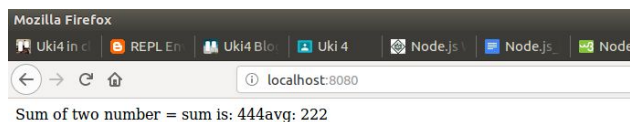


1. Create a custom module which returns the sum and average of any two numbers passed into it. Require the module and run the server by passing 123 and 321 so that the server prints out the sum and average.

```
var http = require('http');
var sample = require('./sample');
http.createServer(function (req,res){
  res.writeHead(200, {'content-type':'text/html'});
  res.write("Sum of two number = "+ sample.sumAvg(123,321));
  res.end();
}).listen(8080);
```



2. Create a simple http server and print “Welcome to Uki. I am **yourname**” when a request is sent to your server via the port 8000. (Note - Change different port numbers and check)

```
var http = require('http');
```

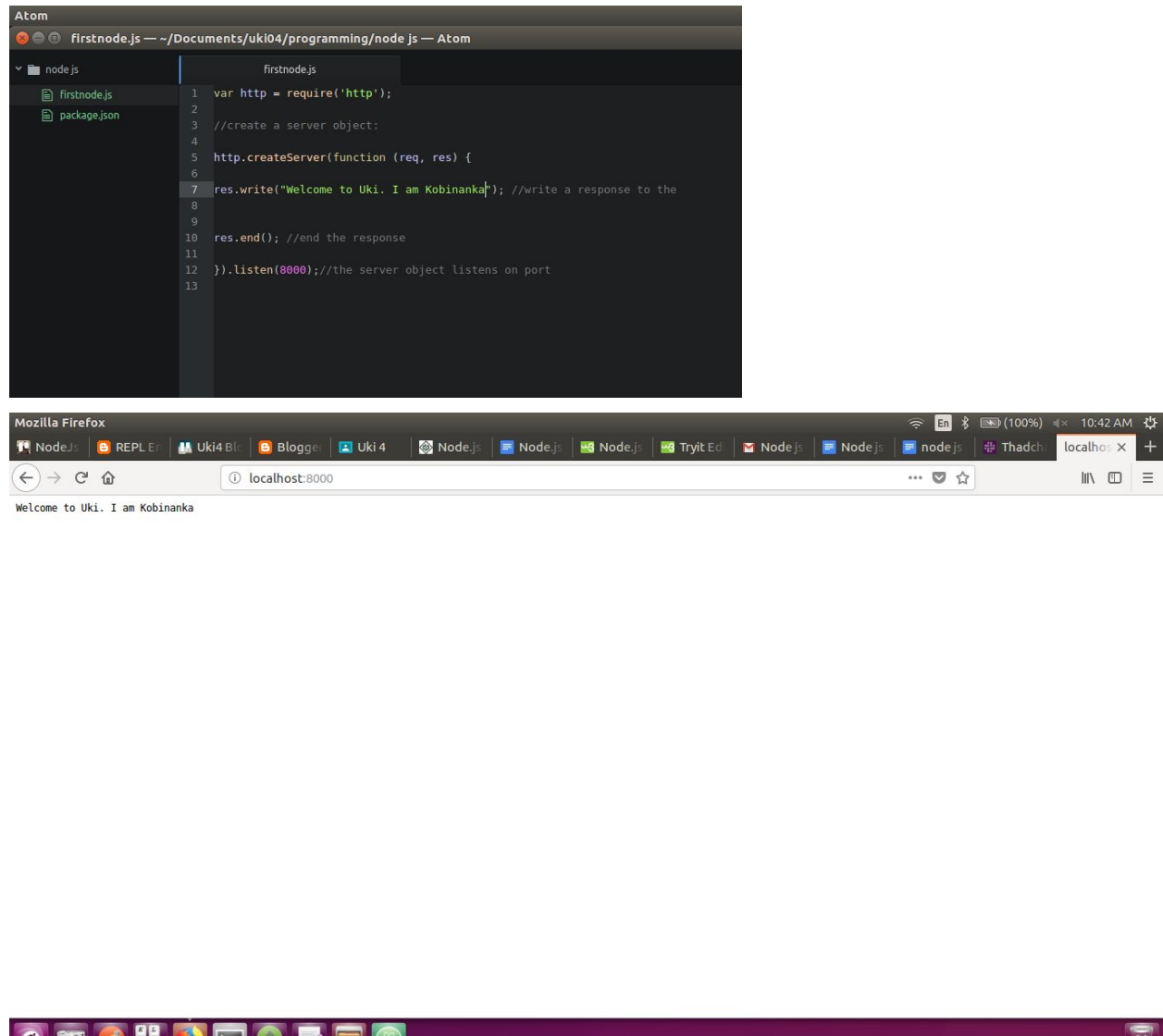
```
//create a server object:
```

```
http.createServer(function (req, res) {
```

```
res.write("Welcome to Uki. I am Kobinanka"); //write a response to the
```

