

Third Year B. Tech., Sem V 2021-22

Programming Lab 3

Practical No- 8

PRN: 2019BTECS00071

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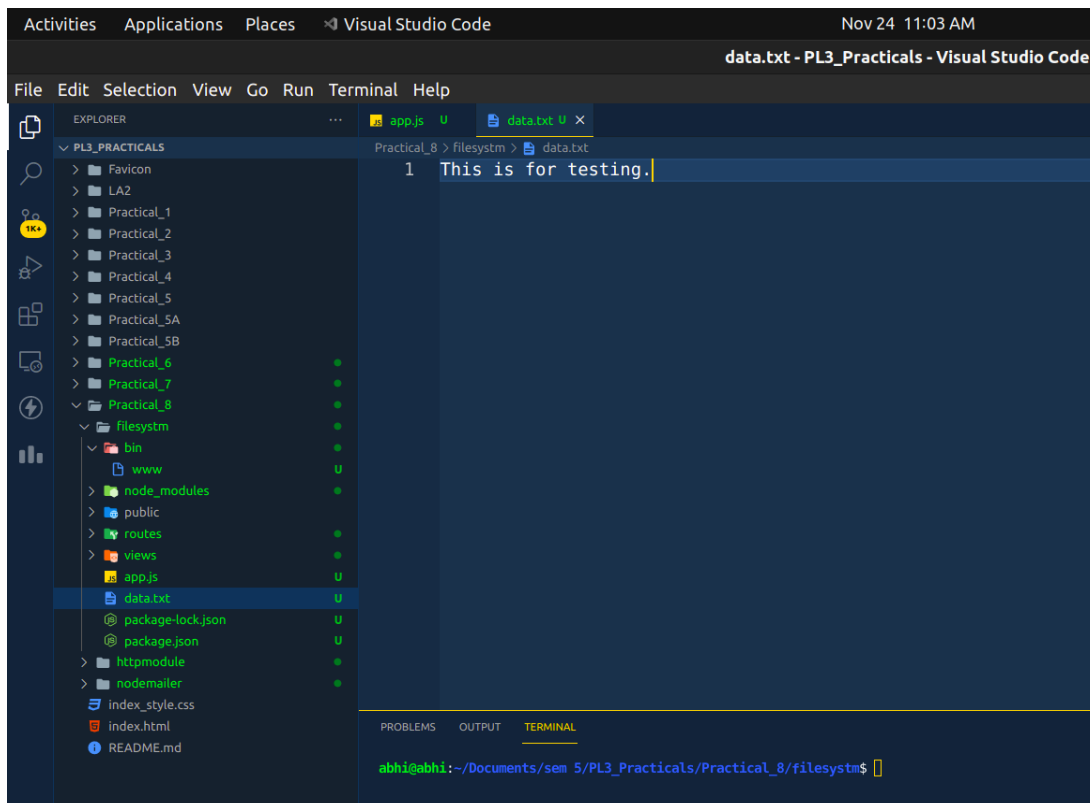
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Assignment 8: To use pre-built and user defined modules in Node.js Application

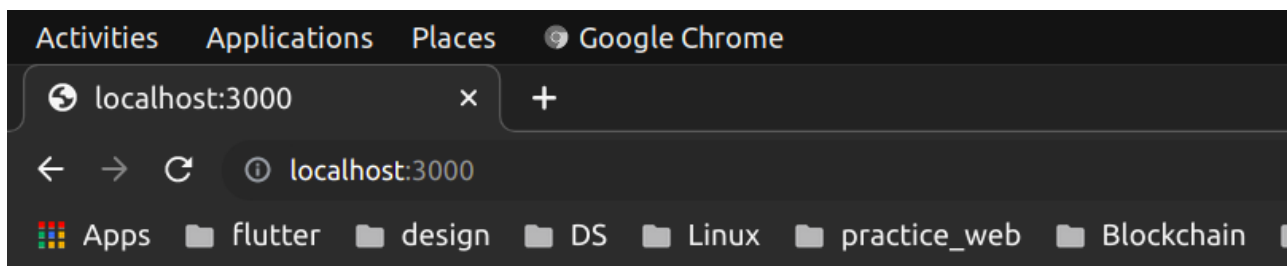
1. With the help of suitable examples use following Node.js pre-built modules in Node.js Application.

