

## Node.js Exercise 1

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.

```
exports.sum=function(x,y) {  
  var x=1;  
  var y=2;  
  return (x+y);  
};  
exports.avg=function(x,y) {  
  var x=1;  
  var y=2;  
  return (x+y)/2;  
};
```

```
var http = require('http');  
var dt = require('./uk11.js');http.createServer(function (req, res) {  
  res.writeHead(200, {'Content-Type': 'text/html'});  
  res.write("Sum: " + dt.sum() +"<br>" + "Average:"+dt.avg());  
  res.end();  
}).listen(8000);
```

---

Sum: 3  
Average:1.5

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

```
ex01.js
1  var http = require('http');
2
3  http.createServer(function (req, res) {
4    res.writeHead(200, {'Content-Type': 'text/plain'});
5    res.end('Welcome to Uki. I am Piraiyalan');
6  }).listen(8000);
7
```

Welcome to Uki. I am Piraiyalan

```
ukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex01.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex01.js`
[nodemon] restarting due to changes...
[nodemon] starting `node ex01.js`
[nodemon] restarting due to changes...
[nodemon] starting `node ex01.js`
```

3. Using the file system module create a new file called ukinode.txt
  - 3.1 Write a paragraph about Uki into that file

```
node
ex01.js
ex02.js
ex01.js
1  var fs = require('fs');
2
3  fs.appendFile('ukinode.txt', 'It is a full scholarship based Accelerator program for Coding in Jaffna', function (err) {
4    if (err) throw err;
5    console.log('Saved!');
6  });
7
```

```

^Cukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex03.1.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex03.1.js`
Saved!
[nodemon] clean exit - waiting for changes before restart

```

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

```

ukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex03.2.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex03.2.js`

```

It is a full scholarship based Accelerator program for Coding in JaffnaIt is a full scholarship based Accelerator program for Coding in JaffnaIt is a full scholarship based Accelerator program for Coding in JaffnaIt is a full scholarship based Accelerator program for Coding in JaffnaIt is a full scholarship based Accelerator program for Coding in Jaffna

```

1  var http = require('http');
2  var fs = require('fs');
3  http.createServer(function (req, res) {
4    fs.readFile('ukinode.txt', function(err, data) {
5      res.writeHead(200, {'Content-Type': 'text/html'});
6      res.write(data);
7      res.end();
8    });
9  }).listen(8080);

```

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

```
1 var fs = require('fs');//create a file named mynewfile1.txt:
2 fs.appendFile('ukinode.txt', 'This is a joint initiative by Yarl IT Hub and SERVE Foundation.'
3 , function (err) {
4   if (err) throw err;
5   console.log('Saved!');
6 });|
```

```
^Cukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex3.3.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex3.3.js`
Saved!
[nodemon] clean exit - waiting for changes before restart
```

### 3.4 Rename the file as ukinodejsexercise1.txt

```
1 var fs = require('fs');
2
3 //Rename the file "mynewfile1.txt" into "myrenamedfile.txt":
4 fs.rename('ukinode.txt', 'ukinodejsexercise1.txt', function (err) {
5   if (err) throw err;
6   console.log('File Renamed!');
7 });|
```

```
^Cukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex3.4.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex3.4.js`
File Renamed!
[nodemon] clean exit - waiting for changes before restart
[nodemon] restarting due to changes
```

### 3.5 Delete the file you created



```
1 var fs = require('fs');//Delete the file mynewfile2.txt:
2 fs.unlink('ukinodejsexercise1.txt', function (err) {
3   if (err) throw err;
4   console.log('File deleted!');
5 });
6
```

```
^Cukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex3.5.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex3.5.js`
File deleted!
[nodemon] clean exit - waiting for changes before restart
```

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

```

```

^Cukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex6.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex6.js`

```

/head.html

/tail.html

you have got head

you have got tail

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.

```

^Cukistu02@ukipc02:~/Documents/uki5/node$ sudo npm install upper-case
[sudo] password for ukistu02:
npm WARN saveError ENOENT: no such file or directory, open '/home/ukistu02/package.json'
npm notice created a lockfile as package-lock.json. You should commit this file.
npm WARN enoent ENOENT: no such file or directory, open '/home/ukistu02/package.json'
npm WARN ukistu02 No description
npm WARN ukistu02 No repository field.
npm WARN ukistu02 No README data
npm WARN ukistu02 No license field.

+ upper-case@1.1.3
added 1 package from 1 contributor and audited 91 packages in 2.015s
found 0 vulnerabilities

```

```

1 var http = require('http');
2 var uc = require('upper-case');
3 http.createServer(function (req, res) {
4   res.writeHead(200, {'Content-Type': 'text/html'});
5   /*Use our upper-case module to upper case a string:*/
6   res.write(uc("Uki is the best place to learn programming"));
7   res.end();
8 }).listen(8080);
9

```

---

UKI IS THE BEST PLACE TO LEARN PROGRAMMING

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');

```

```

^Cukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex6.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex6.js`
I bark when I see strangers !
[nodemon] clean exit - waiting for changes before restart

```

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

```

ukistu02@ukipc02:~/Documents/uki5/node$ sudo npm install formidable
npm WARN saveError ENOENT: no such file or directory, open '/home/ukistu02/package.json'
npm WARN enoent ENOENT: no such file or directory, open '/home/ukistu02/package.json'
npm WARN ukistu02 No description
npm WARN ukistu02 No repository field.
npm WARN ukistu02 No README data
npm WARN ukistu02 No license field.

+ formidable@1.2.1
added 1 package and audited 92 packages in 2.372s
found 0 vulnerabilities

```

7.1 Save that uploaded file into your Documents directory.

```

var http = require('http');

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

```

```

ukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex7.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex7.js`

```



Browse... head.html

Submit Query

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

http.createServer(function (req, res) {
  if (req.url == '/fileupload') {
    var form = new formidable.IncomingForm();
    form.parse(req, function (err, fields, files) {
      res.write('File uploaded');
      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);
```

File uploaded

```
^Cukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex7.2.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex7.2.js`
```

File uploaded and moved!

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 !"

