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Experiment No: 11

Aim: - Write a program to implement file-server in Node JS

Theory :-

To make HTTP requests in Node.js, there is a built-in module HTTP in Node.js to transfer data over the HTTP. To use the HTTP server in node, we need to require the HTTP module. The HTTP module creates an HTTP server that listens to server ports and gives a response back to the client.

The central server in a computer network that is responsible for the storage and management of data files is called a File Server. In a File Server, users access a central storage space that acts as a medium to store the internal data. The users can share information over a network without having to physically transfer files. The server administrator has given strict rules that which users have the access to the files. These rules include opening, closing, adding, deleting, and editing a file.

Apart from accessing the files via a local network, users can also benefit from remote access. This includes accessing and saving the desired file on the server even when users are on the go. It makes a remote file system accessible to clients. The File Servers can also be used as a Backup Server and Respiratory for programs which means the files are accessible to multiple network participants.

Type of File Server:

File Servers can be categorized as:

1. Dedicated File Server: Dedicated File Server solely provide services to other computers. This can be in a particular local-area network or having a properly authorized access request associated with a computer system. It is dedicated to one purpose- being a File Server. A dedicated File Server offers sufficient storage space for the website. Also, it is more secure.

2. Non-Dedicated File Server: The function of a Non-Dedicated File Server is like any other workstation that permits it to utilize itself as a workstation. These File Servers can be used simultaneously as a workstation, also for everyday tasks. A Non-Dedicated File Server offers less storage space for the website. It is less secure and can be compromised by a fraudster.

Features of File Server:

· Multiple users can access files simultaneously.

· Protocols are set for authorization.

· FTP(File Transfer Protocol) and SFTP(Secure File Transfer Protocol) are used over the internet for accessing files.

· Blocking multiple users from editing the same file at the same time is called File Locking.

· One can use a download server for ease.

Advantages:

· Helps in resource and information sharing.

· Helps in central storage of data.

· Helps in connecting with multiple computers for sending and receiving information when accessing the network.

· Faster-problem-solving.

· Boots Storage Capacity.

· Highly flexible and reliable.

Disadvantages:

· Costly setup.

· The risk from viruses and malware.

· It lacks independence.

· Requires time for constant administration.

· It lacks Robustness.

Synchronous approach: They are called blocking functions as it waits for each operation to complete, only after that, it executes the next operation, hence blocking the next command from execution i.e. a command will not be executed until & unless the query has finished executing to get all the result from previous commands.

Asynchronous approach: They are called non-blocking functions as it never waits for each operation to complete, rather it executes all operations in the first go itself. The result of each operation will be handled once the result is available i.e. each command will be executed soon after the execution of the previous command. While the previous command runs in the background and loads the result once it is finished processing the data.

Code:

expt11.js

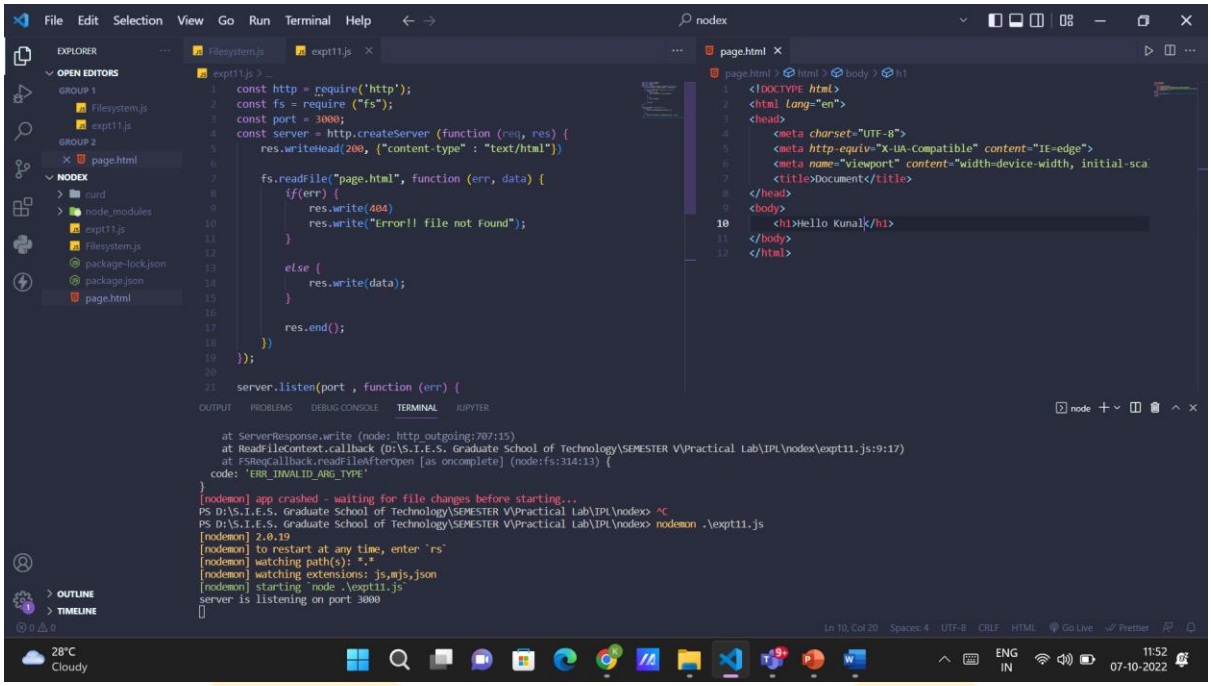
```
const http = require('http');
const fs = require ("fs");
const port = 3000;
const server = http.createServer (function (req, res) {
    res.writeHead(200, {"content-type" : "text/html"})

    fs.readFile("page.html", function (err, data) {
        if(err) {
            res.write(404)
            res.write("Error!! file not Found");
        }

        else {
            res.write(data);
        }

        res.end();
    })
});

server.listen(port , function (err) {
    if(err) {
        console.log("Something went wrong", err);
    }

    else {
```

```
        console.log("server is listening on port " + port )
    }
});
```

Page.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>
<body>
    <h1>Hello Kunal</h1>
</body>
</html>
```

Output :



Hello Kunal

Conclusion:

Thus, we have successfully able to Write a program to implement fileserver in Node JS.