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**Batch : MERN 1**

**Experiment No. : 1**

**1) Basic Routing :**

**Q) Build First server application using http module**

**Code :**

const http=require("http");//required module to build server

//server created

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

    res.end("This is working fine and server is created successfully!!");

})

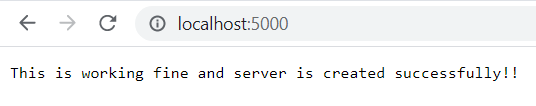
//server listening on port 5000

server.listen(5000,()=>{

    console.log("Server is listening on port 5000!!!");

})

**Output :**





**Q) Basic routing: Demonstrate it using simple HTML/Json file.**

**Code :**

const http=require("http");//required module to build server

const fs=require('fs')

//server created and routing inserted

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

    if(req.url=='/')

    {

        fs.readFile('base.html',(err,data)=>{

            res.write(data);

            res.end();

        })

    }

    else if(req.url=='/home')

    {

        fs.readFile('home.html',(err,data)=>{

            res.write(data);

            res.end();

        })

    }

    else if(req.url=='/about')

    {

        fs.readFile('about.html',(err,data)=>{

            res.write(data);

            res.end();

        })

    }

    else if(req.url=='/contact')

    {

        fs.readFile('contact.json',(err,data)=>{

            res.write(data);

            res.end();

        })

    }

    else

    {

        fs.readFile('error.html',(err,data)=>{

            res.write(data);

            res.end();

        })

    }

})

//server listening on port 5000

server.listen(5000,()=>{

    console.log("Server is listening on port 5000!!!");

})

**Base.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>

    <style>

        p{

            padding: 50px 50px 70px 70px;

            color: green;

            background-color: black;

            font-size: 100px;

