

FINAL PRACTICAL FILE

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Paper: Internet Technologies

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Que1 Display your systems IP Address, Subnet mask using ipconfig, and find out the network address and the maximum number of systems possible on your network and range of IP addresses available to these systems.

Ans

>>> ipconfig /all

```
IPv4 Address. . . . . : 192.168.1.7(Preferred)
Subnet Mask . . . . . : 255.255.255.0
```

network address = ip address & subnet mask

= 192.168.1.7 & 255.255.255.0

= 192.168.1.0

Maximum no. of systems on networks = $2^{(32 - \text{bits fixed})}$

= $2^{(32 - 24)} - 2$

= $2^8 - 2 = 254$ systems

Ip range : 192.168.1.1 – 192.168.1.255

192.168.1.0 : loopback address

192.168.1.255 : broadcast address

Que2 With help of ping, check if you are connected to other systems of your network and find the route to connect to that system using tracert. List all the processes which are using ports for TCP protocol.

Ans

```
C:\Users\DELL>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=4ms TTL=64
Reply from 192.168.1.1: bytes=32 time=16ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64
Reply from 192.168.1.1: bytes=32 time=1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 16ms, Average = 5ms
```

```
C:\Users\DELL>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.7: Destination host unreachable.
Reply from 192.168.1.7: Destination host unreachable.
Reply from 192.168.1.7: Destination host unreachable.
Reply from 192.168.1.7: Destination host unreachable.

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
C:\Users\DELL>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:
Reply from 192.168.1.7: Destination host unreachable.
Reply from 192.168.1.7: Destination host unreachable.
Reply from 192.168.1.7: Destination host unreachable.
Reply from 192.168.1.7: Destination host unreachable.

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
// tracert 192.168.1.1
```

```
Tracing route to 192.168.1.1 over a maximum of 30 hops

  1      4 ms      1 ms      8 ms  192.168.1.1

Trace complete.
```

Que3 Create an HTML page that shows information about you, your course, hobbies, address, and your plans. Use CSS for styling of HTML page so that looks nice.

Ans

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="">
    <style>
      *{
        padding: 0;
        margin: 0;
        box-sizing: border-box;
        font-family: 'Courier New', Courier, monospace;
        color: #ddd;
        /* outline: 2px solid limegreen; */
      }
      body{
        background-color: #23272e;
        display: grid;
        height: 100vh;
        place-items: center;
      }
      main{
        width: 55vmin;
        /* aspect-ratio: 3/4; */
        display: flex;
        flex-direction: column;
        justify-content: space-between;
        align-items: center;
        background-color: #ffffff33;
        padding: 2% 0;
      }
      h1{
        color: white;
```

```

        font-size: 40px;
    }
    .bio{
        padding: 0 5%;
        width: 100%;
        background-color: #ffffff44;
    }
    ul{
        height: 70%;
        display: flex;
        flex-wrap: wrap;
        justify-content: space-around;
        gap: .5rem;
        padding: .5rem;
    }
    li{
        width: calc(50% - .5rem);
        display: flex;
        flex-direction: column;
        align-items: center;
        text-align: center;
        gap: 1rem;
    }
    .title{
        font-weight: bold;
        color: white;
        font-size: 20px;
        width: 100%;
        background-color: #acacac;
        color: black;
    }
    li:last-of-type{
        width: 98%;
    }
}
</style>
<title>Profile | Ravish Ranjan</title>
</head>
<body>
    <main>
        <h1>Ravish Ranjan</h1>
        <span class="bio">BSc. Hons. Computer Science<br>RLAC
24,DU</span><br>
        <ul class="info">
            <li><span class="title">Age :</span>20</li>
            <li><span class="title">Gender :</span>Male</li>
            <li><span class="title">Course :</span>Bachelores of Science
Honours Computer Science</li>
            <li><span class="title">Hobbies :</span>Web Designing , Video
Games , Driving</li>
            <li><span class="title">Address :</span>Lorem ipsum dolor sit
amet.</li>

```

