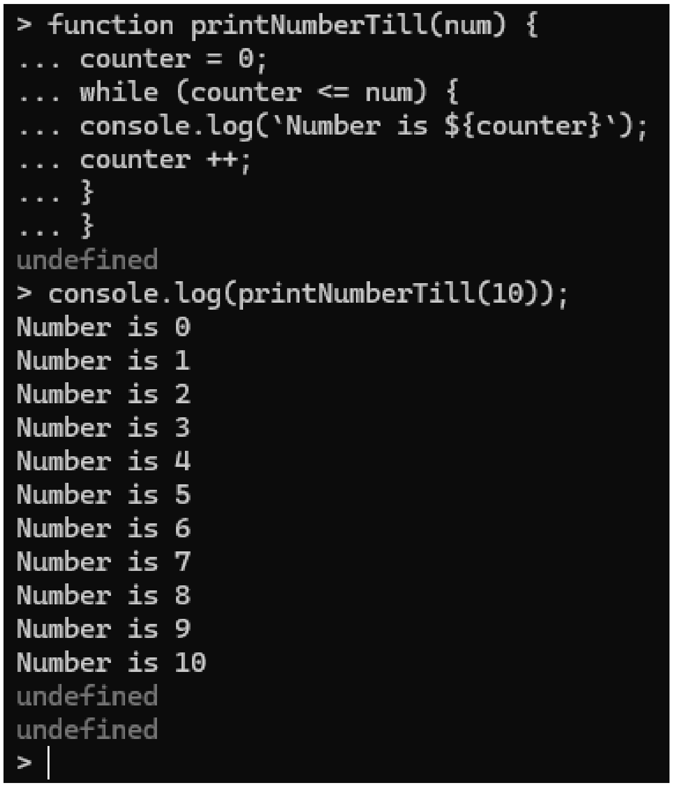
INDEX

17)	Write a program to calculate the salary using EventEmitter class
18)	Write a program to create an EventEmitters to print the sum of odd and even numbers from an array
19)	Write a program to demonstrate File handling in Node.js
20)	Write a Node.js code to display the Employee Job Registration Form saved in an HTML file in response to the client's access request to the server
21)	Write a program to handle request URLs between various HTML pages using HTTP Server
22)	Write a program to implement the database in node.js

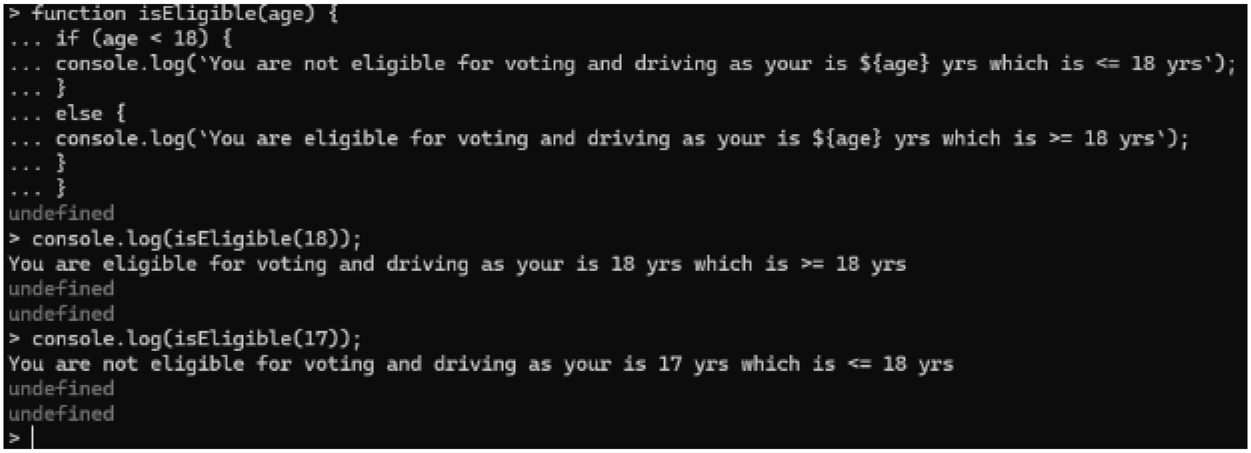
1) Perform the REPL in Node.js

a. Print numbers using a while loop.



```
> function printNumberTill(num) {
... counter = 0;
... while (counter <= num) {
... console.log(`Number is ${counter}`);
... counter ++;
... }
... }
undefined
> console.log(printNumberTill(10));
Number is 0
Number is 1
Number is 2
Number is 3
Number is 4
Number is 5
Number is 6
Number is 7
Number is 8
Number is 9
Number is 10
undefined
undefined
> 
```

b. Using a conditional statement estimated the eligibility of one for voting and driving.



```
> function isEligible(age) {
... if (age < 18) {
... console.log(`You are not eligible for voting and driving as your is ${age} yrs which is <= 18 yrs`);
... }
... else {
... console.log(`You are eligible for voting and driving as your is ${age} yrs which is >= 18 yrs`);
... }
... }
undefined
> console.log(isEligible(18));
You are eligible for voting and driving as your is 18 yrs which is >= 18 yrs
undefined
undefined
> console.log(isEligible(17));
You are not eligible for voting and driving as your is 17 yrs which is <= 18 yrs
undefined
undefined
> 
```

2) Using modules, perform the Arithmetic Operations

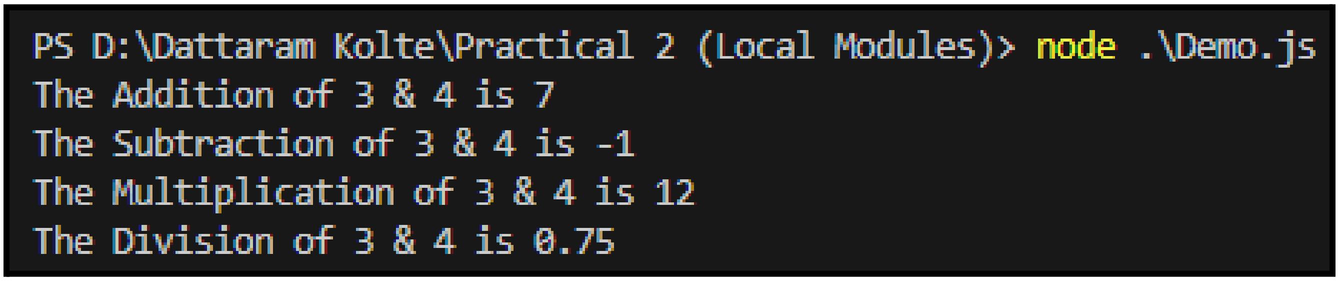
ArithmeticOperation.js

```
function add (a,b){
   return a+b;
}

function sub (a,b){
   return a-b;
}

function mul (a,b){
   return a*b;
}

function div (a,b){
   return a/b;
}

exports.add=add;
exports.sub=sub;
exports.mul=mul;
exports.div=div;
```

Demo.js

```
const req1 = require("./ArithOperations")

console.log(`The Addition of 3 & 4 is ${req1.add(3,4)}`)
console.log(`The Subtraction of 3 & 4 is ${req1.sub(3,4)}`)
console.log(`The Multiplication of 3 & 4 is ${req1.mul(3,4)}`)
console.log(`The Division of 3 & 4 is ${req1.div(3,4)}`)
```

OUTPUT:



```
PS D:\Dattaram Kolte\Practical 2 (Local Modules)> node .\Demo.js
The Addition of 3 & 4 is 7
The Subtraction of 3 & 4 is -1
The Multiplication of 3 & 4 is 12
The Division of 3 & 4 is 0.75
```

3) Using modules find the Area of a circle, rectangle, square.

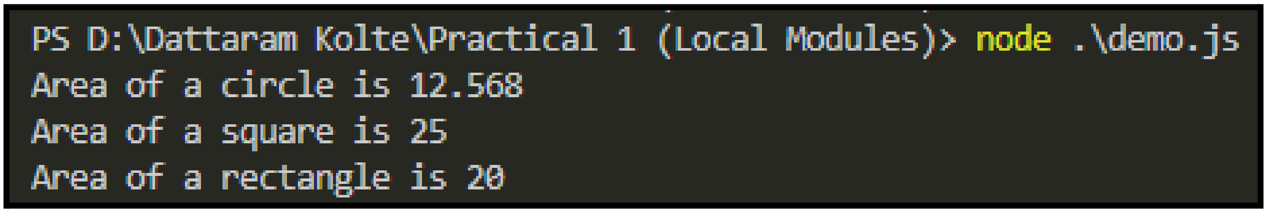
Area.js

```
function circleArea(r){
   return 3.142*(r**2);
}
exports.circleArea=circleArea;

function squareArea(s){
   return s**2;
}
exports.squareArea=squareArea;

function recArea(l,b){
   return l*b;
}
exports.recArea=recArea;
```

Demo.js

```
var req1 = require("./Area");

console.log("Area of a circle is "+req1.circleArea(2));
console.log("Area of a square is "+req1.squareArea(5));
console.log("Area of a rectangle is "+req1.recArea(5,4));
```

OUTPUT:



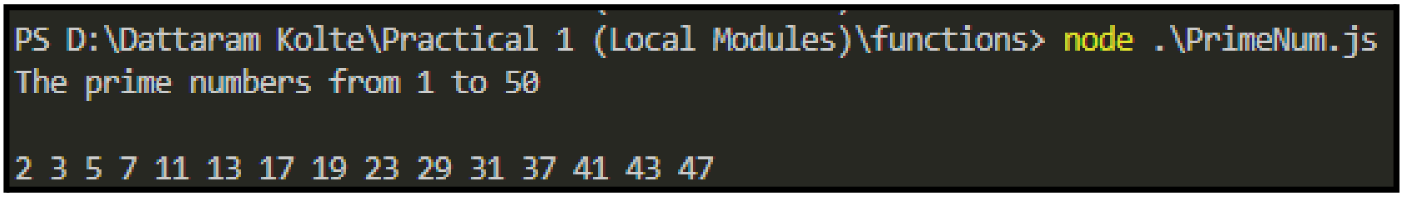
```
PS D:\Dattaram Kolte\Practical 1 (Local Modules)> node .\demo.js
Area of a circle is 12.568
Area of a square is 25
Area of a rectangle is 20
```

4) Write a program to print the Prime Numbers from 1 to 50.

PrimeNum.js

```
function primeNum(){
   console.log("The prime numbers from 1 to 50\n")

   for(i=2; i<=50; i++){
      var count=0;

      for(j=2; j<=i/2; j++){
         if(i%j==0){
            count=1;
            break;
         }
      }

      if (count==0){
         console.log(i);
      }
   }
}
primeNum();
```

OUTPUT:



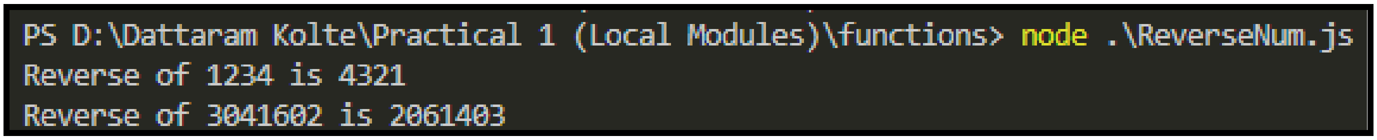
```
PS D:\Dattaram Kolte\Practical 1 (Local Modules)\functions> node .\PrimeNum.js
The prime numbers from 1 to 50

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

5) Write a program to find the reverse of a four-digit number.

ReverseNum.js

```
function revNum(a){
  var rev=0
  var temp=a;
  while(a!=0){
    r=a%10;
    rev=(rev*10)+r;
    a=parseInt(a/10);
  }

  console.log("Reverse of "+temp+" is "+rev);
}

revNum(1234);
revNum(3041602);
```

OUTPUT:



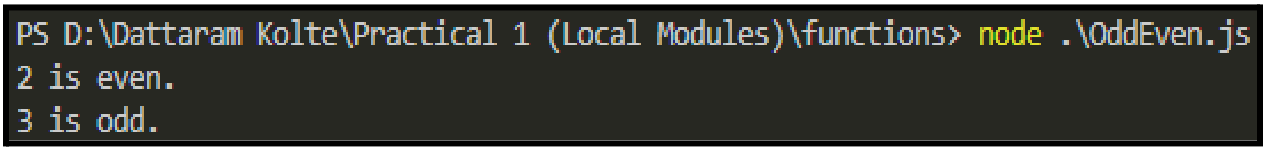
```
PS D:\Dattaram Kolte\Practical 1 (Local Modules)\functions> node .\ReverseNum.js
Reverse of 1234 is 4321
Reverse of 3041602 is 2061403
```

6) Write a program to find if the number is odd or even.

OddEven.js

```
function oddeve(a){
    if (a%2 == 0){
        console.log(a+" is even.");
    }

    else{
        console.log(a+" is odd.");
    }
}

oddeve(2);
oddeve(3);
```

OUTPUT:



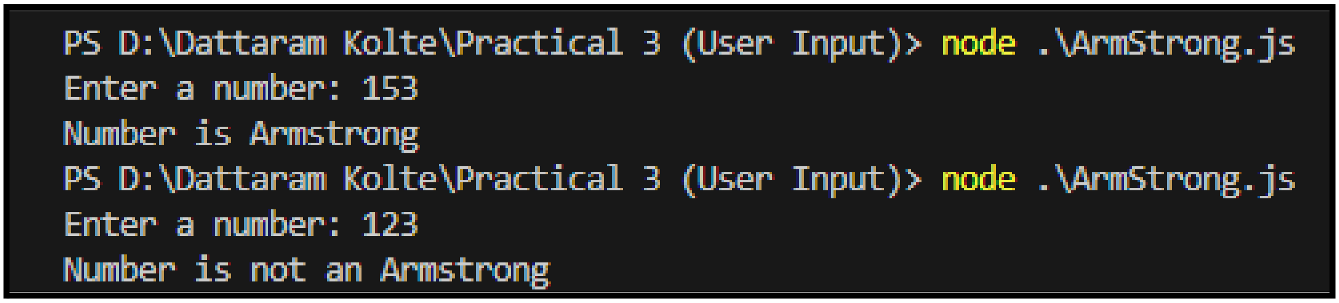
```
PS D:\Dattaram Kolte\Practical 1 (Local Modules)\functions> node .\OddEven.js
2 is even.
3 is odd.
```

7) Write a program to check if the entered number is Armstrong or not.

Armstrong.js

```
const prompt = require("prompt-sync")();

const num=parseInt(prompt("Enter a number: "));
let temp1=num;
let sum=0;

while(temp1>0){
   let reminder=temp1%10;
   sum=sum+(reminder**num.toString().length);
   temp1=parseInt(temp1/10);
}

if (sum == num){
   console.log("Number is Armstrong");
}
else{
   console.log("Number is not an Armstrong");
}
```

OUTPUT:



