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Experiment No: 12

Aim: - Install Express Js Framework and WAP take first name and last name

Theory :-

Express

- Express is a minimal and flexible Node.js web application framework that provides a robust set of features to develop web and mobile applications.
- It facilitates the rapid development of Node based Web applications.

Express framework –

- Allows to set up middlewares to respond to HTTP Requests.
- Defines a routing table which is used to perform different actions based on HTTP Method and URL.
- Allows to dynamically render HTML Pages based on passing arguments to templates.

Installing Express

Firstly, install the Express framework globally using NPM so that it can be used to create a web application using node terminal.

```
$ npm install express --save
```

The above command saves the installation locally in the node_modules directory and creates a directory express inside node_modules.

Express.js GET Request

GET and POST both are two common HTTP requests used for building REST API's. GET requests are used to send only limited amount of data because data is sent into header while POST requests are used to send large amount of data because data is sent in the body. Express.js facilitates you to handle GET and POST requests using the instance of express.

Fetch data in JSON format:

Get method facilitates you to send only limited amount of data because data is sent in the header. It is not secure because data is visible in URL bar.

Code:

Router.js

```
const express = require ("express");
var app = express();
var port = 9000;

var router1 = express.Router();
var router2 = express.Router();
var router3 = express.Router();

router1.get("/user", function (req, res, next) {
  console.log("user router working");
  res.end();
});

router2.get("/student", function (req, res, next) {
  console.log("Student Router");
  res.end();
});

router1.get("/admin", function (req, res, next) {
  console.log("Admin router");
  res.end();
});
```

```
});  
  
app.use(router1);  
app.use(router2);  
app.use(router3);  
  
app.listen(port, function (err) {  
  if(err) console.log(err);  
  console.log("Server on port ", port);  
});
```

getex.js

```
var express = require('express');  
var app = express();  
app.use(express.static('public'));  
  
app.get('/index.html', function (req, res) {  
  res.sendFile(__dirname + "/" + "index.html" );  
});  
app.get('/process_get', function (req, res) {  
  response = {  
    first_name:req.query.first_name,  
    last_name:req.query.last_name  
  };  
  console.log(response);  
  res.end(JSON.stringify(response));  
});  
var server = app.listen(8082, function () {  
  
  var host = server.address().address  
  var port = server.address().port  
  console.log("Example app listening at http://%s:%s", host, port)  
  
});
```

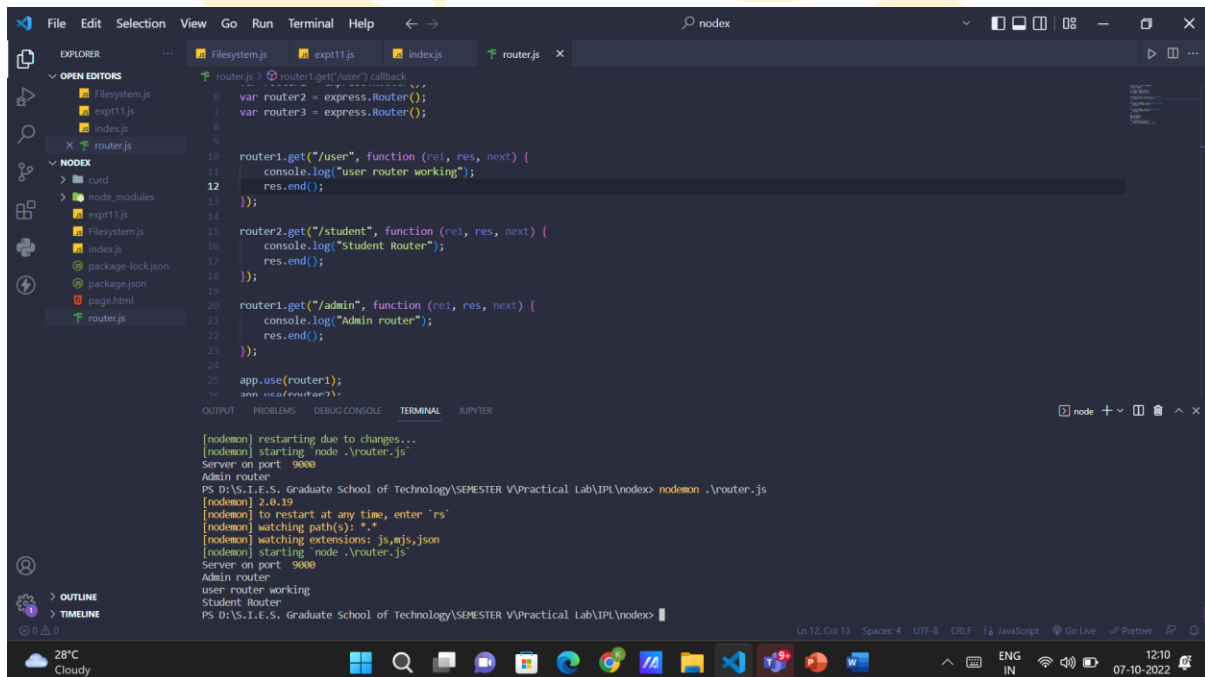
Index.html

```
<html>

<body>
  <form action="http://127.0.0.1:8082/process_get" method="GET">
    First Name: <input type="text" name="first_name"> <br>
    Last Name: <input type="text" name="last_name">
    <input type="submit" value="Submit">
  </form>
</body>

</html>
```