        }

    </style>

</head>

<body>

    <p>This is the base page of my website. Having color as green.</p>

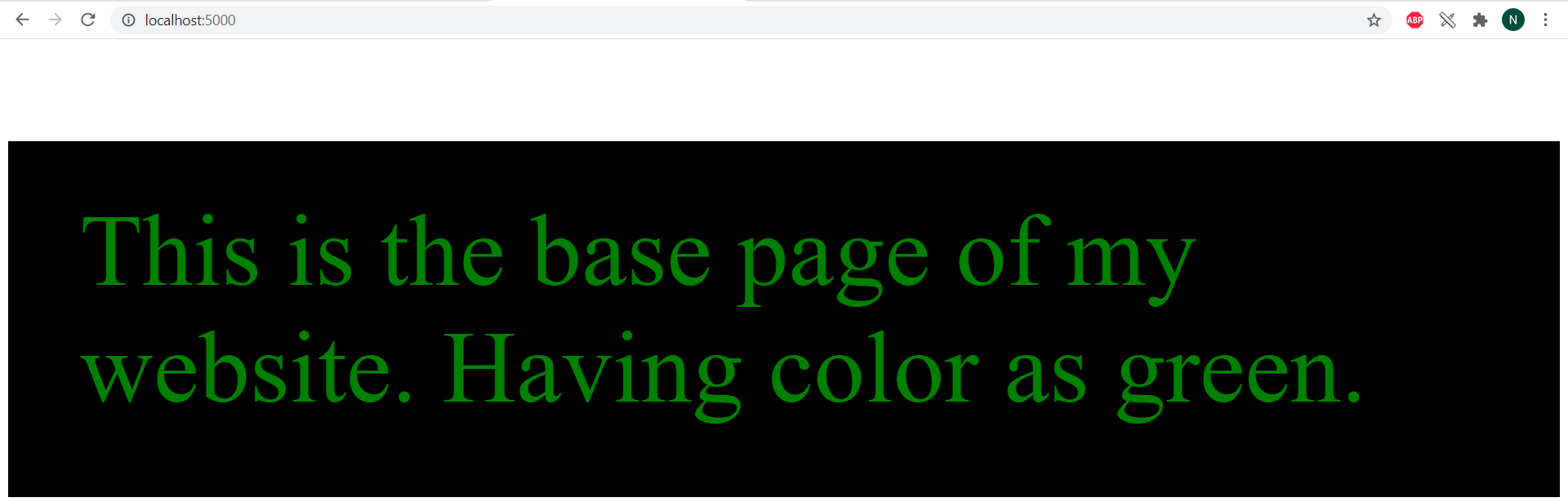
</body>

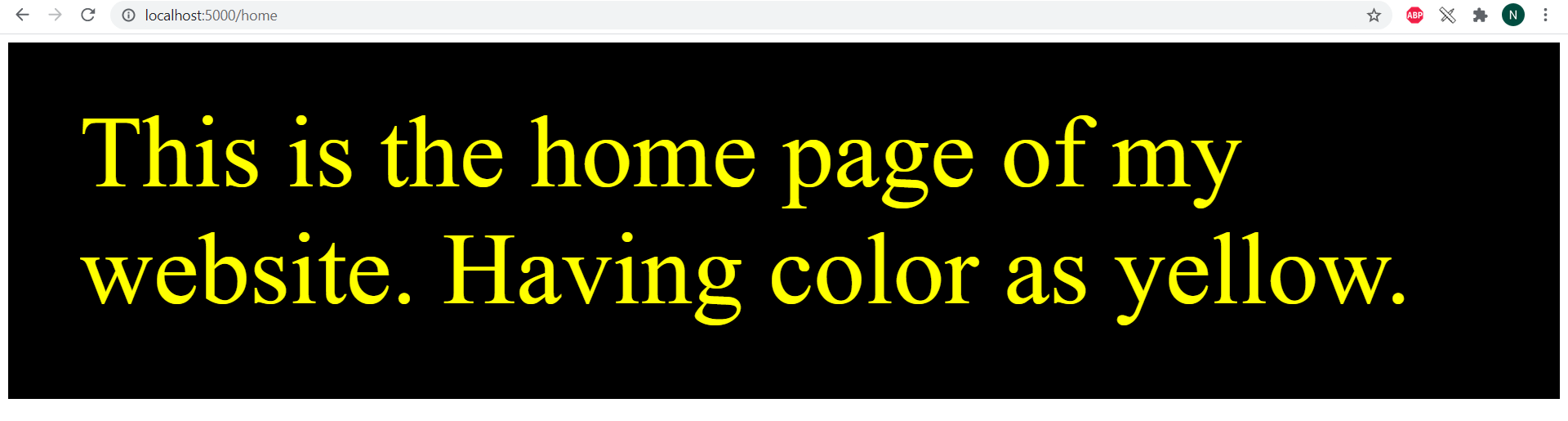
</html>

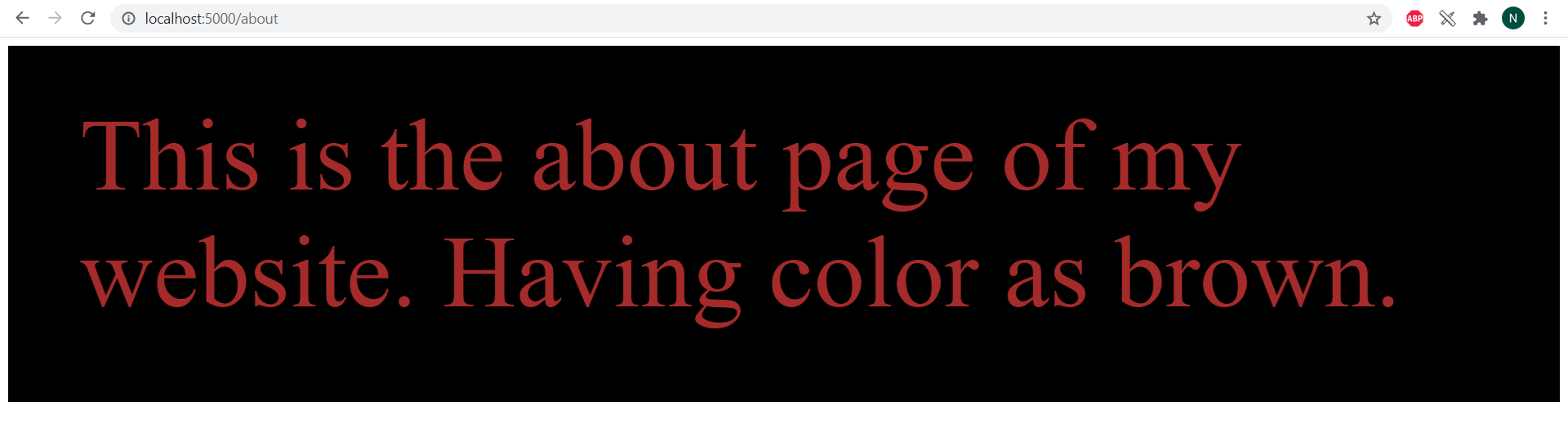
**Code of home.html, about.html, contact.html and error.html is same as base.html only some text is changed.**