```

        <li><span class="title">Plans </span>
          <p class="plan">
            Looking forward to get a career in web development
            as a front-end developer
          </p>
        </li>
      </ul>
    </main>
    <script></script>
  </body>
</html>

```

#Output

Ravish Ranjan

BSc. Hons. Computer Science
RLAC 24,DU

Age :	Gender :
20	Male
Course :	Hobbies :
Bachelores of Science Honours Computer Science	Web Designing , Video Games , Driving
Address :	
Lorem ipsum dolor sit amet.	
Plans	
Looking forward to get a career in web development as a front-end developer	

Que4 Create an HTML page with the sole purpose to show multiplication tables of 2 to 10 (row-wise) created by JavaScript. Initially, the page is blank. With help of setInterval function print a row every 5 seconds in different colors and increasing font size.

Ans

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="">
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
    <style>
      *{
        padding: 0;
        margin: 0;
        box-sizing: border-box;
        /* outline: 2px solid lime; */
      }
      body{
        height: 100vh;
        display: flex;
        justify-content: center;
        gap: .5rem;
        align-items: center;
        background-color: #23272e;
        padding: 0 1%;
      }
      ul{
        height: 80vh;
        width: 30vw;
        color: white;
        padding: 0 0%;
        display: flex;
        gap: .5rem;
        flex-direction: column;
        justify-content: flex-start;
        list-style-type: none;
        background-color: #ffffff11;
      }
      li{
        text-align: center;
        background-color: #ffffff11;
        margin: 2% 0;
      }
    </style>
    <title>Learn your tables</title>
  </head>
```

```

<body>
  <ul></ul><ul></ul><ul></ul><ul></ul><ul></ul>
  <ul></ul><ul></ul><ul></ul><ul></ul>
  <script>
    function getRand() {
      return Math.floor((Math.random() * 100)+155);
    }
    function getRandCol() {
      return `rgb(${getRand()},${getRand()},${getRand()})`;
    }
    $(document).ready(() => {
      let secs = $('ul').toArray();
      let i = 0;
      for (let i = 0; i < secs.length; i++) {
        let sec = secs[i];
        let count = 0;
        setInterval(() => {
          count ++;
          if (count <= 10) {
            sec.innerHTML += `<li
style='color:${getRandCol()};font-size:${count+14}px;'>
              ${i+2} x ${count} = ${(i+2)*count}
            <li>`;
          }
        }, 5000);
      }
    });
  </script>
</body>
</html>

```

#Output

2 x 1 = 2	3 x 1 = 3	4 x 1 = 4	5 x 1 = 5	6 x 1 = 6	7 x 1 = 7	8 x 1 = 8	9 x 1 = 9	10 x 1 = 10
2 x 2 = 4	3 x 2 = 6	4 x 2 = 8	5 x 2 = 10	6 x 2 = 12	7 x 2 = 14	8 x 2 = 16	9 x 2 = 18	10 x 2 = 20
2 x 3 = 6	3 x 3 = 9	4 x 3 = 12	5 x 3 = 15	6 x 3 = 18	7 x 3 = 21	8 x 3 = 24	9 x 3 = 27	10 x 3 = 30
2 x 4 = 8	3 x 4 = 12	4 x 4 = 16	5 x 4 = 20	6 x 4 = 24	7 x 4 = 28	8 x 4 = 32	9 x 4 = 36	10 x 4 = 40
2 x 5 = 10	3 x 5 = 15	4 x 5 = 20	5 x 5 = 25	6 x 5 = 30	7 x 5 = 35	8 x 5 = 40	9 x 5 = 45	10 x 5 = 50
2 x 6 = 12	3 x 6 = 18	4 x 6 = 24	5 x 6 = 30	6 x 6 = 36	7 x 6 = 42	8 x 6 = 48	9 x 6 = 54	10 x 6 = 60
2 x 7 = 14	3 x 7 = 21	4 x 7 = 28	5 x 7 = 35	6 x 7 = 42	7 x 7 = 49	8 x 7 = 56	9 x 7 = 63	10 x 7 = 70
2 x 8 = 16	3 x 8 = 24	4 x 8 = 32	5 x 8 = 40	6 x 8 = 48	7 x 8 = 56	8 x 8 = 64	9 x 8 = 72	10 x 8 = 80
2 x 9 = 18	3 x 9 = 27	4 x 9 = 36	5 x 9 = 45	6 x 9 = 54	7 x 9 = 63	8 x 9 = 72	9 x 9 = 81	10 x 9 = 90

Que5 Create an HTML page that shows information about you, your course, hobbies, address, and your plans. Use CSS for styling of HTML page so that looks nice.