Output :

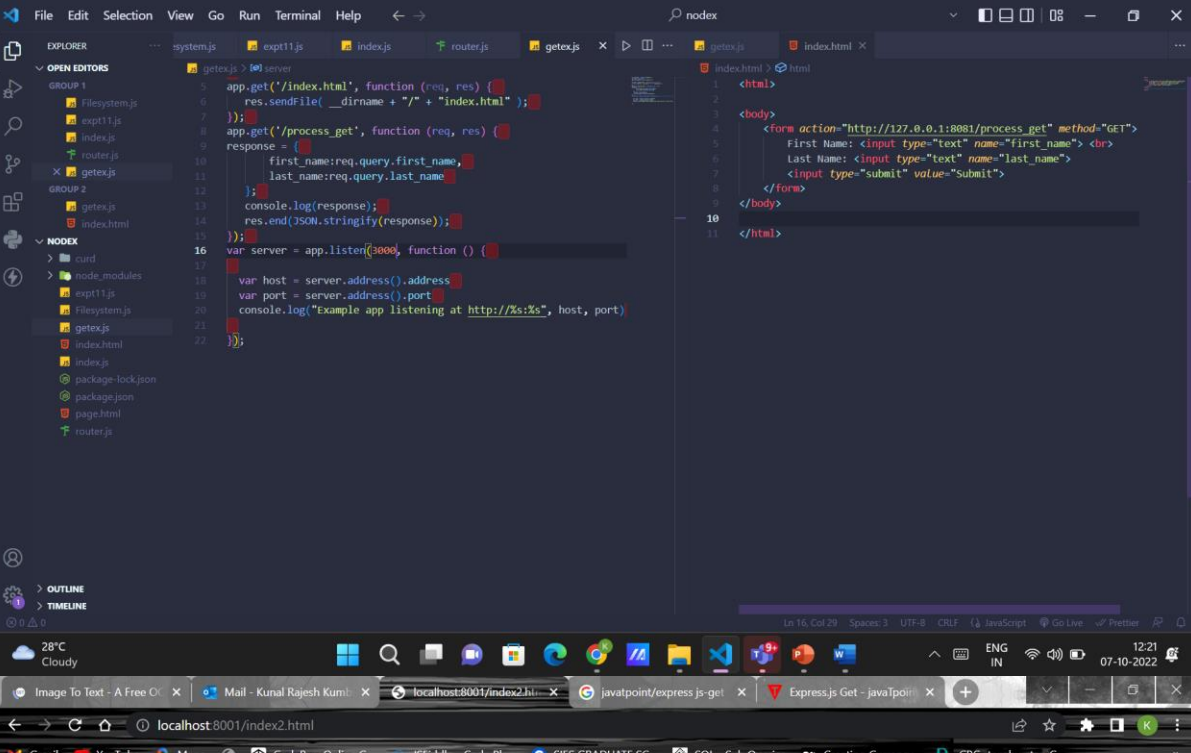


```
File Edit Selection View Go Run Terminal Help
node

EXPLORER
  filesystem.js
  expt11.js
  index.js
  router.js
  node_modules
  package-lock.json
  package.json
  page.html
  router.js

ROUTER.JS
  router1.get("/user", function (req, res, next) {
    console.log("user router working");
    res.end();
  });
  router2.get("/student", function (req, res, next) {
    console.log("Student Router");
    res.end();
  });
  router1.get("/admin", function (req, res, next) {
    console.log("Admin router");
    res.end();
  });
  app.use(router1);
  app.use(router2);

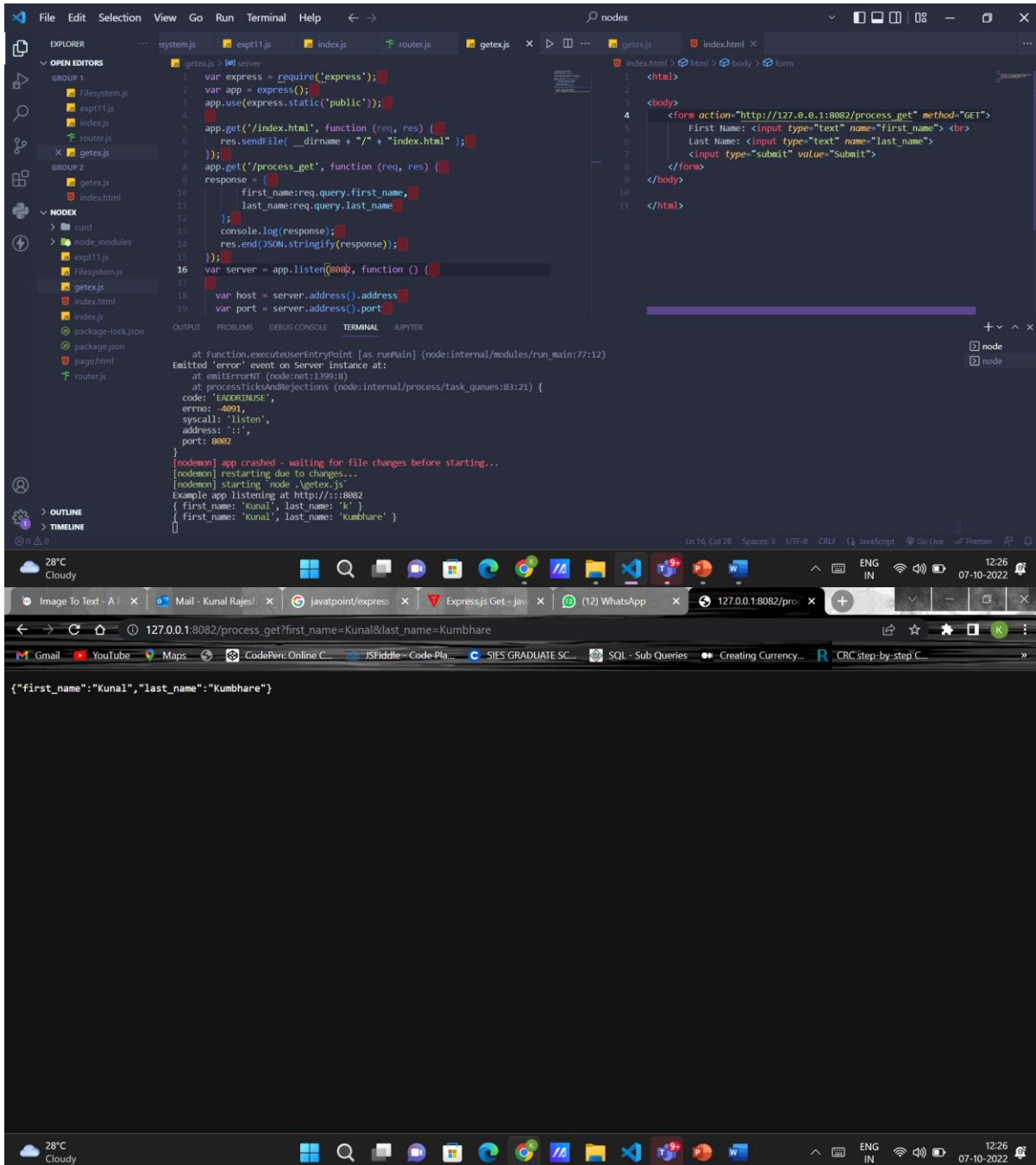
TERMINAL
  [nodemon] restarting due to changes...
  [nodemon] starting node .\router.js
  Server on port 9000
  Admin router
  PS D:\S.I.E.S. Graduate School of Technology\SEMESTER V\Practical Lab\IPL\node> node .\router.js
  [nodemon] 2.0.19
  [nodemon] to restart at any time, enter `rs`
  [nodemon] watching path(s): *.*
  [nodemon] watching extensions: js,mjs,json
  [nodemon] starting node .\router.js
  Server on port 9000
  Admin router
  user router working
  Student Router
  PS D:\S.I.E.S. Graduate School of Technology\SEMESTER V\Practical Lab\IPL\node>
```



```
getex.js > server
7 app.get('/index.html', function (req, res) {
8   res.sendFile(__dirname + "/" + "index.html");
9 });
10 app.get('/process_get', function (req, res) {
11   response = {
12     first_name: req.query.first_name,
13     last_name: req.query.last_name
14   };
15   console.log(response);
16   res.end(JSON.stringify(response));
17 });
18 var server = app.listen(3000, function () {
19   var host = server.address().address;
20   var port = server.address().port;
21   console.log("Example app listening at http://%s:%s", host, port);
22 });
```

```
index.html
1 <html>
2
3 <body>
4   <form action="http://127.0.0.1:8081/process_get" method="GET">
5     First Name: <input type="text" name="first_name"> <br>
6     Last Name: <input type="text" name="last_name">
7     <input type="submit" value="Submit">
8   </form>
9 </body>
10
11 </html>
```

