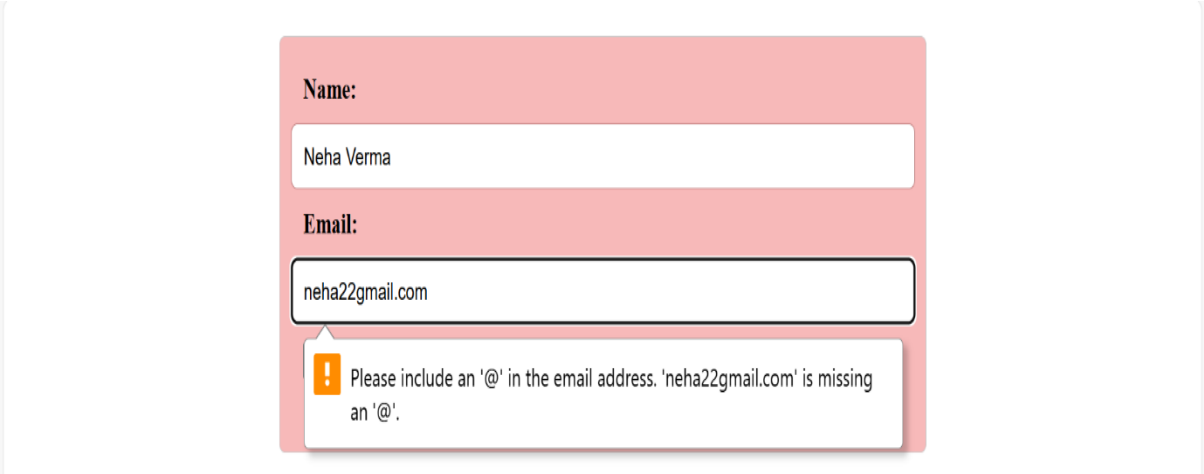
Experiment-4

Object: - Form validation using java script

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Login Form Validation</title>
  <style>
    .error {
      color: red;
      font-size: 0.9em;
    }
    input {
      display: block;
      margin-bottom: 10px;
    }
  </style>
</head>
<body>
  <h2>Login Form</h2>
  <form id="loginForm">
    <label for="email">Email:</label>
    <input type="text" id="email" name="email">
    <span id="emailError" class="error"></span>
    <label for="username">Username:</label>
    <input type="text" id="username" name="username">
    <span id="usernameError" class="error"></span>
    <label for="password">Password:</label>
    <input type="password" id="password" name="password">
    <span id="passwordError" class="error"></span>
    <button type="button" onclick="validateForm()">Login</button>
  </form>
  <script>
    function validateForm() {
      const email = document.getElementById('email').value.trim();
      const username = document.getElementById('username').value.trim();
      const password = document.getElementById('password').value.trim();
```

```
        const emailError = document.getElementById('emailError');
        const usernameError = document.getElementById('usernameError');
        const passwordError = document.getElementById('passwordError');

        emailError.textContent = '';
        usernameError.textContent = '';
        passwordError.textContent = '';

        let isValid = true;

        if (!email) {
            emailError.textContent = 'Email is required.';
            isValid = false;
        } else if (!/^[^\s@]+@[^\s@]+\.[^\s@]+$/.test(email)) {
            emailError.textContent = 'Enter a valid email address.';
            isValid = false;
        }

        if (!username) {
            usernameError.textContent = 'Username is required.';
            isValid = false;
        }

        if (!password) {
            passwordError.textContent = 'Password is required.';
            isValid = false;
        }

        if (isValid) {
            alert('Login successful!');
        }
    }
  </script>
</body>
</html>
```

Output: -

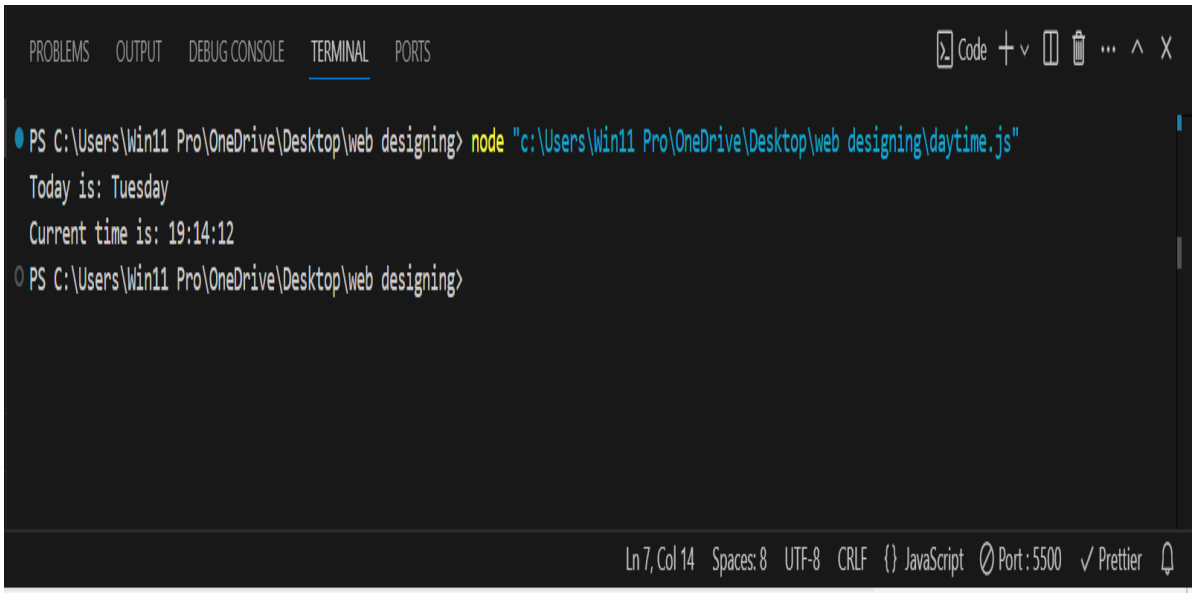


Experiment-5

Object: - Current day and current time using java script

