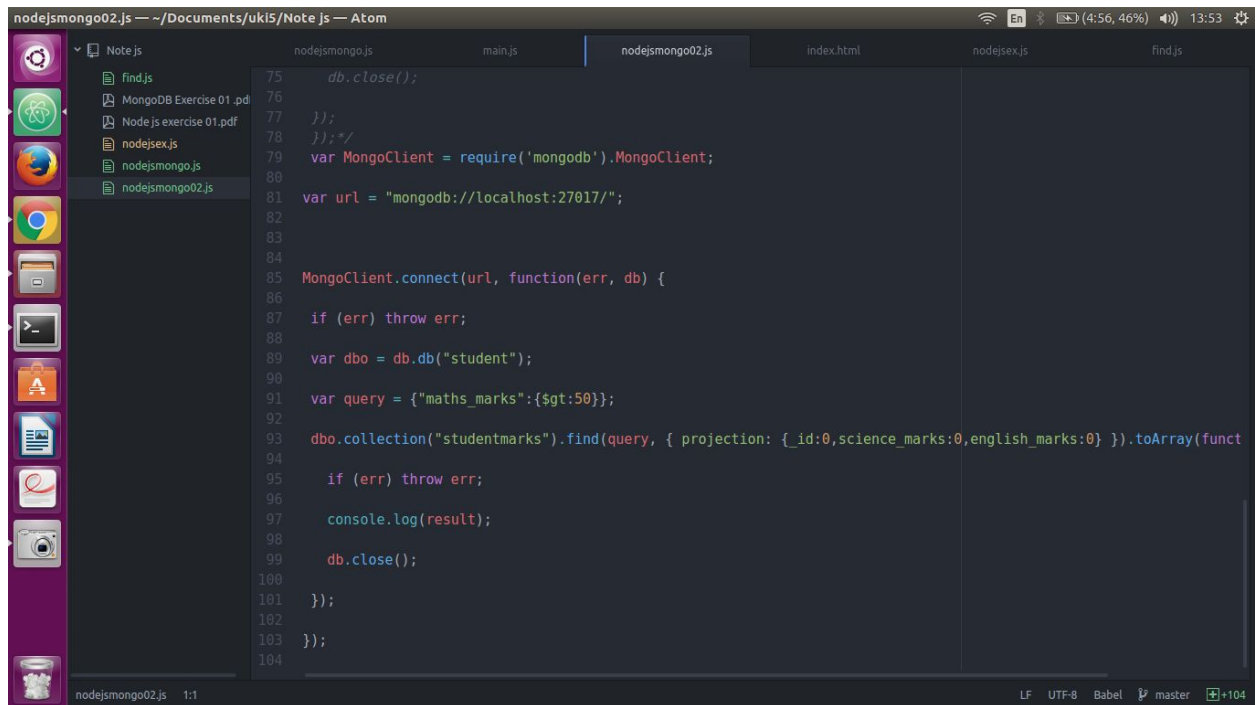
```
50 //
51
52 var MongoClient = require('mongodb').MongoClient;
53 var url = "mongodb://127.0.0.1:27017/";
54
55 MongoClient.connect(url, function(err, db) {
56   if (err) throw err;
57   var dbo = db.db("student");
58   var myquery = { name: "Mala" };
59   var newvalues = { $inc: { maths_marks: 6 } };
60   dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
61     if (err) throw err;
62     console.log("1 document updated");
63     db.close();
64   });
65 });
```



The terminal output shows the following:

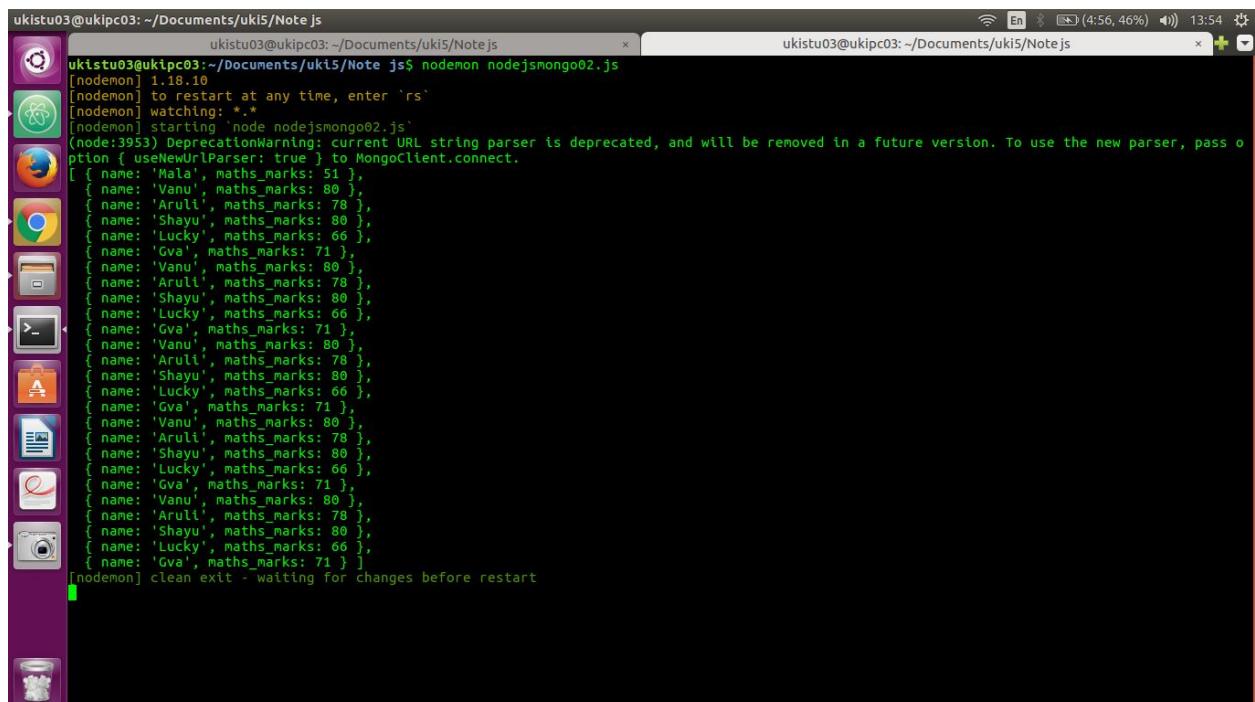
```
[nodemon] restarting due to changes...
[nodemon] starting 'node nodejsmongo02.js'
[nodemon] restarting due to changes...
[nodemon] starting 'node nodejsmongo02.js'
(node:8824) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { urlParser: true } to MongoClient.connect.
1 document updated
[nodemon] clean exit - waiting for changes before restart
```

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



The screenshot shows the Atom text editor with a file named `nodejsmongo02.js` open. The file contains JavaScript code that connects to a MongoDB database, queries for students with more than 50 marks in Maths, and logs the results. The code is as follows:

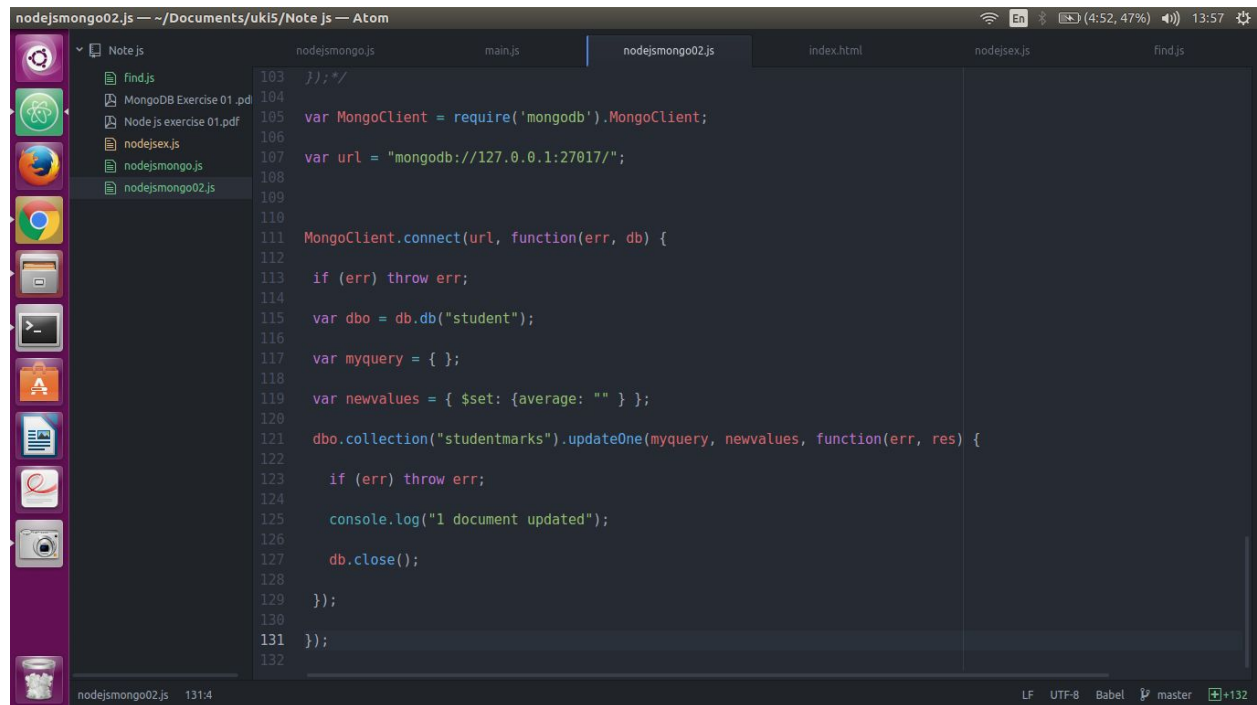
```
75 db.close();
76
77 });
78 }
79 var MongoClient = require('mongodb').MongoClient;
80
81 var url = "mongodb://localhost:27017/";
82
83
84
85 MongoClient.connect(url, function(err, db) {
86
87   if (err) throw err;
88
89   var dbo = db.db("student");
90
91   var query = {"maths_marks":{$gt:50}};
92
93   dbo.collection("studentmarks").find(query, { projection: { _id:0,science_marks:0,english_marks:0 } }).toArray(function(err, results) {
94
95     if (err) throw err;
96
97     console.log(results);
98
99     db.close();
100   });
101 });
102
103 });
104
```



The screenshot shows a terminal window running the command `nodemon nodejsmongo02.js`. The output shows the results of the MongoDB query, which is an array of student records. The records are as follows:

```
[ { name: 'Mala', maths_marks: 51 },
  { name: 'Vanu', maths_marks: 80 },
  { name: 'Aruli', maths_marks: 78 },
  { name: 'Shayu', maths_marks: 80 },
  { name: 'Lucky', maths_marks: 66 },
  { name: 'Gva', maths_marks: 71 },
  { name: 'Vanu', maths_marks: 80 },
  { name: 'Aruli', maths_marks: 78 },
  { name: 'Shayu', maths_marks: 80 },
  { name: 'Lucky', maths_marks: 66 },
  { name: 'Gva', maths_marks: 71 },
  { name: 'Vanu', maths_marks: 80 },
  { name: 'Aruli', maths_marks: 78 },
  { name: 'Shayu', maths_marks: 80 },
  { name: 'Lucky', maths_marks: 66 },
  { name: 'Gva', maths_marks: 71 },
  { name: 'Vanu', maths_marks: 80 },
  { name: 'Aruli', maths_marks: 78 },
  { name: 'Shayu', maths_marks: 80 },
  { name: 'Lucky', maths_marks: 66 },
  { name: 'Gva', maths_marks: 71 } ]
```

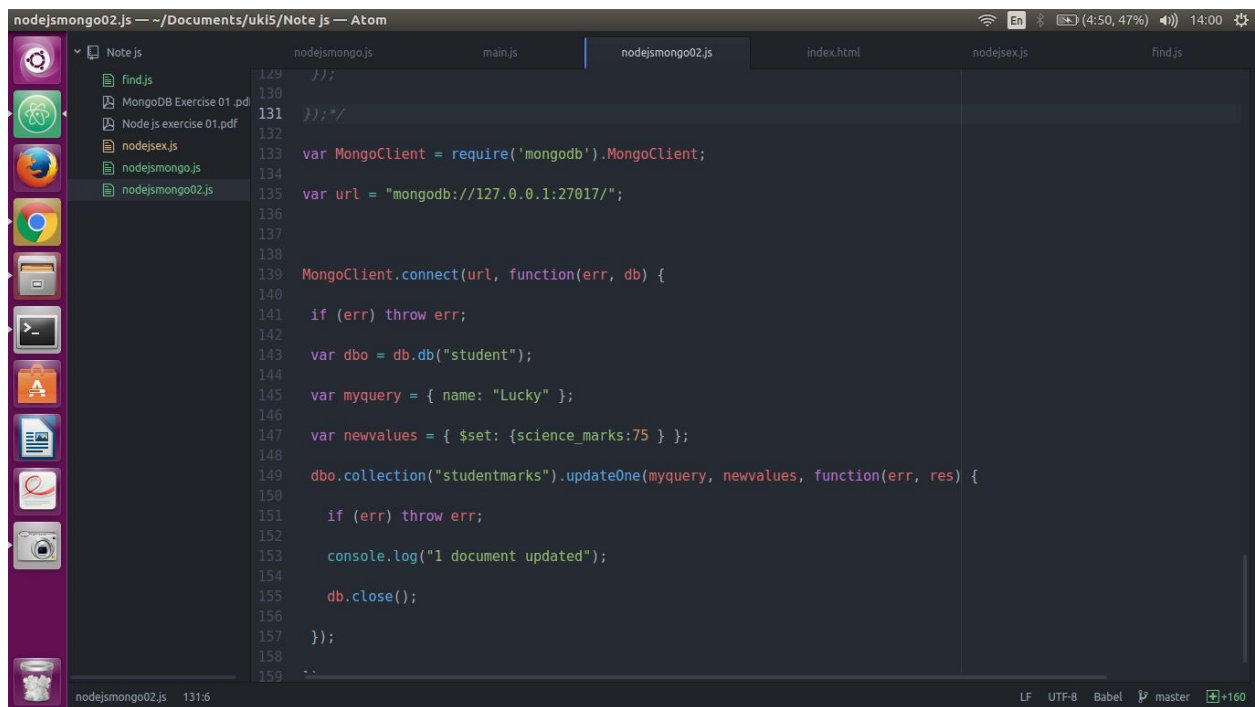
6) Add a new column(field) for Average for all students.



```
103  }); */
104
105  var MongoClient = require('mongodb').MongoClient;
106
107  var url = "mongodb://127.0.0.1:27017/";
108
109
110
111  MongoClient.connect(url, function(err, db) {
112
113    if (err) throw err;
114
115    var dbo = db.db("student");
116
117    var myquery = { };
118
119    var newvalues = { $set: {average: "" } };
120
121    dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
122
123      if (err) throw err;
124
125      console.log("1 document updated");
126
127      db.close();
128
129    });
130
131  });
132
```

```
^Cukistu03@ukipc03:~/Documents/uki5/Note js$ nodemon nodejsmongo02.js
[nodemon] 1.18.10
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node nodejsmongo02.js`
(node:4238) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To avoid this warning, pass { useNewUrlParser: true } to MongoClient.connect.
1 document updated
[nodemon] clean exit - waiting for changes before restart
```