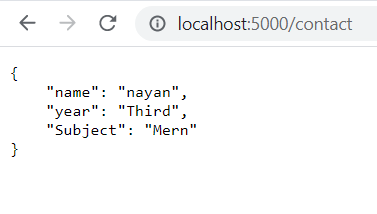
**Output :**

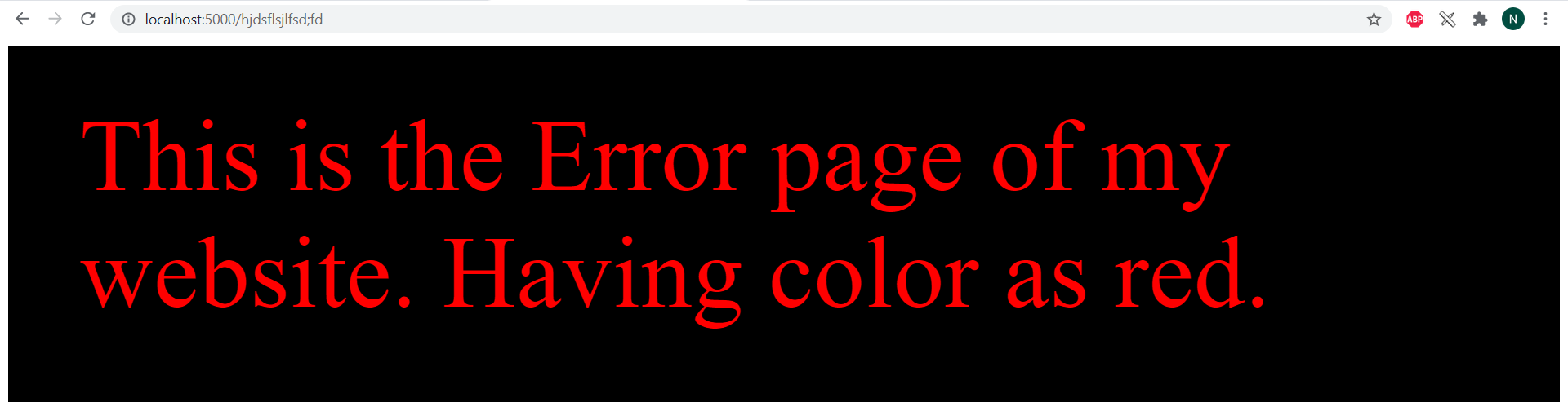












**Q) Demonstrate the callback in node.js.**

**Code :**

const http=require('http');

const fs=require('fs');

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

    res.write("First file reading started");

    fs.readFile('first.txt',(data,err)=>{

        if(err)

        {

            console.log("There is some error generated!!")

        }

        else

        {

            res.write(data.toString());

            res.write("First file reading done!!!");

        }

    })

    res.write("Second file reading started");

    fs.readFile('second.txt',(data,err)=>{

        if(err)

        {

            console.log("There is some error generated!!")

        }

        else

        {

            res.write(data.toString());

            res.write("Second file reading done!!!");

        }

    })

    res.write("Third file reading started");

    fs.readFile('third.txt',(data,err)=>{

        if(err)

        {

            console.log("There is some error generated!!")