```
PS D:\Dattaram Kolte\Practical 3 (User Input)> node .\ArmStrong.js
Enter a number: 153
Number is Armstrong
PS D:\Dattaram Kolte\Practical 3 (User Input)> node .\ArmStrong.js
Enter a number: 123
Number is not an Armstrong
```

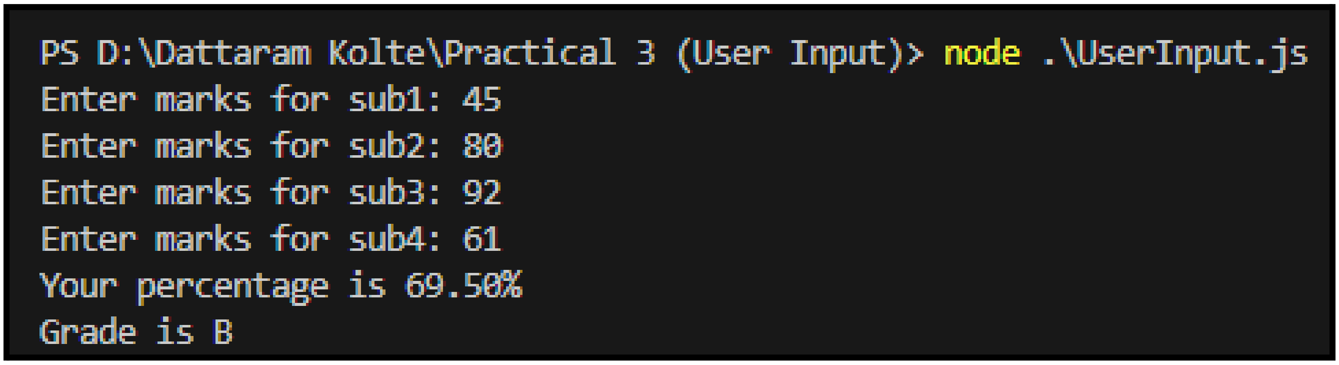
8) Write a program to take the marks of four subjects from user and check is the student has passed the examination or not, if passed then calculate the percentage and grade of the student.

UserInput.js

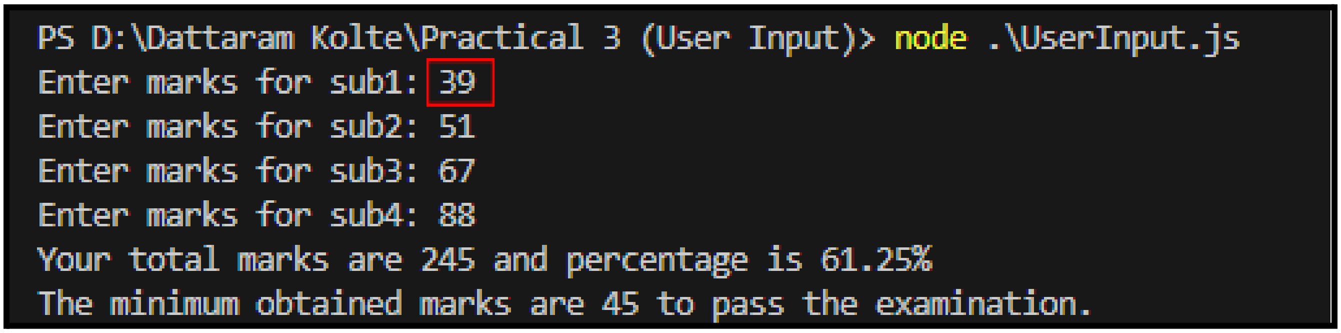
```
const prompt = require("prompt-sync")();

const sub1 = parseInt(prompt('Enter marks for sub1: '));
const sub2 = parseInt(prompt('Enter marks for sub2: '));
const sub3 = parseInt(prompt('Enter marks for sub3: '));
const sub4 = parseInt(prompt('Enter marks for sub4: '));
let obt = sub1+sub2+sub3+sub4
let percentage = (obt/400)*100


if (sub1>=45 && sub2>=45 && sub3>=45 && sub4>=45)
{
   console.log("Your percentage is "+percentage.toFixed(2)+"%")

  if(percentage>85)
  {
      console.log("Your Grade is O")
  }
  else if(percentage>70)
  {
      console.log("Grade is A")
  }
  else if(percentage>60)
  {
      console.log("Grade is B")
  }
  else if(percentage>=45)
  {
      console.log("Grade is C")
  }

}
```

```
else
{
        console.log("Your total marks are "+obt+" and percentage is "+percentage.toFixed(2)+"%\nThe minimum obtained marks are 45 to pass the examination.")

}
```

OUTPUT:



```
PS D:\Dattaram Kolte\Practical 3 (User Input)> node .\UserInput.js
Enter marks for sub1: 45
Enter marks for sub2: 80
Enter marks for sub3: 92
Enter marks for sub4: 61
Your percentage is 69.50%
Grade is B
```



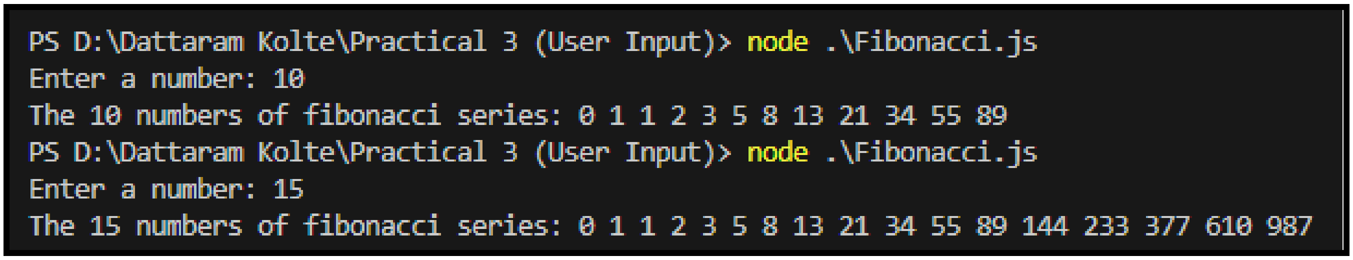
```
PS D:\Dattaram Kolte\Practical 3 (User Input)> node .\UserInput.js
Enter marks for sub1: 39
Enter marks for sub2: 51
Enter marks for sub3: 67
Enter marks for sub4: 88
Your total marks are 245 and percentage is 61.25%
The minimum obtained marks are 45 to pass the examination.
```

9) Write a program to print the Fibonacci series.

Fibonacci.js

```
const promtp = require("prompt-sync")()

const num = parseInt(promtp("Enter a number: "))
let a = 0
let b = 1
process.stdout.write(`The ${num} numbers of fibonacci series: ${a} ${b}`)

for (i = 1; i <= num; i++){
  let c = a+b
  process.stdout.write(` ${c}`)
  a = b
  b = c
}
```

OUTPUT:



```
PS D:\Dattaram Kolte\Practical 3 (User Input)> node .\Fibonacci.js
Enter a number: 10
The 10 numbers of fibonacci series: 0 1 1 2 3 5 8 13 21 34 55 89
PS D:\Dattaram Kolte\Practical 3 (User Input)> node .\Fibonacci.js
Enter a number: 15
The 15 numbers of fibonacci series: 0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987
```

10) Write a program to convert the temperature entered by the user

Temperature.js

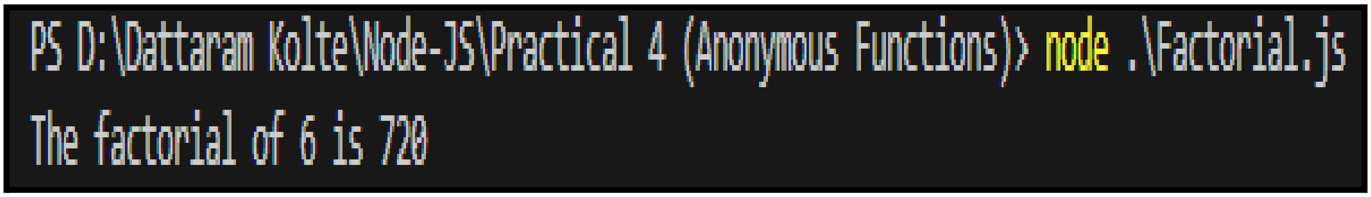
```
const prompt = require("prompt-sync")()

function c2f(temp){
   return ((9/5)*temp)+32
}

function f2c(temp){
   return ((5/9)*(temp-32))
}

const sel = (prompt("Select Temperature (Celsius-'C' or Fahrenheit-'F') : ")).charAt(0)

if (sel == "C" || sel == "c"){
   let temp = parseFloat(prompt("Enter the temperature in Celsius: "))
   console.log(`The temperature in Fahrenheit is ${c2f(temp).toFixed(2)} °F`)
}

else if (sel == "F" || sel == "f"){
   let temp = parseFloat(prompt("Enter the temperature in Fahrenheit: "))
   console.log(`The temperature in Celsius is ${f2c(temp).toFixed(2)} °C`)
}

else{
   console.log("You have selected the wrong input")
}
```

11) Write a program to demonstrate the factorial of number using the Anonymous Functions

Factorial.js

```
//Creating a Anonymous Function
const factorial = function (num) {
   let sum=1;

   for(i=2; i<=num; i++){
      sum *= i;
   }

   return sum;
}

console.log("The factorial of 6 is "+factorial(6))
```

OUTPUT:



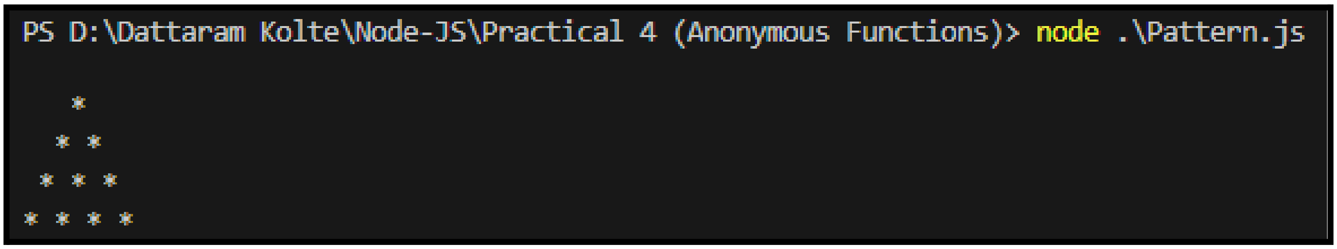
```
PS D:\Dattaram Kolte\Node-JS\Practical 4 (Anonymous Functions)> node .\Factorial.js
The factorial of 6 is 720
```

12) Write a program to demonstrate the Pattern using the Anonymous Functions.

Pattern.js

```
//Creating a Arrow Function
const pattrn = (num) => {
  for( i = 1; i <= num; i++){
      for (j = i; j < num; j++){
        process.stdout.write(" ");
      }

      for( k = 1; k <= i-1; k++){

          process.stdout.write("* ");
      }

      console.log();
    }
}

pattrn(5)
```

OUTPUT:



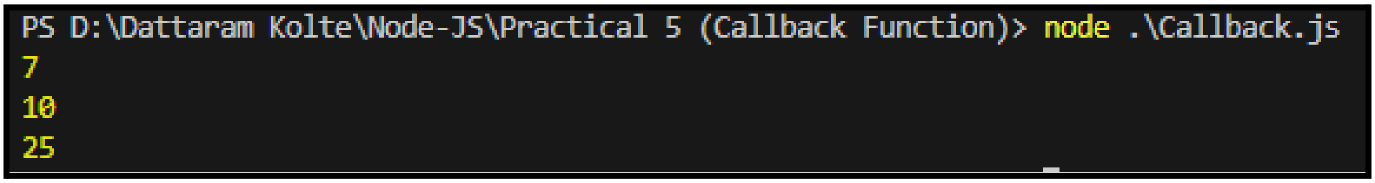
```
PS D:\Dattaram Kolte\Node-JS\Practical 4 (Anonymous Functions)> node .\Pattern.js

   *
  * *
 * * *
* * * *
```

13) Write a program to demonstrate the arithmetic operations using the Callback Functions.

Callback.js

```
//Creating a callback function for Addition
function add (a,b) {
   return a+b;
}

//Creating an anonymous callback function for Multiplication
const mul = function (a,b) {
   return a*b
}

//Creating a function for calling callback function
function func (callback) {
   console.log(callback(5,2))
}

func(add)
func(mul)
func( (num, p) => {
   return num**p
})
```

OUTPUT:



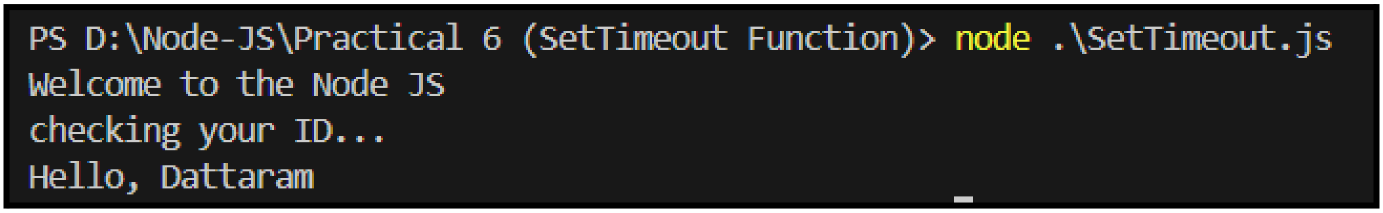
```
PS D:\Dattaram Kolte\Node-JS\Practical 5 (Callback Function)> node .\Callback.js
7
10
25
```

14) Write a program to demonstrate the setTimeout function

SetTimeout.js

```
const greet = function() {
   process.stdout.write("Hello, Dattaram")
}

console.log("Welcome to the Node JS")

setTimeout(() => {
   console.log("checking your ID...")
},2000)

setTimeout(greet,3000)
```

OUTPUT:



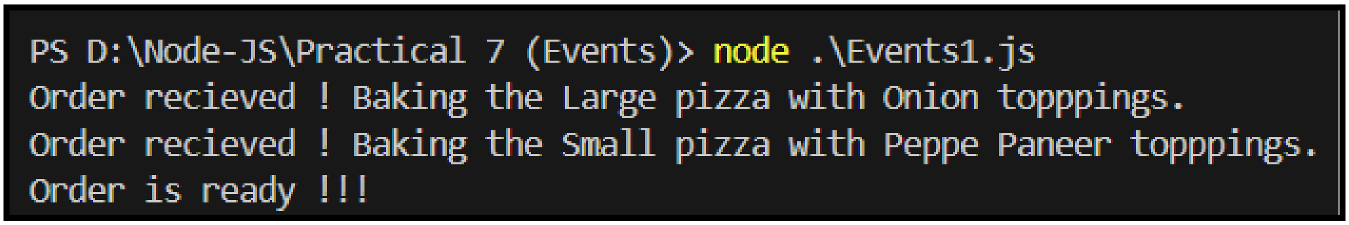
```
PS D:\Node-JS\Practical 6 (SetTimeout Function)> node .\SetTimeout.js
Welcome to the Node JS
checking your ID...
Hello, Dattaram
```

15) Write a program to place the order for a pizza using the EventsEmitter class

Event1.js