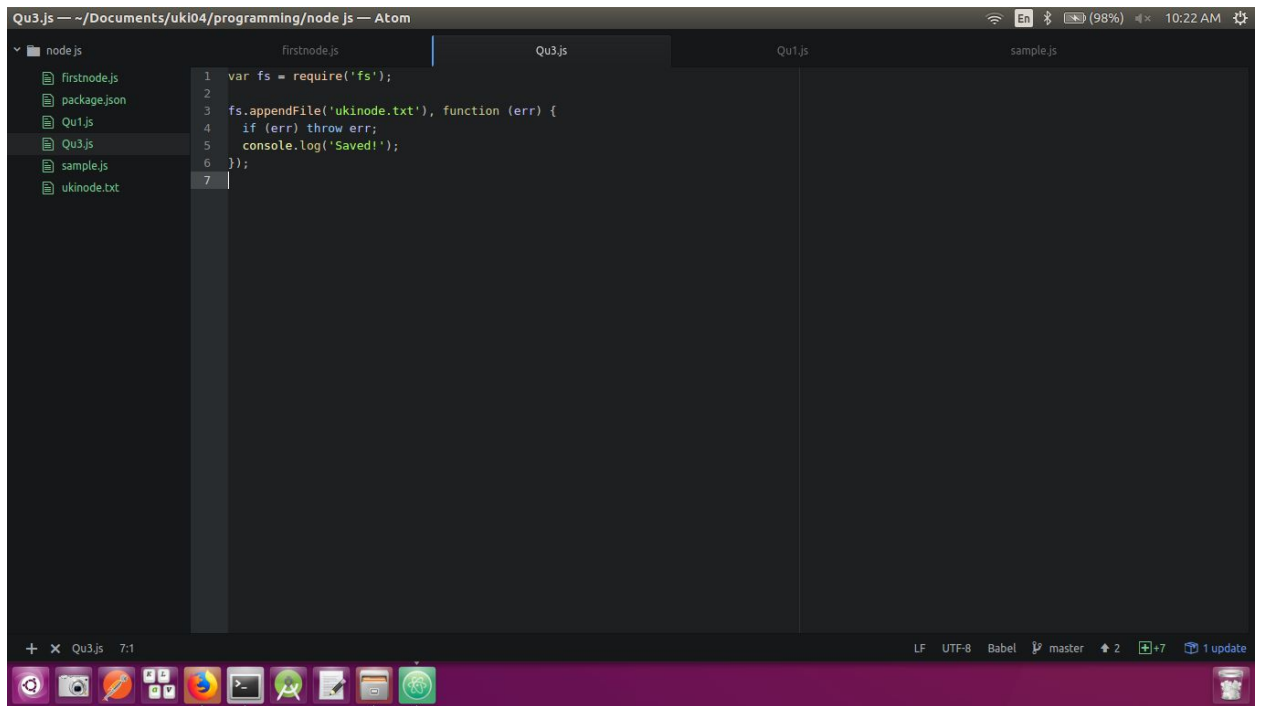
```
res.end(); //end the response
```

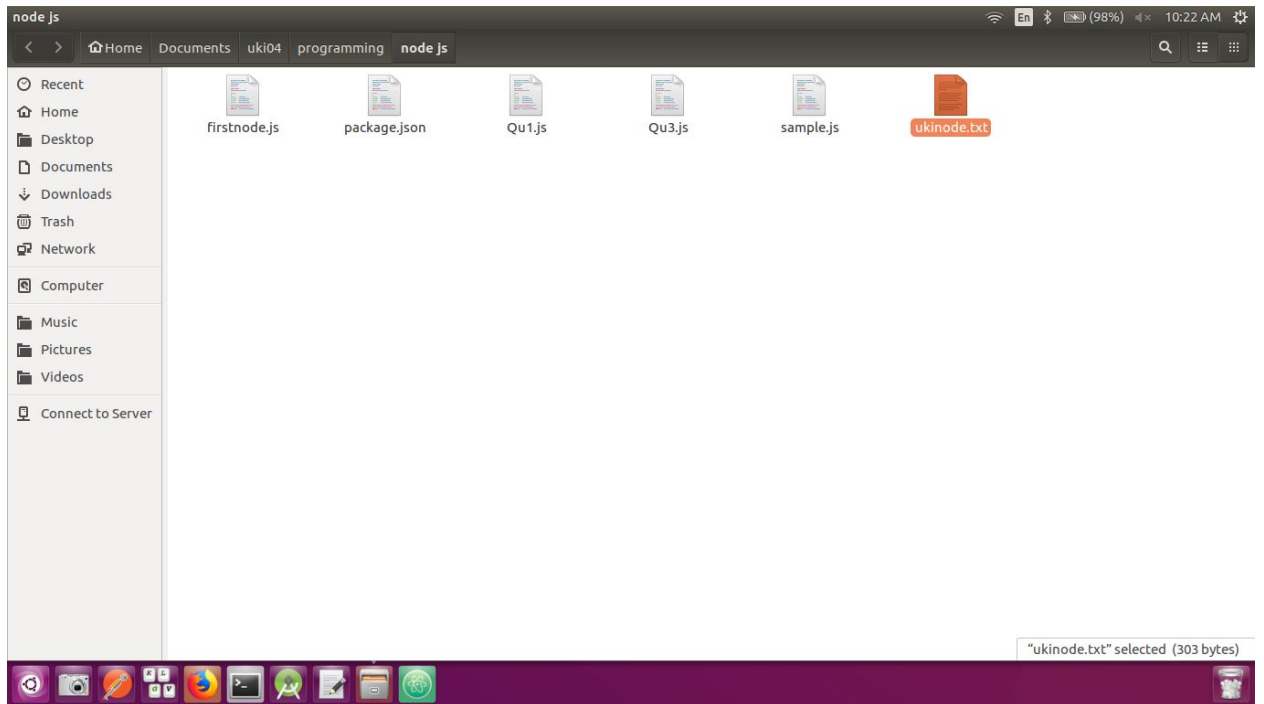
```
}).listen(8000); //the server object listens on port
```