        }

        else

        {

            res.write(data.toString());

            res.write("Third file reading done!!!");

        }

    })

    res.end();

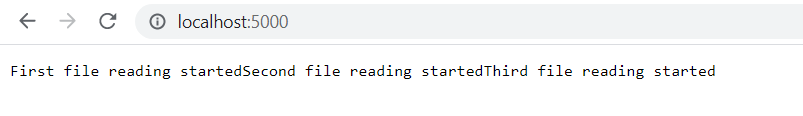
})

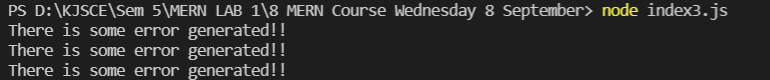
server.listen(5000,()=>{

    console.log("Server listening on port 5000!!!");

})

**Output :**





**As there are no files like first.txt, second.txt and third.txt error will be generated and returned by callback function.**

**2) Event Emitter**

**Q) Demonstrate the use of Event Emitter for ATM Application. (Step-wise all events Occurs at ATM Machine like withdraw amount, checking balance etc...).**

**Code :**

const prompt=require('prompt-sync')();

var n=0;

const eventobj=require('events');

const e = require('express');

var emitter=new eventobj.EventEmitter();

var accounts=[["Nayan Mandliya", 11110, "0934", 35000, 9967890289],["Jane Doe", 11111, "1289", 37000, 9784845289],["John Doe", 11112, "7512", 39000, 7812456887],["Scar Dean", 11113, "5614", 49000, 6357524897],["Robert Wilkist", 11114, "4500", 45000, 8879754125]]

emitter.on('get\_details',(acc\_no)=>{

    var i;

    var flag=0;

    for(i=0;i<accounts.length;i++)

    {

        if(accounts[i][1]==acc\_no)

        {

            flag=1;

            var pass=prompt("\t\t\t\t\tPlease enter PIN : ");

            console.log("--------------------------------------------------------------------------------------------------------------------------");

            if(pass==accounts[i][2])

            {

                console.log(`\t\t\t\t\tAccount Number : ${accounts[i][1]}`);

                console.log(`\t\t\t\t\tName : ${accounts[i][0]}`);

                console.log(`\t\t\t\t\tAccount Balance : ${accounts[i][3]}`);

                console.log(`\t\t\t\t\tPhone Number : ${accounts[i][4]}`);

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                break;

            }

            else

            {

                console.log("\t\t\t\t\tEntered PIN is wrong please try again!!");

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                break;

            }

        }

    }

    if(flag==0)

    {

        console.log("\t\t\t\t\tAccount not found!!!");

        console.log("--------------------------------------------------------------------------------------------------------------------------");

    }

    emitter.emit('clicker');

})

emitter.on('withdraw',(acc\_no)=>{

    var i;

    var flag=0;

    for(i=0;i<accounts.length;i++)

    {

        if(accounts[i][1]==acc\_no)

        {

            flag=1;

            var pass=prompt("\t\t\t\t\tPlease enter PIN : ");

            console.log("--------------------------------------------------------------------------------------------------------------------------");

            if(pass==accounts[i][2])

            {

                console.log(`\t\t\t\t\tAvailable Clear Balance : ${accounts[i][3]}`);

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                var amount=prompt("\t\t\t\t\tPlease enter amount to withdraw : ");

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                if(amount<=0)

                {

                    console.log("\t\t\t\t\tAmount must be greater than or equal to 0!!");

                    console.log("--------------------------------------------------------------------------------------------------------------------------");

                }

                else if(amount>accounts[i][3])

                {

                    console.log("\t\t\t\t\tAmount entered must be less than available clear balance!!");

                    console.log("--------------------------------------------------------------------------------------------------------------------------");

                }

                else

                {

                    accounts[i][3]=accounts[i][3]-amount;

                    console.log("\t\t\t\t\tPlease collect your cash from bottom!!");

                    console.log("--------------------------------------------------------------------------------------------------------------------------");

                }

                break;

            }

            else

            {

                console.log("\t\t\t\t\tEntered PIN is wrong please try again!!");

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                break;

            }

        }

    }

    if(flag==0)

    {

        console.log("\t\t\t\t\tAccount not found!!!");

        console.log("--------------------------------------------------------------------------------------------------------------------------");

    }

    emitter.emit('clicker');

})

emitter.on('pin\_change',(acc\_no)=>{

    var i;

    var flag=0;

    for(i=0;i<accounts.length;i++)

    {

        if(accounts[i][1]==acc\_no)

        {

            flag=1;

            var pass=prompt("\t\t\t\t\tPlease enter old PIN : ");

            console.log("--------------------------------------------------------------------------------------------------------------------------");

            if(pass==accounts[i][2])