7) Update Marks_Science=75 to Lucky .



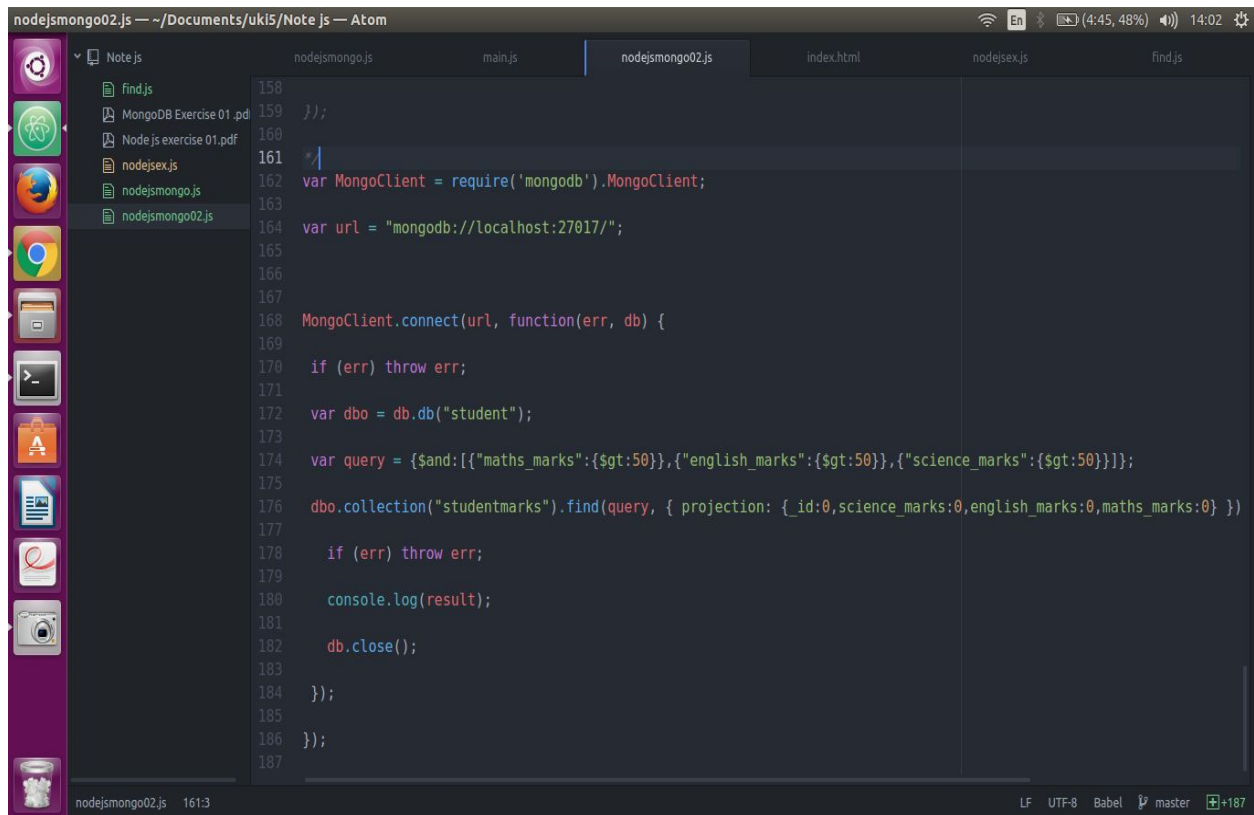
```
nodejsmongo02.js — ~/Documents/uk15/Note js — Atom
nodejsmongo.js  main.js  nodejsmongo02.js  index.html  nodejssex.js  find.js

find.js
MongoDB Exercise 01.pdf
Node js exercise 01.pdf
nodejssex.js
nodejsmongo.js
nodejsmongo02.js

129  //;
130
131  //; */
132
133  var MongoClient = require('mongodb').MongoClient;
134
135  var url = "mongodb://127.0.0.1:27017/";
136
137
138
139  MongoClient.connect(url, function(err, db) {
140
141    if (err) throw err;
142
143    var dbo = db.db("student");
144
145    var myquery = { name: "Lucky" };
146
147    var newvalues = { $set: {science_marks:75 } };
148
149    dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
150
151      if (err) throw err;
152
153      console.log("1 document updated");
154
155      db.close();
156
157    });
158
159  }
```

```
Cuk1stu03@uk1pc03:~/Documents/uk15/Note js$ nodemon nodejsmongo02.js
[nodemon] 1.18.10
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node nodejsmongo02.js`
(node:4441) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To avoid this warning, pass { useNewUrlParser: true } to MongoClient.connect.
1 document updated
[nodemon] clean exit - waiting for changes before restart
```