A. File System Module (fs)

read:



```
1 var express = require('express');
2 var router = express.Router();
3 var fs=require('fs');
4
5 /* GET home page. */
6 router.get('/', function(req, res, next) {
7   fs.readFile('./data.txt','utf-8',(err,data)=>{
8     if(err)
9     {
10       console.log(err);
11     }
12     else
13     {
14       res.send(data);
15     }
16   })
17 });
18
19 module.exports = router;
20
```



This is for testing.

write:

```
Practical_8 > filesystem > routes > index.js > router.get('/') callback
1  var express = require('express');
2  var router = express.Router();
3  var fs=require('fs');
4
5  /* GET home page. */
6  router.get('/', function(req, res, next) {
7      fs.readFile('./data.txt','utf-8',(err,data)=>{
8          if(err)
9          {
10             console.log(err);
11          }
12          else
13          {
14             res.send(data);
15          }
16      })
17
18      var data = 'To write something in file'
19      fs.writeFile('forwriting.txt',data,err=>{
20          if(err){
21             console.log(err);
22          }
23      })
24  });
25
26  module.exports = router;
27
```

Output ->

```
Practical_8 > filesystem > forwriting.txt
1  To write something in file
```

B. Secure HTTP Module (https)

```
app.js  U X
Practical_8 > nodemodules > app.js > sslServer > cert
1  const express = require('express');
2  const https = require('https');
3  const path = require('path');
4  const fs = require('fs');
5
6  const app = express();
7
8  app.get('/', (req, res) => {
9    res.send("Hello from SSL");
10 })
11
12 const sslServer = https.createServer({
13   key: '',
14   cert: ''
15 }, app)
16
17
18
19 sslServer.listen(3443, () => {
20   console.log("Secure server on port 3443");
21 })
22
23
24
```

```
PROBLEMS  OUTPUT  TERMINAL
abhi@abhi:~/Documents/sem 5/PL3_Practicals/Practical_8/httpmodule$ openssl genrsa -out key.pem
Generating RSA private key, 2048 bit long modulus (2 primes)
.....+++++
.....+++++
e is 65537 (0x010001)
abhi@abhi:~/Documents/sem 5/PL3_Practicals/Practical_8/httpmodule$
```

```
abhi@abhi:~/Documents/sem 5/PL3_Practicals/Practical_8/httpmodule$ openssl req -new -key key.pem -out csr.pem
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:IN
State or Province Name (full name) [Some-State]:
Locality Name (eg, city) []:
Organization Name (eg, company) [Internet Widgits Pty Ltd]:
Organizational Unit Name (eg, section) []:
Common Name (e.g. server FQDN or YOUR name) []:
Email Address []:charpaleabhi@gmail.com

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
abhi@abhi:~/Documents/sem 5/PL3_Practicals/Practical_8/httpmodule$
```

```
abhi@abhi:~/Documents/sem 5/PL3_Practicals/Practical_8/httpmodule$ openssl x509 -req -days 365 -in csr.pem -signkey key.pem -out cert.pem
Signature ok
subject=C = IN, ST = Some-State, O = Internet Widgits Pty Ltd, emailAddress = charpaleabhi@gmail.com
Getting Private key
abhi@abhi:~/Documents/sem 5/PL3_Practicals/Practical_8/httpmodule$
```

Activities Applications Places Google Chrome Nov 24 11:56 AM U 10% M 62% ↓ 810 B/s ↑ 1.98 K/s 28 %

https://localhost:3443 x +

Not secure | https://localhost:3443

Apps flutter design DS Linux practice_wv

Hello from SSL

Certificate Viewer: E=charpaleabhi@gmail.com,O=Internet Widgits Pty Ltd,ST=Some-State,C=IN

General Details

This certificate has been verified for the following usages:

Issued To

Common Name (CN)	<Not part of certificate>
Organisation (O)	Internet Widgits Pty Ltd
Organisational Unit (OU)	<Not part of certificate>

Issued By

Common Name (CN)	<Not part of certificate>
Organisation (O)	Internet Widgits Pty Ltd
Organisational Unit (OU)	<Not part of certificate>

Validity Period

Issued On	Wednesday, 24 November 2021 at 11:37:23
Expires On	Thursday, 24 November 2022 at 11:37:23

Fingerprints

SHA-256 fingerprint	E8 85 55 46 CA A1 12 0A D3 8B 9F 98 2E 97 B5 16 3D C2 64 2A A3 82 6A 26 9B F6 4F 48 FF 30 64 1B 7E 8A B7 57 A9 4C F7 8E 6A E1 60 8C DC 64 02 75 46 FA 51 9C
SHA-1 Fingerprint	

C. Nodemailer Module (nodemailer)

← Less secure app access

Some apps and devices use less secure sign-in technology, which makes your account vulnerable. You can turn off access for these apps, which we recommend, or turn it on if you want to use them despite the risks. Google will automatically turn this setting OFF if it's not being used. [Learn more](#)

