Node.JS Basics   ~Hanshal Mehta

Installation

Ask GOOGLE.

What kind of engineer you are . You need tutorial / notes to do such basic tasks??

- Make a folder named backend_tutorial

- After installation run command

- This will check your npm version(Download the latest one)

- After installtion open VS Code in the backend folder and open the terminal. Type :

```
npm init
```

- After this runs a "package.json" file will be created where all your module versions are stored.

Some Basics / Prequisites

- Create an "index.js" file.

- For creating a server write in index.js :

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

const server = http.createServer((req,res) => {
    if(req.url == '/'){
        res.end("<h1>Home Page</h1>");
    }
    else if (req.url == '/about') {
        res.end("<h1>About Page</h1>");
    }
    else if (req.url == '/contact') {
        res.end("<h1>Contact Page</h1>");
    }
    else{
        res.end("<h1>Error 404</h1>")
    }
});


server.listen(5000,()=>{
    console.log("Server is Started");
});
```

- Here in this code the const http is derived to create a server which will run on terminal via nodemon or node command.

- Also to run on webpage server.listen command is used to run the server on localhost(web) of port 5000.

- Some navigations are provided in the server part. Eg

'/' $\Rightarrow$ Home Page

'/about' $\Rightarrow$ About Page

'/contact' $\Rightarrow$ Contact Page

And anyother page navigates to 404 Error.

- Now lets use the most efficient way to export and import modules which will be further used by us in Frontend Frameworks as well.

- To do this just add the code below the main in "package.json " file.

```
"type": "module",
```

- Let us start making new js file as we cant write every code of our project in a single file.

- Create a file name "features.js". Then type the below code to this file

```
const name = "Hanshal";
const age = 19;
const loc = "Mumbai";


export {name,age,loc};
```

- Here we are defining name, age and location as Hanshal,19,Mumbai. and at last we are exporting them through the export command.

NOTE: While using export command you can use a single variable to export a single module Eg

```
//add this to export only name
export default name;

//this is to add all the variables in a single module
export {name , age , loc};
```

- Now let us see the import part of this file. To import our modules to the index.js file we can use this command below the "import http" module

```
import { age, loc, name } from "./feature.js"
```

- Now let us check whether the modules are import or not. We can check this while typing this code below
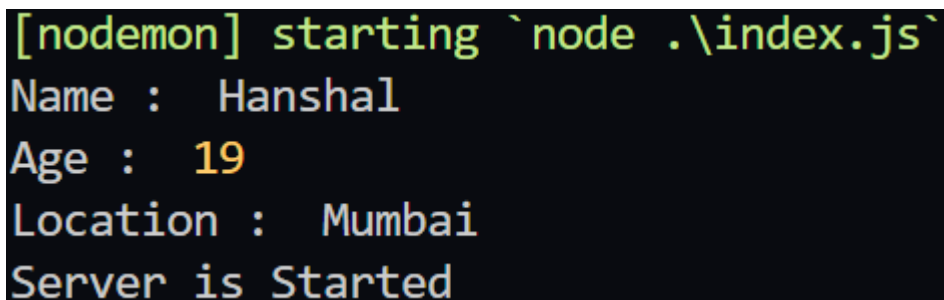
```
import http from "http";
import { age, loc, name } from "./feature.js"


    //This code
    console.log("Name : ",name);
    console.log("Age : ",age);
    console.log("Location : ", loc);
    //Till Here


const server = http.createServer((req,res) => {
    if(req.url == '/'){
        res.end("<h1>Home Page</h1>");

    }
    else if (req.url == '/about') {
        res.end("<h1>About Page</h1>");
    }
    else if (req.url == '/contact') {
        res.end("<h1>Contact Page</h1>");
    }
    else{
        res.end("<h1>Error 404</h1>")
    }
});




server.listen(5000,()=>{
    console.log("Server is Started");
});
```

- The output should look like this

- Now lets learn how to add functions in node.js code , this will help us when we integrate DataBases to our project.

- First make a "functions.js file" in your current node folder. Then write the following code :

```
//In this function we are just defining the fuction greeting to return Hello Admin
//Here export can be written first as there is only one function to include in a module
export const greetings = () => {
    return "Hello Admin";
};
```

- Now let us use the greeting function in our Index.js file. The code would look like :

```
import http from "http";
import { age, loc, name } from "./feature.js"


//As usual importing the greeting module
import {greetings} from "./function.js";


    console.log("Name : ",name);
    console.log("Age : ",age);
    console.log("Location : ", loc);

const server = http.createServer((req,res) => {
    if(req.url == '/'){
        res.end(`<h1>${greetings()}</h1>`) //here we are calling the function by ${__}
    }
    else if (req.url == '/about') {
        res.end("<h1>About Page</h1>");
    }
    else if (req.url == '/contact') {
        res.end("<h1>Contact Page</h1>");
    }
    else{
        res.end("<h1>Error 404</h1>")
    }
});




server.listen(5000,()=>{
    console.log("Server is Started");
});
```

NOTE: WHILE CALLING THE FUNCTION USE (`) apostrophe instead of (' ') or (" ").

(Because this took me around 1/2 hour to figure it out when i was learning 😅)

Some Modules in Node.JS (You can skip this, not imp 🙂)

- So we will learn a few modules on Node JS.

- The first module is "fs". This module has the capabilities to read and write files (has many abilities but these are mainly used). The code below shows an example that it reads a file.

- First create a file named "about.html" and paste the following code in it.