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



```
nodejsmongo02.js -- ~/Documents/ukl5/Note.js -- Atom
nodejsmongo.js  main.js  nodejsmongo02.js  index.html  nodejsex.js  find.js

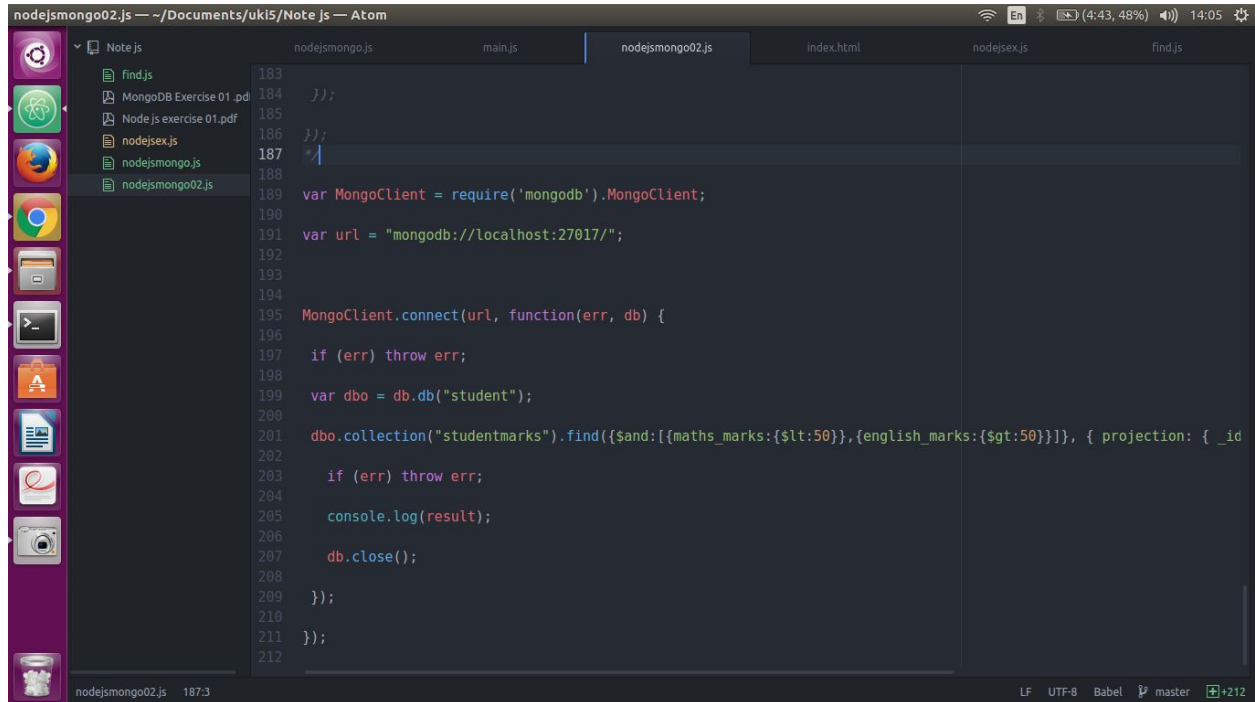
158
159
160
161
162 var MongoClient = require('mongodb').MongoClient;
163
164 var url = "mongodb://localhost:27017/";
165
166
167
168 MongoClient.connect(url, function(err, db) {
169
170   if (err) throw err;
171
172   var dbo = db.db("student");
173
174   var query = {$and:[{"maths_marks":{$gt:50}}, {"english_marks":{$gt:50}}, {"science_marks":{$gt:50}}]};
175
176   dbo.collection("studentmarks").find(query, { projection: { _id:0, science_marks:0, english_marks:0, maths_marks:0 } })
177
178   if (err) throw err;
179
180   console.log(result);
181
182   db.close();
183
184 });
185
186 });
187

nodejsmongo02.js  161:3  LF  UTF-8  Babel  master  +187
```

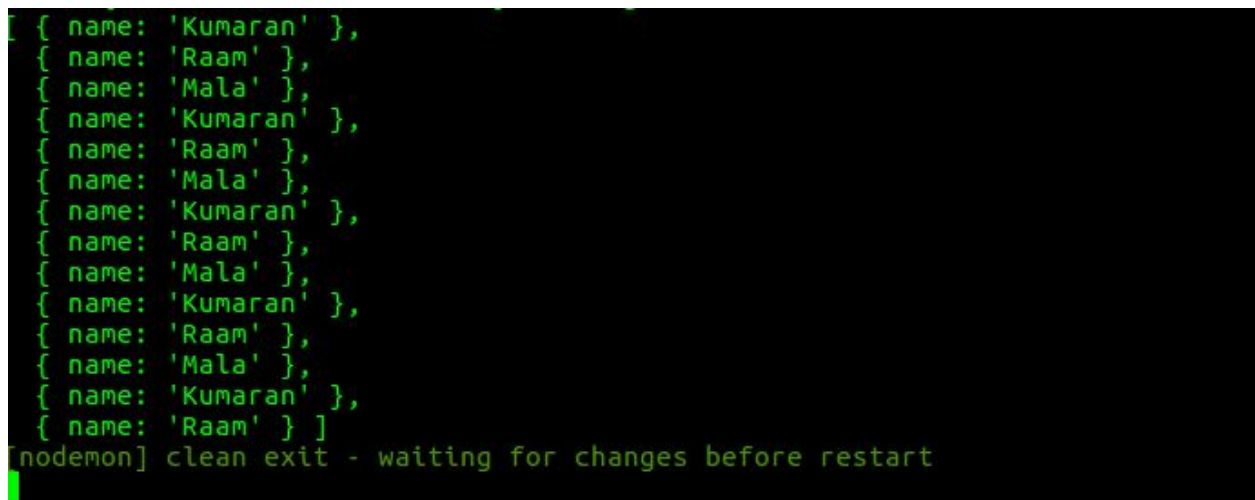


```
[ { name: 'Mala', average: 11 },
  { name: 'Vanu' },
  { name: 'Aruli' },
  { name: 'Shayu' },
  { name: 'Lucky' },
  { name: 'Gva' },
  { name: 'Vanu' },
  { name: 'Aruli' },
  { name: 'Shayu' },
  { name: 'Gva' },
  { name: 'Vanu' },
  { name: 'Aruli' },
  { name: 'Shayu' },
  { name: 'Gva' },
  { name: 'Vanu' },
  { name: 'Aruli' },
  { name: 'Shayu' },
  { name: 'Gva' },
  { name: 'Vanu' },
  { name: 'Aruli' },
  { name: 'Shayu' },
  { name: 'Gva' } ]
[nodemon] clean exit - waiting for changes before restart
```