3. Using the file system module create a new file called ukinode.txt  
var fs = require('fs');

```
fs.appendFile('ukinode.txt', function (err) {  
  if (err) throw err;  
  console.log('Saved!');  
});
```

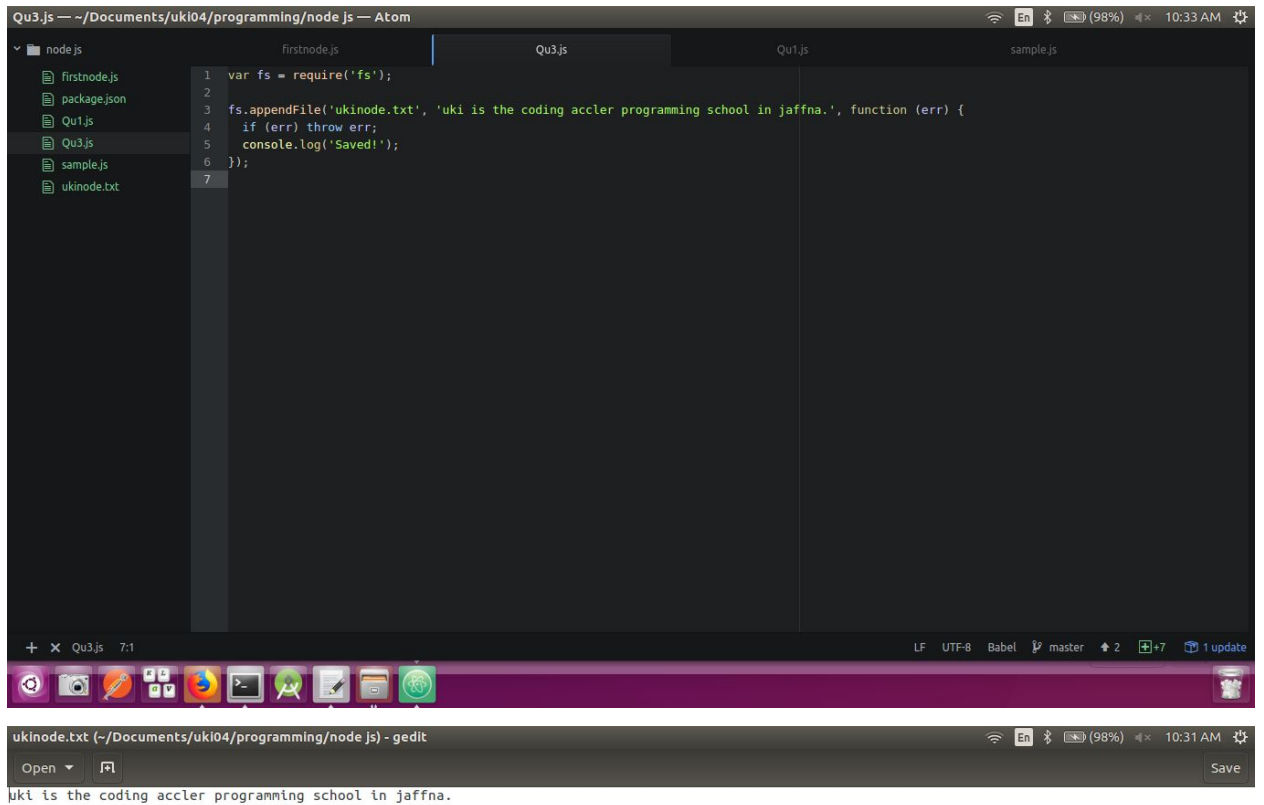




3.1 Write a paragraph about Uki into that file

```
var fs = require('fs');
```

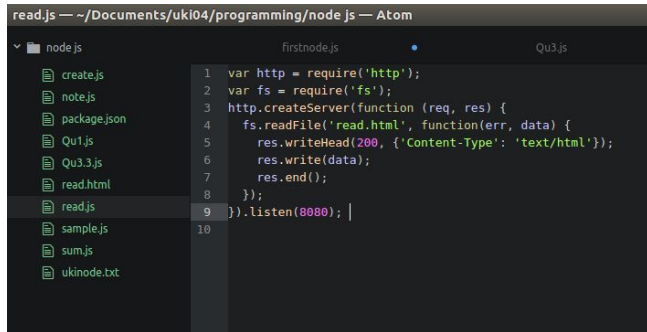
```
fs.appendFile('ukinode.txt', 'uki is the coding accler programming school in jaffna.',  
function (err) {  
  if (err) throw err;  
  console.log('Saved!');  
});
```



