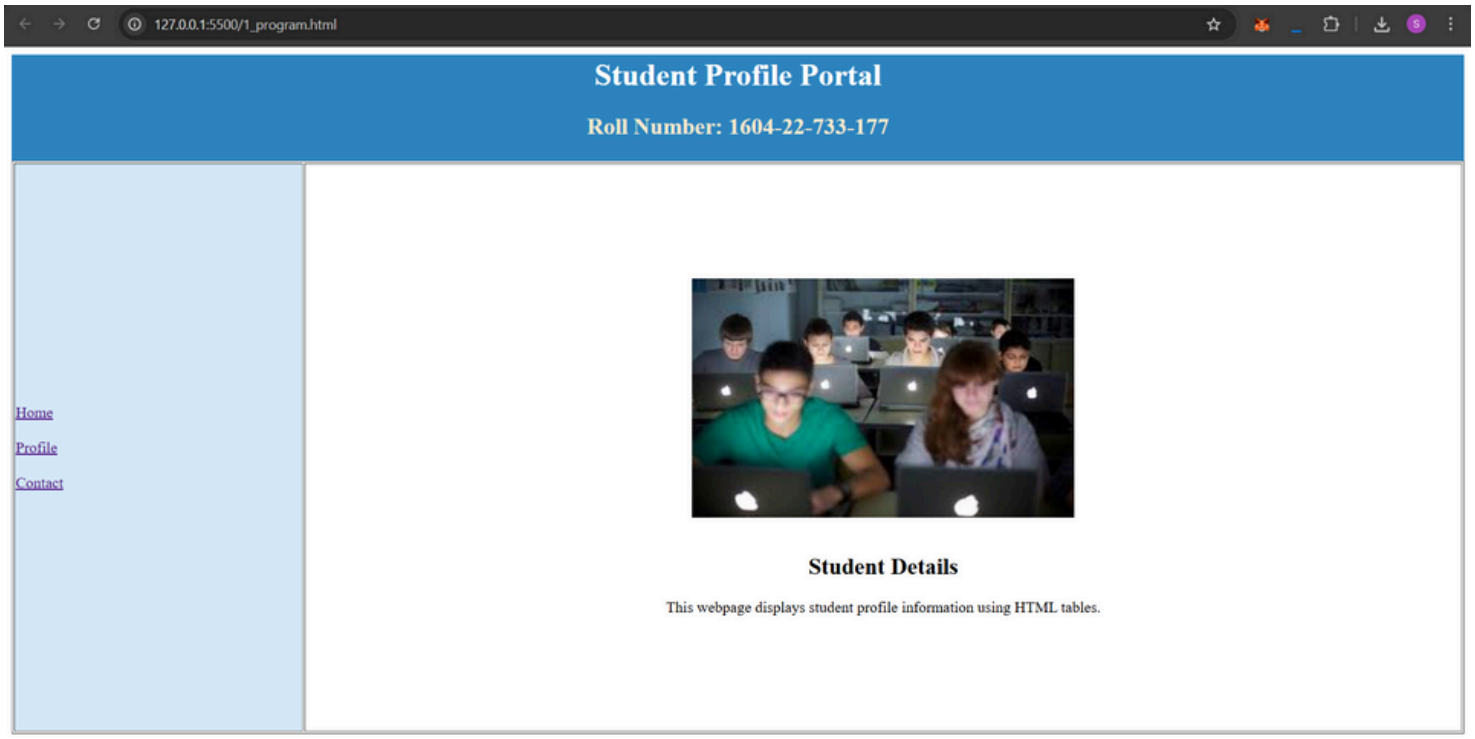
Program-1: Develop a static website using HTML Tables

```
<html>
  <head>
    <title>Student Profile</title>
  </head>
  <body>
    <tablewidth="100%" bgcolor="#2E86C1">
      <tr>
        <td>
          <center>
            <h1style="color: white">Student Profile Portal</h1>
            <h2style="color: #fdebd0">Roll Number: 1604-22-733-177</h2>
          </center>
        </td>
      </tr>
    </table>

    <tablewidth="100%" height="600" border="1">

      <tr>
        <tdwidth="20%" bgcolor="#D6EAF8">
          <ahref="#">Home</a><br /><br />
          <ahref="#">Profile</a><br /><br />
          <ahref="#">Contact</a>
        </td>

        <tdwidth="80%">
          <center>
            <img
              src="https://www.nasca.edu.in/learning-centre/wp-content/uploads/2019/10/students-
future-1024x683.jpg"
width="400"
height="250"
            /><br/><br />
            <h2>Student Details</h2>
            <p>
              Thiswebpage displays student profile information using HTML
              tables.
            </p>
          </center>
        </td>
      </tr>
    </table>
  </body>
</html>
```

Output:


127.0.0.1:5500/1_program.html
Student Profile Portal
Roll Number: 1604-22-733-177
Home
Profile
Contact
Student Details
This webpage displays student profile information using HTML tables.