```

ukistu02@ukipc02:~/Documents/uki5/node$ sudo npm install nodemailer
npm WARN saveError ENOENT: no such file or directory, open '/home/ukistu02/package.js
n'
npm WARN enoent ENOENT: no such file or directory, open '/home/ukistu02/package.json'
npm WARN ukistu02 No description
npm WARN ukistu02 No repository field.
npm WARN ukistu02 No README data
npm WARN ukistu02 No license field.

+ nodemailer@6.2.1
added 1 package from 1 contributor and audited 93 packages in 2.303s
found 0 vulnerabilities

```

The screenshot shows a terminal window with the following content:

```

Terminal
ex8.js -- ~/Documents/uki5/node -- Atom

node
  ex01.js
  ex05.js
  ex02.js
  ex03.1.js
  ex03.2.js
  ex3.3.js
  ex3.4.js
  ex3.5.js
  ex4.js
  ex6.js
  ex7.1.js
  ex7.2.js
  ex7.js
  ex8.js
  head.html
  tail.html
  uki.js

ex3.4.js
1 var nodemailer = require('nodemailer');
2
3 var transporter = nodemailer.createTransport({
4   service: 'gmail',
5   auth: {
6     user: 's.piraiyalan@gmail.com',
7     pass: 'ghgdfr76349'
8   }
9 });
10
11 var mailOptions = {
12   from: 's.piraiyalan@gmail.com',
13   to: 'info@uki.life',
14   subject: 'Testing my nodemailer module',
15   text: 'This is easy!'
16 };
17
18 transporter.sendMail(mailOptions, function(error, info){
19   if (error) {
20     console.log(error);
21   } else {
22     console.log('Email sent: ' + info.response);
23   }
24 });
25

ex7.js
+ nodemailer@6.2.1
added 1 package from 1 contributor and audited 93 packages in 2.303s
found 0 vulnerabilities

ukistu02@ukipc02:~/Documents/uki5/node$ nodemon ex8.js
[nodemon] 1.19.1
[nodemon] to restart at any time, enter `rs`
[nodemon] watching: *.*
[nodemon] starting `node ex8.js`
{ Error: queryA EREFUSED smtp.gmail.com
  at QueryReqWrap.onresolve [as oncomplete] (dns.js:199:19)
  errno: 'EREFUSED',
  code: 'EDNS',
  syscall: 'queryA',
  hostname: 'smtp.gmail.com',
  command: 'CONN' }
[nodemon] clean exit - waiting for changes before restart

```

8.1 Now instead of text send a basic html formatted mail.

Terminal

ex8.js -- ~/Documents/uki5/node -- Atom

node

ex01.js

ex05.js

ex02.js

ex03.1.js

ex03.2.js

ex3.3.js

ex3.4.js

ex3.5.js

ex4.js

ex6.js

ex7.1.js

ex7.2.js

ex7.js

ex8.js

head.html

tail.html

uki.js

ex3.4.js

ex3.5.js

ex6.js

ex7.js

ex7

```
1 var nodemailer = require('nodemailer');
2
3 var transporter = nodemailer.createTransport({
4   service: 'gmail',
5   auth: {
6     user: 's.piraiyalan@gmail.com',
7     pass: 'klnrjhgr'
8   }
9 });
10
11 var mailOptions = {
12   from: 's.piraiyalan@gmail.com',
13   to: 'info@uki.life',
14   subject: 'Testing my nodemailer module',
15   html: '<h1>Welcome</h1><p>That was easy!</p>'
16 };
17
18 transporter.sendMail(mailOptions, function(error, info){
19   if (error) {
20     console.log(error);
21   } else {
22     console.log('Email sent: ' + info.response);
23   }
24 });
25
```

uklstu02@uklpc02: ~/Documents/uki5/node

```
'535-5.7.8 Username and Password
not accepted. Learn more at\n535 5.7
.8 https://support.google.com/mail/
?p=BadCredentials v27sm7645863pgn.76
- gsmtpl',
  responseCode: 535,
  command: 'AUTH PLAIN' }
[nodemon] clean exit - waiting for c
hanges before restart
[nodemon] restarting due to changes.
''
[nodemon] starting `node ex8.js`
{ Error: queryA EREFUSED smtp.gmail.
com
  at QueryReqWrap.onresolve [as on
complete] (dns.js:199:19)
  errno: 'EREFUSED',
  code: 'EDNS',
  syscall: 'queryA',
  hostname: 'smtp.gmail.com',
  command: 'CONN' }
[nodemon] clean exit - waiting for c
hanges before restart
```

ex8.js 7:21

update