```
<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Current Date and Time</title>

</head>

<body>

  <h1>Current Day and Time</h1>

  <script>

    const now = new Date();

    const days = ["Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"];

    const day = days[now.getDay()];

    const hours = now.getHours();

    const minutes = now.getMinutes();

    const seconds = now.getSeconds();

    const dayTime = `${hours.toString().padStart(2, '0')}:${minutes.toString().padStart(2, '0')}:${seconds.toString().padStart(2, '0')}`;

    console.log(`Today is: ${day}`);

    console.log(`Current time is: ${dayTime}`);

  </script>

</body>

</html>
```

Output: -

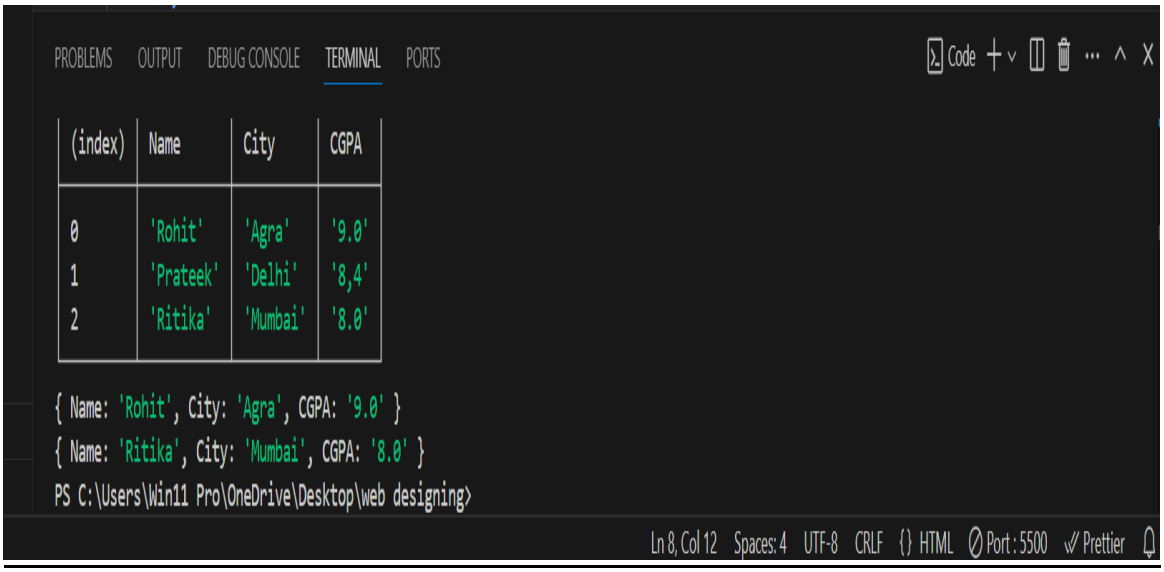


Experiment-6

Object: - Student table with attributes name, CGPA, city using js