Ans

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="">
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
    <style>
      *{
        padding: 0;
        margin: 0;
        box-sizing: border-box;
        /* outline: 1px solid limegreen; */
      }
      body{
        background-color: #23272e;
        height: 100vh;
        display: grid;
        place-items: center;
      }
      main{
        height: 80vmin;
        aspect-ratio: 3/4;
        display: flex;
        flex-direction: column;
        justify-content: space-between;
        outline: 2px ridge white;
      }
      .text{
        padding: 2%;
        color: white;
        text-align: center;
        font-family: monospace;
        font-size: 30px;
        height: 60%;
        overflow-y: auto;
      }
      section{
        width: 100%;
        height: 10%;
        display: grid;
        gap: .5rem;
        grid-template-columns: 1fr 1fr 1fr;
      }
    </style>
  </head>
  <body>
    <main>
      <div class="text">
        <h1>Hello, World!</h1>
      </div>
      <div class="section">
        <div></div>
        <div></div>
        <div></div>
      </div>
    </main>
  </body>
</html>
```

```

        button{
            font-size: 20px;
            height: 80%;
            font-weight: bold;
            background-color: #fffffffa;
        }
    </style>
    <title></title>
</head>
<body>
    <main>
        <p class="text">
            Lorem ipsum dolor sit amet consectetur adipisicing elit.
            Eos recusandae dolorum reiciendis, pariatur illo asperiores
            praesentium aut, modi aliquid dolore magni voluptatem officia
            expedita vel ipsa dolor eius, aspernatur natus.
        </p>
        <section class="color">
            <button style="background-color: red;">red</button>
            <button style="background-color: green;">green</button>
            <button style="background-color: blue;">blue</button>
        </section>
        <section class="size">
            <button style="font-size: 10px;">10</button>
            <button style="font-size: 20px;">20</button>
            <button style="font-size: 30px;">30</button>
        </section>
        <section class="font">
            <button style="font-family: Helvetica;">Helvetica</button>
            <button style="font-family: impact;">Impact</button>
            <button style="font-family: monospace;">Monospace</button>
        </section>
    </main>
    <script>
        $(document).ready(() => {
            let color = $('.color button').toArray();
            let size = $('.size button').toArray();
            let font = $('.font button').toArray();
            $.each(color,(i,v) => {
                $(v).click(() => {
                    $('.text').css({"color":$(v).text()});
                });
            });
            $.each(size,(i,v) => {
                $(v).click(() => {
                    $('.text').css({"font-size":$(v).text()+"px"});
                });
            });
            $.each(font,(i,v) => {
                $(v).click(() => {
                    $('.text').css({"font-family":$(v).text()});
                });
            });
        });
    </script>

```

```

    });
  });
</script>
</body>
</html>

```

#Output

Lorem ipsum dolor sit amet
 consectetur adipisicing
 elit. Eos recusandae dolorum
 reiciendis, pariatur illo
 asperiores praesentium aut,
 modi aliquid dolore magni
 voluptatem officia expedita
 vel ipsa dolor eius,
 aspernatur natus.

red	green	blue
10	20	30
Helvetica	Impact	Monospace

Lorem ipsum dolor sit
 amet consectetur
 adipisicing elit. Eos
 recusandae dolorum
 reiciendis, pariatur illo
 asperiores praesentium
 aut, modi aliquid dolore
 magni voluptatem

red	green	blue
10	20	30
Helvetica	Impact	Monospace

Lorem ipsum dolor sit amet consectetur adipisicing elit. Eos recusandae
 dolorum recusandae, pariatur illo asperiores praesentium aut, modi aliquid
 dolore magni voluptatem officia expedita vel ipsa dolor eius, aspernatur
 natus.

red	green	blue
10	20	30
Helvetica	Impact	Monospace

Lorem ipsum dolor sit amet
 consectetur adipisicing
 elit. Eos recusandae dolorum
 reiciendis, pariatur illo
 asperiores praesentium aut,
 modi aliquid dolore magni
 voluptatem officia expedita
 vel ipsa dolor eius,
 aspernatur natus.

red	green	blue
10	20	30
Helvetica	Impact	Monospace

Que6 Create a form that takes data about a pet. The form must be well designed and should accept the pet's name, age, weight, type, and what it likes most. At the submission of this form create a Pet object in JavaScript filled with these values and log that object and equivalent JSON on the console.

Ans

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="">
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
    <style>
      *{
        box-sizing: border-box;
        /* outline: 1px solid lime ; */
        padding: 0;
        margin: 0;
      }
      h1{
        padding: 2%;
        width: 80vw;
      }
      body{
        background-color: #23272e;
        color: #ddd;
        height: 100vh;
        display: grid;
        place-items: center;
      }
      form{
        width: 80vw;
        height: 70vh;
        display: flex;
        flex-direction: column;
        justify-content: space-between;
        /* align-items: center; */
        font-size: 20px;
      }
      fieldset{
        width: 100%;
        padding: 2%;
      }
      input{
        background-color: #ffffff66;
```

```

        width: 100%;
        font-size: 20px;
        color: white;
    }
    input[type="submit"]{
        background-color: white;
        font-size: 20px;
        color: black;
    }
</style>
<title></title>
</head>
<body>
    <h1>Dog Info : </h1>
    <form action="">
        <fieldset><legend>Name</legend><input id="name" type="text"
required></fieldset>
        <fieldset><legend>Age</legend><input id="age" type="number"
required></fieldset>
        <fieldset><legend>Weight</legend><input id="weight" type="number"
required></fieldset>
        <fieldset><legend>Type</legend><input id="type" type="text"
required></fieldset>
        <fieldset><legend>Favorite Thing ??</legend><input id="fav"
type="text" required></fieldset>
        <input type="submit" value="submit">
    </form>
    <script>
        function Dog(name,age,weight,type,favorite_thing) {
            const doginfo = {
                name:name,
                age:age,
                weight:weight,
                type:type,
                favorite_thing,favorite_thing,
            }
            return doginfo;
        }
        $(document).ready(() => {
            $('form').submit((e) => {
                e.preventDefault();
                let newDog = Dog(
                    $('#name').val(),
                    $('#age').val(),
                    $('#weight').val(),
                    $('#type').val(),
                    $('#fav').val(),
                );
                console.log(newDog);
            });
        });
    </script>