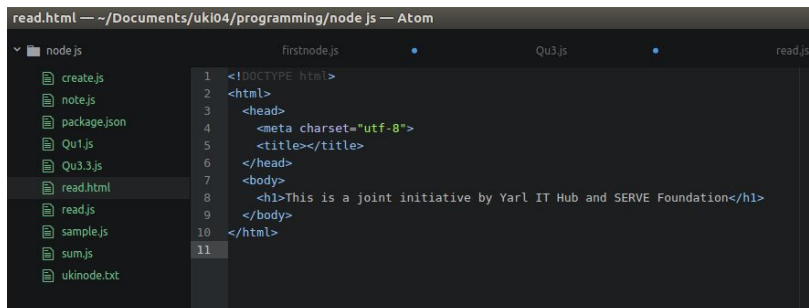
### 3.2 Serve that file to the client (Read File) over your server

```
var http = require('http');
var fs = require('fs');
```

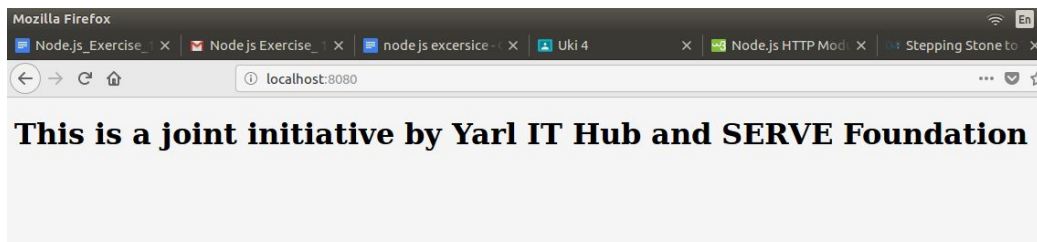
```
http.createServer(function (req, res) {  
  fs.readFile('read.html', function(err, data) {  
    res.writeHead(200, {'Content-Type': 'text/html'});  
    res.write(data);  
    res.end();  
  });  
}).listen(8080);
```



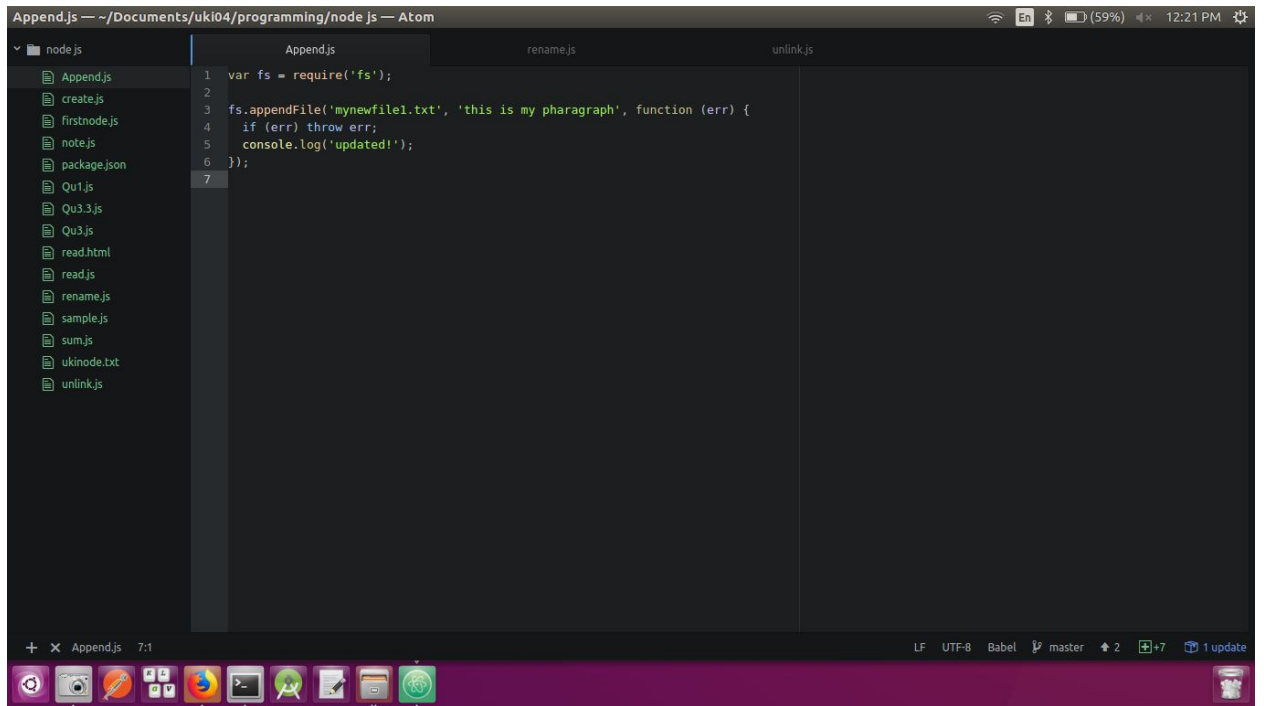
The screenshot shows the Atom editor interface. The left sidebar displays a file explorer for the project located at ~/Documents/ukl04/programming/node.js. The file list includes create.js, note.js, package.json, Qu1.js, Qu3.js, read.html, read.js (selected), sample.js, sum.js, and ukinode.txt. The main editor area shows the code for read.js, which is identical to the code block above, starting with line 1: var http = require('http'); and ending with line 9: }).listen(8080);.



