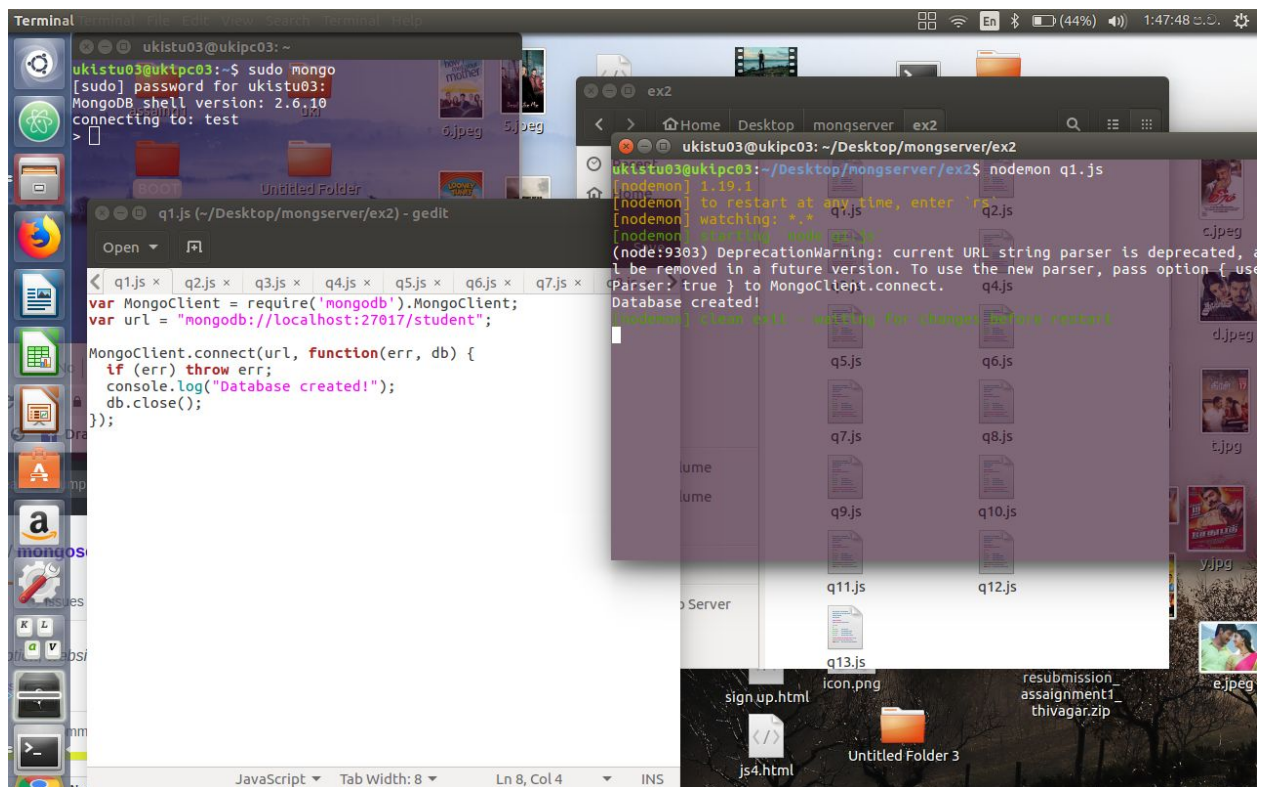
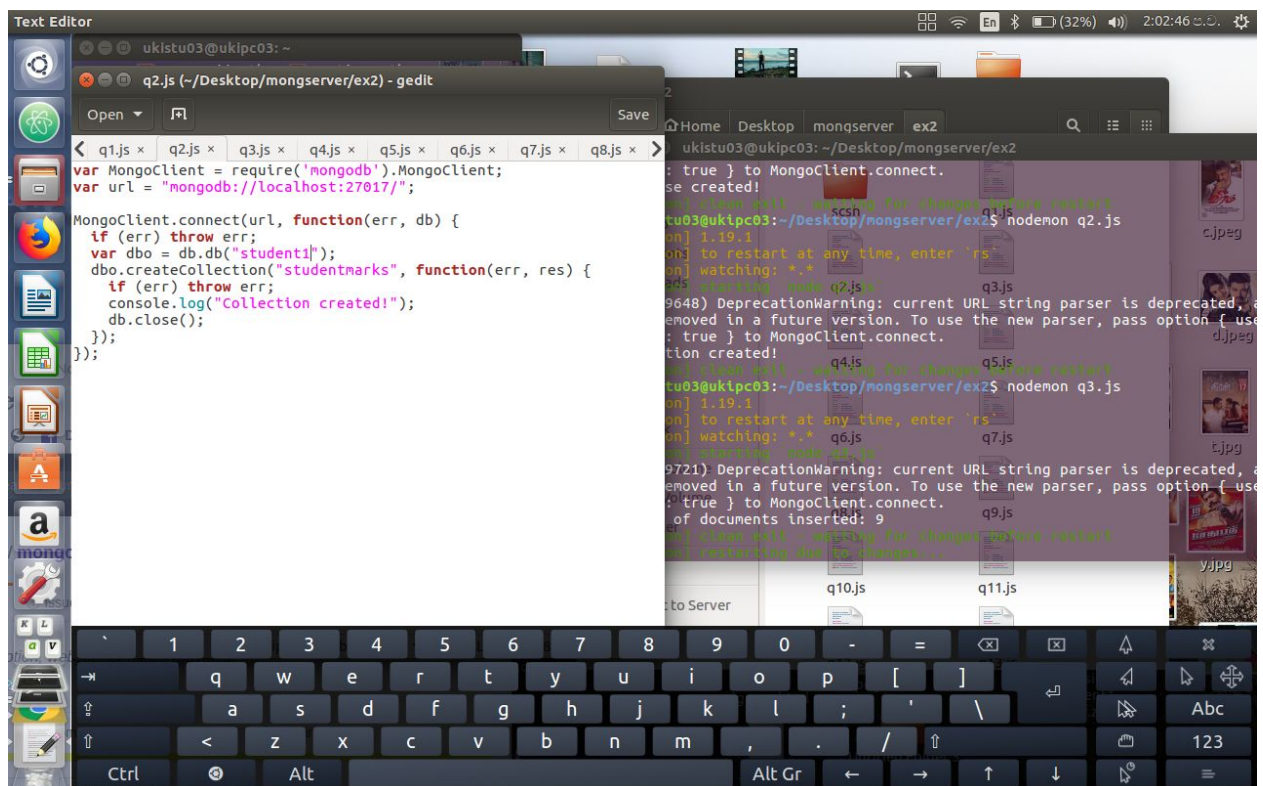