```

```
</body>  
</html>
```

#Output

Dog Info :

Name

Hammy

Age

4

Weight

8

Type

Corgi

Favorite Thing ??

Having dinner before time

submit

```
▼ {name: 'Hammy', age: '4', weight: '8', type: 'Corgi', favorite_thing: 'Having dinner before time'}  
  age: "4"  
  favorite_thing: "Having dinner before time"  
  name: "Hammy"  
  type: "Corgi"  
  weight: "8"  
  ► [[Prototype]]: Object
```

Que7 Store JSON data of few pets that you created in previous practical in a JSON file (copy from console output of previous program to a .json file). Using AJAX, load data from the file and display it in a presentable way using HTML and CSS.

Ans

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></scrip
t>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <link rel="stylesheet" href="">
    <style>
      *{
        padding: 0;
        margin: 0;
        box-sizing: border-box;
        /* outline: 1px solid limegreen; */
      }
      body{
        background-color: #23272e;
        display: grid;
        place-items: center;
        color: #ddd;
        min-height: 100vh;
        font-family: 'Courier New', Courier, monospace;
      }
      main{
        display: flex;
        justify-content: space-between;
        align-items: center;
        flex-wrap: wrap;
        width: 90vw;
        gap: 1.5rem;
        margin-bottom: 5%;
      }
      h1{
        font-size: 45px;
        font-weight: bold;
      }
      .card{
        height: 50vh;
        aspect-ratio: 3/4;
```

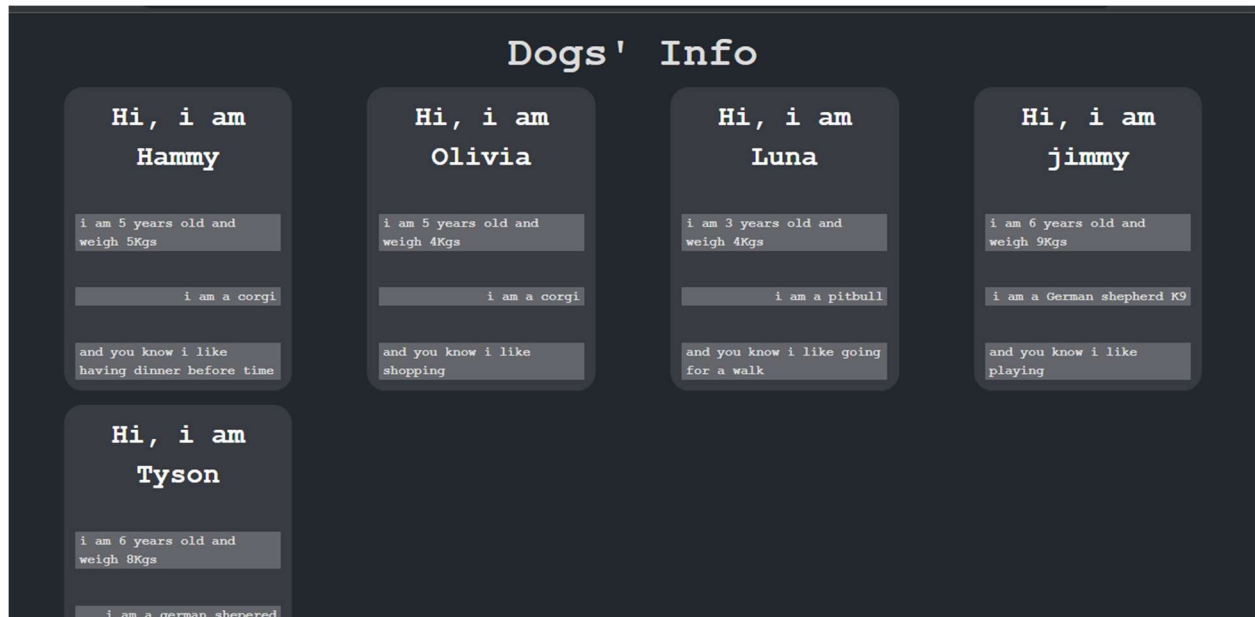
```