The screenshot shows the Atom editor interface with the read.html file open. The left sidebar shows the same file explorer as the previous screenshot, with read.html now selected. The main editor area displays the HTML content of read.html, which is a simple page with a title and a paragraph. The code starts with line 1: <!DOCTYPE html> and ends with line 11: </html>.



3.3 Append another paragraph about Uki and now serve the new file

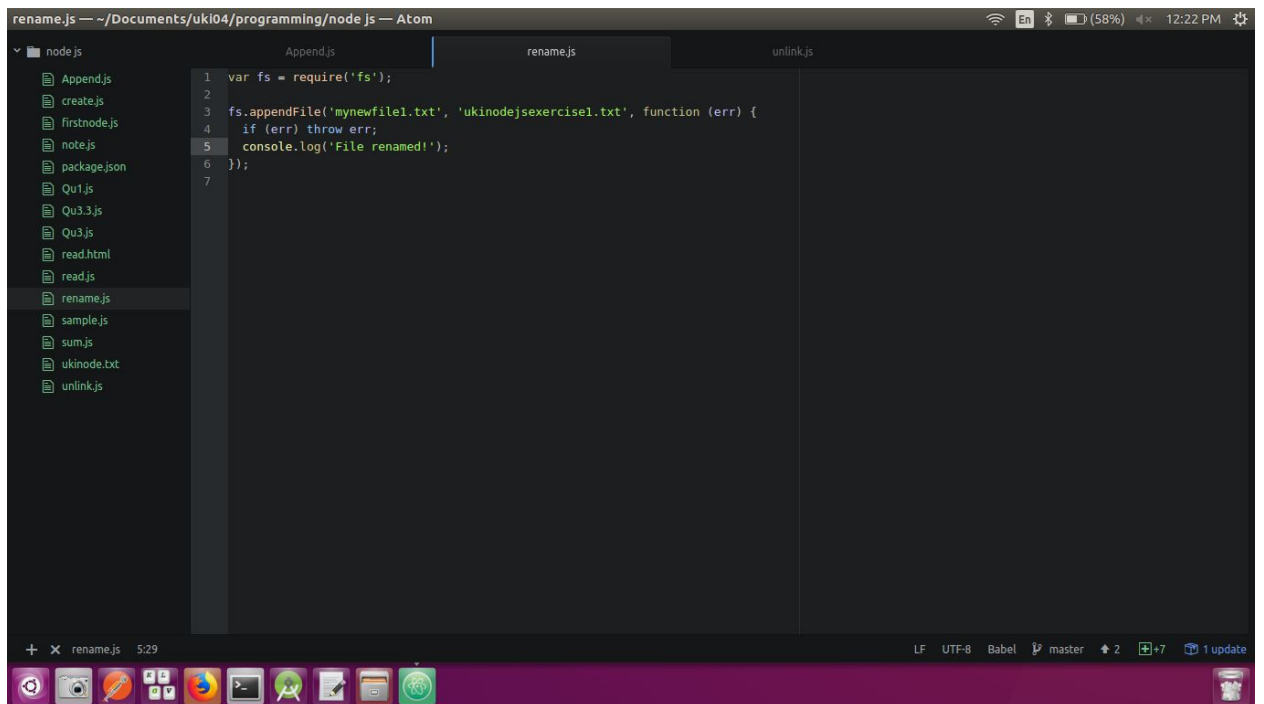


The screenshot shows the Atom text editor with a file named 'Append.js' open. The left sidebar displays a file tree for a project named 'node.js', listing files such as 'Append.js', 'create.js', 'firstnode.js', 'note.js', 'package.json', 'Qu1.js', 'Qu3.3.js', 'Qu3.js', 'read.html', 'read.js', 'rename.js', 'sample.js', 'sum.js', 'ukinode.txt', and 'unlink.js'. The main editor area shows the following JavaScript code:

```
1 var fs = require('fs');
2
3 fs.appendFile('mynewfile1.txt', 'this is my pharagraph', function (err) {
4   if (err) throw err;
5   console.log('updated!');
6 });
7
```

The status bar at the bottom indicates the file is 'Append.js' at line 7:1, with encoding 'LF', 'UTF-8', and 'Babel' mode. It also shows 'master' branch, 2 additions, 7 changes, and 1 update.