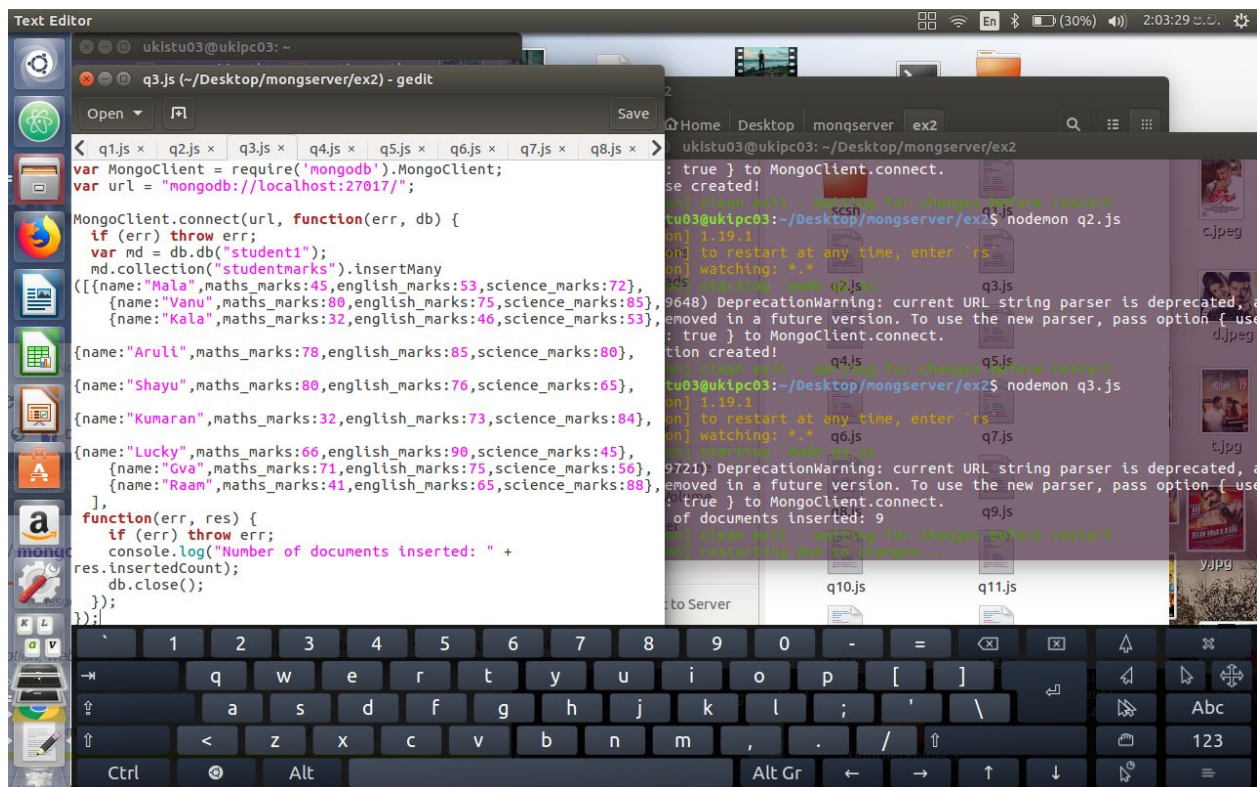
1) Create a Database called student



2) Create a collection called studentmarks



3) Create the documents listed in above table.