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

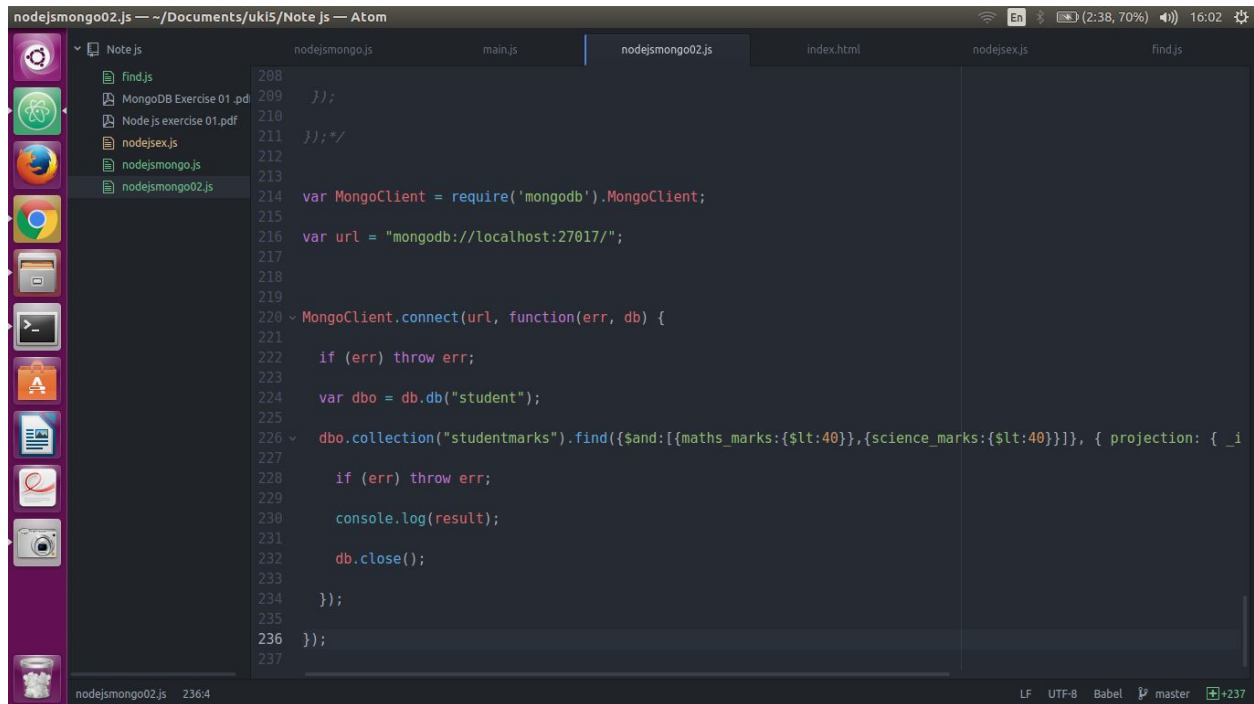


```
183  
184  
185  
186  
187  
188  
189 var MongoClient = require('mongodb').MongoClient;  
190  
191 var url = "mongodb://localhost:27017/";  
192  
193  
194  
195 MongoClient.connect(url, function(err, db) {  
196  
197   if (err) throw err;  
198  
199   var dbo = db.db("student");  
200  
201   dbo.collection("studentmarks").find({$and:[{maths_marks:{<50}}, {english_marks:{>50}}]}, { projection: { _id  
202  
203     if (err) throw err;  
204  
205     console.log(result);  
206  
207     db.close();  
208  
209   });  
210  
211 });  
212
```



```
[ { name: 'Kumaran' },  
  { name: 'Raam' },  
  { name: 'Mala' },  
  { name: 'Kumaran' },  
  { name: 'Raam' },  
  { name: 'Mala' },  
  { name: 'Kumaran' },  
  { name: 'Raam' },  
  { name: 'Mala' },  
  { name: 'Kumaran' },  
  { name: 'Raam' },  
  { name: 'Mala' },  
  { name: 'Kumaran' },  
  { name: 'Raam' } ]  
[nodemon] clean exit - waiting for changes before restart
```

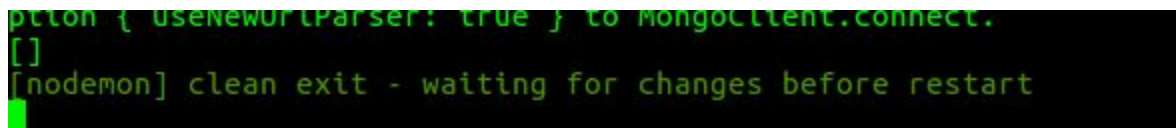
10) List the names who got less than 40 in both Maths and Science.



```
nodejsmongo02.js -- ~/Documents/uk15/Note Js -- Atom
nodejsmongo.js  main.js  nodejsmongo02.js  index.html  nodejsex.js  find.js

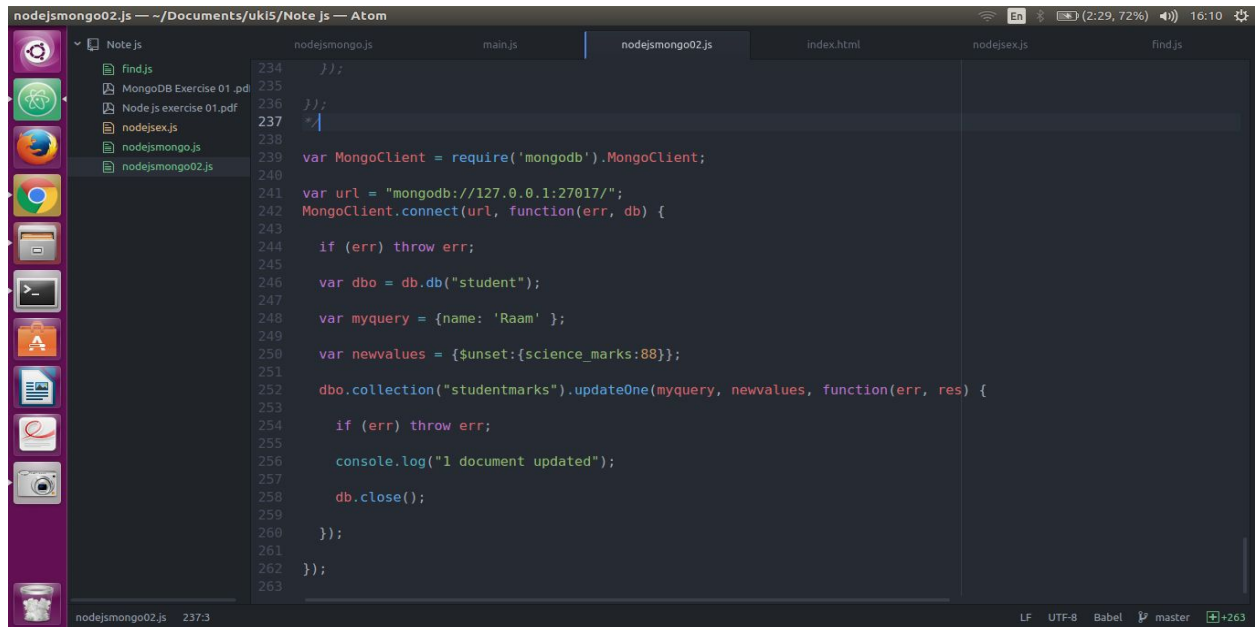
find.js
MongoDB Exercise 01.pdf
Node.js exercise 01.pdf
nodejsex.js
nodejsmongo.js
nodejsmongo02.js

208
209 });
210
211 // */
212
213
214 var MongoClient = require('mongodb').MongoClient;
215
216 var url = "mongodb://localhost:27017/";
217
218
219
220 - MongoClient.connect(url, function(err, db) {
221
222   if (err) throw err;
223
224   var dbo = db.db("student");
225
226   dbo.collection("studentmarks").find({$and:[{maths_marks:{$lt:40}}, {science_marks:{$lt:40}}]}, { projection: { _id: 1, name: 1 }}).toArray(function(err, results) {
227
228     if (err) throw err;
229
230     console.log(results);
231
232     db.close();
233
234   });
235
236 });
237
```



```
python { useNewURLParser: true } to MongoClient.connect.
[]
[nodemon] clean exit - waiting for changes before restart
```