Program-2: Develop a static website using DIV and CSS

```
<html>
<head>
<title>Department Overview</title>
<style>

/* Basic reset */
* {
box-sizing: border-box;
margin: 0;
padding: 0;
}

body {
font-family: Arial, sans-serif;
background-color: #ffffff;
}

/* Header styling */
.header {
background-color: #2E86C1;
color: white;
text-align: center;
padding: 15px;
}

/* Page layout */
.main {
display: flex;
width: 100%;
height: auto;
}

/* Left navigation */
.left {
width: 20%;
background-color: #D6EAF8;
padding: 15px;
}

.left a {
display: block;
margin-bottom: 12px;
text-decoration: none;
color: #1A5276;
font-weight: bold;
}

/* Right content area */
.right {
width: 80%;
padding: 15px;
}

/* Images row */
.images {
display: flex;
justify-content: space-between;
margin-top: 10px;
margin-bottom: 10px;
}
```

```
.images img {
width: 32%;
height: auto;
border: 2px solid #ccc;
border-radius: 6px;
}

.content-text {
font-size: 16px;
color: #34495E;
line-height: 1.4;
margin-top: 10px;
}

</style>
</head>
<body>
<div class="header">
<h1>MJCET</h1>
<h2>Department of Computer Science & Engineering</h2>
<p>Roll Number: 1604-22-733-177</p>
</div>

<div class="main">

<div class="left">
<a href="#">Vision</a>
<a href="#">Mission</a>
<a href="#">Faculty</a>
<a href="#">Lab Facilities</a>
<a href="#">Contact</a>
</div>

<div class="right">
<h2>Welcome to the CSE Department</h2>

<div class="images">
<img src="1.png" alt="Students in Computer Lab">
<img src="2.png" alt="Computer Lab Setting">
<img src="3.png" alt="Students Group Discussion">
</div>

<div class="content-text">
<p>
The Computer Science and Engineering (CSE) department at MJCET is dedicated to offering quality education that combines theoretical fundamentals with practical experience.
</p>
<p>
Our curriculum is designed to prepare students for careers in software development, data science, cybersecurity, AI, and research by providing hands-on lab sessions, collaborative projects, and industry exposure.
</p>
</div>
</div>

</div>

</body>
</html>
```

Output:

MJCET

Department of Computer Science & Engineering

Roll Number: 1604-22-733-177

- Vision
- Mission
- Faculty
- Lab Facilities
- Contact

Welcome to the CSE Department



The Computer Science and Engineering (CSE) department at MJCET is dedicated to offering quality education that combines theoretical fundamentals with practical experience.

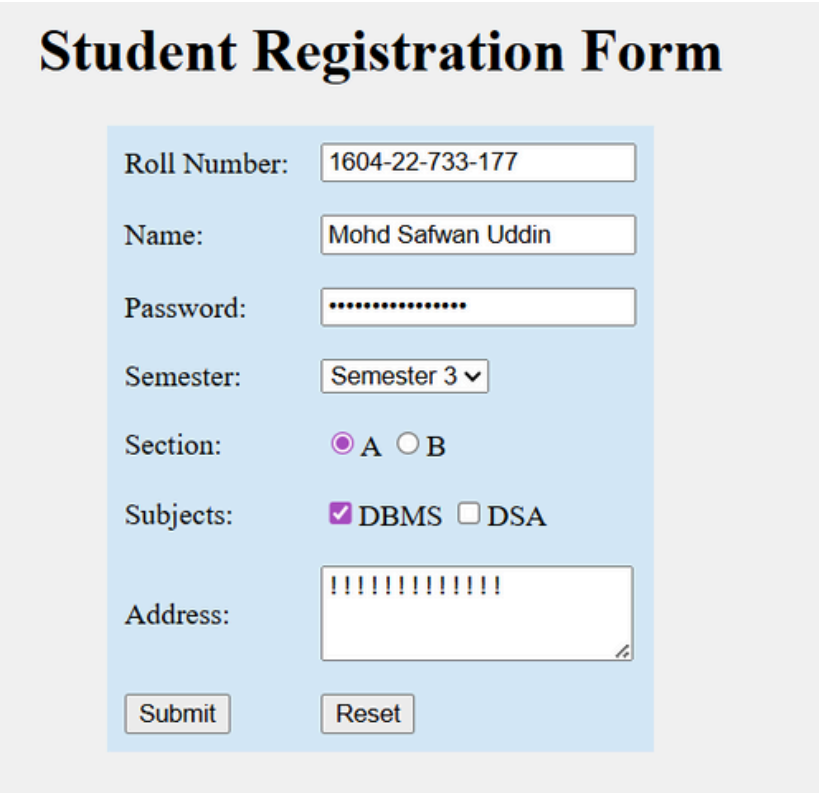
Our curriculum is designed to prepare students for careers in software development, data science, cybersecurity, AI, and research by providing hands-on lab sessions, collaborative projects, and industry exposure.