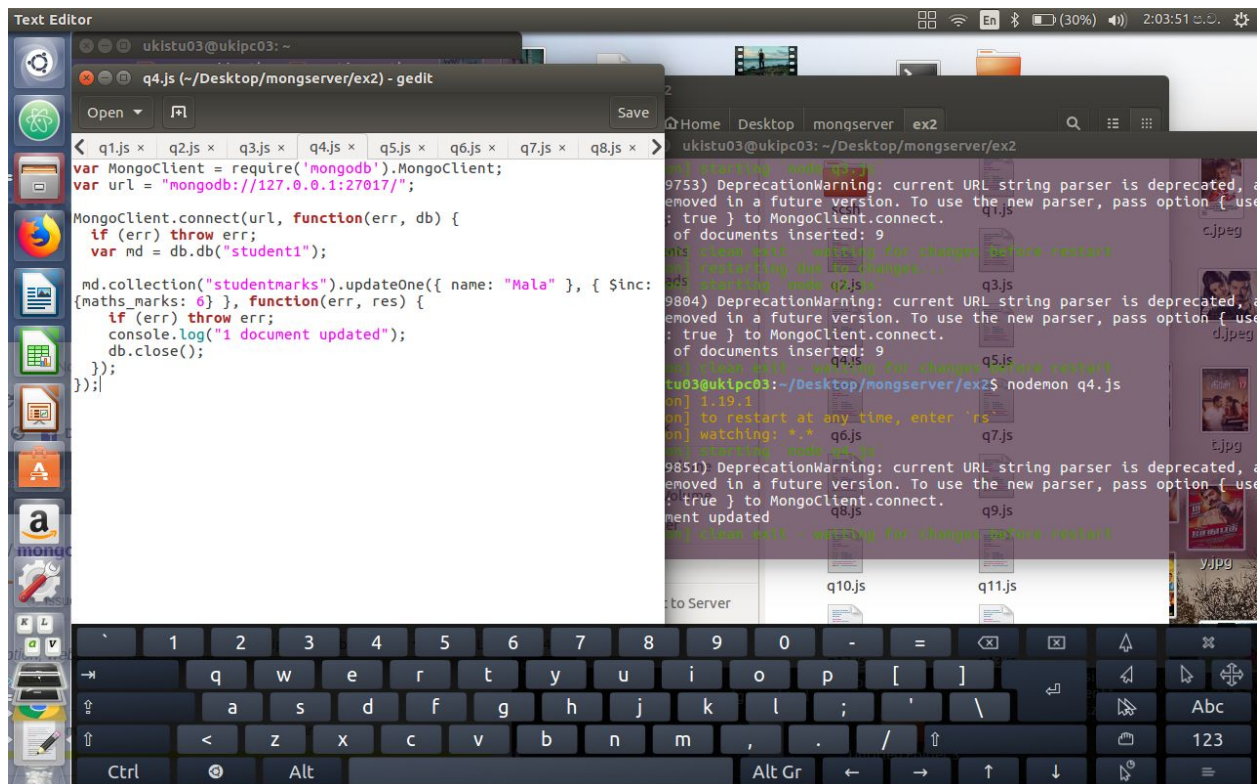


```
Text Editor
ukistu03@ukipc03: ~
q3.js ~/Desktop/mongserver/ex2 - gedit

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

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var md = db.db("student1");
  md.collection("studentmarks").insertMany(
    [{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}],
    function(err, res) {
      if (err) throw err;
      console.log("Number of documents inserted: " +
        res.insertedCount);
      db.close();
    });
});
```

4) Increase the maths marks of Mala by 6 marks



```
Text Editor
ukistu03@ukipc03: ~
q4.js ~/Desktop/mongserver/ex2 - gedit

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

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var md = db.db("student1");
  md.collection("studentmarks").updateOne({ name: "Mala" }, { $inc:
    {maths_marks: 6 } }, function(err, res) {
      if (err) throw err;
      console.log("1 document updated");
      db.close();
    });
});
```

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

The terminal window shows the execution of a Node.js script. The script connects to a MongoDB instance at localhost:27017 and finds all documents in the 'studentmarks' collection where 'maths_marks' is greater than 50. The output shows a single document updated.

```
ukistu03@ukipc03: ~  
q5.js (~/Desktop/mongserver/ex2) - gedit  
var MongoClient = require('mongodb').MongoClient;  
var url = "mongodb://localhost:27017/";  
  
MongoClient.connect(url, function(err, db) {  
  if (err) throw err;  
  var md = db.db("student1");  
  md.collection("studentmarks").find({"maths_marks":{$gt:50}}).toArray(  
    function(err, result) {  
      if (err) throw err;  
      console.log(result);  
      db.close();  
    });  
});
```

The terminal output shows the following messages:

```
[node:9851] 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  
[node:9851] clean exit - waiting for changes before restart  
ukistu03@ukipc03: ~/Desktop/mongserver/ex2$ node q5.js  
[node:9851] 1.19.1 track  
[node:9851] watching: **  
[node:9851] to restart at any time, enter 'rs'  
[node:9851] watching: **  
[node:9851] starting node q5.js  
[node:10079] 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.  
[ { name: 'Mala', maths_marks: 51 },  
  { name: 'Vanu', maths_marks: 80 },  
  { name: 'Arul', maths_marks: 78 },  
  { name: 'Shayu', maths_marks: 80 },  
  { name: 'Lucky', maths_marks: 66 },  
  { name: 'Gva', maths_marks: 71 } ]  
[node:10079] clean exit - waiting for changes before restart
```