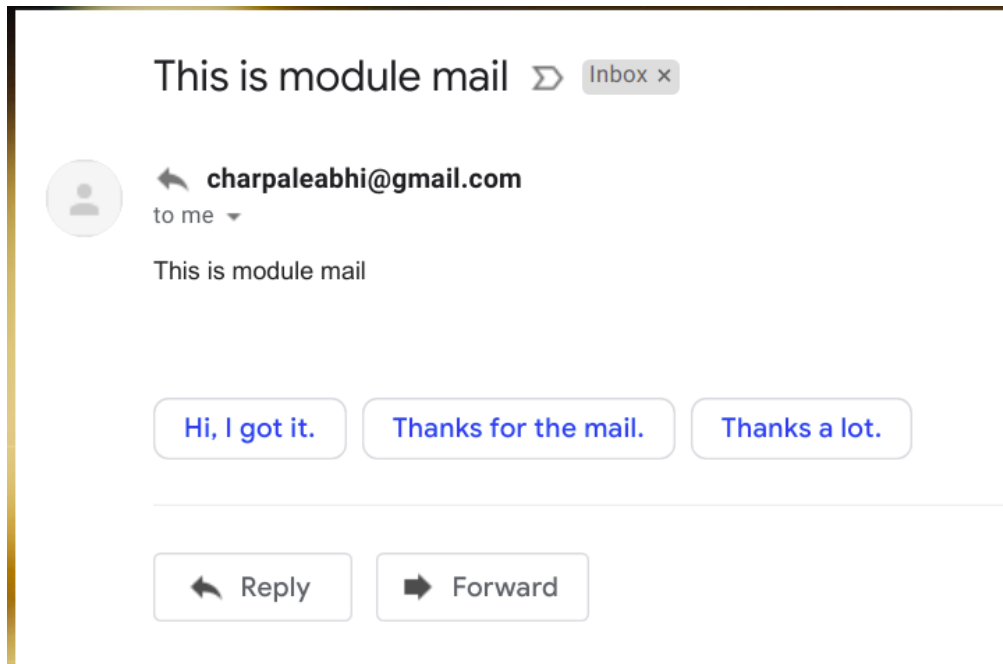
Allow less secure apps: ON



Practical_8 > app.js > app.listen() callback

```
1  const express = require('express');
2  const fs = require('fs');
3  const path = require('path');
4  const https = require('https');
5  const nodemailer = require('nodemailer');
6  const port = 3000;
7  const app = express();
8
9  const sendmail = async (mail) => {
10     var transport = nodemailer.createTransport({
11         service: 'Gmail',
12         auth: {
13             user: 'charpaleabhi@gmail.com',
14             pass: '*****'
15         }
16     });
17     console.log('Transport created');
18     transport.sendMail({
19         from: 'charpaleabhi@gmail.com',
20         to: mail,
21         subject: 'This is module mail',
22         text: 'This is module mail'
23     })
24 }
25
26 app.get('/', (req, res) => {
27     const mail = req.query.mail
28     sendmail(mail)
29     res.send('Email sent successfully.')
30 })
31 app.listen(port, () => {
32     console.log('listening on port ' + port);
33 });
```

Email from http server -



2. Create a user defined module and use it in Node.js Application that uses HTTP server

Ans - To send email we have to enable this -

← Less secure app access

Some apps and devices use less secure sign-in technology, which makes your account vulnerable. You can turn off access for these apps, which we recommend, or turn it on if you want to use them despite the risks. Google will automatically turn this setting OFF if it's not being used. [Learn more](#)

Allow less secure apps: ON



Practical_8 > app.js > app.listen() callback

```
1  const express = require('express');
2  const fs = require('fs');
3  const path = require('path');
4  const https = require('https');
5  const nodemailer = require('nodemailer');
6  const port = 3000;
7  const app = express();
8
9  const sendmail = async (mail) => {
10     var transport = nodemailer.createTransport({
11         service: 'Gmail',
12         auth: {
13             user: 'charpaleabhi@gmail.com',
14             pass: '*****'
15         }
16     });
17     console.log('Transport created');
18     transport.sendMail({
19         from: 'charpaleabhi@gmail.com',
20         to: mail,
21         subject: 'This is module mail',
22         text: 'This is module mail'
23     })
24 }
25
26 app.get('/', (req, res) => {
27     const mail = req.query.mail
28     sendmail(mail)
29     res.send('Email sent successfully.')
30 })
31 app.listen(port, () => {
32     console.log('listening on port ' + port);
33 });
```

This is module mail  Inbox x



← **charpaleabhi@gmail.com**

to me ▾

This is module mail

Hi, I got it.

Thanks for the mail.

Thanks a lot.

← Reply

➡ Forward