```
const EventEmitter = require("node:events")

const emitter = new EventEmitter()

emitter.on("order-pizza", (size,toppings) => {
   console.log(`Order recieved ! Baking the ${size} pizza with ${toppings} topppings.`)
})

emitter.on("order-ready",() => {
   console.log("Order is ready !!!")
})

emitter.emit("order-pizza","Large","Onion")
emitter.emit("order-pizza","Small","Peppe Paneer")
setTimeout(() => {
   emitter.emit("order-ready")
},4000)
```

OUTPUT:



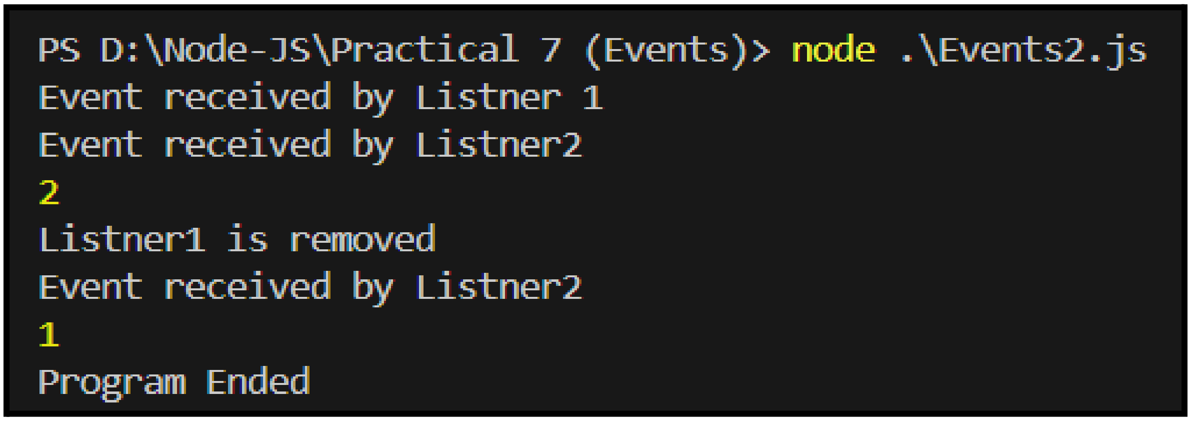
```
PS D:\Node-JS\Practical 7 (Events)> node .\Events1.js
Order recieved ! Baking the Large pizza with Onion topppings.
Order recieved ! Baking the Small pizza with Peppe Paneer topppings.
Order is ready !!!
```

16) Write a program to demonstrate Events by the same name

Event2.js

```
const events = require("node:events")

const eventEmitter = new events.EventEmitter()
function listner1(){
console.log("Event received by Listner 1")
}

function listner2(){
console.log("Event received by Listner2");
}

eventEmitter.addListener("Write",listner1);
eventEmitter.on("Write",listner2);

eventEmitter.emit("Write")
console.log(eventEmitter.listenerCount("Write"))

eventEmitter.removeListener("Write",listner1);
console.log("Listner1 is removed")

eventEmitter.emit("Write")
console.log(eventEmitter.listenerCount("Write"))
console.log("Program Ended")
```

OUTPUT:



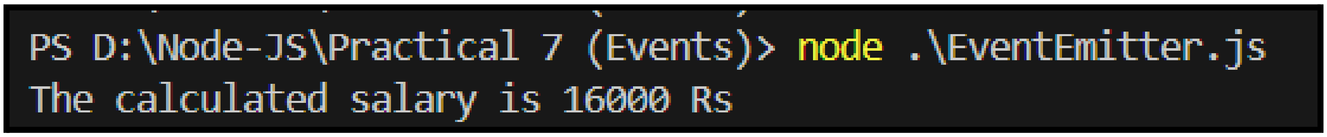
```
PS D:\Node-JS\Practical 7 (Events)> node .\Events2.js
Event received by Listner 1
Event received by Listner2
2
Listner1 is removed
Event received by Listner2
1
Program Ended
```

17) Write a program to calculate the salary using the EventEmitter class

EventEmitter.js

```
const EventEmitter = require("node:events") //EventEmitter is a class

//Extending the event emitter class to another class
class SalaryCalculator extends EventEmitter{
   //Method to calculate the salary
   calculateSalary(basic, ta){
      const hra = 0.2 * basic //20% of the basic
      const da = basic // 100% of the basic
      const inc_tax = 0.3 * basic //30% of the basic
      const prof_tax = 200 // Professional tax is 200

      const salary = basic + hra + da + ta - inc_tax - prof_tax
      this.emit("salary_disp",salary)

   }
}

//Creating an object of class SalaryCalculator
const obj1 = new SalaryCalculator()

//Creating an event of the class SalaryCalculator
obj1.on('salary_disp',(salary) => {
   console.log(`The calculated salary is ${salary} Rs`)
})

//Calling the method of the class SalaryCalculator
obj1.calculateSalary(8000,1000)
```

OUTPUT:



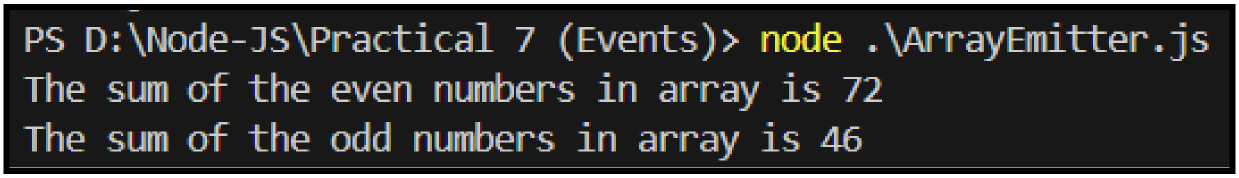
```
PS D:\Node-JS\Practical 7 (Events)> node .\EventEmitter.js
The calculated salary is 16000 Rs
```

18) Write a program to create an event to print the sum of odd and even numbers from an array

ArrayEmitter.js

```
const EventEmitter = require("node:events")
const emitter = new EventEmitter()
//Creating an event to print the sum of the even numbers
emitter.on("even_disp",(num) => {
   console.log(`The sum of the even numbers in array is ${num}`)
})

//Creating an event to print the sum of the odd numbers
emitter.on("odd_disp",(num) => {
   console.log(`The sum of the odd numbers in array is ${num}`)
})
//Point of Execution
const arr = [1,2,3,4,5,6,7,8,9,10,22,21,20]
let even = 0
let odd = 0

for (i=0; i<arr.length; i++){
   if (arr[i]%2 == 0){
      even+=arr[i]
   }
   else{
      odd+=arr[i]
   }
}

emitter.emit('even_disp',even)
emitter.emit('odd_disp',odd)
```

OUTPUT:



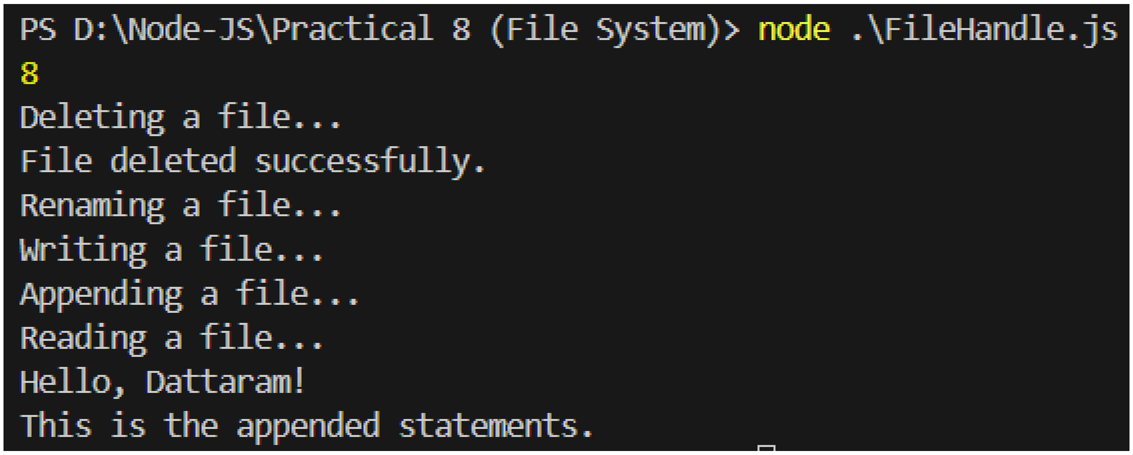
```
PS D:\Node-JS\Practical 7 (Events)> node .\ArrayEmitter.js
The sum of the even numbers in array is 72
The sum of the odd numbers in array is 46
```

19) Write a program to demonstrate File handling in Node.js

FileHandle.js

```
const fs = require("node:fs")

//Creating and writing into a file
fs.writeFile("Datta.txt","Hello, Dattaram!",function (err, data) {
   console.log("Writing a file...")
})

//Appedning the text into a file
fs.appendFile("Datta.txt","\nThis is the appended statements.",function (err, data) {
   console.log("Appending a file...")
})

//Reading a file
fs.readFile("Datta.txt","utf8",function (err, data) {
   console.log("Reading a file...")
   console.log(data)
})

//Deleting file
fs.unlink("Datta.txt",function(err, data) {
   console.log("Deleting a file...")
   console.log("File deleted successfully.")
})


//OpenSync and WriteSync
const fd = fs.openSync("Datta.txt","r+")
const text = "John Doe"
const position = 1
const obs = fs.writeSync(fd, text, position, "utf8")
console.log(obs)

// Renaming a file
fs.rename("Datta.txt","TextDocument.txt",function (err, data) {
   console.log("Renaming a file...")
})
```

OUTPUT:



```
PS D:\Node-JS\Practical 8 (File System)> node .\FileHandle.js
8
Deleting a file...
File deleted successfully.
Renaming a file...
Writing a file...
Appending a file...
Reading a file...
Hello, Dattaram!
This is the appended statements.
```

20) Write a Node.js code to display the Employee Job Registration Form saved in an HTML file in response to the client’s access request to the server

index.html

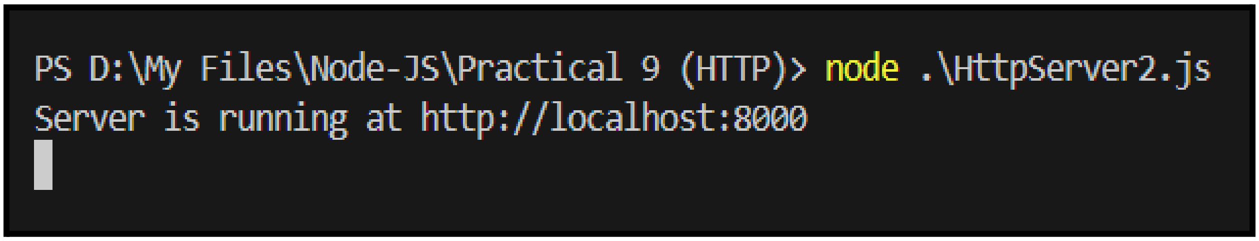
```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Dattaram Kolte</title>
</head>
<body>
  <h1>Employee Registeration Form</h1>
 <form action="formFirst" method="post" style="text-size-adjust: 24px;">
  <table cellpadding="5" cellspacing="0">
    <tr>
      <td><label>First Name:</label></td>
      <td><input type="text" name="fname"></td>
    </tr>

    <tr>
      <td><label>Last Name:</label></td>
      <td><input type="text"></td>
    </tr>

    <tr>
      <td><label>Date of Birth:</label></td>
      <td><input type="date"></td>
    </tr>

    <tr>
      <td><label>Gender:</label></td>
      <td>
        <select >
          <option value="0">select your gender</option>
          <option value="1">Male</option>
          <option value="2">Female</option>
        </select>
      </td>
    </tr>

    <tr>
```

```
      <td>Phone Number:</td>
      <td><input type="text"></td>
    </tr>

    <tr>
      <td>Email ID:</td>
      <td><input type="text"></td>
    </tr>

    <tr>
      <td>Department:</td>
      <td>
        <select>
          <option>select your department</option>
          <option>HR</option>
          <option>Sales</option>
          <option>Management</option>
          <option>IT</option>
        </select>
      </td>
    </tr>

    <tr>
      <td colspan="2" style="text-align: center;">
        <button>submit</button>
      </td>
    </tr>
  </table>
 </form>
</body>
</html>
```

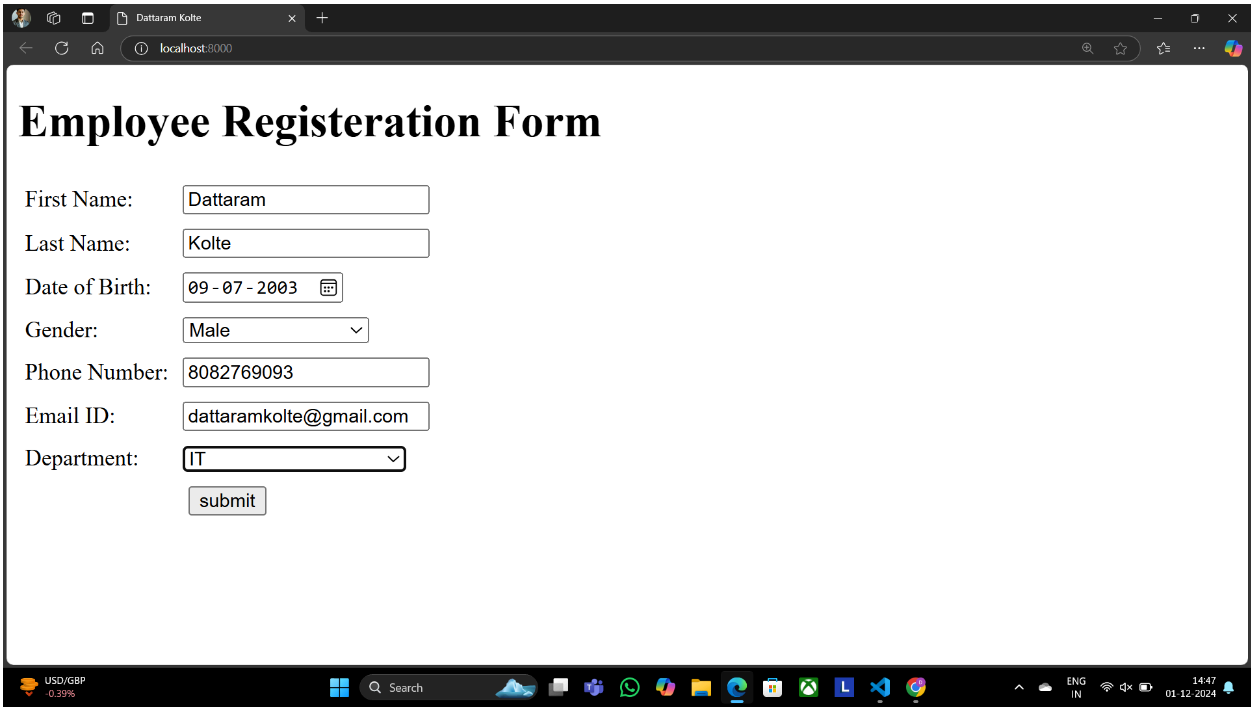
HttpServer2.js

```
const http = require("node:http")
const fs = require("node:fs")

const server = http.createServer((req,res) => {
  fs.readFile("index.html", (err, data) => {
    if (data) {
            res.writeHead(200, {'Content-Type':"text/html"})
            res.end(data)
        }
    })
})

server.listen(8000, () => {
    console.log("Server is running at http://localhost:8000")
})
```

OUTPUT:



```
PS D:\My Files\Node-JS\Practical 9 (HTTP)> node .\HttpServer2.js
Server is running at http://localhost:8000
```



Employee Registeration Form

First Name:	Dattaram
Last Name:	Kolte
Date of Birth:	09-07-2003
Gender:	Male
Phone Number:	8082769093
Email ID:	dattaramkolte@gmail.com
Department:	IT
	submit

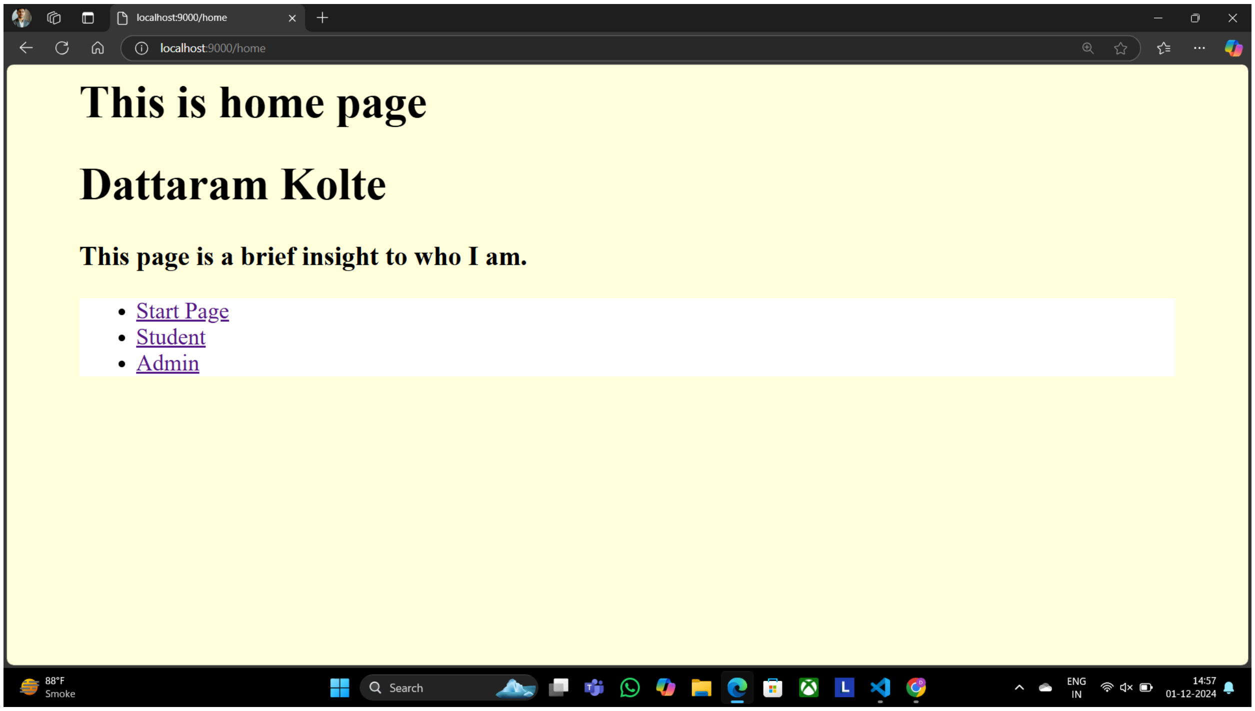
21) Write a program to handle request URLs between various HTML pages using HTTP Server

HttpServer1.js

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

var server = http.createServer(function(req, res) {
        if (req.url == '/') {
                res.writeHead(200, {
                        'content-type': 'text/html'
                });
                res.write('<html></head><body>');
                res.write('<style> ul li{display: inline-block; float: right; height: 40px;} ul li
a{padding: 20px; background:orange; color: white;}</style>');
                res.write('<div><h1>First WebPage using http
Server</h1></div><div><ul><li><a href="/admin">Contact Admin</a></li><li><a
href="/student">Student</a></li><li><a
href="/home">Home</a></li></ul></div></div>');
                res.write('<div style="background: white; padding: 20px;"><h2>Start
Page</h2><p>This is my first webpage!</p><p>Hi
everyone</p></div></body></html>');
                res.end();
        } else if (req.url == '/home') {
                res.writeHead(200, {
                        'content-type': 'text/html'
                });
                res.write('<html><head><style>body{padding-left: 43px;
padding-right:43px; background-color:lightyellow;} </style></head><body><p><h1>This
is home page</h1></p><h1>Dattaram Kolte</h1><h3>This page is a brief insight to who I
am.</h3>');
                res.write('<nav style="background-color:white; text-
align:center;"><ul><li><a href="/">Start Page</a></li><li><a
href="/student">Student</a></li><li><a
href="/admin">Admin</a></li></ul></nav></body></html>');
                res.end();
        } else if (req.url == '/student') {
                res.writeHead(200, {
                        'content-type': 'text/html'
                });
                res.write('<div style="display: inline-block; float: right; height: 40px;
padding: 20px;"><ul><li><a href="/home">Home</a></li><li><a href="/">Start
Page</a></li> <li><a href="/admin">Contact Admin</a></li></ul></div>');
                res.write('<html><head><style>body{background-
color:pink;}</style><title>Form</title></head><body bgcolor="White" ><h1
align="center">Student Page Form</h1>');
                res.write('<form action="url" method="post"><fieldset><legend>Personal
Imformation</legend>');
                res.write('<lable><Strong>Student Name</strong></lable><br/><input
type="text" name="Student Name" placeholder="Enter Your Name" /><br/>');
                res.write('<lable><Strong>Email</strong></lable><br/><input
type="email" name="eamil" placeholder="Enter Your Email Address" /></br>');
                res.write('<lable><Strong>Password</strong></lable><br/>');
                res.write('<input type="password" name="Password" placeholder="Enter
Your Password" /></br><lable><Strong>Gender</strong></lable><br/>');
                res.write('<input type="Radio" name="Gender" value="Male" />Male<input
type="Radio" name="Gender" value="FeMale" />FeMale<br/>');
                res.write('<lable><Strong>Hobbies</strong></lable><br/>');
                res.write('<input type="checkbox" name="Hobbies" value="Playing Sports"
/>Playing Sports<br/>');
                res.write('<input type="checkbox" name="Hobbies" value="Listening Music"
/>Listening Music<br/>');
                res.write('<input type="checkbox" name="Hobbies"
value="Traveling"/>Traveling<br/>');
                res.write('<input type="checkbox" name="Hobbies" value="Reading
Books"/>Reading Books<br/>');
                res.write('<lable><Strong>Select Your City</strong></lable><select
name="City">');
                res.write('<option value="Mumbai">Mumbai</option><option
value="Gujrat">Gujrat</option><option value="Pune">Pune</option>');
                res.write(' <option value="Thane">Thane</option></select></br><input
type="submit" onclick=alert("Thanks!") name="submit" value="Submit"/></form>');
                res.end();
        } else if (req.url == '/admin') {
                res.writeHead(200, {
                        'content-type': 'text/html'
                });
                res.write('<style>ul li{display: inline-block; float: right; height:40px;} ul li
a{padding: 20px; background:orange; color: white;}</style>');
```

```
        res.write('<div><ul><li><a href="/admin">Contact Admin</a></li><li><a
href="/student">Student</a></li><li><a
href="/home">Home</a></li></ul></div></div><br><br>');
        res.write('<html><head><style>legend{text-align:center;}
body{background-color:faf89a;border: 5px solid darkred;} form{display: inline- block;
float: center; padding: 20px;} ');
        res.write('border-radius:4px; padding:40px 5px; max-
width:100%;}</style></head>');
        res.write('<legend><h1><u>Admin Login</u></h1></legend>');
        res.write('<form action="#" method="POST" autocomplete="off">');
        res.write('<div class="input_field"><h3>Username</h3></div><div
class="input_field"><input type="text" ');
        res.write('name="userid" placeholder="Username" required/></div>');
        res.write('<div class="input_field"><h3>Password</h3></div><div
class="input_field"><input type="Password"');
        res.write('name="pword" placeholder="Password" required/></div><p>');
        res.write('<style>button{border:none; border-radius:5px; text-align:center;
padding:15px 15px; background- color:lavender;<div></div></style>');
        res.write('<button onclick=alert("SUCESS")>LOGIN
NOW</button></form>');
        res.end();
    } else {
        res.end('Invalid request');
    }
});

server.listen(9000);
console.log('Server is running at http://localhost:9000');
```

OUTPUT:

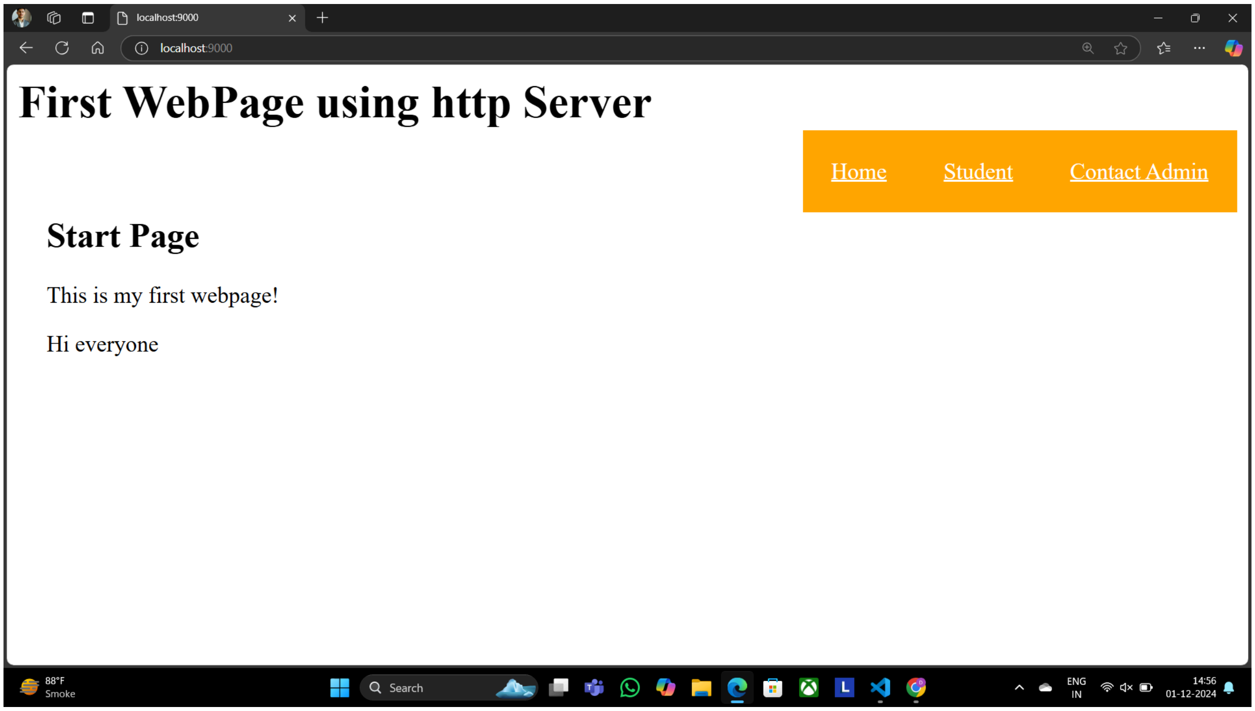


This is home page

Dattaram Kolte

This page is a brief insight to who I am.

- Start Page
- Student
- Admin



First WebPage using http Server

Home Student Contact Admin

Start Page

This is my first webpage!

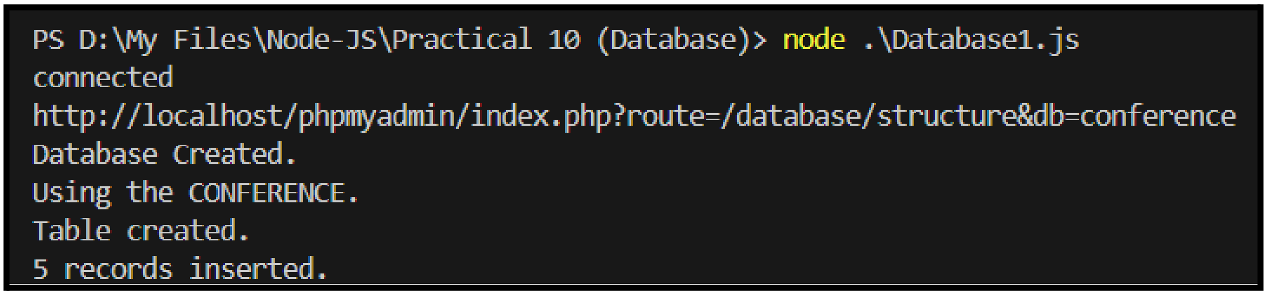
Hi everyone

22) Write a program to implement the database in node.js

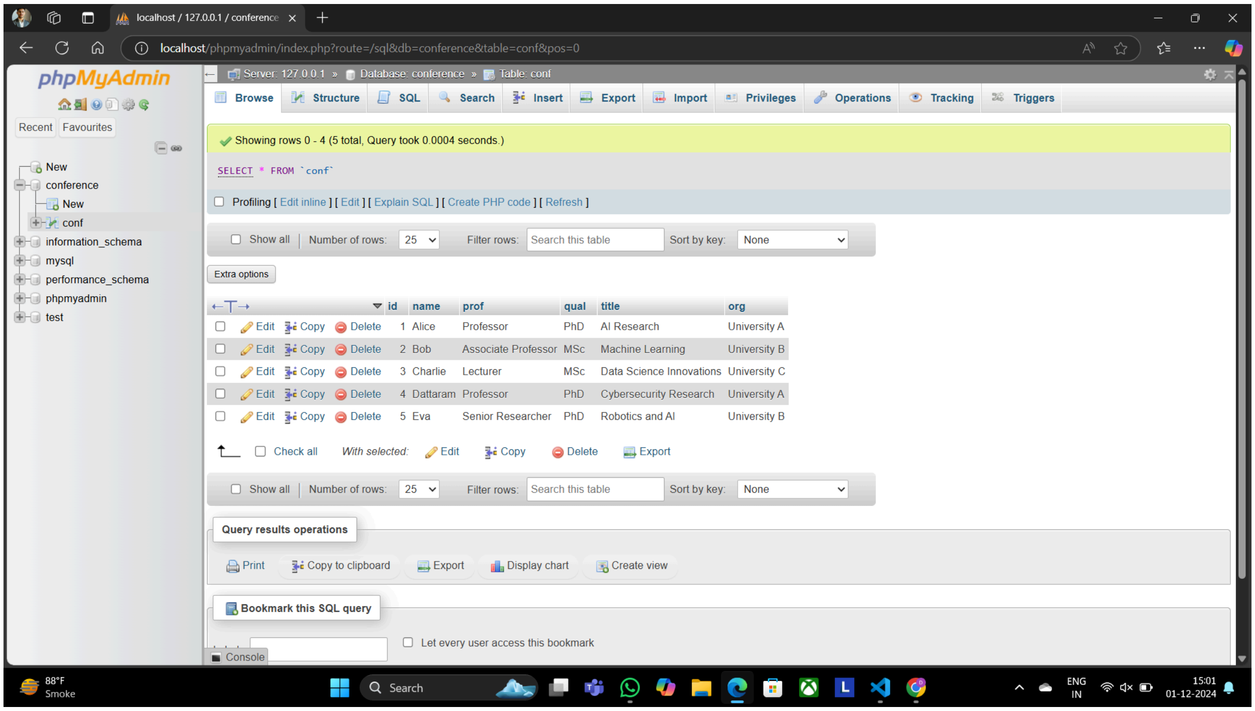
Database1.js

```
const mysql = require("mysql")

const con = mysql.createConnection({
   host:"localhost",
   user:"root",
   password:"",
})

con.connect(function(err) {
   if(err) throw err;

console.log("connected\nhttp://localhost/phpmyadmin/index.php?route=/database/structure&db=conference")

   //Creating the Database
   var query = "CREATE DATABASE IF NOT EXISTS CONFERENCE;"
   con.query(query, function(err, result){
      if (err) throw err;
      console.log("Database Created.")
   })

   //Using the Database
   query = "USE CONFERENCE;"
   con.query(query, function(err, result){
      console.log("Using the CONFERENCE.")
   })

   //Creating the Table
   query = `CREATE TABLE IF NOT EXISTS conf(
      id int auto_increment primary key,
      name varchar(20),
      prof varchar(20),
      qual varchar(20),
      title varchar(50),
      org varchar(50)
   );`
   con.query(query, function(err, result){
        if (err) throw err;
        console.log("Table created.")
    })

    // //Inserting the values
    const records = [
        ['Alice', 'Professor', 'PhD', 'AI Research', 'University A'],
        ['Bob', 'Associate Professor', 'MSc', 'Machine Learning', 'University B'],
        ['Charlie', 'Lecturer', 'MSc', 'Data Science Innovations', 'University C'],
        ['David', 'Professor', 'PhD', 'Cybersecurity Research', 'University A'],
        ['Eva', 'Senior Researcher', 'PhD', 'Robotics and AI', 'University B']
      ];

    query = 'INSERT INTO conf (name, prof, qual, title, org) VALUES ?'
    con.query(query, [records], function (err, result) {
    if (err) throw err
    console.log(result.affectedRows + " records inserted.")
    })

    //Retrieving the data
    query = "SELECT * from conf;"
    con.query(query, function(err, result){
        if(err) throw err;
        console.log(result)
    })

    //Updating a row
    query = `UPDATE conf set name = "Dattaram" where id = 4;`
    con.query(query, function(err, result){
        if(err) throw err;
        console.log("Values updated.")
    })

    //Closing the connection
    con.end
})
```