### 3.4 Rename the file as ukinodejsexercise1.txt

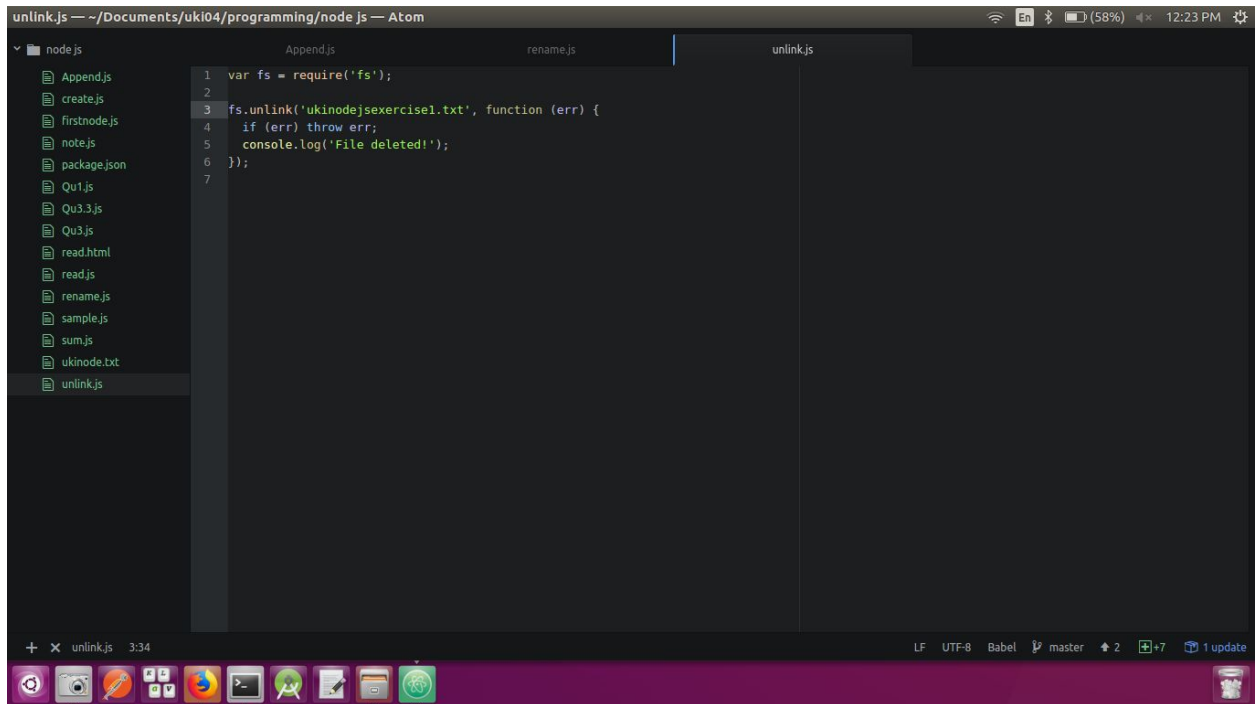


The screenshot shows the Atom text editor with a file named 'rename.js' open. The left sidebar shows the same file tree as the previous image. The main editor area shows the following JavaScript code:

```
1 var fs = require('fs');
2
3 fs.appendFile('mynewfile1.txt', 'ukinodejsexercise1.txt', function (err) {
4   if (err) throw err;
5   console.log('File renamed!');
6 });
7
```

The status bar at the bottom indicates the file is 'rename.js' at line 5:29, with encoding 'LF', 'UTF-8', and 'Babel' mode. It also shows 'master' branch, 2 additions, 7 changes, and 1 update.

### 3.5 Delete the file you created



4. Create two html files called head.html which is a web page which says 'you have got head' and tail.html which is a web page which says 'you have got tail' and save them in the same folder as your node.js files. Create a Node.js file that opens the requested file and returns the content to the client. If anything goes wrong, throw a 404 error.

If you have followed the correct steps you should see two different results when opening these two addresses:

<http://localhost:8080/head.html> -> You have got head

<http://localhost:8080/tail.html> -> You have got tail

```
var http = require('http');
```

```
var url = require('url');
```

```
var fs = require('fs');
```

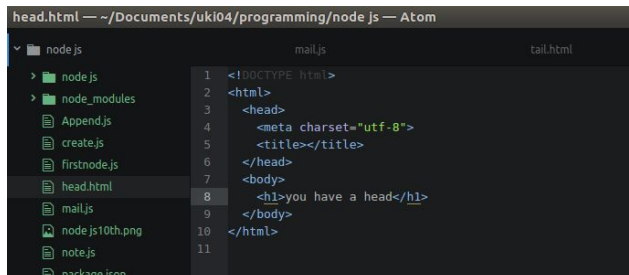
```
http.createServer(function (req, res) {  
  var q = url.parse(req.url, true);  
  var filename = "." + q.pathname;  
  fs.readFile(filename, function(err, data) {  
    if (err) {  
      res.writeHead(404, {'Content-Type': 'head.html'});
```



```

    return res.end("404 Not Found");
  }
  res.writeHead(200, {'Content-Type': 'tailhtml'});
  res.write(data);
  return res.end();
});
}).listen(8080);