First Name:
Last Name:



```

1 var express = require('express');
2 var app = express();
3 app.use(express.static('public'));
4
5 app.get('/index.html', function (req, res) {
6   res.sendFile(__dirname + "/" + "index.html");
7 });
8 app.get('/process_get', function (req, res) {
9   response = {
10     first_name: req.query.first_name,
11     last_name: req.query.last_name
12   };
13   console.log(response);
14   res.end(JSON.stringify(response));
15 });
16 var server = app.listen(8082, function () {
17   var host = server.address().address
18   var port = server.address().port
19
20   console.log('Example app listening at http://localhost:' + port)
21 })

```

```

1 <html>
2
3 <body>
4   <form action="http://127.0.0.1:8082/process_get" method="GET">
5     First Name: <input type="text" name="first_name"> <br>
6     Last Name: <input type="text" name="last_name"> <br>
7     <input type="submit" value="Submit">
8   </form>
9 </body>
10
11 </html>

```

```

at Function.executeUserEntryPoint [as runMain] (node:internal/modules/run_main:77:12)
Emitted 'error' event on Server instance at:
at emitErrorNT (node:net:1399:8)
at processTicksAndRejections (node:internal/process/task_queues:83:21) {
  code: 'EADDRINUSE',
  error: 4091,
  syscall: 'listen',
  address: '::',
  port: 8082
}
[nodemon] app crashed - waiting for file changes before starting...
[nodemon] restarting due to changes...
[nodemon] starting 'node .\getex.js'
Example app listening at http://localhost:8082
{"first_name": "Kunal", "last_name": "Kumbhare"}

```

Conclusion:

Thus, we have successfully able to Install Express Js Framework and WAP take first name and last name in Json Format.