```
const Student=[{
   Name:"Rohit",
   City:"Agra",
   CGPA:"9.0"
},
{
   Name:"Prateek",
   City:"Delhi",
   CGPA:"8,4"
},
{
   Name:"Ritika",
   City:"Mumbai",
   CGPA:"8.0"
}];
console.log(Student);
console.table(Student);
for (let i=0;i<Student.length;i++){
   if(Student[i].City=="Mumbai"){
      console.log(Student[i]);
   }
   else if(Student[i].CGPA>8.4){
      console.log(Student[i]);
   }
```

Output: -



Experiment-7

Object: - Change the content of html using java script

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      background-color: pink;
    }
    .content{
      background-color: rgb(153, 214, 240);
      padding: 20px;
      display: flex;
      justify-content: center;
      text-align: center;  }
  </style>
</head>
<body>
  <div class="content">
    <h1 id="title">Hello World</h1><br><br>
    <div class="container">
    <p id="desc">Welcome to Javascript</p>
    <button id="change">Neha</button>
    <button id="change1">Priya</button>
  </div>
  </div>
 <script>
    document.getElementById('change').addEventListener('click', function(){
      document.getElementById('title').textContent = 'Hello Neha';
      document.getElementById('desc').textContent = 'welcome to javascript';
    });
    document.getElementById('change1').addEventListener('click', function(){
      document.getElementById('title').textContent = 'Hello Priya';
      document.getElementById('desc').textContent = 'welcome to javascript';
    });
  </script>
</body>
</html>
```

Output: -

Experiment-8

Object: - Change the attribute of html using java script

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport"
content="width=device-width, initial-
scale=1.0">

  <title>Change Attribute Example</title>

</head>

<body>

  <img id="myImage"
src="./profile_icon.jpg" alt="Old Image"
width="200">

  <button
onclick="changeAttribute()">Change
Image</button>

  <script>

    function changeAttribute() {

      let img =
document.getElementById("myImage");

      img.setAttribute("src", "ABES.jpg");

      img.setAttribute("alt", "New
Image");

      img.setAttribute("width", "500");

    }

  </script>

</body>

</html>
```

Output: -

Experiment-9

Object: - Program to get the IP Address of local host

```
import java.net.InetAddress;

import java.net.UnknownHostException;

public class GetLocalIPAddress {

   public static void main(String[] args) {

      try {

         InetAddress localHost =
InetAddress.getLocalHost();

         System.out.println("Local
Hostname: " + localHost.getHostName());

         System.out.println("Local IP
Address: " + localHost.getHostAddress());

      } catch (UnknownHostException e) {

         System.err.println("Unable to get
the local host address.");

         e.printStackTrace();

      }}}
```

Output: -

```
Local Host Name: my-computer

Local Host IP Address: 192.168.1.2
```

Experiment-10

Object: Program to extract the protocol, port, and host from a URL in Java

```
import java.net.URL;

public class UrlDetails {

   public static void main(String[] args) {

      try {

String urlString = "https://www.example.com:8080/path?query=value";

         URL url = new URL(urlString);

         String protocol = url.getProtocol();

         String host = url.getHost();

         int port = url.getPort(); // Returns -1 if no port is specified

         System.out.println("URL: " + urlString);

         System.out.println("Protocol: " + protocol);

         System.out.println("Host: " + host);

         System.out.println("Port: " + (port == -1 ? "Default" : port));

         } catch (Exception e) {

         System.out.println("Invalid URL: " + e.getMessage());

      }

   }

}
```

Output: -

```
URL: https://www.example.com:8080/path?query=value
Protocol: https
Host: www.example.com
Port: 8080
```

Experiment-11

Object: -TCP/IP Server Socket program

```
import java.io.*;

import java.net.*;

public class TcpServer {

   public static void main(String[] args) {

      int port = 5000;

      try (ServerSocket serverSocket = new ServerSocket(port)) {
```

```
        System.out.println("Server is running and waiting for a client...");

        Socket socket = serverSocket.accept();

        System.out.println("Client connected: " + socket.getInetAddress());

        BufferedReader in = new BufferedReader(new InputStreamReader(socket.getInputStream()));

        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);

        String message;

        while ((message = in.readLine()) != null) {

            System.out.println("Client says: " + message);

            out.println("Server received: " + message);

            if (message.equalsIgnoreCase("bye")) {

System.out.println("Connection closed by client.");

                break;

            }

        }

        socket.close(); // Close connection

        System.out.println("Server stopped.");

    } catch (IOException e) {

        System.out.println("Server error: " + e.getMessage());

        e.printStackTrace();

    }

  }

}
```

Client code

```
import java.io.*;

import java.net.*;

public class TCPClient {

  public static void main(String[] args) {

    try {

        Socket socket = new Socket("localhost", 5000);

        System.out.println("Connected to the server");

        BufferedReader in = new BufferedReader(

        new InputStreamReader(socket.getInputStream()));

        PrintWriter out = new PrintWriter(socket.getOutputStream(), true);
```

```
            String message = "Hello from Client!";
            out.println(message);
            System.out.println("Sent to server: " + message);
            String serverResponse = in.readLine();
            System.out.println("Received from server: " + serverResponse);
            socket.close();
        } catch (IOException e) {
            System.out.println("Error: " + e.getMessage());
        }
    }
}
```

Server Output: -

```
Server is running and waiting for a connection...
Client connected: /127.0.0.1
Received from client: Hello from Client!
Sent to client: Hello from Server!
```

Client Output: -

```
Connected to the server
Sent to server: Hello from Client!
Received from server: Hello from Server!
```