OUTPUT:



```
PS D:\My Files\Node-JS\Practical 10 (Database)> node .\Database1.js
connected
http://localhost/phpmyadmin/index.php?route=/database/structure&db=conference
Database Created.
Using the CONFERENCE.
Table created.
5 records inserted.
```



localhost/phpmyadmin/index.php?route=/sql&db=conference&table=conf&pos=0

Server: 127.0.0.1 » Database: conference » Table: conf

✓ Showing rows 0 - 4 (5 total, Query took 0.0004 seconds.)

```
SELECT * FROM `conf`
```

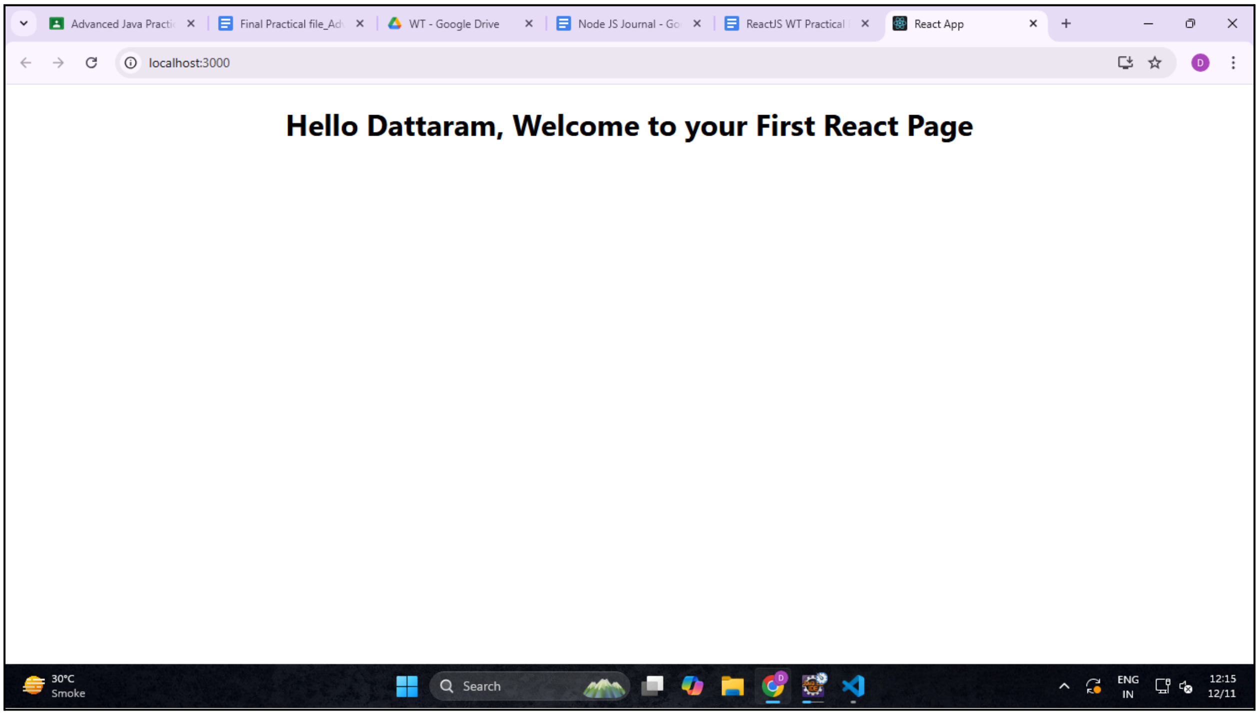
id	name	prof	qual	title	org
1	Alice	Professor	PhD	AI Research	University A
2	Bob	Associate Professor	MSc	Machine Learning	University B
3	Charlie	Lecturer	MSc	Data Science Innovations	University C
4	Dattaram	Professor	PhD	Cybersecurity Research	University A
5	Eva	Senior Researcher	PhD	Robotics and AI	University B

23) Write a program to Display Hello World using ReactJS

App.js

```
import './App.css';


function App() {
 return (
  <div className="App">
   <p>
     <h1>Hello Dattaram, Welcome to your First React Page</h1>
    </p>
  </div>
 );
}
export default App;
```

OUTPUT:



Hello Dattaram, Welcome to your First React Page

24) Create an application in ReactJS to implement component life cycle

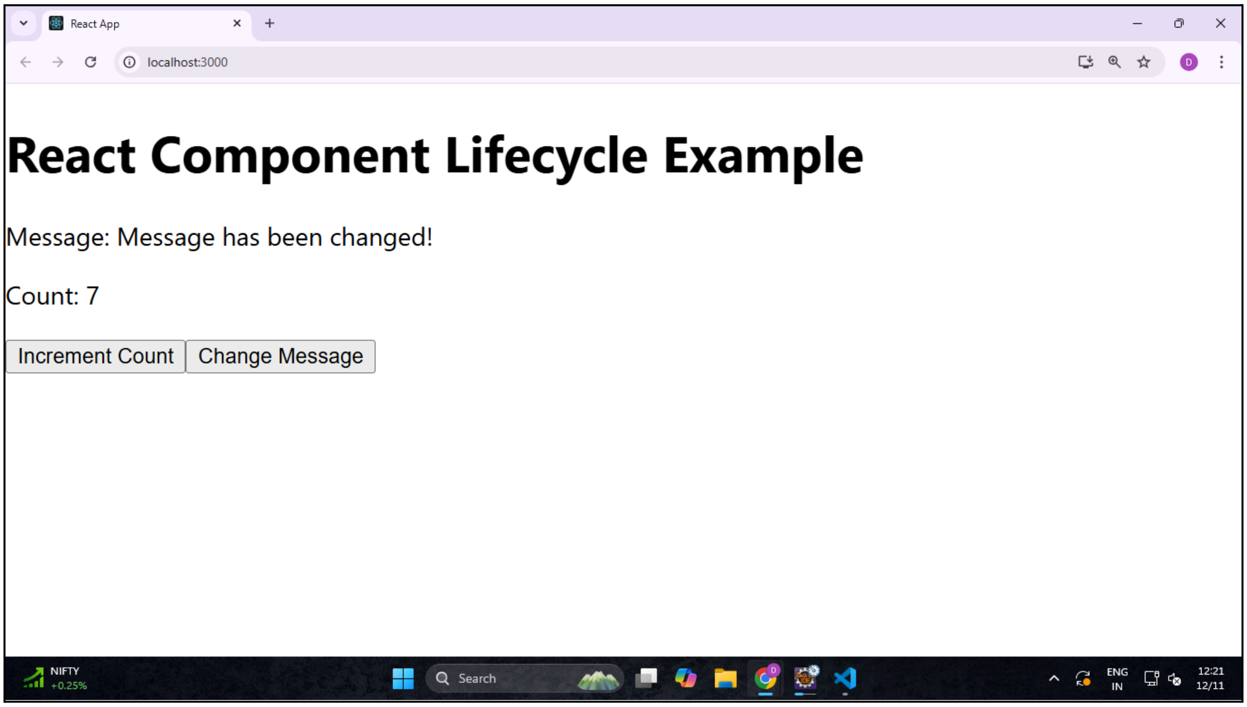
ComponentLifeCycle.js

```
import React, { useState, useEffect } from 'react';

const LifecycleComponent = () => {
  const [count, setCount] = useState(0);
  const [message, setMessage] = useState('Hello, World!');

  // Equivalent to componentDidMount, componentDidUpdate, componentWillUnmount
  useEffect(() => {
    // This function will run once when the component mounts (initial render)
    console.log('Component mounted!');

    // This return function acts like componentWillUnmount
    return () => {
      console.log('Component will unmount!');
    };
  }, []); // Empty dependency array means this runs only once on mount

  useEffect(() => {
    // This function will run every time the count changes (update phase)
    console.log(`Count updated to: ${count}`);
  }, [count]); // This runs only when `count` changes

  const handleClick = () => {
    setCount(count + 1); // Increment count
  };

  const handleMessageChange = () => {
    setMessage('Message has been changed!');
  };
return (
    <div>
      <h1>React Component Lifecycle Example</h1>
      <p>Message: {message}</p>
      <p>Count: {count}</p>
      <button onClick={handleClick}>Increment Count</button>
      <button onClick={handleMessageChange}>Change Message</button>
    </div>
  );
};
export default LifecycleComponent;
```

App.js

```
import './App.css';
import LifecycleComponent from './ComponentLifeCycle';

function App() {
  return (
    <div>
      <LifecycleComponent />
    </div>
  );
}
export default App;
```

OUTPUT:



React Component Lifecycle Example

Message: Message has been changed!

Count: 7

25) Create an application to implement class and functional component in ReactJS

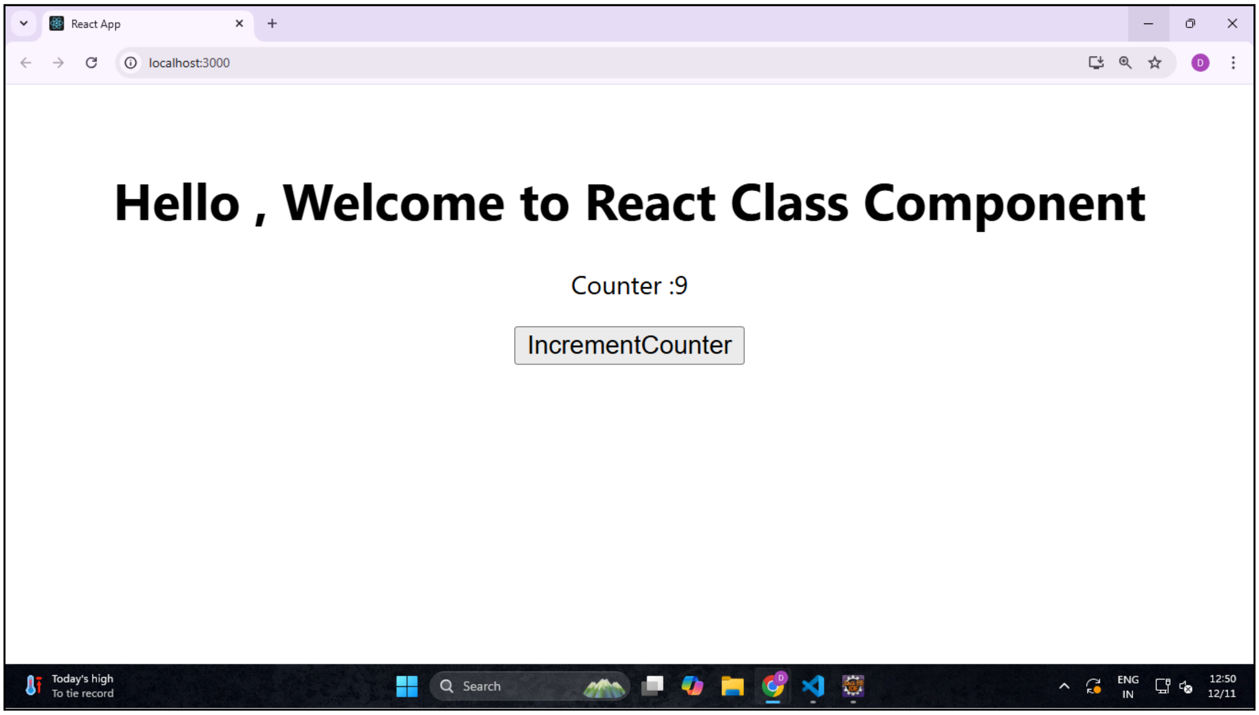
MyClassComponent.js

```
import React, {Component} from 'react';
class MyClassComponent extends Component {
   constructor(props){
    super(props);
    this.state={
      message :'Hello , Welcome to React Class Component ',
      counter: 0,
    };
  }

  incrementCounter=()=> {
    this.setState((prevState)=> ({
      counter:prevState.counter+1,
    }));
  };

  render(){
    return(
      <div style={{textAlign:'center' ,marginTop:'50px'}}>
      <h1>{this.state.message}</h1>
      <p>Counter :{this.state.counter}</p>
                <button onClick={this.incrementCounter} style={{padding:'10 px 20 px', fontSize:'16px'}}>
      IncrementCounter
      </button>
      </div>
    );
  }
}
export default MyClassComponent;
```

App.js

```
import './App.css';
import MyClassComponent from './MyClassComponent';

function App() {
 return (
  <div>
   <MyClassComponent />
  </div>
 );
}
export default App;
```

OUTPUT:



Hello , Welcome to React Class Component

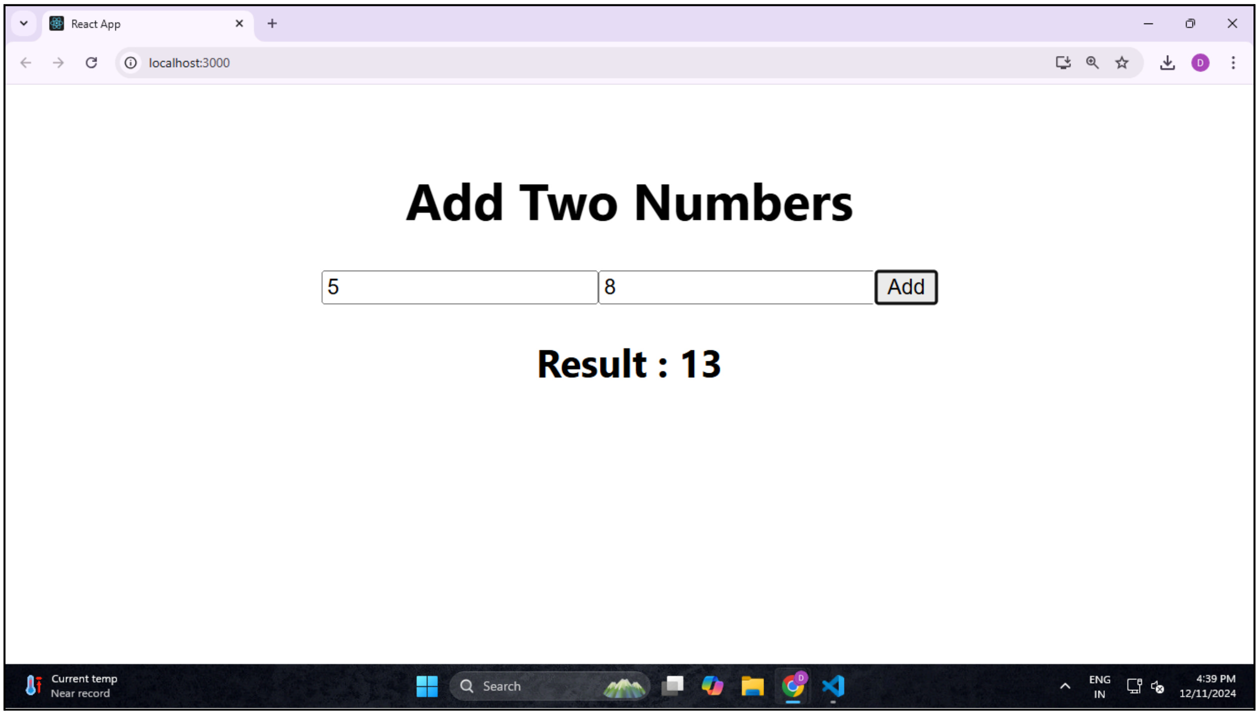
Counter :9

26) Create an application to implement functional component in ReactJS

FunctionalComponent.js

```
import  React, {useState} from 'react';

const AddTwoNumbers=()=> {
 const [num1, setNum1] = useState('');
 const [num2, setNum2] = useState('');
 const [sum, setSum] = useState(null);

 const handleAddition= () =>{
  const result =parseFloat(num1) +parseFloat(num2);
  setSum(result);
 };

 return (
  <div style={{textAlign:'center',marginTop:'50px'}}>
   <h1> Add Two Numbers</h1>
   <div style ={{ marginBottom:'20px'}}>
    <input type="number" placeholder='Enter first number'
    value={num1}
    onChange={(e) => setNum1(e.target.value)}
    style={{marginRight:'10 px' ,padding:'5 px'}} />
     <input type="number" placeholder='Enter second number'
    value={num2}
    onChange={(e) => setNum2(e.target.value)}
    style={{marginRight:'10 px' ,padding:'5 px'}} />
    <button onClick={handleAddition} style={{padding: '5px 10 px'}}>Add</button>
    {sum!==null && <h2> Result : {sum}</h2>}
    </div>
    </div>
 );
};

export default AddTwoNumbers;
```