        padding: 1%;
        display: flex;
        flex-direction: column;
        justify-content: space-between;
        text-align: center;
        background-color: #ffffff18;
        border-radius: 2rem;
    }
    span{
        background-color: #dddddd44;
        font-weight: bold;
        padding: 0 2%;
    }
    .card>span:nth-of-type(2n){
        text-align: left;
    }
    .card>span:nth-of-type(2n+1){
        text-align: right;
    }
    .card>span:first-of-type{
        border-radius: 1rem;
        font-size: 30px;
        color: white;
        background-color: transparent;
        font-weight: bold;
        text-align: center;
    }
</style>
<title></title>
</head>
<body>
    <h1>Dogs' Info</h1>
    <main></main>
    <script>
        $(document).ready(() => {
            $.getJSON("http://127.0.0.1:5501/it/dogdata.json",(data) => {
                for (const dog of data) {
                    $("main").append(`
                        <div class="card">
                            <span>Hi, i am ${dog.name}</span>
                            <span>i am ${dog.age} years old and weigh
${dog.weight}Kgs</span>
                            <span>i am a ${dog.type}</span>
                            <span>and you know i like
${dog.favorite_thing}</span>
                        </div>
                    `);
                }
            });
        });
    </script>
</body>

```


</html>

#Output



Que8 Create a plain HTML page for B.Sc. Hons CS course, mentioning details like fee, eligibility criteria, papers with names and credits, and future possibilities after the course. A button for styling should be there at bottom of the page. On clicking on this button JavaScript should redesign the complete page using jQuery in a nice presentable way.

Ans

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></scrip
t>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <link rel="stylesheet" href="">
    <style>
      *{
        box-sizing: border-box;
        margin: 0;
        display: block ;
        /* outline: 1px solid limegreen; */
      }
```

```

}
style,script{
    display: none !important;
}
body{
    color: #ddd;
    display: flex;
    flex-direction: column;
    place-items: center;
}
h1,h2{
    font-size: 40px;
    text-align: center;
    color: lightseagreen;
}
h2{
    font-size: 30px;
    color: #aaa;
}
main{
    width: 98vw;
    display: flex;
    flex-direction: column;
    justify-content: flex-start;
    align-items: center;
    gap: 1rem;
}
.info{
    height: 20vh;
    display: flex;
    flex-direction: column;
    justify-content: space-around;
    align-items: center;
    padding: 2%;
}
.papers{
    width: 95%;
    padding: 0 2%;
    margin: 2% 0;
    gap: 2rem;
    display: flex;
    flex-wrap: wrap;
    justify-content: center;
}
.sem{
    padding: 2% 1%;
    display: flex;
    flex-direction: column;
    border-radius: 1rem;
    border: 4px solid #aaa;
    width: 45%;
}

```

[illegible]

```

        <span class="paper">Computer System Architecture
: &nbsp;&nbsp;&nbsp;<span class="value">6 Credits</span></span>
    </div>
    <div class="sem">
        <h3>Semester 2</h3>
        <span class="paper">Programming in JAVA :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Discrete Structure :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
    </div>
    <div class="sem">
        <h3>Semester 3</h3>
        <span class="paper">Data Structures :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Operating Systems :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">computer Networks :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Web developmewnt and designing
: &nbsp;&nbsp;&nbsp;<span class="value">4 Credits</span></span>
    </div>
    <div class="sem">
        <h3>Semester 4</h3>
        <span class="paper">Design and analysis of algorithms
: &nbsp;&nbsp;&nbsp;<span class="value">6 Credits</span></span>
        <span class="paper">Software Engineering :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Database managment systetmms
: &nbsp;&nbsp;&nbsp;<span class="value">6 Credits</span></span>
        <span class="paper">Android Programming :&nbsp;&nbsp;&nbsp;<span
class="value">4 Credits</span></span>
    </div>
    <div class="sem">
        <h3>Semester 5</h3>
        <span class="paper">Internet technologies :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Theory of Computation :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Microprocessors :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Sysrttem Programming :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
    </div>
    <div class="sem">
        <h3>Semester 6</h3>
        <span class="paper">Artificcal Inttelegence
: &nbsp;&nbsp;&nbsp;<span class="value">6 Credits</span></span>
        <span class="paper">Computer Graphics :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
        <span class="paper">Information Security :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>