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

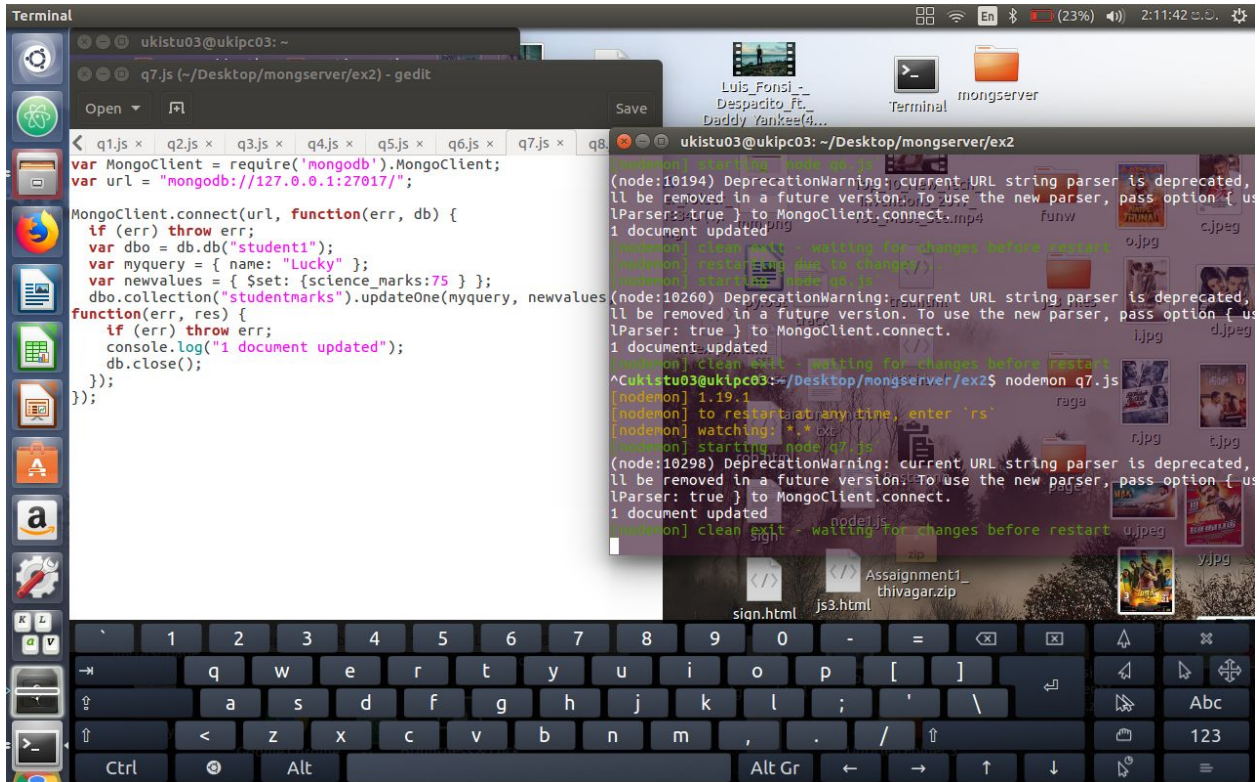
The terminal window shows the execution of a Node.js script. The script connects to a MongoDB instance at localhost:27017 and updates all documents in the 'studentmarks' collection by adding an 'average' field. The output shows a single document updated.

```
ukistu03@ukipc03: ~  
q6.js (~/Desktop/mongserver/ex2) - gedit  
var MongoClient = require('mongodb').MongoClient;  
var url = "mongodb://localhost:27017/";  
  
MongoClient.connect(url, function(err, db) {  
  if (err) throw err;  
  var db = db.db("student1");  
  db.collection("studentmarks").updateOne({ }, { $set: { average: 1 } }, function(err, res) {  
    if (err) throw err;  
    console.log("1 document updated");  
    db.close();  
  });  
});
```

The terminal output shows the following messages:

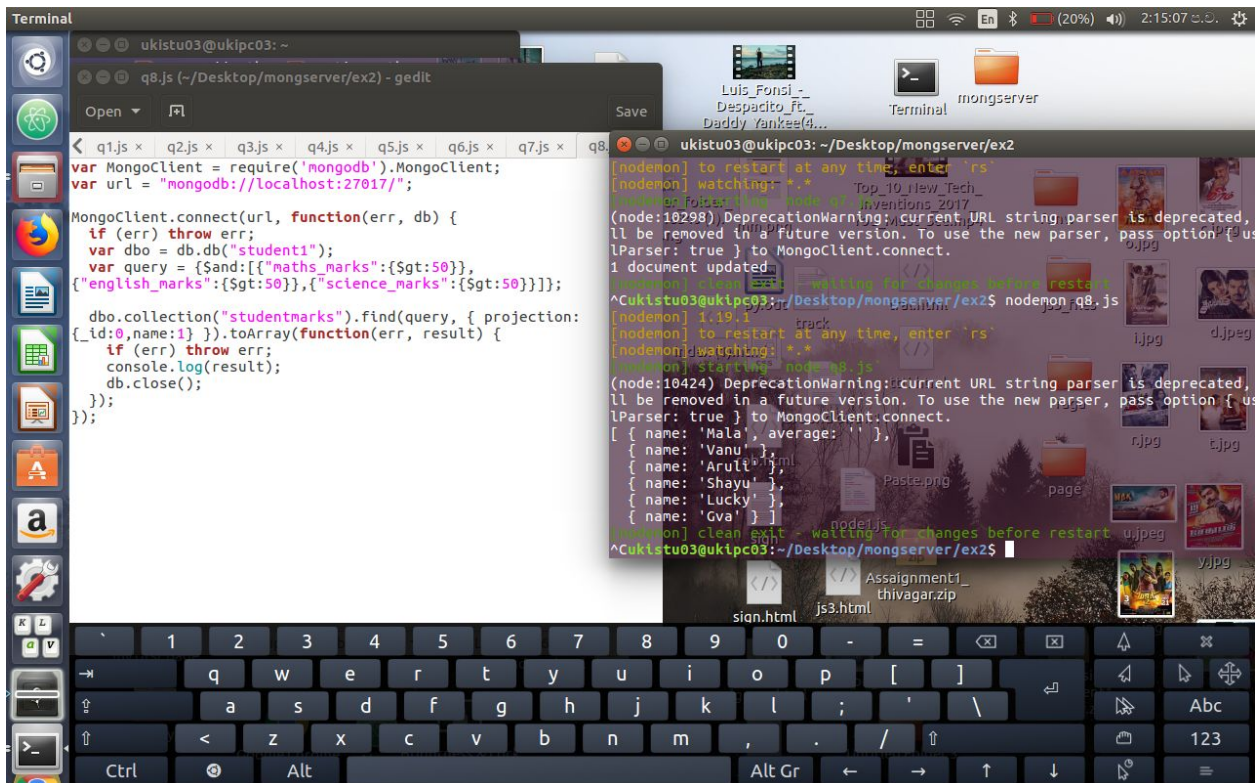
```
[node:10079] DeprecationWarning: current URL string parser is deprecated, and will be removed in a future version. To use the new parser, pass option { useNewUrlParser: true } to MongoClient.connect.  
1 document updated  
[node:10079] clean exit - waiting for changes before restart  
ukistu03@ukipc03: ~/Desktop/mongserver/ex2$ node q6.js  
[node:10079] 1.19.1 track  
[node:10079] watching: **  
[node:10079] to restart at any time, enter 'rs'  
[node:10079] watching: **  
[node:10079] starting node q6.js  
[node:10194] 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  
[node:10194] clean exit - waiting for changes before restart
```

7) Update Marks_Science=75 to Lucky .