OUTPUT:



Add Two Numbers

5 | 8 | Add

Result : 13

27) Create an application in ReactJS import and export the files (components)

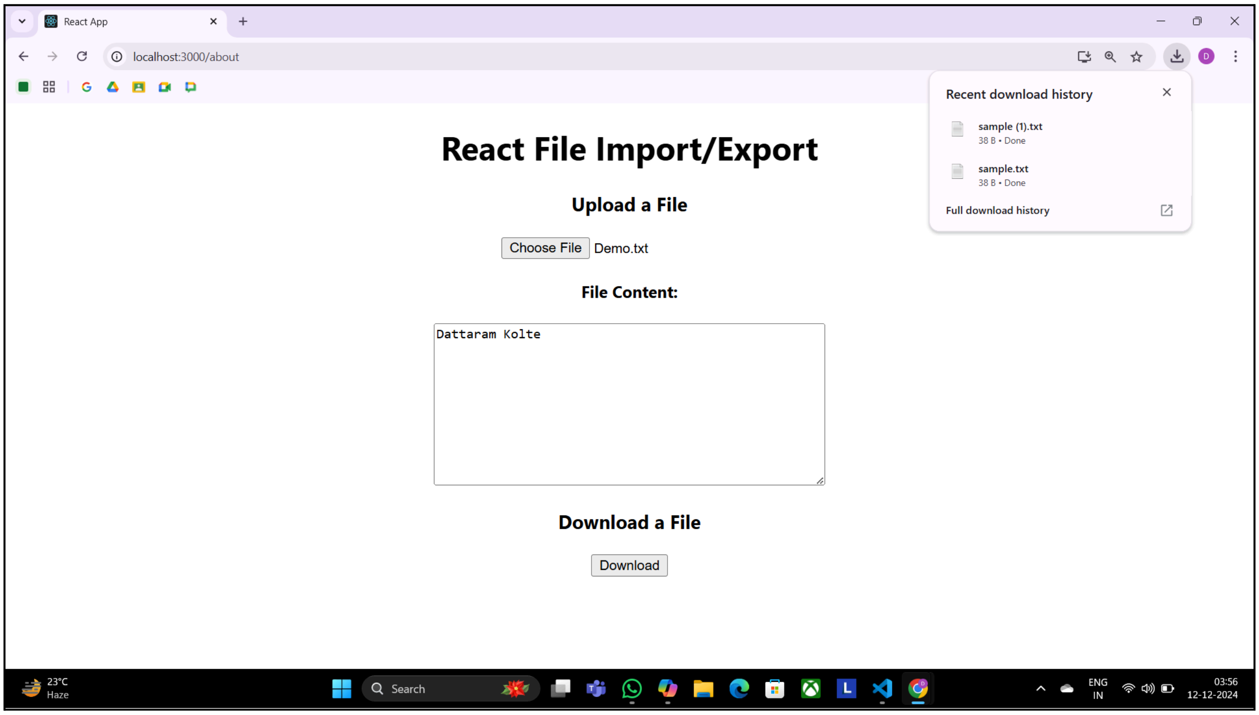
FileUploader.js

```
import React, { useState } from "react";

const FileUploader = () => {
  const [fileContent, setFileContent] = useState(""); // Declare useState correctly

  const handleFileUpload = (e) => {
    const file = e.target.files[0];
    const reader = new FileReader();

    reader.onload = (event) => {
      setFileContent(event.target.result); // Correctly set file content
    };

    if (file) reader.readAsText(file); // Read file as text
  };

  return (
    <div>
      <h3>Upload a File</h3>
      <input type="file" onChange={handleFileUpload} />
      {fileContent && ( // Conditionally render file content
        <div>
          <h4>File Content:</h4>
          <textarea value={fileContent} readOnly rows="10" cols="50" />
        </div>
      )}
    </div>
  );
};
export default FileUploader;
```

FileDownloader.js

```
import React from "react";

const FileDownloader = () => {
  const handleDownload = () => {
    const content = "This is some sample text for the file.";
    const blob = new Blob([content], { type: "text/plain" });
    const url = URL.createObjectURL(blob);

    const link = document.createElement("a");
    link.href = url;
    link.download = "sample.txt";
    link.click();

    URL.revokeObjectURL(url);
  };

  return (
    <div>
      <h3>Download a File </h3>
      <button onClick={handleDownload}>Download</button>
    </div>
  );
};
export default FileDownloader;
```

OUTPUT:



React File Import/Export

Upload a File

Demo.txt

File Content:

```
Dattaram Kolte
```

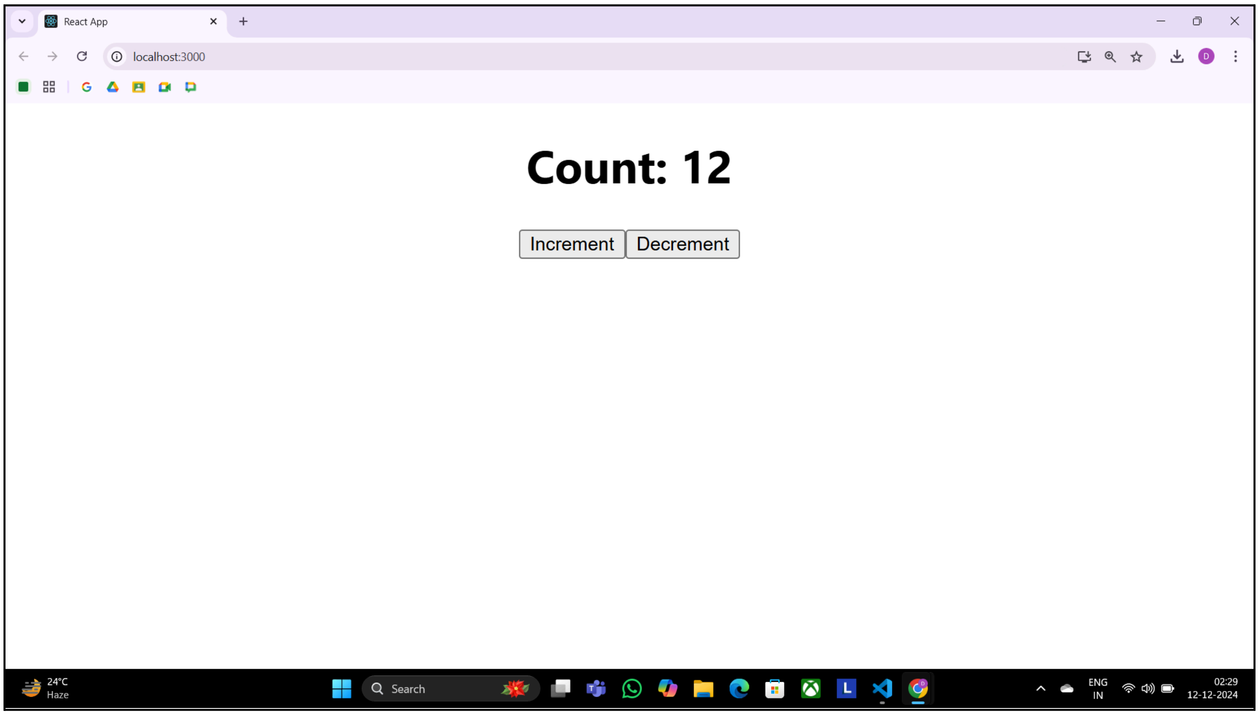
Download a File

28) Create an application to increment and decrement counter using state

Conuter.js

```
import './App.css';

import React, { useState } from 'react';
 const Counter = () => {
 const [count, setCount] = useState(0);
 return (
  <div style={{textAlign:"center"}}>
  <h1>Count: {count}</h1>
  <button onClick={() => setCount(count + 1)}>Increment</button>
  <button onClick={() => setCount(count - 1)}>Decrement</button>
  </div>
 );
};
export default Counter;
```

OUTPUT:



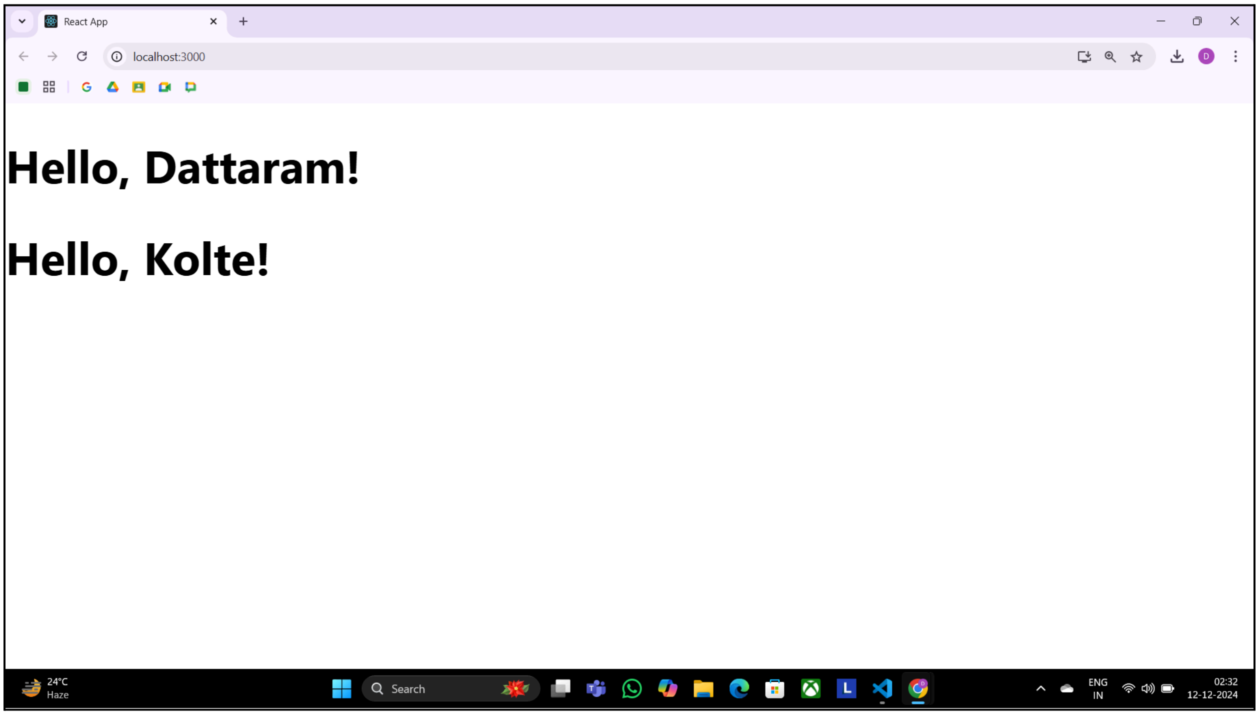
```
Count: 12
```

29) Create an application to display your name using prop

App.js

```
const Greeting = ({ name }) => {
   return <h1>Hello, {name}!</h1>;
 };

const App = () => {
 return (
   <div>
   <Greeting name="Dattaram" />
   <Greeting name="Kolte" />
   </div>
 );
};
export default App;
```

OUTPUT:



Hello, Dattaram!

Hello, Kolte!

30) Create an application to implement To-Do task

TaskList.js

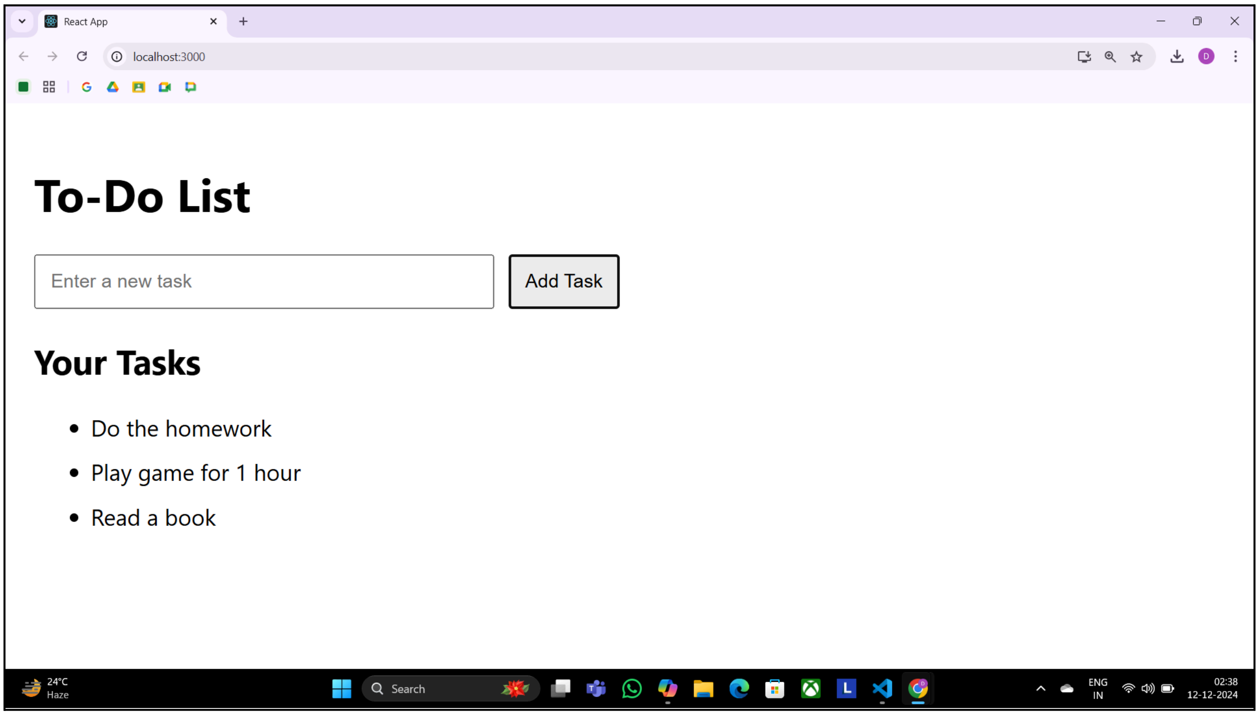
```
import React from 'react';

const TaskList = ({ tasks }) => {
  return (
    <div style={{ marginTop: '20px' }}>
      <h2>Your Tasks</h2>
      {tasks.length === 0 ? (
        <p>No tasks added yet.</p>
      ) : (
        <ul>
          {tasks.map((task, index) => (
            <li key={index} style={{ marginBottom: '10px' }}>
              {task}
            </li>
          ))}
        </ul>
      )}
    </div>
  );
};
export default TaskList;
```