```

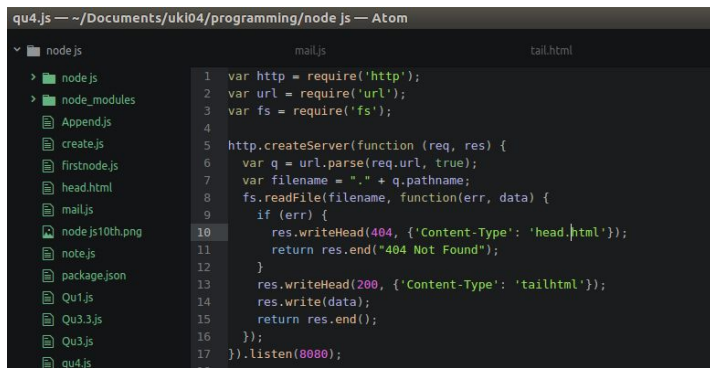


head.html — ~/Documents/uki04/programming/node.js — Atom

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4   <meta charset="utf-8">
5   <title></title>
6 </head>
7 <body>
8   <h1>you have a head</h1>
9 </body>
10 </html>
11

```

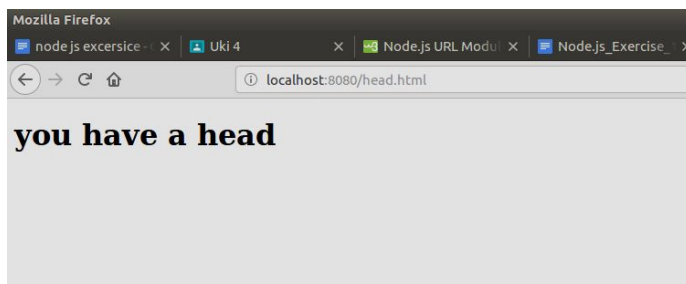


qu4.js — ~/Documents/uki04/programming/node.js — Atom

```

1 var http = require('http');
2 var url = require('url');
3 var fs = require('fs');
4
5 http.createServer(function (req, res) {
6   var q = url.parse(req.url, true);
7   var filename = "." + q.pathname;
8   fs.readFile(filename, function(err, data) {
9     if (err) {
10      res.writeHead(404, {'Content-Type': 'head.html'});
11      return res.end("404 Not Found");
12    }
13    res.writeHead(200, {'Content-Type': 'tailhtml'});
14    res.write(data);
15    return res.end();
16  });
17 }).listen(8080);
18

```



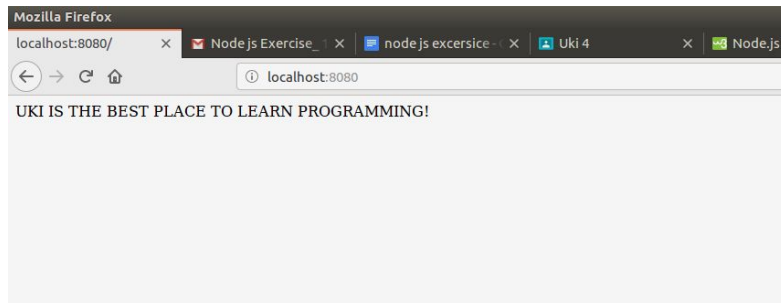
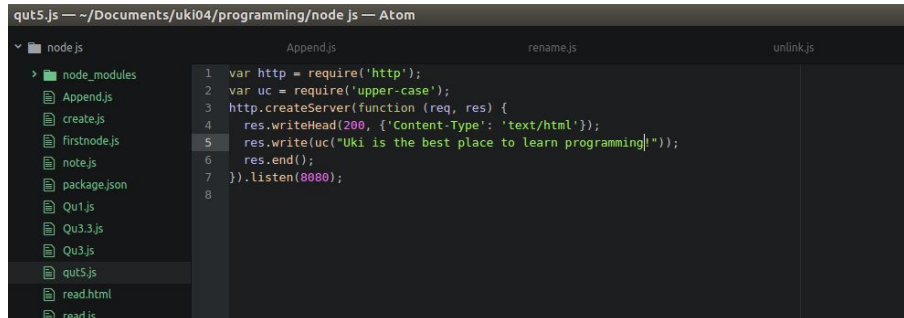
5. Install the package “upper-case” using NPM and create a Node.js file that will convert the output "Uki is the best place to learn programming !" into upper-case letters.

```

var http = require('http');
var uc = require('upper-case');
http.createServer(function (req, res) {
  res.writeHead(200, {'Content-Type': 'text/html'});
  res.write(uc("Uki is the best place to learn programming!"));
  res.end();
});

```

```
}).listen(8080);
```



6. Create an event handler function that will say "I bark when I see strangers !" when a "bark" event is fired.