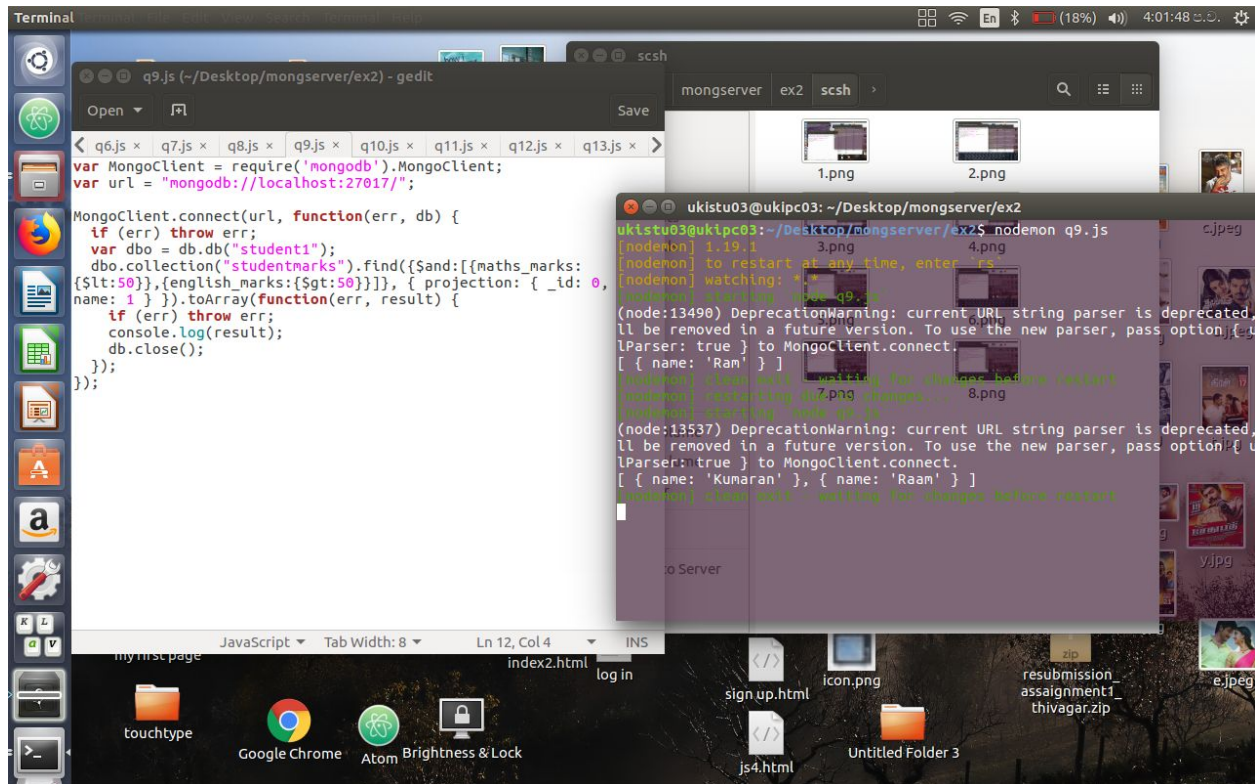
```
ukistu03@ukipc03: ~  
q7.js (~/Desktop/mongserver/ex2) - gedit  
Open Save  
q1.js x q2.js x q3.js x q4.js x q5.js x q6.js x q7.js x q8.js  
var MongoClient = require('mongodb').MongoClient;  
var url = "mongodb://localhost:27017/";  
  
MongoClient.connect(url, function(err, db) {  
  if (err) throw err;  
  var dbo = db.db("student1");  
  var myquery = { name: "Lucky" };  
  var newvalues = { $set: {science_marks:75 } };  
  dbo.collection("studentmarks").updateOne(myquery, newvalues  
function(err, res) {  
  if (err) throw err;  
  console.log("1 document updated");  
  db.close();  
});  
});
```