11) Remove Science column/field for Raam

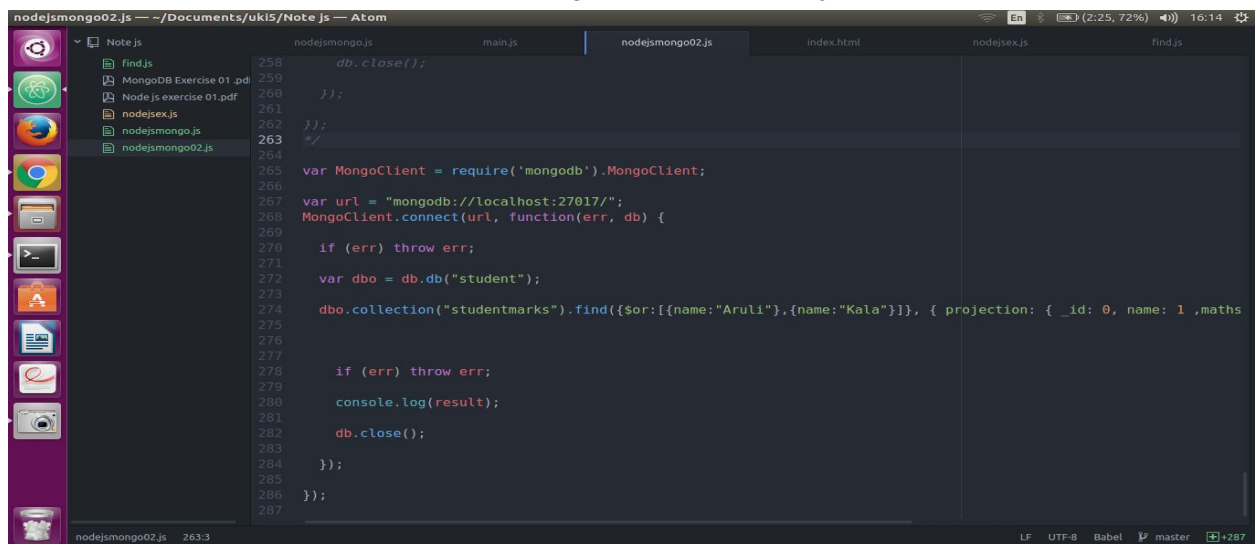


The screenshot shows the Atom editor interface with a file explorer on the left containing files like find.js, MongoDB Exercise 01.pdf, Node.js exercise 01.pdf, nodejsex.js, nodejsmongo.js, and nodejsmongo02.js. The main editor window displays the code for nodejsmongo02.js, which includes a MongoDB connection and an updateOne operation. The code is as follows:

```
234 });
235
236 });
237
238
239 var MongoClient = require('mongodb').MongoClient;
240
241 var url = "mongodb://127.0.0.1:27017/";
242 MongoClient.connect(url, function(err, db) {
243
244     if (err) throw err;
245
246     var dbo = db.db("student");
247
248     var myquery = {name: 'Raam' };
249
250     var newvalues = {$unset:{science_marks:88}};
251
252     dbo.collection("studentmarks").updateOne(myquery, newvalues, function(err, res) {
253
254         if (err) throw err;
255
256         console.log("1 document updated");
257
258         db.close();
259     });
260
261 });
262
263
```

```
(node:7304) DeprecationWarning: Current URL string parser is deprecated, and
option { useNewUrlParser: true } to MongoClient.connect.
1 document updated
[nodemon] clean exit - waiting for changes before restart
```

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

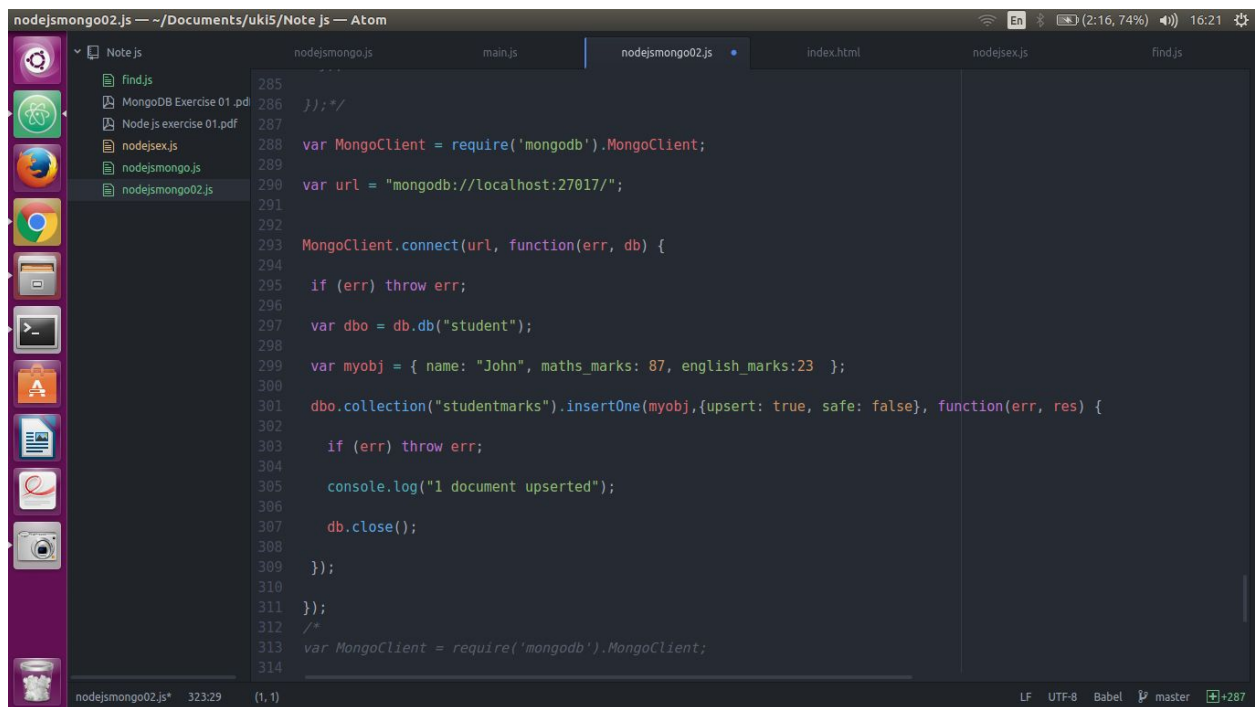


The screenshot shows the Atom editor interface with the same file explorer. The main editor window displays the code for nodejsmongo02.js, which includes a MongoDB connection, a find operation, and an update operation. The code is as follows:

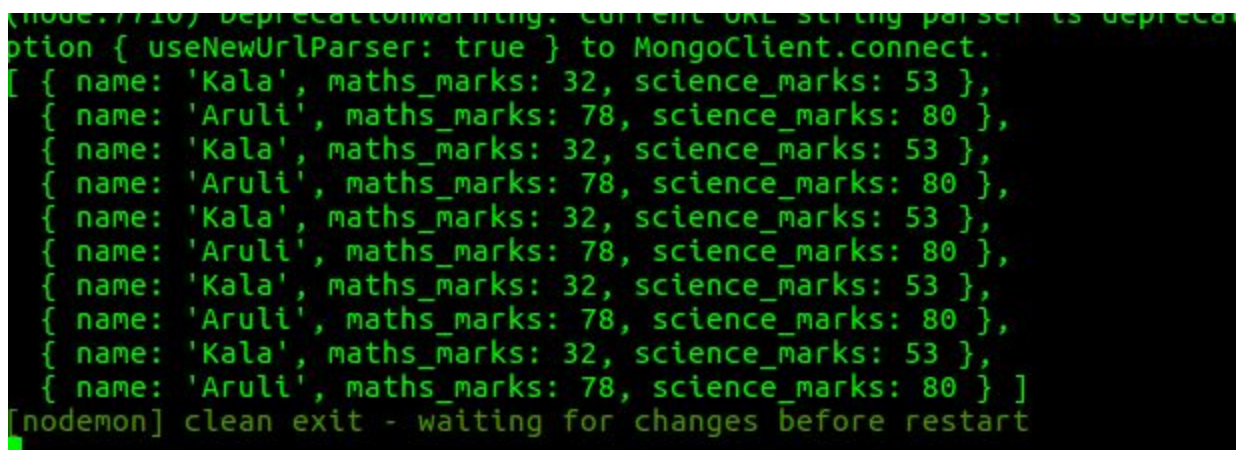
```
258 db.close();
259
260 });
261
262 });
263
264
265 var MongoClient = require('mongodb').MongoClient;
266
267 var url = "mongodb://localhost:27017/";
268 MongoClient.connect(url, function(err, db) {
269
270     if (err) throw err;
271
272     var dbo = db.db("student");
273
274     dbo.collection("studentmarks").find({$or:[{name:"Aruli"},{name:"Kala"}]}).{ projection: { _id: 0, name: 1 ,maths
275
276
277     if (err) throw err;
278
279     console.log(result);
280
281     db.close();
282
283     });
284
285     });
286
287
```

```
(node:7304) DeprecationWarning: Current URL string parser is deprecated, and
option { useNewUrlParser: true } to MongoClient.connect.
1 document updated
[nodemon] clean exit - waiting for changes before restart
```

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

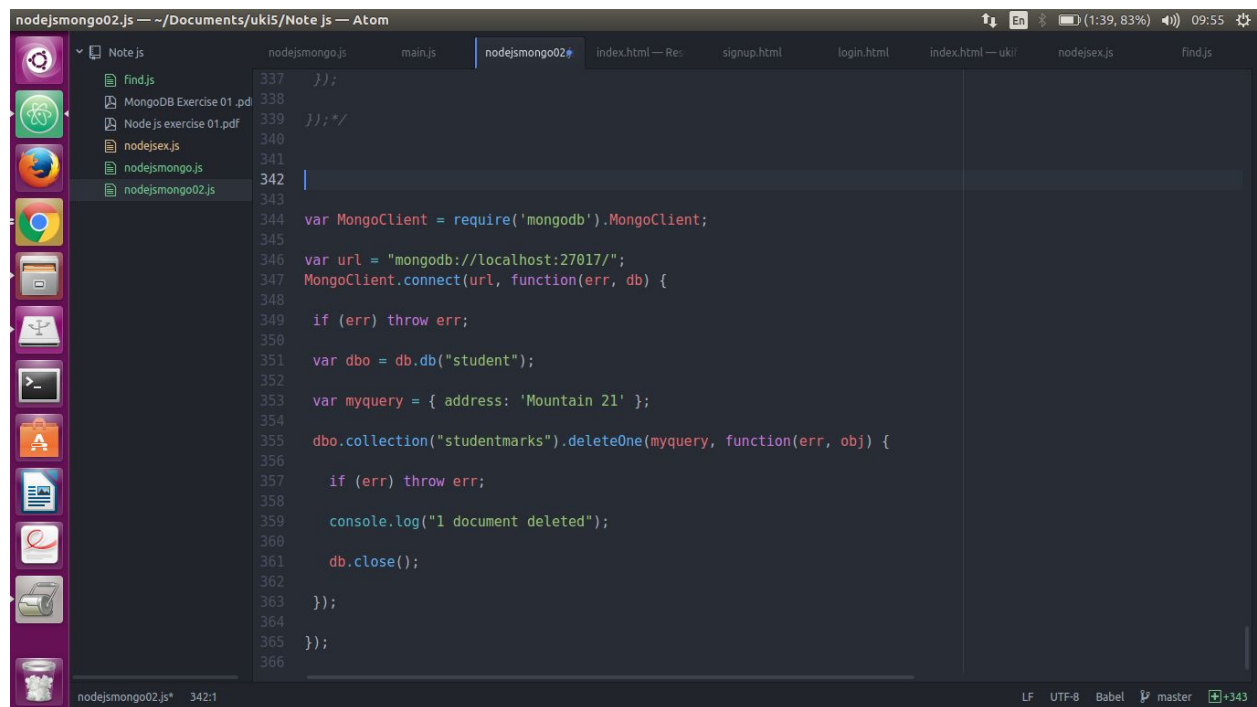


```
285 }
286 };
287
288 var MongoClient = require('mongodb').MongoClient;
289
290 var url = "mongodb://localhost:27017/";
291
292 MongoClient.connect(url, function(err, db) {
293   if (err) throw err;
294   var dbo = db.db("student");
295   var myobj = { name: "John", maths_marks: 87, english_marks: 23 };
296   dbo.collection("studentmarks").insertOne(myobj, {upsert: true, safe: false}, function(err, res) {
297     if (err) throw err;
298     console.log("1 document upserted");
299     db.close();
300   });
301 });
302
303 var MongoClient = require('mongodb').MongoClient;
304
305 MongoClient.connect(url, function(err, db) {
306   if (err) throw err;
307   var dbo = db.db("student");
308   var myobj = { name: "John", maths_marks: 87, english_marks: 23 };
309   dbo.collection("studentmarks").insertOne(myobj, {upsert: true, safe: false}, function(err, res) {
310     if (err) throw err;
311     console.log("1 document upserted");
312     db.close();
313   });
314 });
```