Program-3: Develop a registration page using HTML forms

```
<html>
<head>
<title>Student Registration</title>
</head>

<body bgcolor="#F2F3F4">

<h1 align="center">Student Registration Form</h1>

<form>
<table align="center" cellpadding="8" bgcolor="#D6EAF8">

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

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

<tr>
<td>Password:</td>
<td><input type="password"></td>
</tr>

<tr>  <td>Semester:</td>  <td>
<select>       <option>Semester
1</option>   <option>Semester
2</option>   <option>Semester
3</option>     </select>     </td>
</tr>




<tr>
<td>Section:</td>
<td>
<input type="radio" name="sec">A
```

```
<input type="radio" name="sec">B
</td>
</tr>

<tr>
<td>Subjects:</td>
<td>
<input type="checkbox">DBMS
<input type="checkbox">DSA
</td>
</tr>

<tr>
<td>Address:</td>
<td><textarea rows="3" cols="20"></textarea></td>
</tr>

<tr>
<td><input type="submit"></td>
<td><input type="reset"></td>
</tr>

</table>
</form>

</body>
</html>
```

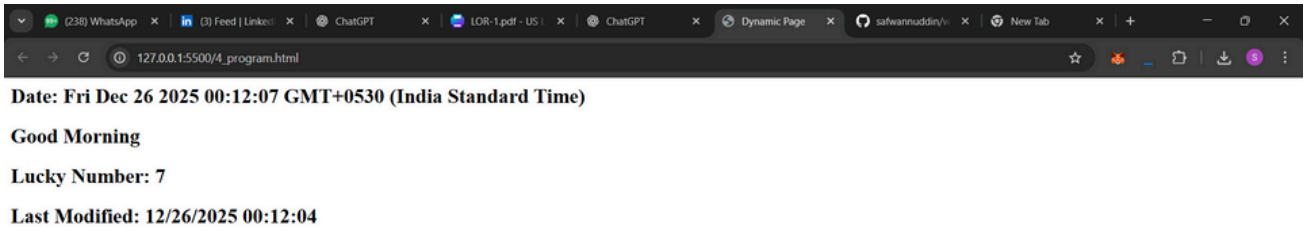
Output:



Program-4: Develop a dynamic web page using JavaScript

```
<html>
  <head>
    <title>Dynamic Page</title>
  </head>

  <body>
    <h2id="date"></h2>
    <h2id="greet"></h2>
    <h2id="lucky"></h2>
    <h2id="last"></h2>

    <script>
      vard=new Date();
      document.getElementById("date").innerHTML = "Date: " + d;

      if(d.getHours() < 12)
        document.getElementById("greet").innerHTML = "Good Morning";
      elsedocument.getElementById("greet").innerHTML = "Good Afternoon";

      varn=Math.floor(Math.random() * 10);
      document.getElementById("lucky").innerHTML = "Lucky Number: " + n;

      document.getElementById("last").innerHTML =
        "LastModified: " + document.lastModified;
    </script>
  </body>
</html>
```

Output:

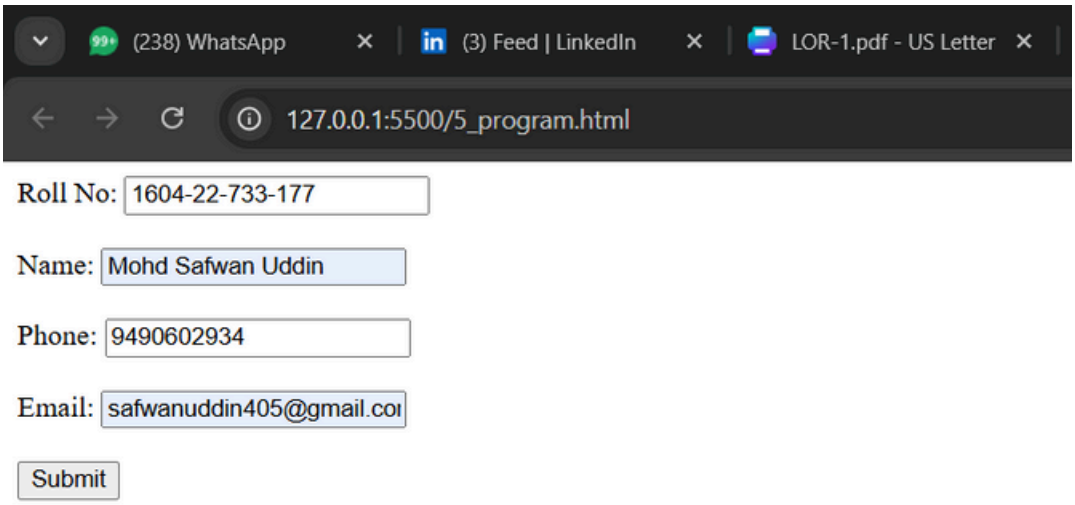


Program-5 JavaScript Program to Validate Registration Form

```
<html>
 <head>
  <title>Form Validation</title>

  <script>
   function validate() {
    var roll = document.getElementById("roll").value;
    if (roll == "") {
     alert("Roll Number cannot be empty");
     return false;
    }
    if (roll.search(/[0-9]{4}-[0-9]{2}-[0-9]{3}-[0-9]{3}$/) != 0) {
     alert("Invalid Roll Number");
     return false;
    }

    var name = document.getElementById("name").value;
    if (name == "" || name.search(/[A-Z a-z]*$/) != 0) {
     alert("Invalid Name");
     return false;
    }

    var ph = document.getElementById("phone").value;
    if (ph.search(/[0-9]{10}$/) != 0) {
    alert("Invalid Phone Number");
    return false;
    }

    var email = document.getElementById("email").value;
    if (email.search(/[A-Z a-z 0-9._]*@[A-Z a-z]*\.[A-Z a-z]*$/) != 0) {
     alert("Invalid Email");
     return false;
    }

    return true;
   }
  </script>
 </head>

 <body>
  <form onsubmit="return validate();">
   Roll No: <input type="text" id="roll" /><br /><br />
   Name: <input type="text" id="name" /><br /><br />
```

```
    Phone: <input type="text" id="phone" /><br /><br />
    Email: <input type="text" id="email" /><br /><br />
    <input type="submit" />
  </form>
 </body>
</html>
```