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

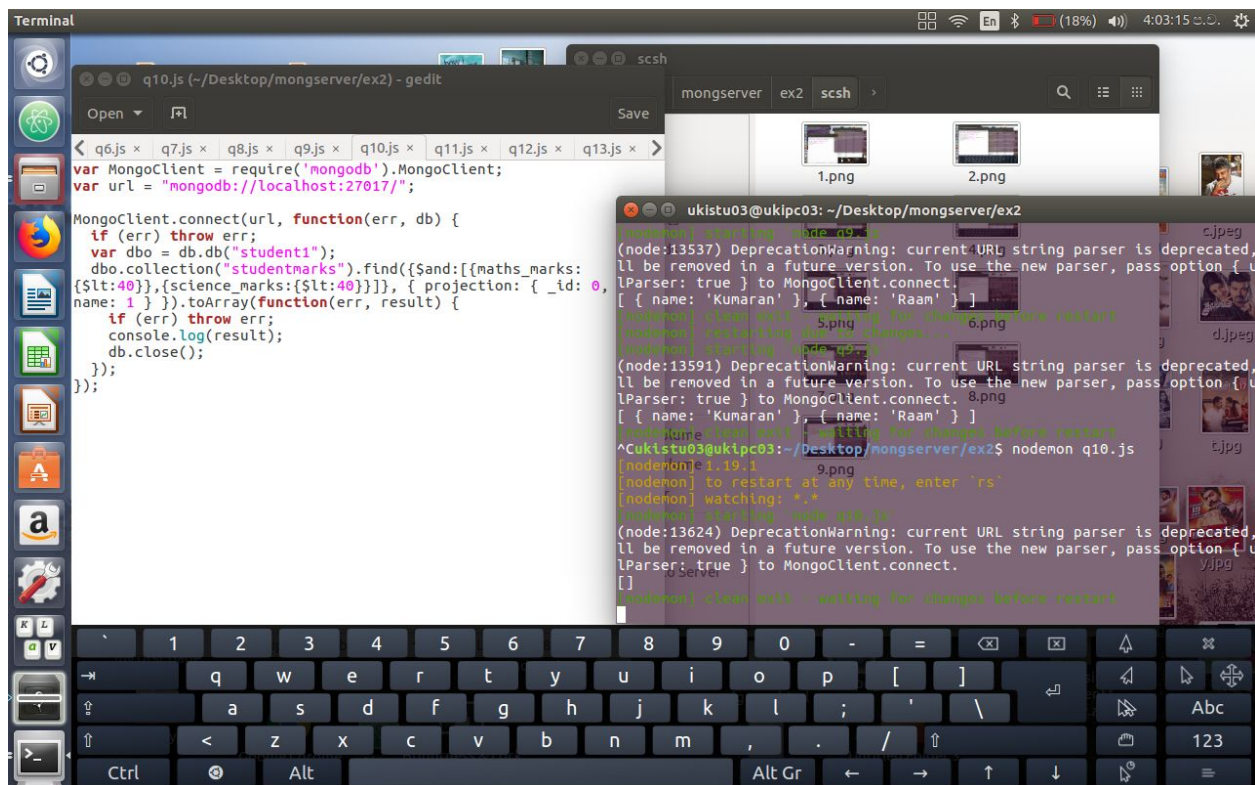


```
ukistu03@ukipc03: ~  
q8.js (~/Desktop/mongserver/ex2) - gedit  
Open Save  
q1.js x q2.js x q3.js x q4.js x q5.js x q6.js x q7.js x q8.js  
var MongoClient = require('mongodb').MongoClient;  
var url = "mongodb://localhost:27017/";  
  
MongoClient.connect(url, function(err, db) {  
  if (err) throw err;  
  var dbo = db.db("student1");  
  var query = {$and:[{"maths_marks":{$gt:50}},  
{"english_marks":{$gt:50}},{"science_marks":{$gt:50}}];  
  dbo.collection("studentmarks").find(query, { projection:  
_id:0,name:1 }).toArray(function(err, result) {  
    if (err) throw err;  
    console.log(result);  
  });  
  db.close();  
});
```

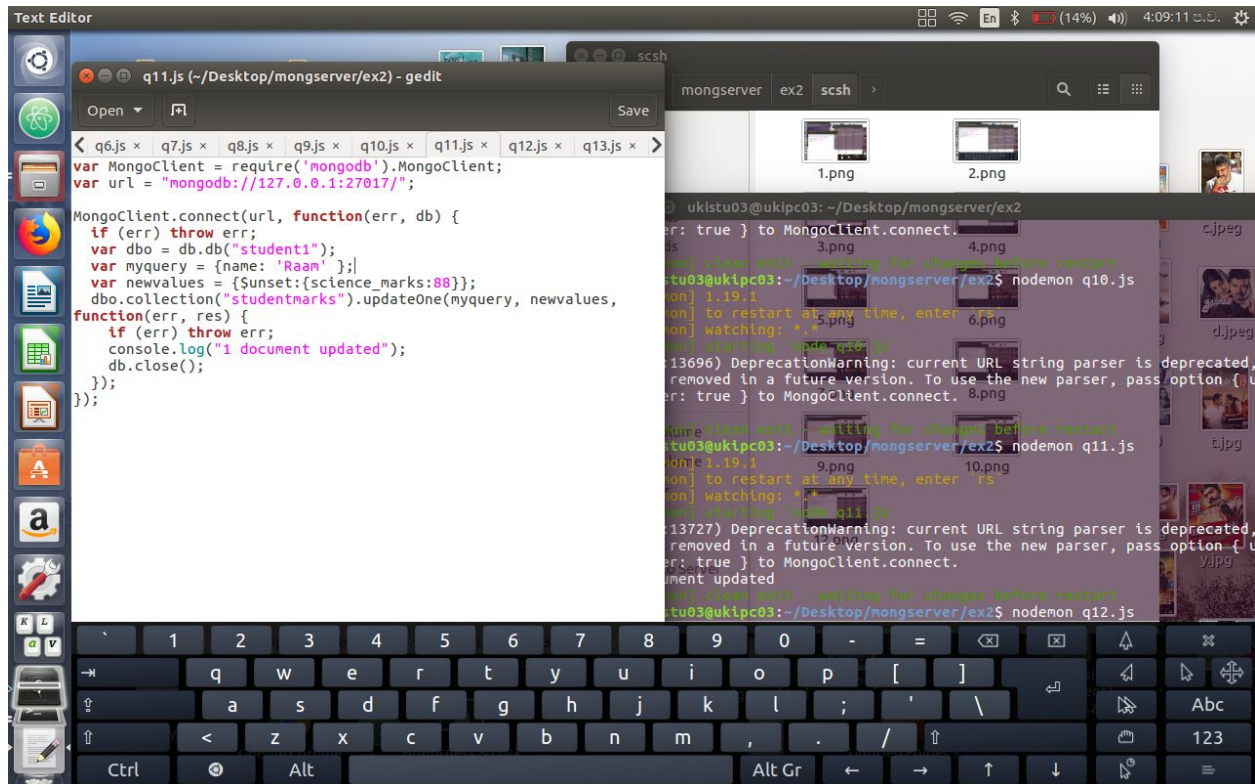
9) List the names who got less than 50 marks in Maths subject and more than 50 marks in English