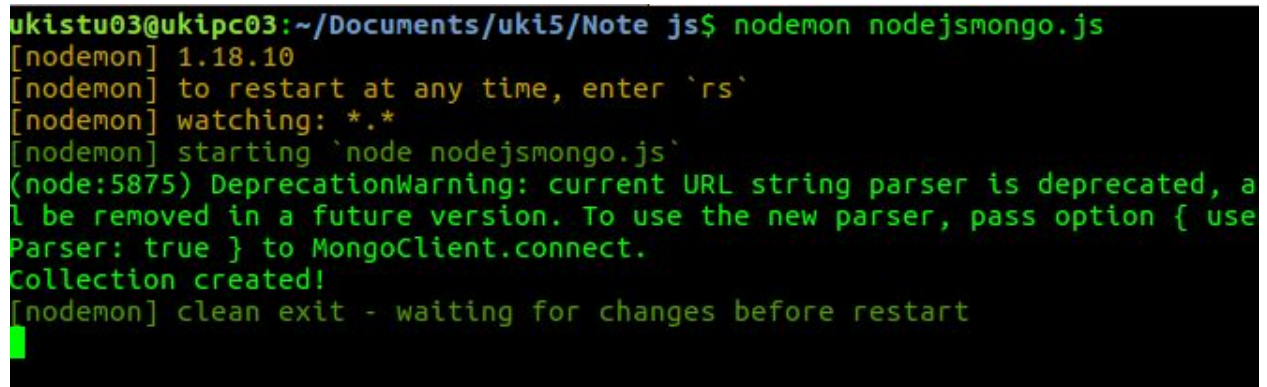


```
(node:7710) DeprecationWarning: Current URL string parser is deprecated.
Option { useNewUrlParser: true } to MongoClient.connect.
[ { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 } ]
[nodemon] clean exit - waiting for changes before restart
```

14) Remove Kumaran's document from collection



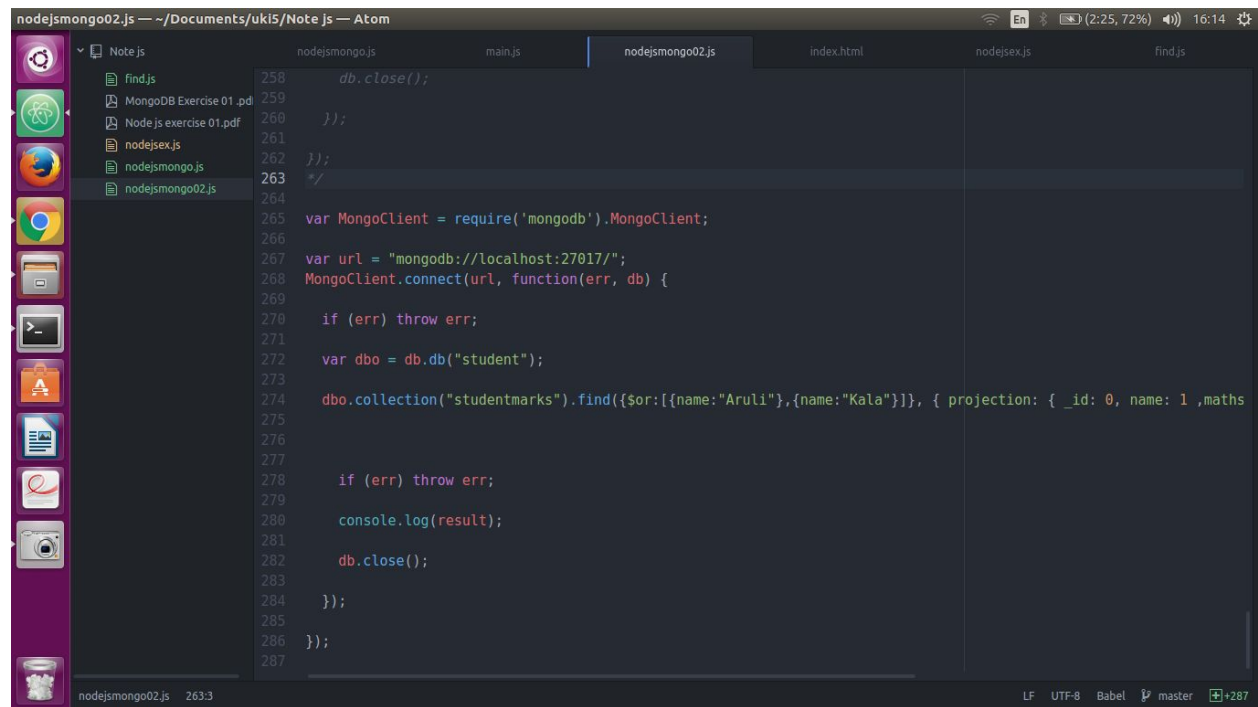
```
nodejsmongo02.js — ~/Documents/uki5/Note js — Atom
nodejsmongo.js  main.js  nodejsmongo02.js  index.html — Res  signup.html  login.html  index.html — uki5  nodejssex.js  find.js
find.js
MongoDB Exercise 01.pdf
Node.js exercise 01.pdf
nodejssex.js
nodejsmongo.js
nodejsmongo02.js
337  });
338
339  }); */
340
341
342
343
344  var MongoClient = require('mongodb').MongoClient;
345
346  var url = "mongodb://localhost:27017/";
347  MongoClient.connect(url, function(err, db) {
348
349    if (err) throw err;
350
351    var dbo = db.db("student");
352
353    var myquery = { address: 'Mountain 21' };
354
355    dbo.collection("studentmarks").deleteOne(myquery, function(err, obj) {
356
357      if (err) throw err;
358
359      console.log("1 document deleted");
360
361      db.close();
362
363    });
364  });
365
366
nodejsmongo02.js* 342:1  LF  UTF-8  Babel  master  +343
```



```
ukistu03@ukipc03:~/Documents/uki5/Note js$ nodemon nodejsmongo.js
[nodemon] 1.18.10
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node nodejsmongo.js`
(node:5875) DeprecationWarning: current URL string parser is deprecated, a
l be removed in a future version. To use the new parser, pass option { use
Parser: true } to MongoClient.connect.
collection created!
[nodemon] clean exit - waiting for changes before restart
```

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

```
(node:7424) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new URL parser, pass the option { useNewUrlParser: true } to MongoClient.connect.
[ { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 },
  { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 } ]
[nodemon] clean exit - waiting for changes before restart
```



```
nodejsmongo02.js -- ~/Documents/uki5/Note.js -- Atom
nodejsmongo.js  main.js  nodejsmongo02.js  index.html  nodejssex.js  find.js
find.js 258 db.close();
MongoDB Exercise 01.pdf 259 });
Node.js exercise 01.pdf 260 };
nodejssex.js 261 };
nodejsmongo.js 262 };
nodejsmongo02.js 263 //
264
265 var MongoClient = require('mongodb').MongoClient;
266
267 var url = "mongodb://localhost:27017/";
268 MongoClient.connect(url, function(err, db) {
269
270   if (err) throw err;
271
272   var dbo = db.db("student");
273
274   dbo.collection("studentmarks").find({$or:[{name:"Aruli"},{name:"Kala"}]}).project({ _id: 0, name: 1 ,maths
275
276
277   if (err) throw err;
278
279   console.log(result);
280
281   db.close();
282
283   });
284
285 });
286
287
nodejsmongo02.js 263:3  LF  UTF-8  Babel  master  +287
```