```

```

        <span class="paper">Machine Learning :&nbsp;&nbsp;&nbsp;<span
class="value">6 Credits</span></span>
    </div>
</div>
</main>
<p class="future">
    In the fields of networking, information technology, schools, and
banks,
        computer science is a vital component of both the public and
commercial sectors.
    Students who have finished their B.Sc. in Computer Science have
numerous work
        prospects. They can work as software engineers or data analysts in
international corporations. They can also work as an IT consultant
and
        start their own company. Students can also work as lecturers at
schools or universities.
</p>
<button style="color: black !important;" id="togbut"
onclick="tog()">Seems Boring..</button>
<script>
    let t = true;
    function tog() {
        const bodyEl = $('body');
        const elems = $('*');
        const sty = $('style,script');
        if (t) {
            $("#togbut").text("Now Better...");
            bodyEl.css({
                'background-color':"#23272e"
            });
            elems.css({
                'display':'flex',
                'border-color':'#aaa'
            });
            sty.css({
                'display':'none'
            });
        } else {
            $("#togbut").text("Seems Boring..");
            bodyEl.css({
                'background-color':"white"
            });
            elems.css({
                'display':'block',
                'border-color':'transparent',
            });
            sty.css({
                'display':'none'
            });
        }
    }

```

```

        t = !t;
    }
    tog();
    tog();
</script>
</body>
</html>

```

#Output

//before button click

The screenshot shows a web page with a light gray background. At the top, the text "Bachelores of Science" is in a teal color, and "Honours Computer Science" is in a gray color. Below this, there is a section for "Tuition fees : 6 Credits7690" and "Eligibility criteria :". Under "Eligibility criteria", there is a sub-section "Common eligibility : A Credits pass in Class 12 + qualifying scores in CUET". Below that, there is a section "Acceptance Entrance Exam : C CreditsUET". The main content area is divided into two sections: "Semester 1" and "Semester 2". "Semester 1" lists "Programming fundamentals using C++ : 6 Credits" and "Computer System Architecture : 6 Credits". "Semester 2" lists "Programming in JAVA : 6 Credits" and "Discrete Structure : 6 Credits".

// after button click

The screenshot shows the same web page as before, but with a dark gray background. The text "Bachelores of Science" is in a teal color, and "Honours Computer Science" is in a gray color. Below this, there is a section for "Tuition fees : 6 Credits7690" and "Eligibility criteria :". Under "Eligibility criteria", there is a sub-section "Common eligibility : A Credits pass in Class 12 + qualifying scores in CUET". Below that, there is a section "Acceptance Entrance Exam : C CreditsUET". The main content area is divided into four sections: "Semester 1", "Semester 2", "Semester 3", and "Semester 4". "Semester 1" lists "Programming fundamentals using C++ : 6 Credits" and "Computer System Architecture : 6 Credits". "Semester 2" lists "Programming in JAVA : 6 Credits" and "Discrete Structure : 6 Credits". "Semester 3" lists "Data Structures : 6 Credits", "Operating Systems : 6 Credits", "computer Networks : 6 Credits", and "Web development and designing : 4 Credits". "Semester 4" lists "Design and analysis of algorithms : 6 Credits", "Software Engineering : 6 Credits", "Database management systems : 6 Credits", and "Android Programming : 4 Credits".

Que9 Create an HTML page for an image gallery which shows the use of BOOTSTRAP to rearrange and resize its contents on resizing the browser.

Ans

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></scrip
t>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <link rel="stylesheet" href="">
    <style>
      *{
        padding: 0;
        margin: 0;
        box-sizing: border-box;
        /* outline: 1px solid lime; */
      }
      body{
        background-color: #23272e;
        display: grid;
        place-items: center;
      }
      main{
        display: flex;
        margin-block: 5%;
        flex-direction: column;
        justify-content: flex-start;
        align-items: center;
        gap: 3rem;
      }
      .row{
        gap: 2rem;
        width: 95vw;
        transition:all .25s ease-in-out;
      }
      img{
        border-radius: 1rem;
```

```

        z-index: 0;
        transition: all .25s ease-in-out;
    }
    img:hover{
        transform: scale(1.2);
        z-index: 2;
    }
    main:hover img:not(:hover){
        filter: brightness(70%);
    }
    header{
        height: 15vh;
        font-size: 60px;
        display: grid;
        place-items: center;
        background-color: #aaa;
        font-family: 'Trebuchet MS', 'Lucida Sans Unicode', 'Lucida
Grande', 'Lucida Sans', Arial, sans-serif;
    }
</style>
<title></title>
</head>
<body>
    <header class="container">My Photo Gallery</header>
    <main>
        <div class="row container">
            