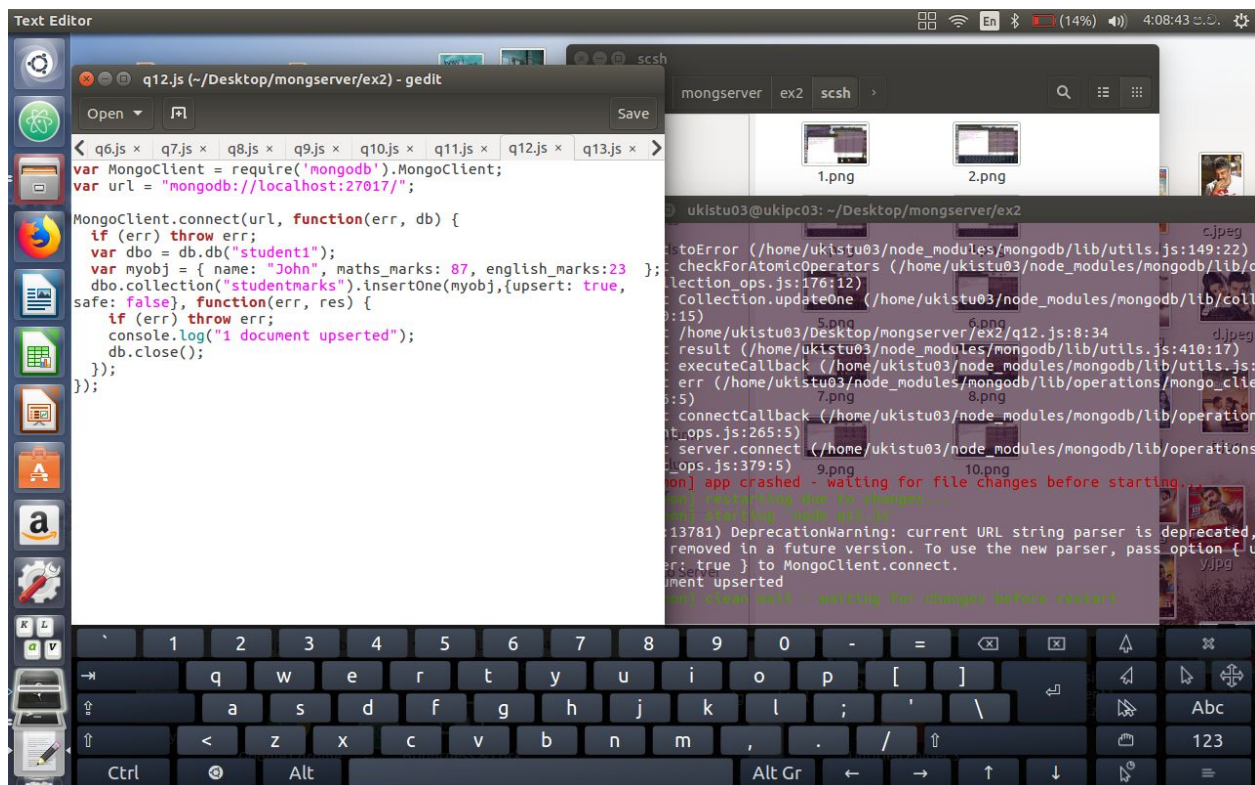
10) List the names who got less than 40 in both Maths and Science.



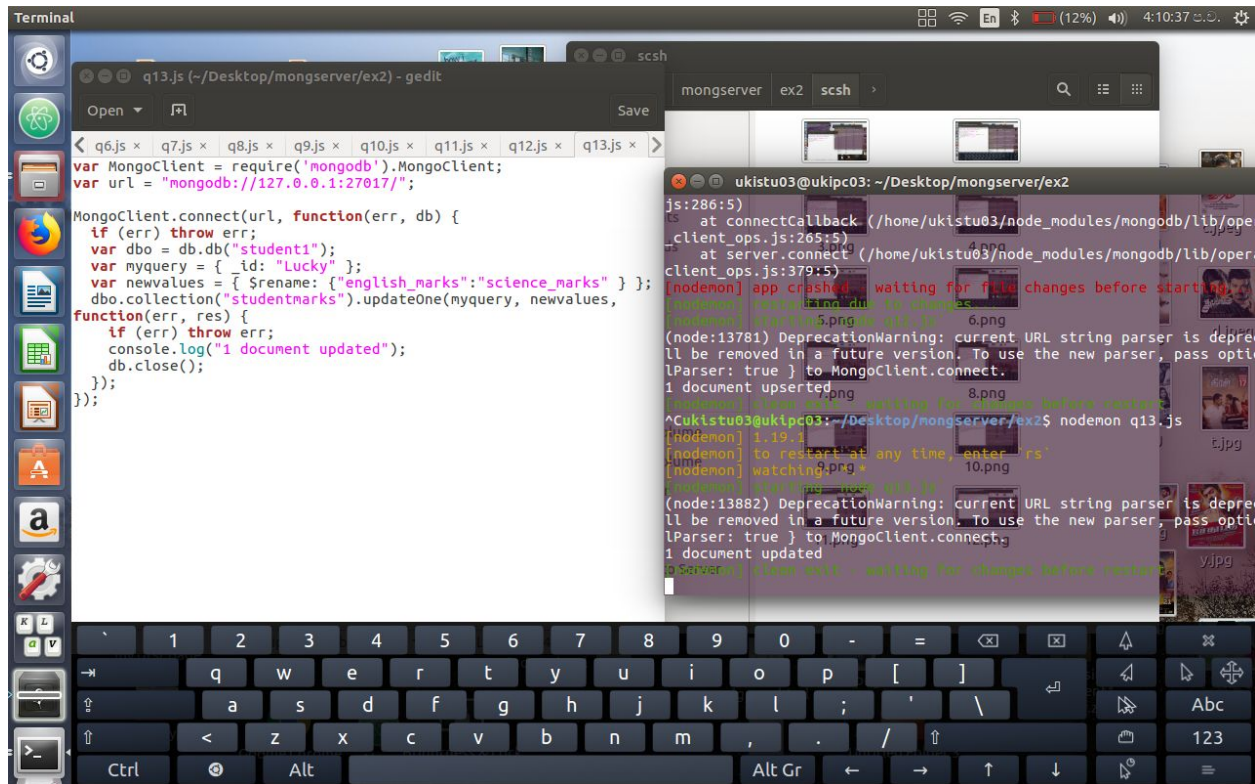
11) Remove Science column/field for Raam