            {

                console.log(`\t\t\t\t\tAccount Number : ${accounts[i][1]}`);

                console.log(`\t\t\t\t\tName : ${accounts[i][0]}`);

                console.log(`\t\t\t\t\tAccount Balance : ${accounts[i][3]}`);

                console.log(`\t\t\t\t\tPhone Number : ${accounts[i][4]}`);

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                var pass1=prompt("\t\t\t\t\tPlease enter new PIN : ");

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                var pass2=prompt("\t\t\t\t\tConfirm PIN : ");

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                if(pass1==pass2)

                {

                    accounts[i][2]=pass2;

                    console.log("\t\t\t\t\tPIN changed successfully");

                    console.log("--------------------------------------------------------------------------------------------------------------------------");

                }

                else

                {

                    console.log("\t\t\t\t\tYou have entered different password please try again!!!");

                    console.log("--------------------------------------------------------------------------------------------------------------------------");

                }

                break;

            }

            else

            {

                console.log("\t\t\t\t\tEntered PIN is wrong please try again!!");

                console.log("--------------------------------------------------------------------------------------------------------------------------");

                break;

            }

        }

    }

    if(flag==0)

    {

        console.log("\t\t\t\t\tAccount not found!!!");

        console.log("--------------------------------------------------------------------------------------------------------------------------");

    }

    emitter.emit('clicker');

})

emitter.on('exit',()=>{

    console.log("\t\t\t\t\tThank you for visiting!!!");

    console.log("--------------------------------------------------------------------------------------------------------------------------");

})

emitter.on('invalid',()=>{

    console.log("\t\t\t\t\tInvalid input");

    console.log("--------------------------------------------------------------------------------------------------------------------------");

    emitter.emit('clicker');

})

emitter.on('shower',()=>{

    console.clear();

    console.log("--------------------------------------------------------------------------------------------------------------------------");

    console.log("--------------------------------------------------MERN BANK---------------------------------------------------------------");

    console.log("--------------------------------------------------------------------------------------------------------------------------");

})

emitter.on('clicker',()=>{

    var int=prompt("\t\t\t\t\tPress enter to continue : ");

})

while(n!=4)

{

    console.clear();

    console.log("--------------------------------------------------------------------------------------------------------------------------");

    console.log("--------------------------------------------------MERN BANK---------------------------------------------------------------");

    console.log("--------------------------------------------------------------------------------------------------------------------------");

    console.log("\t\t\t\t\t1. Get Details of your account.\n\t\t\t\t\t2. Withdraw money.\n\t\t\t\t\t3. Change PIN\n\t\t\t\t\t4. Exit");

    console.log("--------------------------------------------------------------------------------------------------------------------------");

    n=prompt("\t\t\t\t\tEnter you choice : ");

    if(n==1)

    {

        emitter.emit('shower');

        var acc\_no=prompt("\t\t\t\t\tPlease enter acount number : ");

        console.log("--------------------------------------------------------------------------------------------------------------------------");

        emitter.emit('get\_details', acc\_no);

    }

    else if(n==2)

    {

        emitter.emit('shower');

        var acc\_no=prompt("\t\t\t\t\tPlease enter acount number : ");

        console.log("--------------------------------------------------------------------------------------------------------------------------");

        emitter.emit('withdraw', acc\_no);

    }

    else if(n==3)

    {

        emitter.emit('shower');

        var acc\_no=prompt("\t\t\t\t\tPlease enter acount number : ");

        console.log("--------------------------------------------------------------------------------------------------------------------------");

        emitter.emit('pin\_change', acc\_no);

    }

    else if(n==4)

    {

        emitter.emit('shower');

        emitter.emit('exit');

    }

    else

    {

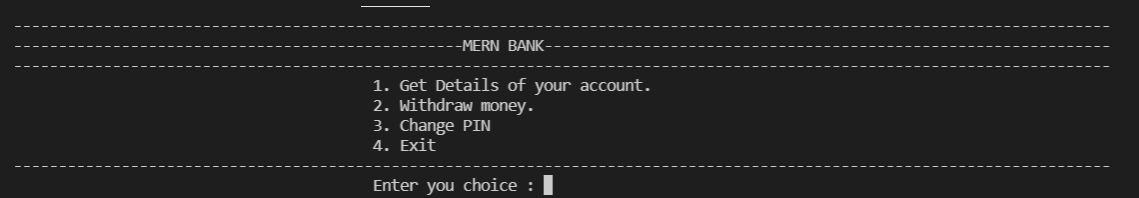
        emitter.emit('shower');