```
var events = require('events');
var eventEmitter = new events.EventEmitter();
```

```
//Create an event handler:
var myEventHandler = function () {
  console.log("I bark when I see strangers !");
}
```

```
//Assign the eventhandler to an event:
eventEmitter.on("bark" , myEventHandler);
```

```
//Fire the 'scream' event:
eventEmitter.emit("bark" );
```

```
qu6.js -- ~/Documents/uki04/programming/node.js — Atom
node_modules
Append.js
create.js
firstnode.js
note.js
package.json
Qu1.js
Qu3.3.js
Qu3.js
qu6.js
quit5.js
Append.js
rename.js
1 var events = require('events');
2 var eventEmitter = new events.EventEmitter();
3
4 //Create an event handler:
5 var myEventHandler = function () {
6   console.log("I bark when I see strangers !");
7 }
8
9 //Assign the eventhandler to an event:
10 eventEmitter.on("bark" , myEventHandler);
11
12 //Fire the 'scream' event:
13 eventEmitter.emit("bark" );
14
```

```
ukistu07@ukipc07: ~/Documents/uki04/programming/node.js
ukistu07@ukipc07:~/Documents/uki04/programming/node.js$ node qu6.js
I bark when I see strangers !
ukistu07@ukipc07:~/Documents/uki04/programming/node.js$
```

7. Install “formidable” module using npm and make a web page in Node.js that lets the user upload files to your computer.

ukistu07@ukipc07:~/Documents/uki04/programming/node.js\$ npm install formidable

```
ukistu07@ukipc07:~/Documents/uki04/programming/node.js
ukistu07@ukipc07:~/Documents/uki04/programming/node.js$ node qu6.js
I bark when I see strangers !
ukistu07@ukipc07:~/Documents/uki04/programming/node.js$ npm install formidable
kobi@1.0.0 /home/ukistu07/Documents/uki04/programming/node.js
└─ formidable@1.2.1

npm WARN kobi@1.0.0 No description
npm WARN kobi@1.0.0 No repository field.
ukistu07@ukipc07:~/Documents/uki04/programming/node.js$
```

7.1 Save that uploaded file into your Documents directory.

```
var http = require('http');
```

```
var formidable = require('formidable');
```

```
var fs = require('fs');
```

```
http.createServer(function (req, res) {
```

```
  if (req.url == '/fileupload') {
```

```
    var form = new formidable.IncomingForm();
```

```
    form.parse(req, function (err, fields, files) {
```

```
      var oldpath = files.fileupload.path;
```

```
      var newpath = '/home/ukistu07/Documents/uki04/programming/node.js/node.js' +
files.fileupload.name;
```

```
      fs.rename(oldpath, newpath, function (err) {
```

```
        if (err) throw err;
```

```

    res.write('File uploaded and moved!');
    res.end();
  });
});
} else {
  res.writeHead(200, {'Content-Type': 'text/html'});
  res.write('<form action="fileupload" method="post" enctype="multipart/form-data">');
  res.write('<input type="file" name="filetoupload"><br>');
  res.write('<input type="submit">');
  res.write('</form>');
  return res.end();
}
}).listen(8080);

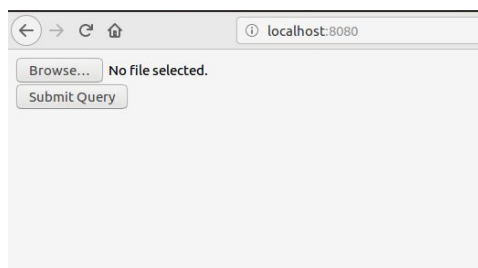
```

```

upload.js — ~/Documents/uki04/programming/node.js — Atom
node.js
Append.js
rename.js
unlink.js
quit5.js
quit6.js

1 var http = require('http');
2 var formidable = require('formidable');
3 var fs = require('fs');
4
5 http.createServer(function (req, res) {
6   if (req.url == '/fileupload') {
7     var form = new formidable.IncomingForm();
8     form.parse(req, function (err, fields, files) {
9       var oldpath = files.filetoupload.path;
10      var newpath = '/home/ukistu07/Documents/uki04/programming/node.js/node.js' + files.filetoupload.name;
11      fs.rename(oldpath, newpath, function (err) {
12        if (err) throw err;
13        res.write('File uploaded and moved!');
14        res.end();
15      });
16    });
17   } else {
18     res.writeHead(200, {'Content-Type': 'text/html'});
19     res.write('<form action="fileupload" method="post" enctype="multipart/form-data">');
20     res.write('<input type="file" name="filetoupload"><br>');
21     res.write('<input type="submit">');
22     res.write('</form>');
23     return res.end();
24   }
25 }).listen(8080);
26

```



8. Using the Nodemailer module create a server and send a mail to info@uki.life with the subject : “Testing my nodemailer module” , text: “This is easy !”
- 8.1 Now instead of text send a basic html formatted mail.

```
ukistu07@ukipc07: ~/Documents/uki04/programming/node js
ukistu07@ukipc07:~/Documents/uki04/programming/node js$ npm install nodemailer
kobi@1.0.0 /home/ukistu07/Documents/uki04/programming/node js
└─ nodemailer@5.1.1

npm WARN kob@1.0.0 No description
npm WARN kob@1.0.0 No repository field.
ukistu07@ukipc07:~/Documents/uki04/programming/node js$
```