            
            
            
        </div>
        <div class="row container">
            
            
            
            
        </div>
    </main>
</body>
</html>

```



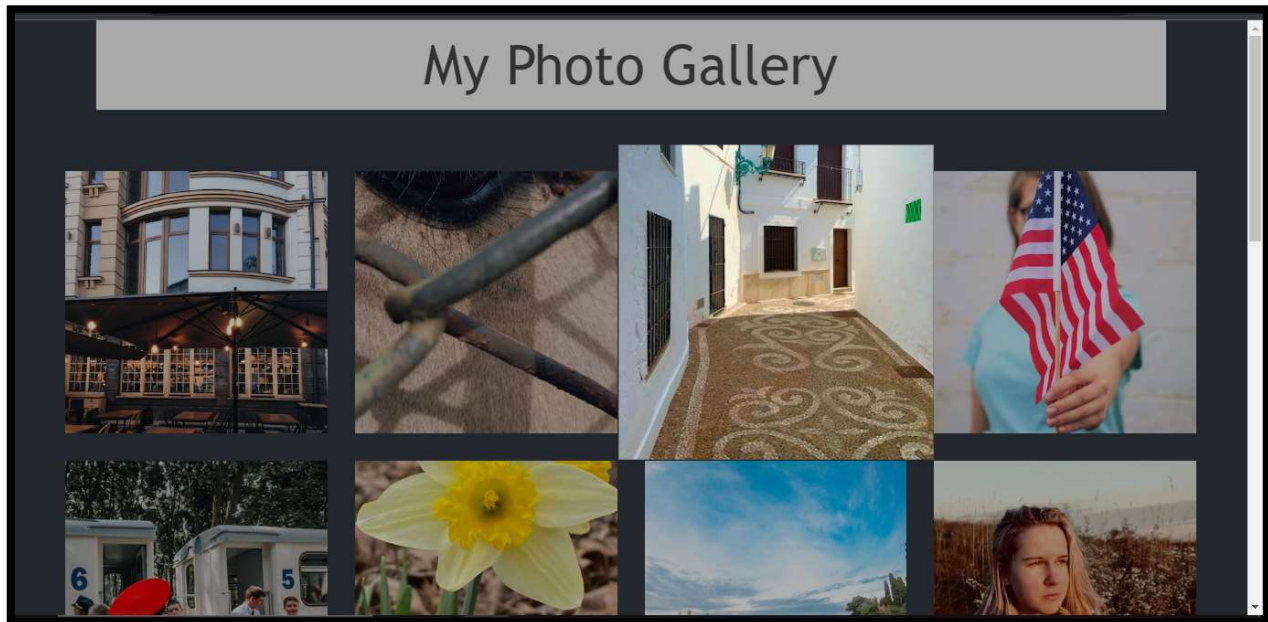
```

        <div class="row container">
            
            
            
            
        </div>
        <div class="row container">
            
            
            
            
        </div>
        <div class="row container">
            
            
            