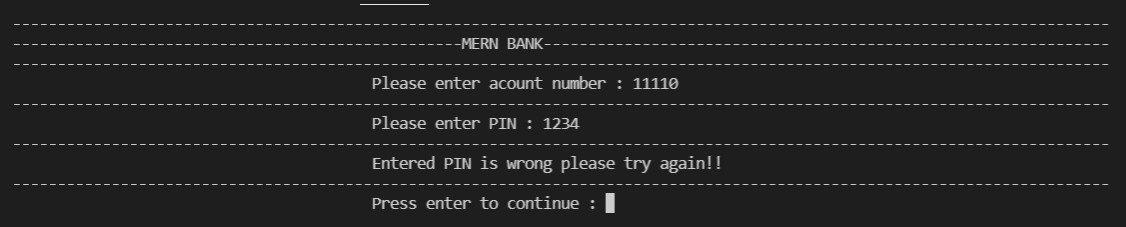
        emitter.emit('invalid');

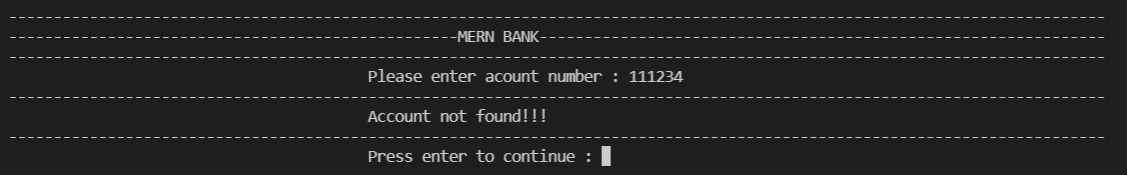
    }

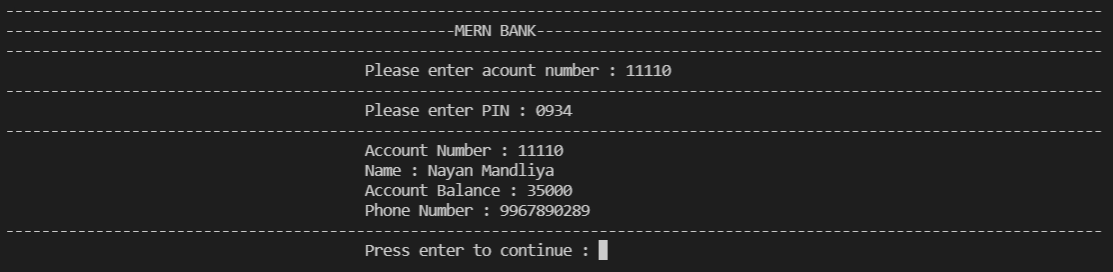
}

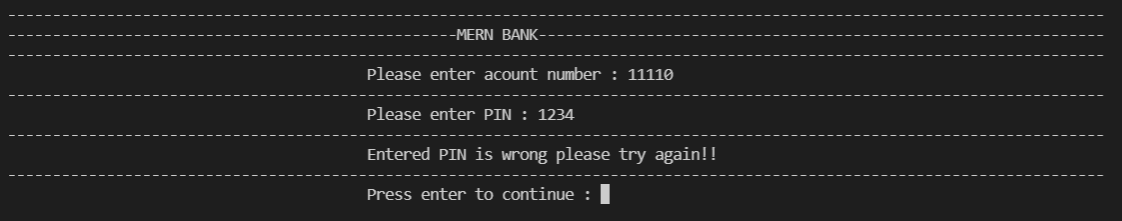
**Output :**

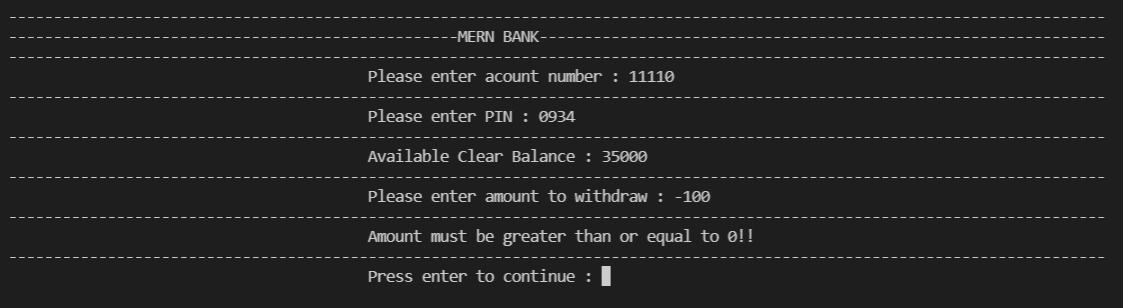
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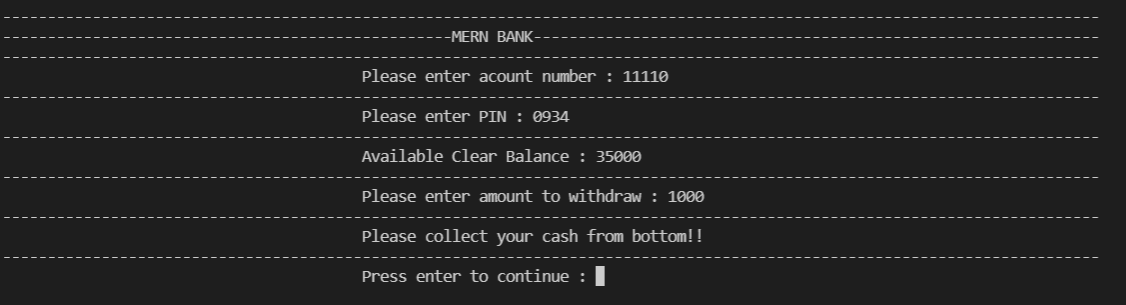
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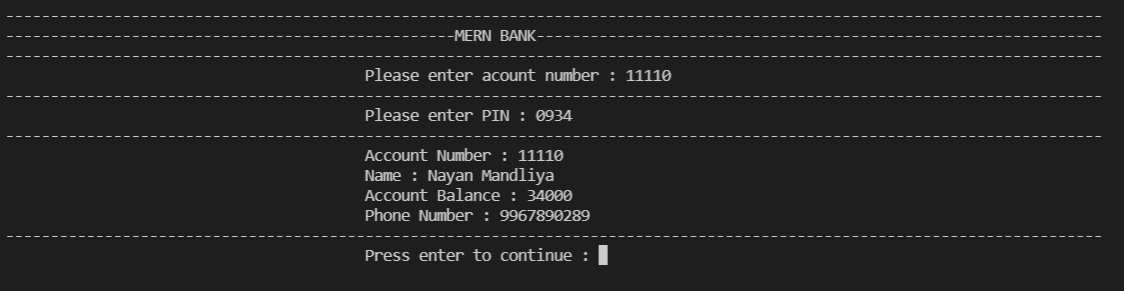
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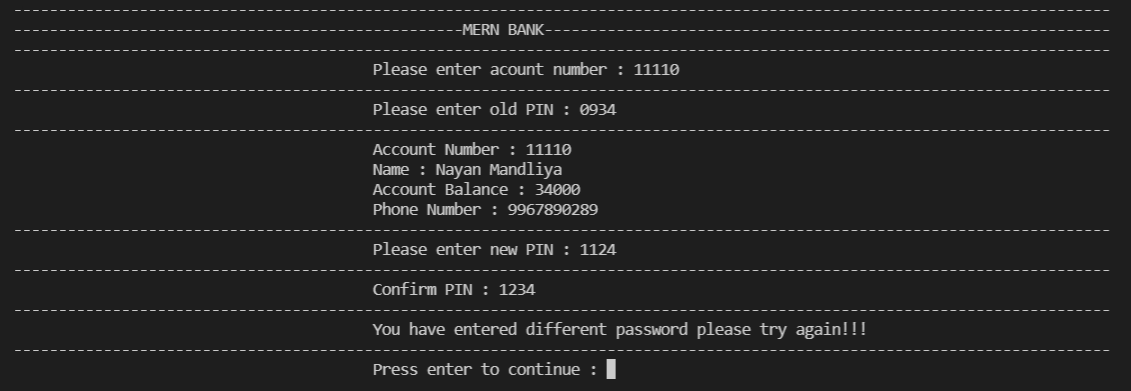