```
<!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>About</title>
</head>
<body>
    <h1>About Page</h1>
    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Alias exercitationem m
aiores veritatis. Distinctio praesentium perspiciatis, quas accusamus repellendus face
re quae repellat quasi perferendis consequuntur, tenetur debitis provident quod hic sa
piente.</p>
</body>
</html>
```

- This is a basic HTML Page with the title About and some LOREM content.

- Then go to index.js page and add the code :

```
//Add this to the /about page section
const data = fs.readFile("./about.html", (err,data)=> {
        res.end(data);
        console.log("File Reading Complete");
    });
```

- The code would look like this :

```
import http from "http";
import { age, loc, name } from "./feature.js"
import {greetings} from "./function.js";
import fs from "fs";

    console.log("Name : ",name);
    console.log("Age : ",age);
    console.log("Location : ", loc);

const server = http.createServer((req,res) => {
    if(req.url == '/'){
        res.end(`<h1>${greetings()}</h1>`)
    }
    else if (req.url == '/about') {
        const data = fs.readFile("./about.html", (err,data)=> {
            res.end(data);
            console.log("File Reading Complete");
        });

    }
    else if (req.url == '/contact') {
        res.end("<h1>Contact Page</h1>");
    }
    else{
        res.end("<h1>Error 404</h1>")
    }
});




server.listen(5000,()=>{
    console.log("Server is Started");
});
```
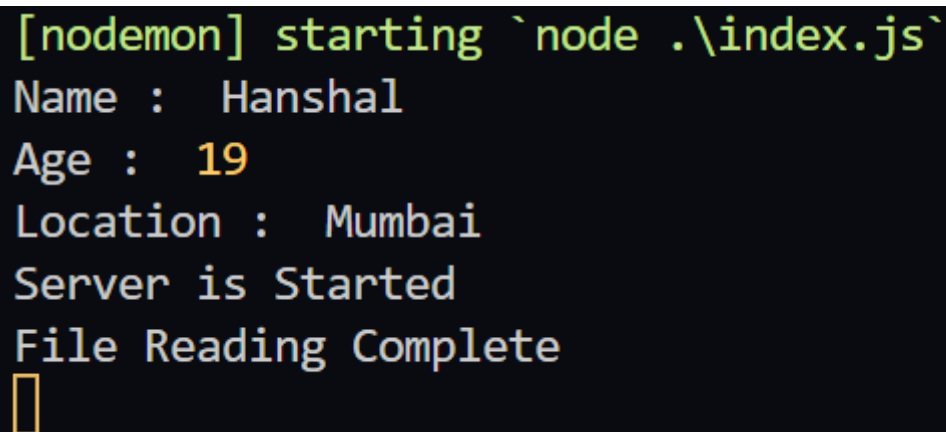
- Here we are saving the data which is being read by the fs.readFile module in the "data" variable and we are calling that data in our about page through our res.end command.

- The about page would look like this :

About Page

Lorem ipsum dolor sit amet consectetur adipisicing elit. Alias exercitationem maiores veritatis. Distinctio praesentium perspiciatis, quas accusamus repellendus facere quae repellat quasi perferendis consequuntur, tenetur debitis provident quod hic sapiente.

- Also we are confirming that the data is been read by the fs module by printing "File Reading Complete" in the terminal.

```
[nodemon] starting `node .\index.js`
Name :  Hanshal
Age :  19
Location :  Mumbai
Server is Started
File Reading Complete
```

- There are many such modules in Node.JS. I can't explain each one of them. You can visit the following link to go through tha module list.

-Node.JS Documentation - <u>LINK</u>

-W3Schools Documentation(nicely structured) - <u>LINK</u>

TIP: YOU ARE CONSIDERED A SUCCESSFUL ENGINEER BY READING DOCUMENTATION OF THE FRAMEWORK NOT BY TUTORIALS (NOT APPLICABLE FOR ALL BUT MOST)

Methods in Node.JS (VERY IMP 🐱)

- In Node.JS we have mainly 4 methods :

GET ⇒ When we want to get/read the data

POST ⇒ When we want to create/post the data

PUT ⇒ When we want to update the data

DELETE ⇒ When we want to delete the data

FROM HERE ONWARDS WE WILL BE DOING EXPRESS.JS AND I WILL TRY TO MAKE SHORT NOTES ON EXPRESS.(If you have any doubts in Node.JS just GOOGLE it or CHATGPT is your bestfriend or you can ping me)

GOODLUCK
THANK YOU

YOU CAN CONNECT ME ON (Will be posting more on these profiles)

<u>LINKEDIN</u>
<u>GITHUB</u>

~Hanshal Mehta