Output:

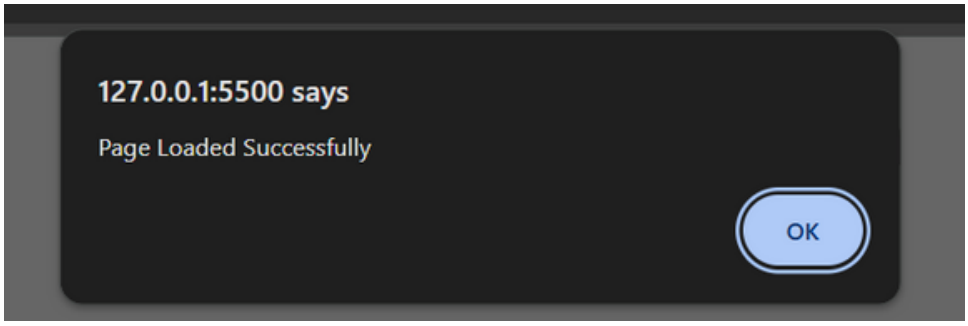


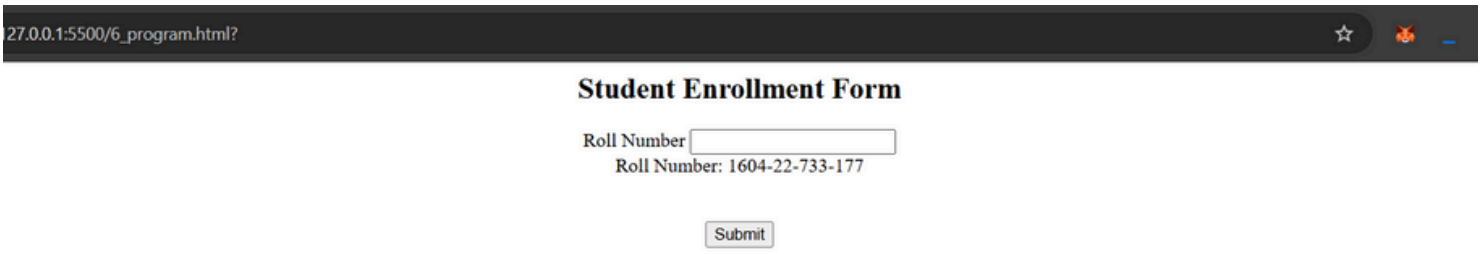
Program-6:Create a dynamic web page using JavaScript event handling and DOM manipulation.

```
<html>
  <head>
    <title>EventHandling</title>

    <script>
      functionshowMessage() {
        alert("PageLoaded Successfully");
      }

      functionvalidate() {
        varrn=document.getElementById("roll");
        if(rn.value== "") {
          document.getElementById("lbl").style.color = "red";
        } else {
          document.getElementById("lbl").style.color = "black";
        }
      }

      functionmouseOver() {
        document.getElementById("msg").innerHTML =
          "RollNumber: 1604-22-733-177";
      }

      functionmouseOut() {
        document.getElementById("msg").innerHTML = "";
      }
    </script>
  </head>

  <bodyonload="showMessage()">
    <center>
      <h2>StudentEnrollment Form</h2>

      <formonsubmit="validate()">
        <labelid="lbl">Roll Number</label>
        <input
          ty pe="tex t"
          id="roll"
          onmouseover="mouseOver()"
          onmouseout="mouseOut()"
        />
        <divid="msg"></div>
```

```
        <br /><br />

        <input type="submit" />
      </form>
    </center>
  </body>
</html>
```

Output:



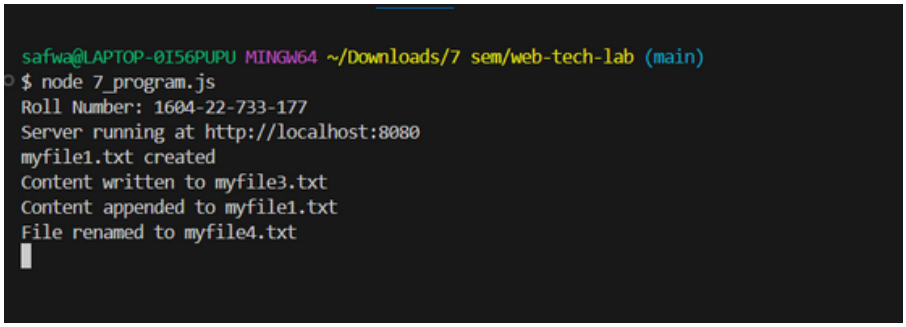


Program-7: Demonstrate working of built-in node.js modules and file system

```
import http from "http";
importosfrom "os";
import fs from "fs";
import{promisify}from"util";

constopen=promisify(fs.open);
constwriteFile=promisify(fs.writeFile);
constappendFile=promisify(fs.appendFile);
constrename=promisify(fs.rename);
constreadFile=promisify(fs.readFile);

  constserver=http.createServer(async (req, res) => {
    res.writeHead(200,{"Content-Type": "text/html" });

  //Displaysysteminformation
  res.write("WelcometoWeb Technologies Lab<br>");
  res.write("CurrentDate:"+ Date() + "<br>");
  res.write("OperatingPlatform: " + os.platform() + "<br>");
  res.write("SystemArchitecture: " + os.arch() + "<br>");
  res.write("HostName:"+os.hostname() + "<br>");
  res.write("OperatingSystem Type: " + os.type() + "<br>");

  try{
    consttext=awaitreadFile("content.txt", "utf8");
    res.write("<br><b>FileContent:</b><br>" + text);
  } catch(err) {
    res.write("<br><b>FileContent:</b><br>Could not read content.txt");
  }

  res.end();
});


server.listen(8080,()=>{
  console.log("Serverrunning at http://localhost:8080");
});

(async () => {
  try{
    awaitopen("myfile1.txt","w");
    console.log("myfile1.txtcreated");
  } catch(err) {
    console.error("Errorcreating myfile1.txt:", err);
  }
```

```
  try {
    await writeFile("myfile3.txt", "Hello Lab");
    console.log("Content written to myfile3.txt");
  }catch (err) {
    console.error("Error writing to myfile3.txt:", err);
  }

  try {
    await appendFile("myfile1.txt", " Hello Web");
    console.log("Content appended to myfile1.txt");
  }catch (err) {
    console.error("Error appending to myfile1.txt:", err);
  }

  try {
    await rename("myfile3.txt", "myfile4.txt");
    console.log("File renamed to myfile4.txt");
  }catch (err) {
    console.error("Error renaming myfile3.txt:", err);
  }
})();

console.log("Roll Number: 1604-22-733-177");
```

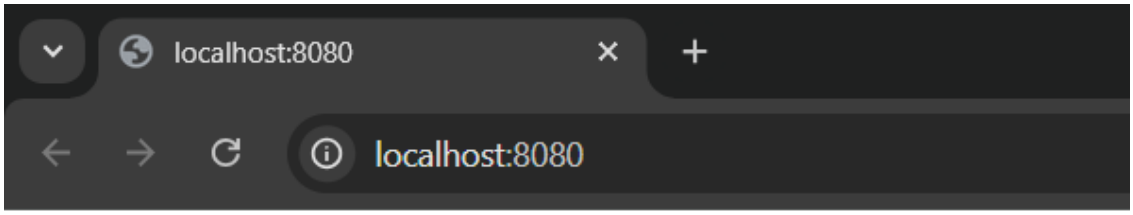
Output:



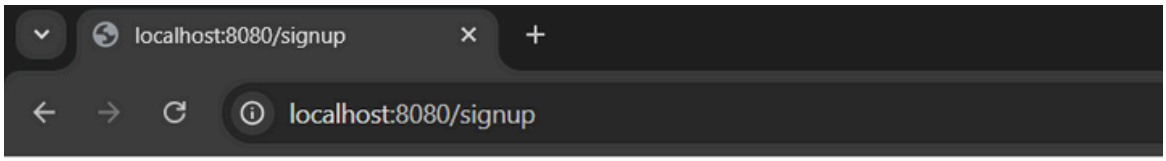
Program 8: Demonstrate routes and parameter handling in Express.js index.js

```
var express = require("express");
var app = express();

app.get("/", function(req, res) {
res.send("Welcome to Home Page created using Express.js by Safwan");
});

app.get("/signup", function(req, res) {
res.send("Signup Page Welcome to Home Page created using Express.js by Safwan");
});

app.get("/login", function(req, res) {
res.send("Login Page");
});

app.get("/display/:name/:pwd", function(req, res) {
res.send("Username: " + req.params.name +
"<br>Password: " + req.params.pwd);
});

app.listen(8080, function() {
console.log("Server Running");
});
```

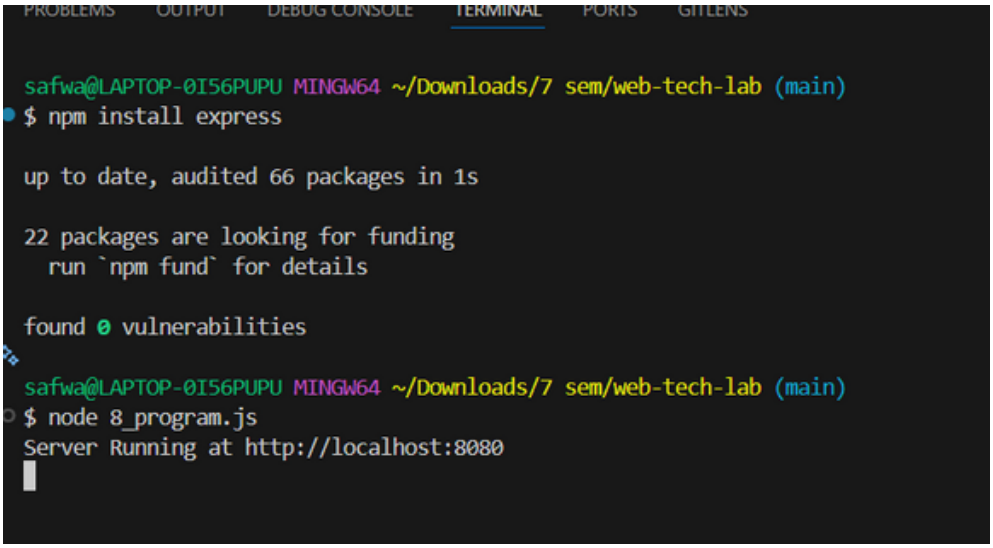
Output:



Welcome to Home Page created using Express.js by Safwan



Signup Page created using Express.js by Safwan



Program-9: Write a program to implement MVC architecture

Index.js

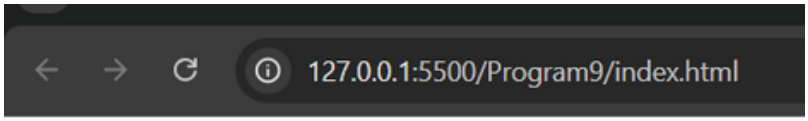
```
var express=require("express");
var app = express();

app.use(function(req, res, next) {
  res.header("Access-Control-Allow-Origin", "*");
  res.header("Access-Control-Allow-Methods",
"GET,PUT,POST,DELETE,OPTIONS");
  res.header("Access-Control-Allow-Headers", "Origin, X-
Requested-With, Content-Type, Accept");
  next();
});

app.get("/", function(req, res) {
res.send("Welcome to Home Page");
});
app.get("/marks", function(req, res) {
  const marksData = [
    { id: 1, subject: "Math", imarks: 18, emarks: 67 },
    { id: 2, subject: "Physics", imarks: 17, emarks: 70 },
    { id: 3, subject: "Chemistry", imarks: 19, emarks: 65 },
    { id: 4, subject: "English", imarks: 20, emarks: 80 }
  ];
  res.json(marksData);
});

app.listen(8080, function() {
console.log("Server Running");
});
```

index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Marks Memo</title>
    <script>
        document.addEventListener("DOMContentLoaded", function() {
            fetch('http://localhost:8080/marks')
                .then(response => response.json())
                .then(data => {
                    console.log(data )
                    const tableBody = document.getElementById('marks-body');
                    data.forEach(d => {
```

```
                const row = document.createElement('tr');
                row.innerHTML =
`<td>${d.id}</td><td>${d.subject}</td><td>${d.imarks}</td><td>${d.emarks}</td>`;
                tableBody.appendChild(row);
            });
        })
        .catch(err => {
            document.getElementById('error').textContent = 'Failed to load marks data.';
        });
    });
  </script>
</head>
<body>

<h1>Student Marks Memo</h1>
<h4>Roll Number: 1604-22-733-177</h4>
<div id="error" style="color:red;"></div>
<table border="2">
  <tr>
    <td>ID</td>
    <td>Subject</td>
    <td>Internal Marks</td>
    <td>External Marks</td>
  </tr>
 <tbodyid="marks-body">
  </tbody>
</table>

</body>
</html>
```

Output:



Student Marks Memo

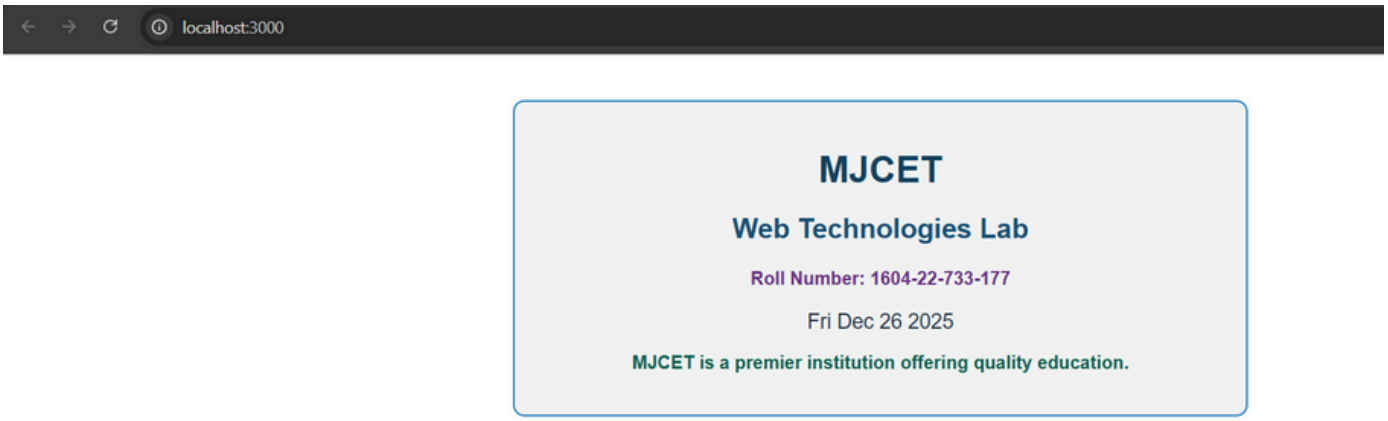
Roll Number: 1604-22-733-177

ID	Subject	Internal Marks	External Marks
1	Math	18	67
2	Physics	17	70
3	Chemistry	19	65
4	English	20	80

Program-10: Demonstrate rendering HTML and JSX using React.js

