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**Batch : T5**

**Subject : PL3**

**Practical No. 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.**

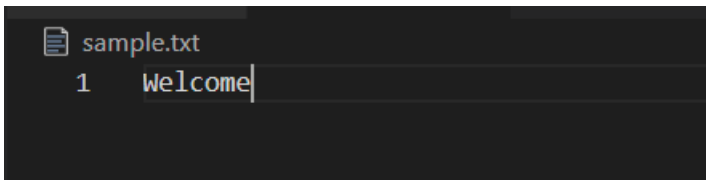
**A .File System Module (fs)**

```
12
13  const fs = require('fs');
14
15  fs.readFile('./sample.txt','utf-8',(err,data)=>{
16      if(!err)
17          console.log(data);
18  })
```

```
PROBLEMS  OUTPUT  TERMINAL  DEBUG CONSOLE
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7> node .\app.js
Welcome to Node.js
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7>
```

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

fs.writeFile('./sample.txt','Welcome',(err)=>{
    if(err)
        console.log(err);
})
```




## B. Secure HTTP Module (https)

```
JS app.js > ...
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  app.listen(8080,()=>{
23      console.log("Server is running on port 8080");
24  })
25
26
```

```
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7\cert> openssl genrsa -out key.pem
Generating RSA private key, 2048 bit long modulus (2 primes)
......+++++
.....................................................................+++++
e is 65537 (0x010001)
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7\cert>
```

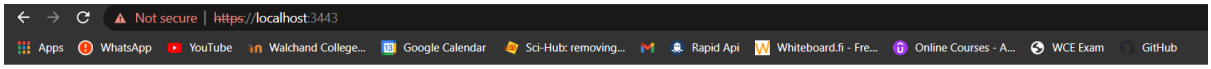
```
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7\cert> openssl req -new -key key.pem -out csr.pem
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a 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 []:pavanshinde74947@gmail.com

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7\cert>
```

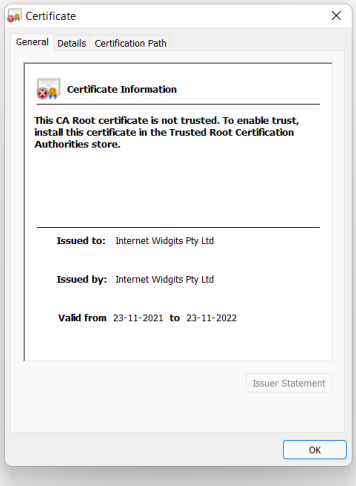
```
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7\cert> openssl x509 -req -days 365 -in csr.pem -signkey key.pem -out cert.pem
Signature ok
subject=C = IN, ST = Some-State, O = Internet Widgits Pty Ltd, emailAddress = pavanshinde74947@gmail.com
Getting Private key
PS C:\Users\ASUS\OneDrive\Desktop\PL3-Assignment\7\cert>
```

JS 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 : fs.readFileSync(path.join(__dirname,'cert','key.pem')),
14     cert: fs.readFileSync(path.join(__dirname,'cert','cert.pem'))
15 } , app)
16
17
18
19 sslServer.listen(3443,()=>{
20     console.log("Secure server on port 3443");
21 })
22 app.listen(8080,()=>{
23     console.log("Server is running on port 8080");
24 })
25
26
```




Hello from SSL




## C.Nodemailer Module (nodemailer)

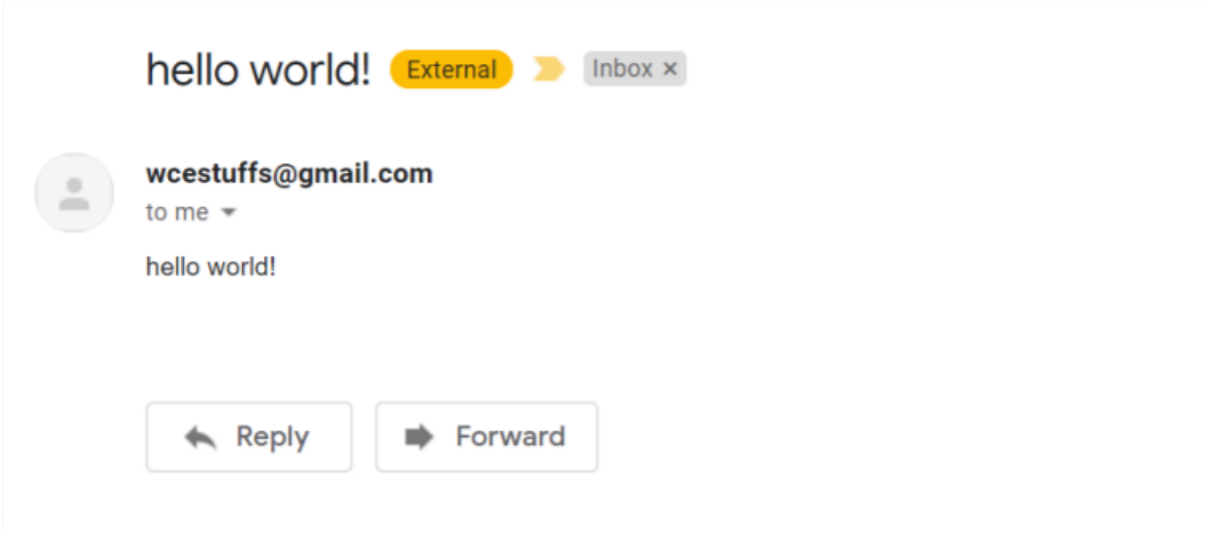
Install this module from npm

```
"use strict";
const nodemailer = require("nodemailer");

// async..await is not allowed in global scope, must use a wrapper
async function main() {
    var transporter = nodemailer.createTransport({
        service: 'Gmail',
        auth: {
            user: 'wcestuffs@gmail.com',
            pass: '[redacted]'
        }
    });

    console.log('created');
    transporter.sendMail({
    from: 'wcestuffs@gmail.com',
      to: 'dnyaneshwar.ware@walchandsangli.ac.in',
      subject: 'hello world!',
      text: 'hello world!'
    });
}

main().catch(console.error);
```




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

```
const nodemailer = require("nodemailer");

const sendMail = async(mail) => {
    var transporter = nodemailer.createTransport({
        service: 'Gmail',
        auth: {
            user: 'wcestuffs@gmail.com',
            pass: [redacted]
        }
    });

    console.log('created');
    transporter.sendMail({
    from: 'wcestuffs@gmail.com',
      to: mail,
      subject: 'This is module mail',
      text: 'This is module mail'
    });
}

module.exports = sendMail
```

```
const express = require('express')
const sendMail = require('./mailer.js')


const app = express()


app.get('/send',(req,res) =>{
    const { mail } = req.query

    sendMail(mail)

    res.send('Done')

})

app.listen(3000)
```

Done