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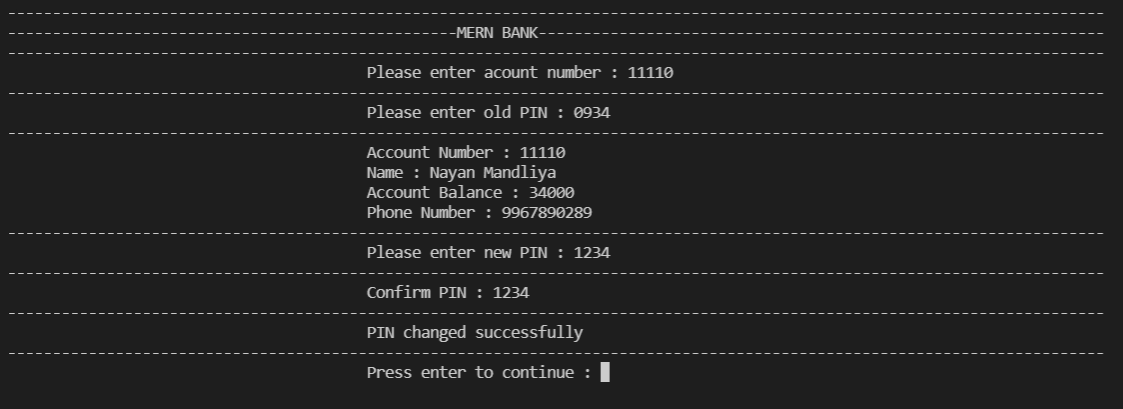
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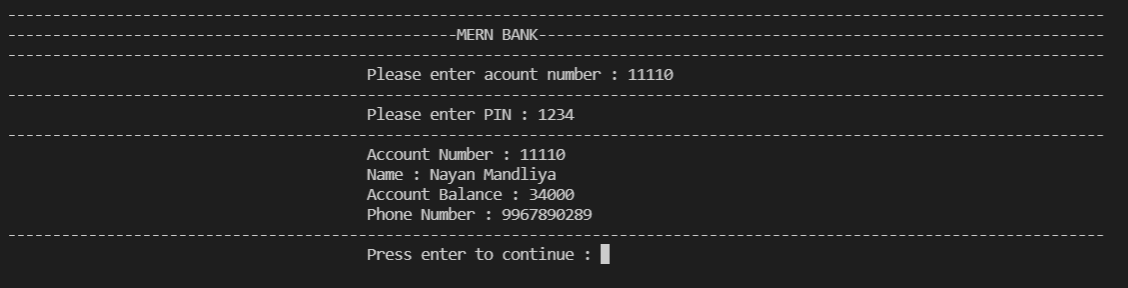
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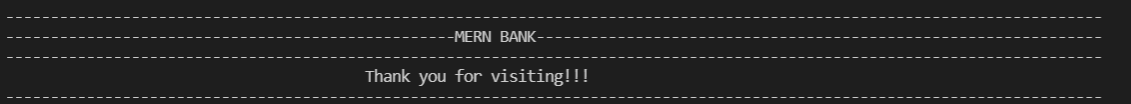
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**3) File operation**

**Q) Check Permissions of a File or Directory.**

**Code :**

**Output :**

**Q) Checking if a file or a directory exists.**

**Code :**

**Output :**

**Q) Determining the line count of a text file.**

**Code :**

**Output :**

**Q) Reading a file line by line.**

**Code :**

**Output :**

**Q) See the file content through browser.**

**Code :**

**Output :**

**4) Building your custom modules**

**Q) To demonstrate this use some mathematics function to create custom module.**

**Code :**

**Output :**

**5) Command Line operations using Nodejs**

**Q) (Make use of READLine and Inquirer)**

**Code :**

**Output :**