```
function WebTech() {
var title = "MJCET";
var d = new Date();

return (
<div>
<h1>{title}</h1>
<h2>Web Technologies Laboratory</h2>
<h4>Roll Number: 1604-22-733-177 </h4>
<p>{d.toDateString()}</p>
<GetVision />
</div>
);
}

function GetVision() {
return (
<p>
MJCET is a premier institution offering quality education.
</p>
);
}

export default WebTech;
```

Output:

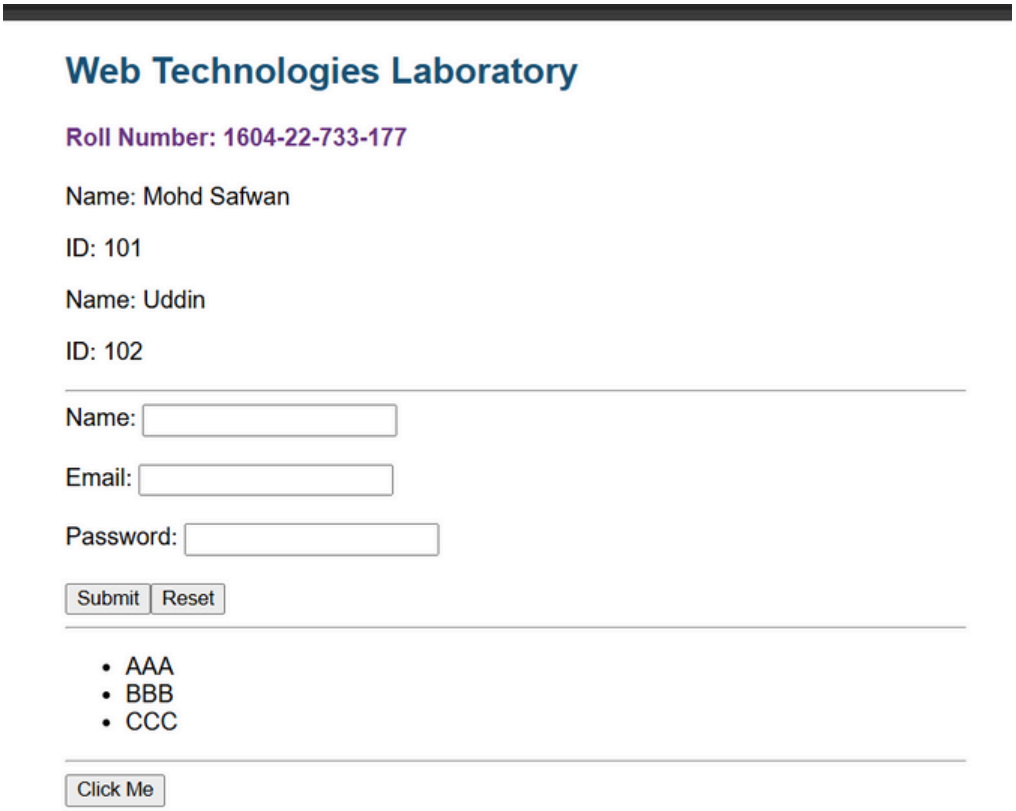


Program-11: Demonstrate use of props, events, lists, forms using

```
function WebTech() {
  return (
    <div>
      <h2>Web Technologies Laboratory</h2>
      <h4>Roll Number: 1604-22-733-177</h4>

      <User name="Mohd Safwan" uid={101} />
      <User name="Uddin" uid={102} />

      <MyForm />
      <StudentList />
      <EventDemo />
    </div>
  );
}

function User(props) {
  return (
    <div>
      <p>Name: {props.name}</p>
      <p>ID: {props.uid}</p>
    </div>
  );
}

function MyForm() {
  return (
    <form>
      Name: <input type="text" /><br /><br />
      Email: <input type="text" /><br /><br />
      Password: <input type="password" /><br /><br />
      <input type="submit" />
      <input type="reset" />
    </form>
  );
}

function StudentList() {
  var students = ["AAA", "BBB", "CCC"];
  return (
    <ul>
      {students.map((s, i) => <li key={i}>{s}</li>)}
    </ul>
  );
}
```

```
function EventDemo() {
  function show() {
    alert("Button Clicked");
  }
  return <button onClick={show}>Click Me</button>;
}

export default WebTech;
```

Output:



Program-12: Create a Single Page Application (SPA) using REST Service.
WebTech.js

```
import { Component } from"react";

class WebTech extends Component {
  state = { students: [], imarks: [], emarks: [] };

  componentDidMount() {
    fetch("http://localhost:8080/students")
      .then(res => res.json())
      .then(data => this.setState({ students: data }));
  }

  loadIMarks = () => {
    fetch("http://localhost:8080/imarks")
      .then(res => res.json())
      .then(data => this.setState({ imarks: data }));
  };

  loadEMarks = () => {
    fetch("http://localhost:8080/emarks")
      .then(res => res.json())
      .then(data => this.setState({ emarks: data }));
  };

  render() {
    return (
      <div>
        <h2>Students Data</h2>
        <button onClick={this.loadIMarks}>Internal Marks</button>
        <button onClick={this.loadEMarks}>External Marks</button>

