Nodejs is a server side programming language based on Javascript.

Nodejs runs on Javascript v8 engine.

In nodejs we can run programs in console and we can also create servers which can send and receive response from browser.

Following IDE can be used for running nodejs code

- WebStorm
- Visual Studio Code
- node console program and a notepad

To run a nodejs javascript file through node program , first of all create a file firstapp.js and write code in it

```
console.log('Hello World');
```

Run the program through node program by giving the following command.

```
node firstapp.js
```

You will get the output

```
Hello World
```

We can create a server in nodejs program which will listen to port on the port number we want and it will also handle request and response.

Following is the code for creating a server which will store request data in req and will send response through res.

```
const http=require('http');
const server= http.createServer((req,res)=>{

    console.log("Request Received");
    process.exit();
});
server.listen(3000);
```

Explanation of the above code

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

above line will import module http which is a core nodejs module and comes with installation of nodejs.

Following code will create a server and it uses a builtin function of http module which is createServer to create the server.

after this

```
console.log("Request Received");
```

will print the Message Request Received on console and process.exit(); will shut down the server.

Then the statement server.listen(3000); will start listening the server on port 3000.

Note that

```
const server= http.createServer((req,res)=>{

    console.log("Request Recived");
    process.exit();
});
```

the above code is a event handler which means it starts when server starts listening on port 3000.

and server.listen(3000); will start the server.

Now we will write a program in node js which will return html data to browser.

```
const http=require('http');
const server= http.createServer((req,res)=>{
res.setHeader('Content-Type','text/html');
res.write('<html>');
res.write('<head><title>My First Node js Page</title></head>');
res.write('<body>');
res.write('<h1>My First Node js Page received by Node js Server</h1>');
res.write('</body>');
res.write('</html>');
res.end();
});
server.listen(3000);
```

Output in browser will be

My First Node js Page received by Node js Server

Now the following code will handle request in two parts if users

writes url in bowser as

http://localhost:3000/

the output will be Greetings!!!

and is url in browser will be

http://localhost:3000/users

output will be a unordered list in an html page.

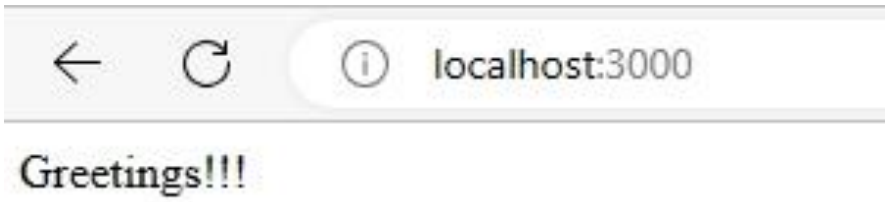
server will listen on port 3000

Following is the code

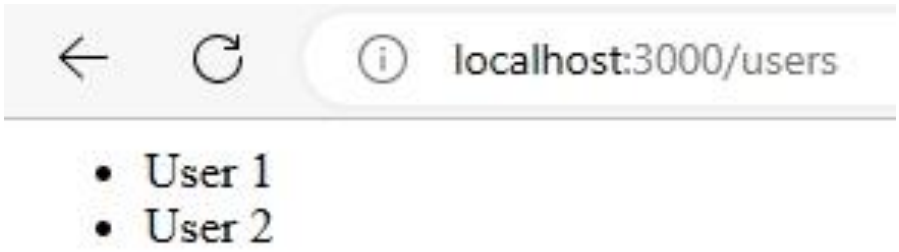
```
const http = require('http');

const server = http.createServer((req, res) => {
    const url = req.url;
    const method = req.method;
    if (url === '/') {
        res.write('<html>');
        res.write('<head><title>Enter Message</title><head>');
```

```
        res.write('<body>Greetings!!!</body>');
        res.write('</html>');
        return res.end();
    }
    if (url === '/users') {
        res.write('<html>');
        res.write('<head><title>Enter Message</title><head>');
        res.write('<body>');
        res.write('<ul><li>User 1</li>');
        res.write('<li>User 2</li>');
        res.write('</body></html>');
        return res.end();
    }

});

server.listen(3000);
```

Output is shown below for url http://localhost:3000/



Output for url http://localhost:3000/users is



Now we will write code to display a form which will ask input from user and the data will be passed to create-user url which will print the entered data by the user on console.

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

const server = http.createServer((req, res) => {
    const url = req.url;
    const method = req.method;
    if (url === '/') {
        res.write('<html>');
        res.write('<head><title>Enter Message</title><head>');
        res.write('<body><form action="/create-user" method="POST"><input
type="text" name="message"><button
type="submit">Send</button></form></body>');
        res.write('</html>');
```

```
        return res.end();
    }
    if (url === '/create-user' && method === 'POST') {
        const body = [];
        req.on('data', (chunk) => {
            console.log(chunk);
            body.push(chunk);
        });
        req.on('end', () => {
            const parsedBody = Buffer.concat(body).toString();
            const message = parsedBody.split('=')[1];
            console.log('message is ', message);
            return res.end();
        });


    }


});

server.listen(3000);
```

```
if (url === '/')
```

this code will show a form

and the following code will check data passed by form to server and check if it is a POST request.

```
if (url === '/create-user' && method === 'POST') {
```

Now we are done with http module which is a core module in nodejs now we will look at fs module which is a file system module which comes with installation of nodejs.

```
const fs=require('fs');
fs.writeFileSync('test.txt','Hello World');
console.log('data written to file');
```

Above code will write text Hello World to file test.txt and will print the message written in console as Data written to file.