App.js

```
import React, { useState } from 'react';
import TaskList from './TaskList';
const App = () => {
const [tasks, setTasks] = useState([]); // State to manage tasks
const [taskInput, setTaskInput] = useState(''); // State for input field
const handleAddTask = () => {
  if (taskInput.trim() !== '') {
    setTasks([...tasks, taskInput]); // Add new task to the list
    setTaskInput(''); // Clear input field
  }
};
  return (
  <div style={{ padding: '20px' }}>
  <h1>To-Do List</h1>
```

```
 <div>
 <input
 type="text"
 value={taskInput}
 onChange={(e) => setTaskInput(e.target.value)}
 placeholder="Enter a new task"
 style={{ padding: '10px', width: '300px', marginRight: '10px' }}
 />
 <button onClick={handleAddTask} style={{ padding: '10px' }}>
 Add Task
 </button>
 </div>
 <TaskList tasks={tasks} />
 </div>
 );
};
export default App
```

OUTPUT:



To-Do List

Enter a new task

Add Task

Your Tasks

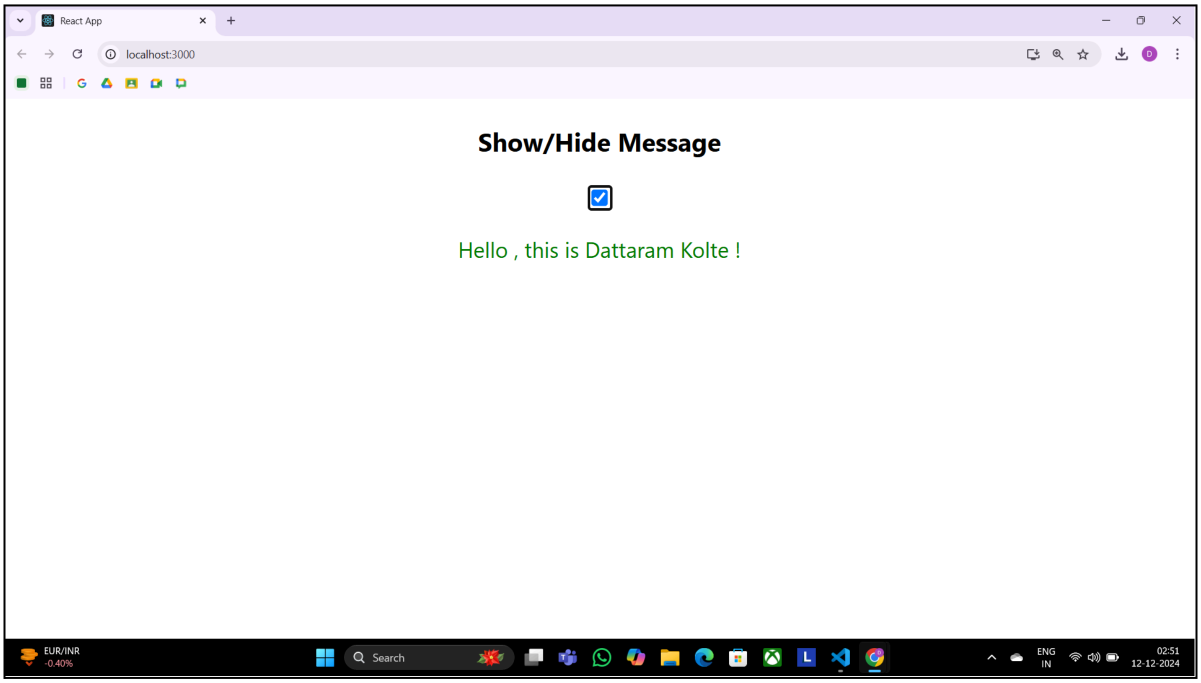
- Do the homework
- Play game for 1 hour
- Read a book

31) Create an application in ReactJS to use DOM events- onChange

OnChangeEvent.js

```
import React , {useState} from "react";
function ToggleMessage() {
  const[isChecked , setIsChecked]= useState(false); // State to track checkbox toggle
  const handleCheckboxChange= (event) => {
    setIsChecked(event.target.checked); // Update state when checkbox is toggled
  };
  return (
    <div style={{margin:"20 px", textAlign:"center"}}>
     <h3> Show/Hide Message</h3>
     <label>
          <input   type="checkbox"  onChange={handleCheckboxChange}  //  Event  handler  for
checkbox  style={{marginRight:"10 px"}}  /> </label>
     <div style={{marginTop:"20 px"}}>
      {isChecked && <p style={{color:"green"}}> Hello , this is Dattaram Kolte !</p>}
     </div> </div>
  )
}
export default ToggleMessage;
```

OUTPUT:



Show/Hide Message

☑

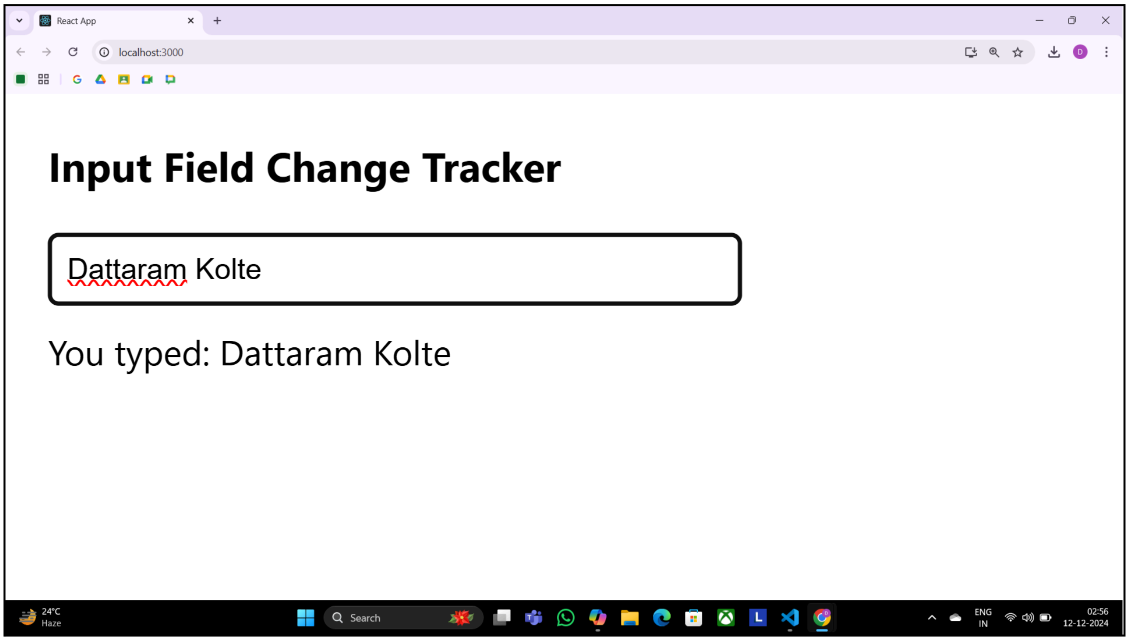
Hello , this is Dattaram Kolte !

32) Write a program that tracks the changes in an input field and displays the entered text in real-time using onChange DOM event

InputTracker.js

```
import React, { useState } from "react”;
function InputTracker() {
 const [text, setText] = useState("");
 const handleChange = (event) => {
  setText(event.target.value);
 };

 return (
  <div style={{ margin: "20px" }}>
   <h3>Input Field Change Tracker</h3>
         <input  type="text"  placeholder="Type something here.."  value={text}
onChange={handleChange}  style={{  padding: "8px",  border: "1px solid #ccc",
borderRadius: "4px", width: "300px", }} />
   <p style={{ marginTop: "10px" }}>You typed: {text}</p>
  </div>
 );
}
export default InputTracker;
```

OUTPUT:



Input Field Change Tracker

Dattaram Kolte

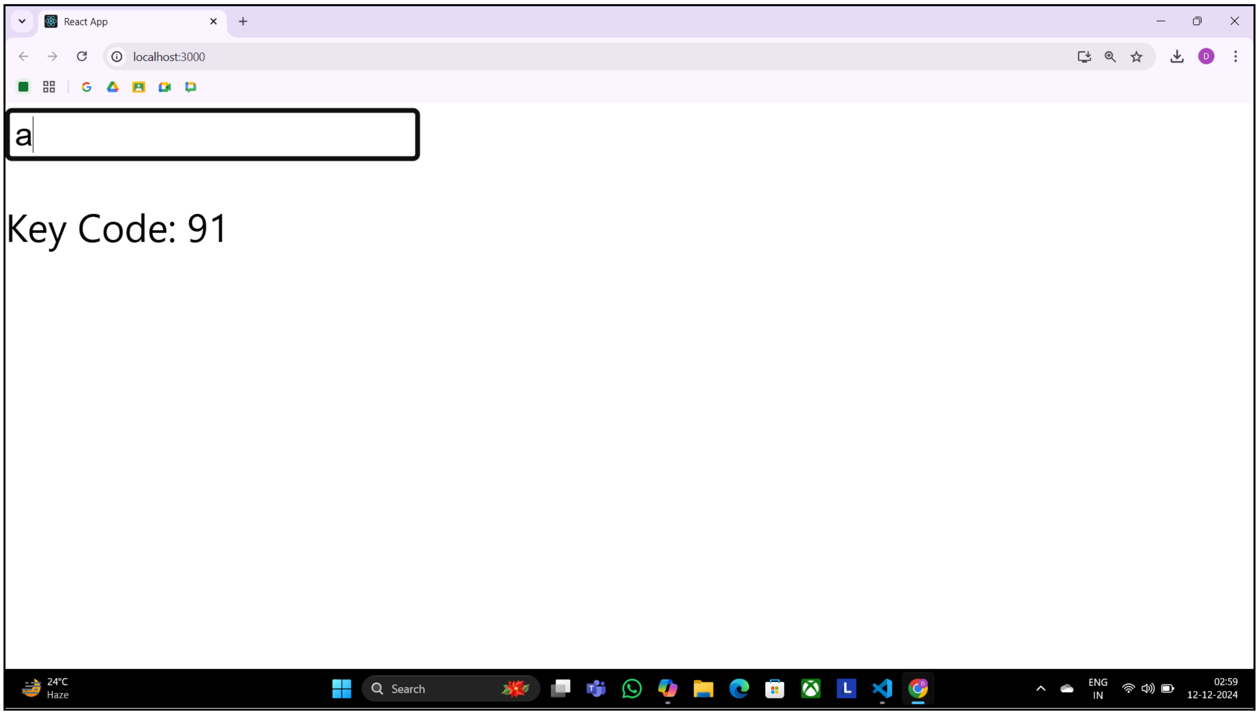
You typed: Dattaram Kolte

33) Create an application in ReactJS to use DOM events- onKeyUp

KeyUp.js

```
import React, { useState } from "react";
function KeyCodeDisplay() {
  const [keyCode, setKeyCode] = useState("");
  const handleKeyUp = (e) => {
    setKeyCode(`Key Code: ${e.keyCode}`);
  };

  return (
    <div>
      <input type="text" onKeyUp={handleKeyUp} placeholder="Press a key.." />
      <p>{keyCode}</p>
    </div>
  );
}

export default KeyCodeDisplay;
```

OUTPUT:



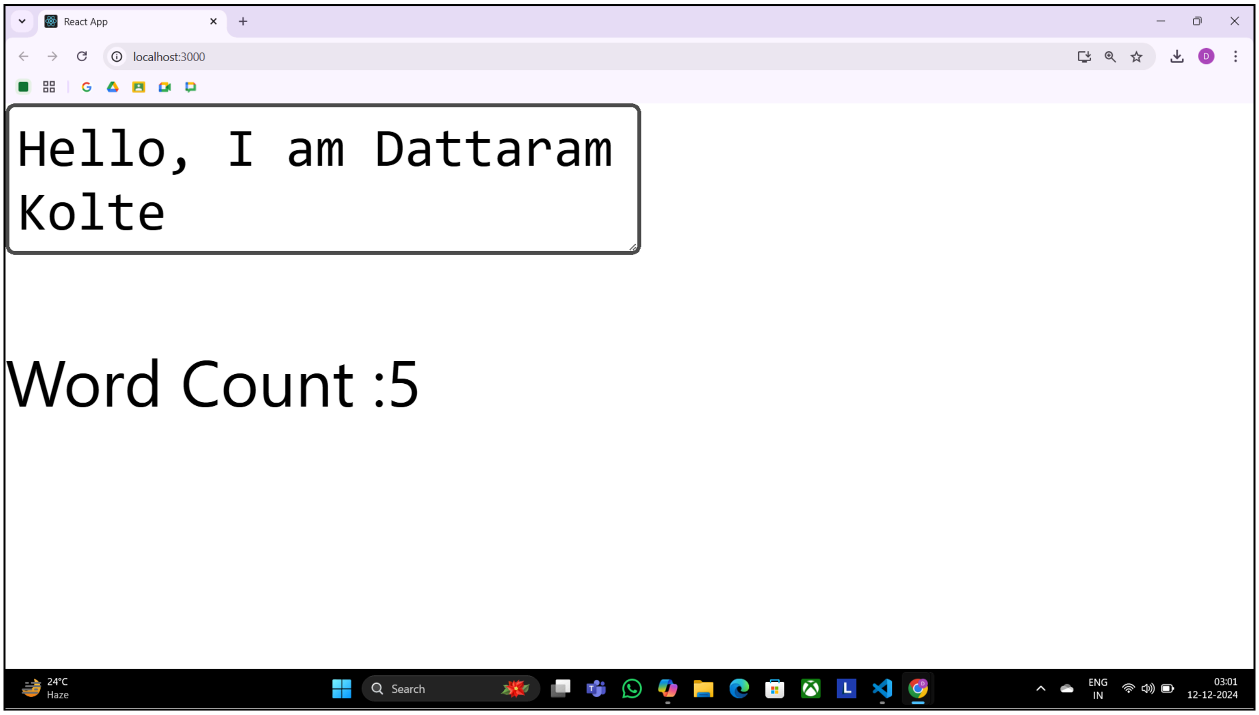
```
a

Key Code: 91
```

34) Write a Program to Counts words as they are typed using onKeyUp event

CountOnKeyUp.js

```
import './App.css';
import WordCount from './Dom Event/CountOnKeyUp';

function App() {
 return (
  <div>
   <WordCount/ >
  </div>
 );
}

export default App;
```

OUTPUT:



Hello, I am Dattaram Kolte

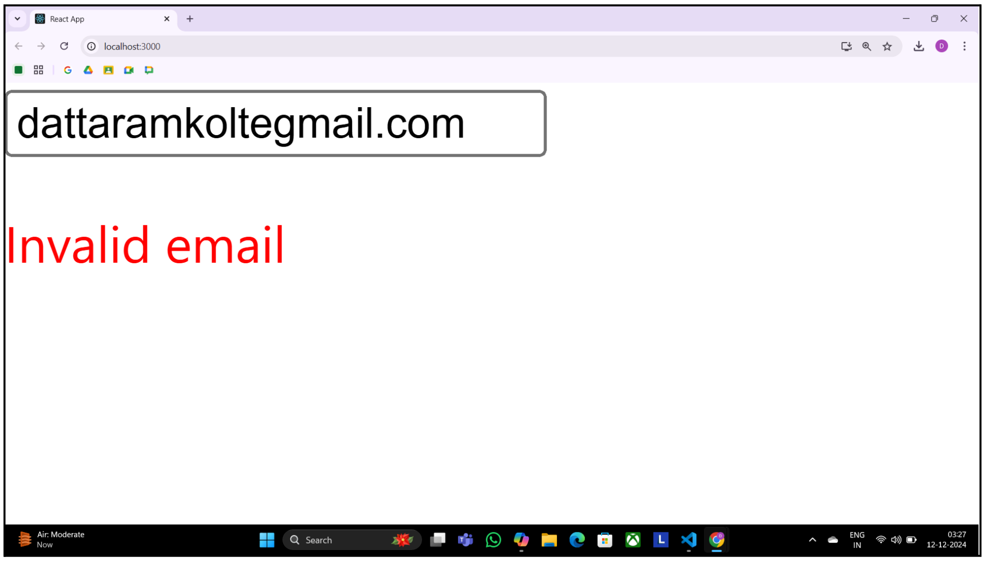
Word Count :5

35) Write a Program to implement validation logic for an email field using onBlur event

OnBlur.js

```
import React, { useState } from "react";
function ValidateOnBlur() {
  const [error, setError] = useState("");

  const handleBlur = (e) => {
    const email = e.target.value;
    if (!email.includes("@")) {
      setError("Invalid email");
    } else {
      setError("");
    }
  };

  return (
    <div>
      <input type="text" onBlur={handleBlur} placeholder="Enter your email" />
      {error && <p style={{ color: "red" }}>{error}</p>}   </div>
  );
}

export default ValidateOnBlur;
```

OUTPUT:



dattaramkoltegmail.com

Invalid email

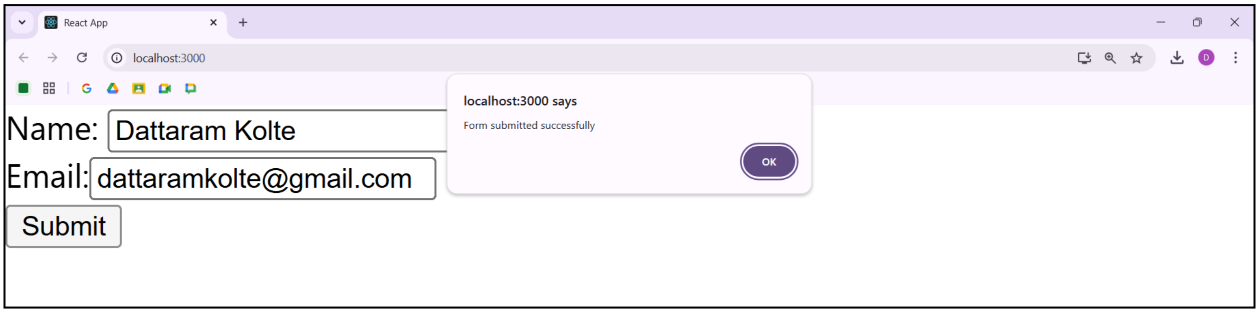
36) Create an application in ReactJS form and add client validation

FormValidation.js

```
import React ,{useState} from "react";
function BasicFormValidation () {
 const[formData, setFormData]=useState({name:"", email:""});
 const[errors,setErrors]=useState({});

 const handleChange=(e) => {
  const {name, value} =e.target;
  setFormData({...formData,[name]:value});
 };

 const validate=() => {
  const newErrors={} ;
  if(!formData.name)newErrors.name="Name is required";
  if(!formData.email)newErrors.email="Email is required";
  else if(!/\S+@\S+\.\S+/.test(formData.email))
   newErrors.email="Email is invalid";
  setErrors(newErrors);
  return Object.keys(newErrors).length===0;
 };

 const handleSubmit=(e) => {
  e.preventDefault();
  if(validate()) {
   alert("Form submitted successfully");
  }
 };
 return(
  <form onSubmit={handleSubmit}>
   <div> <label> Name: </label>
                        <input type="text" name="name" value={formData.name}
onChange={handleChange}/>
    {errors.name && <p style={{color:"red"}}>{errors.name}</p> }
   </div>
   <div>
    <label>Email:</label>
                        <input type="text" name="email" value={formData.email}
onChange={handleChange} />
```

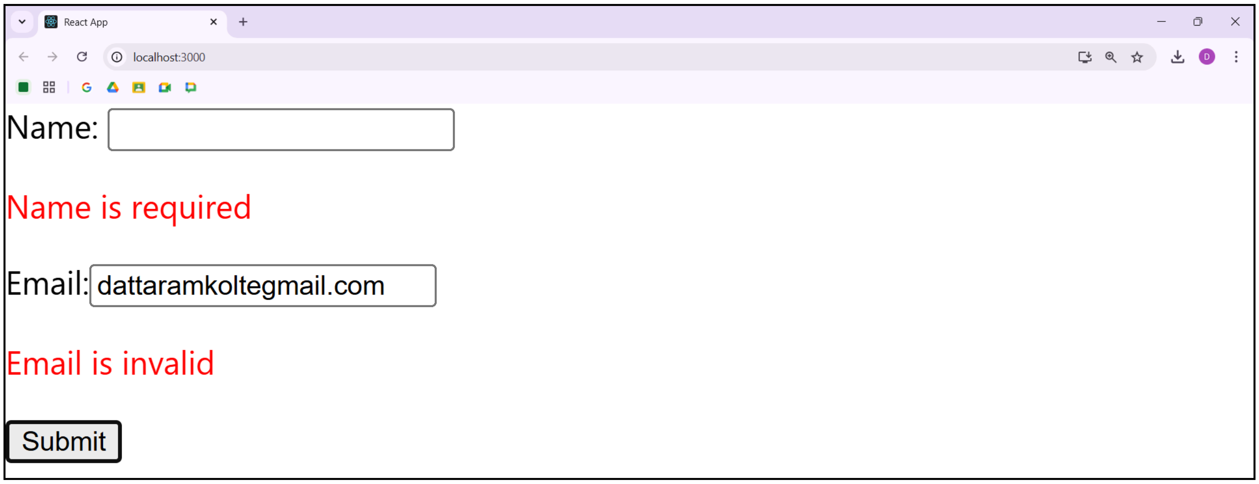
```
      {errors.email && <p style={{color:"red"}}>{errors.email} </p> }
     </div>
     <button type="submit" >Submit</button>
    </form>
  );
}
export default BasicFormValidation;
```

OUTPUT:



Name: Dattaram Kolte
Email: dattaramkolte@gmail.com

localhost:3000 says
Form submitted successfully



Name:

Name is required

Email: dattaramkoltegmail.com

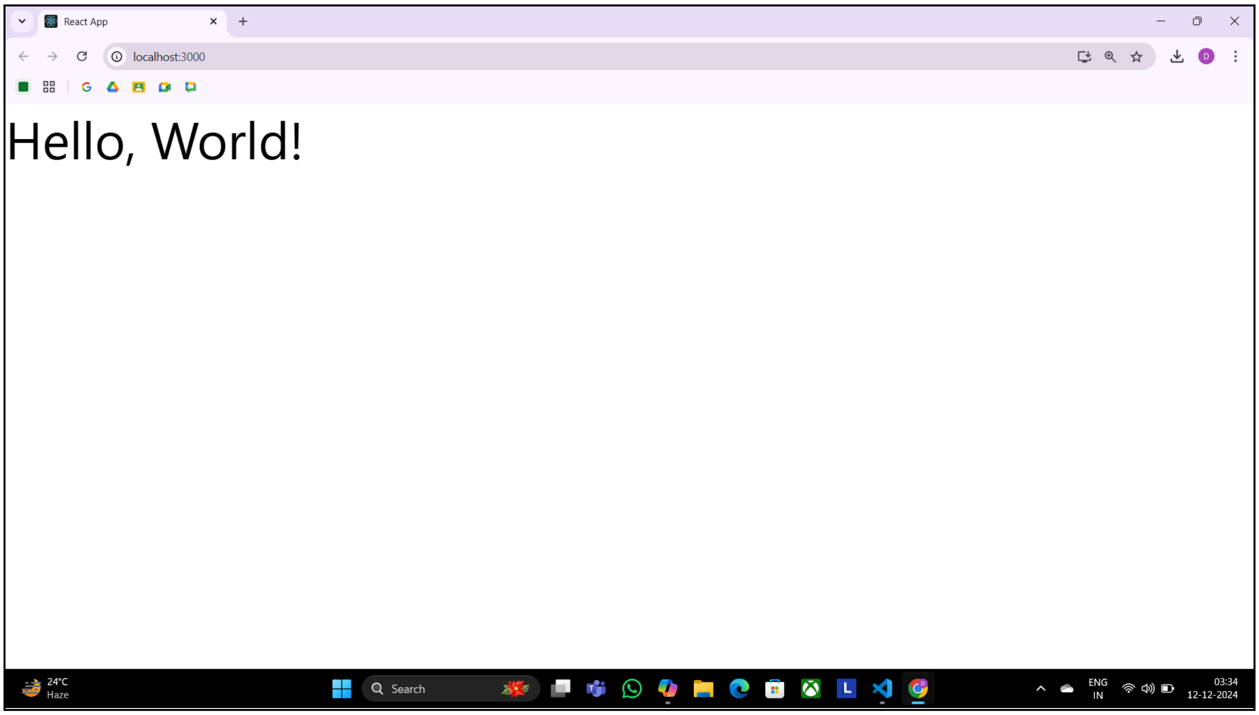
Email is invalid

37) Write a Program to implement useEffect hook

App.js

```
import React, { useEffect } from 'react';

function SimpleComponent() {
  useEffect(() => {
    console.log('Component mounted!');
  }, []); // Empty dependency array ensures this runs only once on mount

  return <div>Hello, World!</div>;
}

export default SimpleComponent;
```

OUTPUT:



Hello, World!

38) Create SPA using React Router

App.js

```
import React from "react";
import { BrowserRouter as Router, Routes, Route, Link } from "react-router-dom";
import Home from "./components/Home";
import AboutUs from "./components/AboutUs";
import Contact from "./components/ContactUs";

const App = () => {
  return (
    <Router>
      <nav>
        <ul>
          <li>
            <Link to="/">Home</Link>
          </li>
          <li>
            <Link to="/about">About</Link>
          </li>
          <li>
            <Link to="/contact">Contact</Link>
          </li>
        </ul>
      </nav>
      <Routes>
        <Route path="/" element={<Home />} />
        <Route path="/about" element={<AboutUs />} />
        <Route path="/contact" element={<Contact />} />
      </Routes>
    </Router>
  );
};
export default App;
```

Home.js

```
import React from "react";
const Home = () => {
    return (<div><h1>Home</h1></div>) }
export default Home;
```

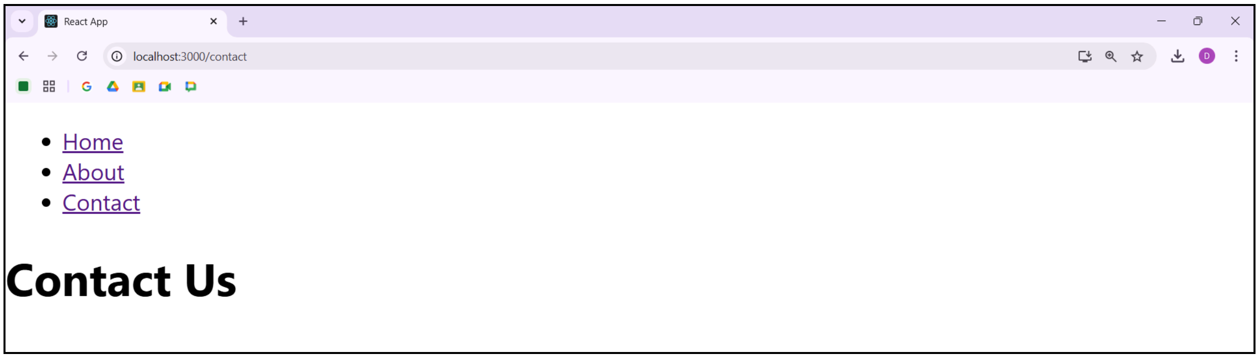
ContactUs.js

```
import React from "react";
const Contact= () => {
   return (<div><h1>Contact Us</h1></div>) }
export default Contact;
```

AboutUs.js

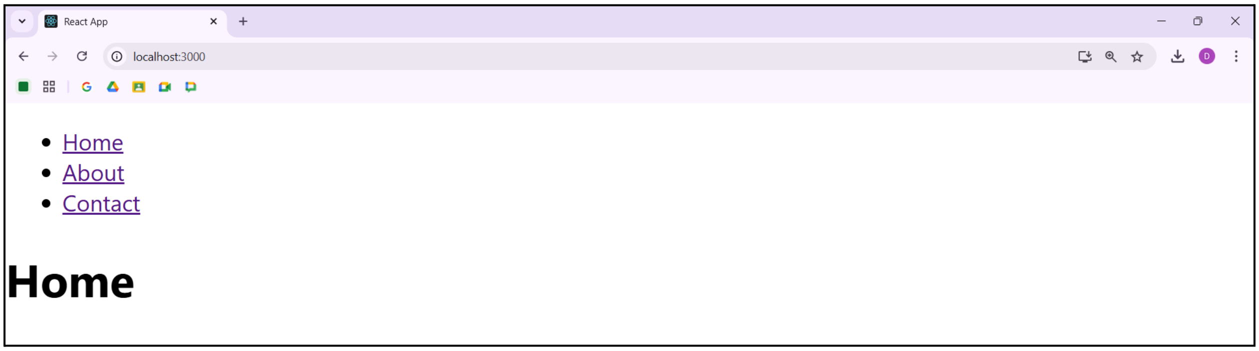
```
import React from "react";
const Contact= () => {
   return (<div><h1>AboutUs</h1></div>) }
export default AboutUs;
```

OUTPUT:



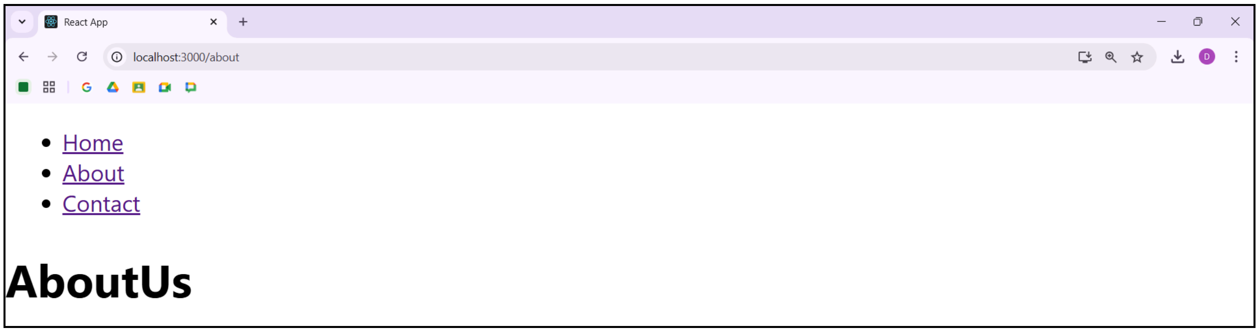
- Home
- About
- Contact

Contact Us



- Home
- About
- Contact

Home



- Home
- About
- Contact

AboutUs