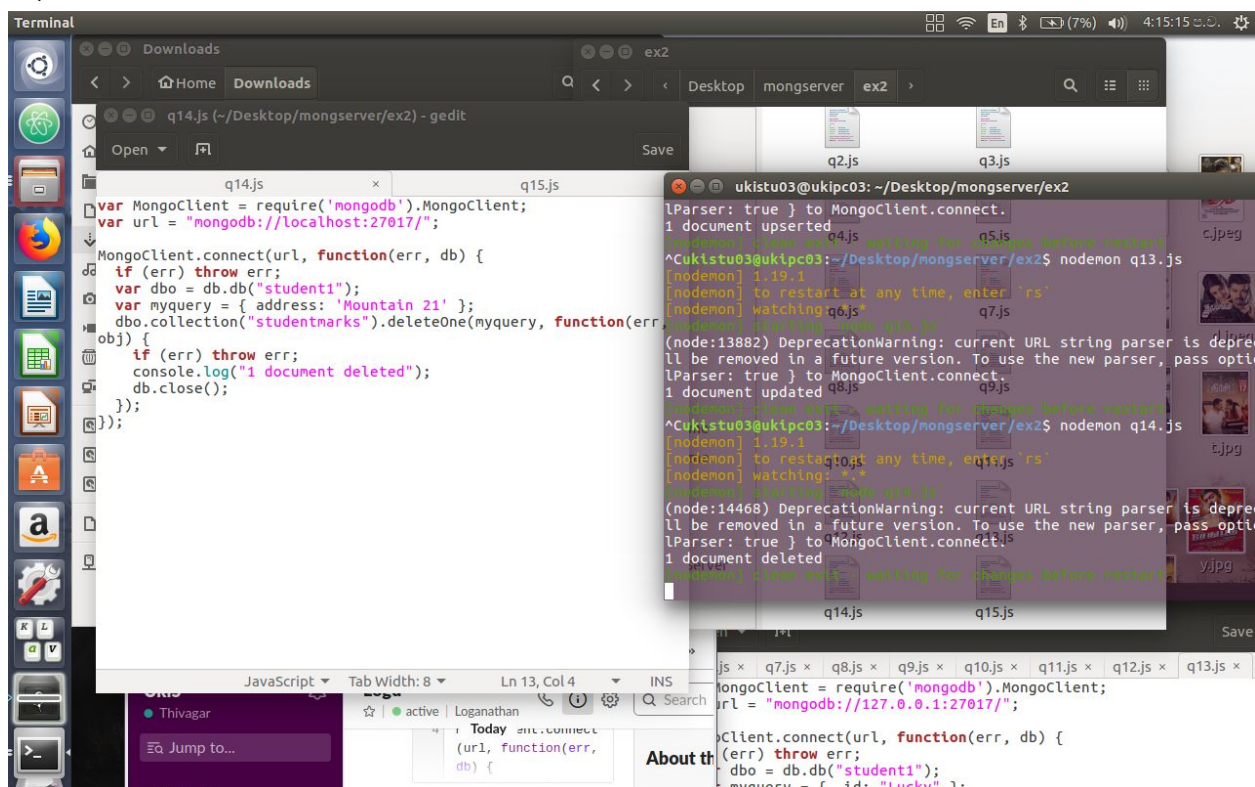
12) Update John's Math mark as 87 and English mark as 23, if john not available upsert.



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



14) Remove Kumaran's document from col



lection

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

The screenshot displays a Windows desktop environment. The primary application is Visual Studio Code, which is open to a file named `q15.js` located at `~/Desktop/mongserver/ex2`. The script in the editor is as follows:

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

MongoClient.connect(url, function(err, db) {
  if (err) throw err;
  var dbo = db.db("student1");
  dbo.collection("studentmarks").find({$or: [{name: "Aruli"}, {name: "Kala"}]}).project({ _id: 0, name: 1, maths_marks: 1, science_marks: 1 }).toArray(function(err, results) {
    if (err) throw err;
    console.log(results);
    db.close();
  });
});
```

Below the editor, a terminal window is active, showing the execution of the script using `nodemon`. The terminal output includes deprecation warnings and the resulting JSON data:

```
(node:14468) DeprecationWarning: current URL string parser is deprecated
ll be removed in a future version. To use the new parser, pass option
{url: true } to MongoClient.connect.
1 document deleted
[nodemon] clean exit - waiting for changes before restart
[nodemon] restart: no changes detected
(node:14506) DeprecationWarning: current URL string parser is deprecated
ll be removed in a future version. To use the new parser, pass option
{url: true } to MongoClient.connect.
1 document deleted
[nodemon] clean exit - waiting for changes before restart
^Cukistu03@ukipc03:~/Desktop/mongserver/ex2$ nodemon q15.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching q15.js
(node:14543) DeprecationWarning: current URL string parser is deprecated
ll be removed in a future version. To use the new parser, pass option
{url: true } to MongoClient.connect.
[ { name: 'Kala', maths_marks: 32, science_marks: 53 },
  { name: 'Aruli', maths_marks: 78, science_marks: 80 } ]
[nodemon] clean exit - waiting for changes before restart
^Cukistu03@ukipc03:~/Desktop/mongserver/ex2$
```

At the bottom of the image, a virtual keyboard overlay is visible, featuring a standard QWERTY layout with additional function keys like `Ctrl`, `Alt`, and `Alt Gr`.