        <table border="1">
            <tr>
                <th>
                    Roll No.
                </th>
            </tr>
            <tr>
                <td>
                    1604-22-733-177
                </td>
            </tr>
          <tr>
            <th>Name</th>
```

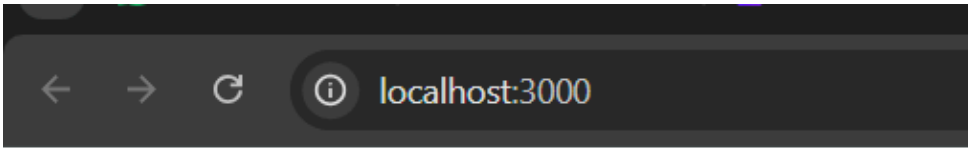
```
            <th>IMarks</th>
            <th>EMarks</th>
          </tr>
          <tr>
            <td>{this.state.students.map(s => <div>{s.name}</div>)}</td>
            <td>{this.state.imarks.map(i => <div>{i.marks}</div>)}</td>
            <td>{this.state.emarks.map(e => <div>{e.marks}</div>)}</td>
          </tr>
        </table>
      </ div>
    );
  }
}

exportdefaultWebTech;
```

Index.js

```
 varexpress=require("express");
varcors=require("cors");

varapp=express();
app.use(cors());

var students = [
  {id:101,name:"Safwan" },
  {id:102,name:"Ahad" },
  {id:103,name:"haseeb" },
  {id:104,name:"Ansar" },
  {id:105,name:"omer" }
];

var imarks = [
  {id:101,marks:28 },
  {id:102,marks:30 },
  {id:103,marks:27 },
  {id:104,marks:29 },
  {id:105,marks:26 }
];

var emarks = [
  {id:101,marks:70 },
  {id:102,marks:68 },
  {id:103,marks:66 },
  {id:104,marks:72 },
  {id:105,marks:65 }
];
```

```
app.get("/students", function (req, res) {
  res.json(students);
});

app.get("/imarks", function (req, res) {
  res.json(imarks);
});

app.get("/emarks", function (req, res) {
  res.json(emarks);
});


app.listen(8080, function () {
  console.log("REST Service running on port 8080");
});

<td>
{students.map(st=><div>{st.name}</div>)}
</td>
<td>
{imarks.map(im=><div>{im.marks}</div>)}
</td>
<td>
{emarks.map(em=><div>{em.marks}</div>)}
</td>
</tr>
</table>
</div>
);
}
}
export default App;
```

Output:



Students Data

Internal Marks | External Marks

Roll No.		
1604-22-733-177		
Name	**IMarks**	**EMarks**
Safwan	28	70
Ahad	30	68
Haseeb	27	66
Ansar	29	72
Omer	26	65

Program-13: Write a Node.js program to create DB and Collections in MongoDB

```
const { MongoClient } = require("mongodb");

const url = "mongodb://localhost:27017";
const dbName = "safwan";

MongoClient.connect(url)

 .then(client => {

  console.log("1604-22-733-177 Database connected.");

const db = client.db(dbName);

  return db.createCollection("students")

   .then(() => {

    console.log("Collection 'students' created.");

    client.close(); // close only after success

   })

   catch(err => {

    console.log("Collection already exists or error:", err.message);

    client.close();

   });

})

 .catch(err => {

  console.error("Failed to connect to MongoDB:", err);

 });
```

Output:

Program-14: Write a react.js program to retrieve data from MongoDB

Index.js

```
import express from "express";
import cors from "cors";
import { MongoClient } from "mongodb";

const app = express();
app.use(cors());
app.use(express.json());

const url = "mongodb://localhost:27017/";
const dbName = "mymongodb";
let db;

async function connectDB() {
  try {
    const client = await MongoClient.connect(url);
    db = client.db(dbName);
    console.log("Connected to MongoDB");

    // Ensure collection exists and insert dummy data only if empty
    const collection = db.collection("student");
    const count = await collection.countDocuments();
    if (count === 0) {
      const dummyData = [
        { id: 101, name: "Safwan", marks: 92 },
        { id: 102, name: "Ahad", marks: 78 },
        { id: 103, name: "Nabeel", marks: 82 },
        { id: 104, name: "Kazim", marks: 90 },
      ];
      await collection.insertMany(dummyData);
      console.log("Dummy data inserted successfully");
    }
  } catch (err) {
    console.error("Failed to connect to MongoDB:", err);
  }
}

connectDB();

app.get("/retrieve", async (req, res) => {
  try {
    const result = await db.collection("student").find({}).toArray();
    res.json(result);
  } catch (err) {
```

```
    res.status(500).json({ error: "Failed to retrieve data" });
  }
});

app.listen(8080, () => {

  console.log("Server running on port 8080 from 1604-22-733-153");
});
```

WebTech.js

```
import { Component } from "react";
class WebTech extends Component {
  state = { students: [] };

  componentDidMount() {
    fetch("http://localhost:8080/retrieve")
      .then(res => res.json())
      .then(data => this.setState({ students: data }));
  }

  render() {
    return (
      <div>
        <h2>Student Data from MongoDB</h2>

        <table border="1">
          <tr>
            <th>ID</th>
            <th>Name</th>
            <th>Marks</th>
          </tr>

          {this.state.students.map((s, i) => (
            <tr key={i}>
              <td>{s.id}</td>
              <td>{s.name}</td>
              <td>{s.marks}</td>
            </tr>
          ))}
        </table>
      </div>
    );
  }
}
export default WebTech;
```

Output:

Student Data from MongoDB - 1604-22-733-177

ID	Name	Marks
101	Mohd Safwan Uddin	92
102	Ahad	78
103	Nabeel	82
104	kazim	90