            
        </div>
    </main>
    <footer></footer>
    <script></script>
</body>
</html>

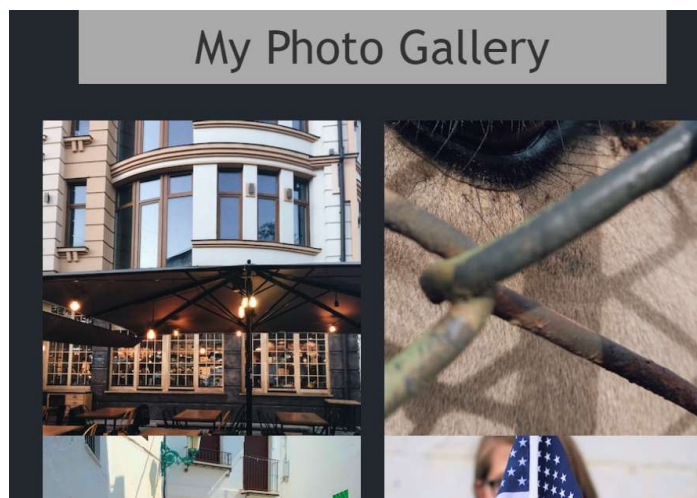
```

#Output

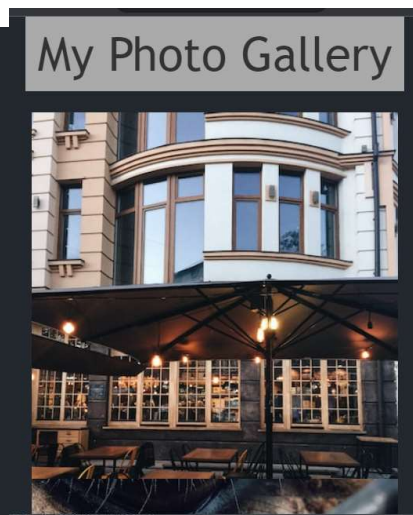
//full screen



//medium screen



//small screen



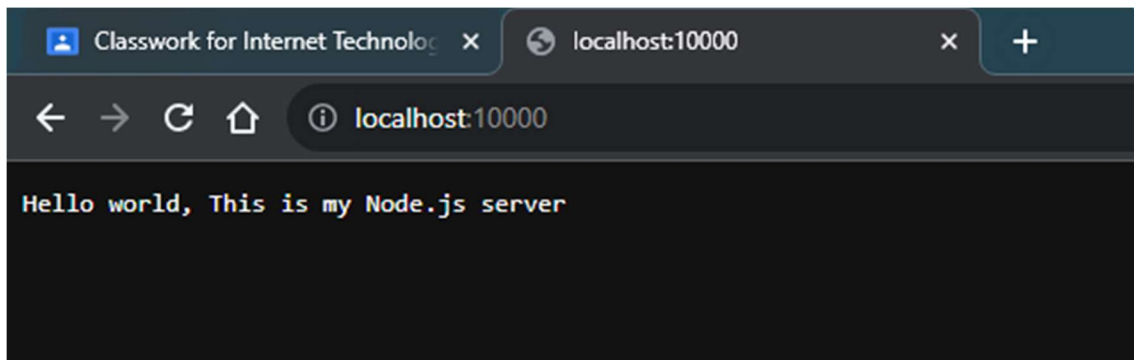
Que10 Create an HTTP server using Node.js which handles requests on port 10000 or a free port beyond 10000. Modify the server in such a way that opening localhost:10000 will display “Hello world, This is my Node.js server” on browser.

Ans

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

http.createServer((req,res) => {
    res.write("Hello world, This is my Node.js server");
    res.end();
}).listen(10000);
```

//output



Que 11 Create index.html file containing two forms for SignIn and SignUp. Submitting SignIn form should search for credentials in mysql database using server created in previous practical. On successful signin, a welcome page should be displayed. Submitting SignUp form should insert new entry for credentials in mysql database using server created in previous practical. On successful signup, user should be returned back to index.html.

Ans

//pro11.js

```
const http = require('http');
const mysql = require('mysql2/promise');

const db = mysql.createPool({
  host:"localhost",
  user:"root",
  password:"wrogn",
  database:"employees"
});

function strForm(str) {
  return Object.fromEntries(new URLSearchParams(str));
}

async function signin(body) {
  try {
    const [rows, fields] = await db.execute(
      'SELECT * FROM user_info WHERE username = ? AND password = ?',
      [body.username, body.password]
    );
    return rows;
  } catch (err) {
    console.log(err);
  }
}

async function signup(body) {
  try {
    const res = await db.execute(
```

```

        `INSERT INTO user_info (name, username, password, email) VALUES
        (?, ?, ?, ?)` ,
        [body.name, body.newusername, body.crtpassword, body.email]
    );
    return res;
} catch (err) {
    console.log(err);
}
}

const server = http.createServer((req, res) => {
    if (req.method === "POST") {
        let body = "";
        req.on("data", chunk => {
            body += chunk.toString();
        });
        switch (req.url) {
            case "/signin":
                req.on("end", async () => {
                    body = strForm(body);
                    signin(body).then(data => {
                        if (data.length === 0) {
                            res.statusCode = 202;
                            res.end(JSON.stringify({ "err": "User doesn't
exists" }));
                        } else {
                            res.statusCode = 200;
                            res.end(JSON.stringify({ "user": data[0] }));
                        }
                    });
                });
                break;
            case "/signup":
                req.on("end", async () => {
                    body = strForm(body);
                    signin({ "username": body["newusername"], "password": body["crtpa
ssword"] }).then(data => {
                        if (data.length === 0) {
                            signup(body).then(data => {
                                if (data[0].warningStatus === 0) {
                                    res.statusCode = 200;
                                    res.end(JSON.stringify({ "err": "User added
successfully" }));
                                }
                            });
                        }
                    });
                });
            }
        }
    }
});

```

```

        } else if(data.length >= 1) {
            res.statusCode = 202;
            res.end(JSON.stringify({"err":"User already
exists"}));
        }
    });
    });
    break;
default:
    break;
}
}
});

server.listen(10000, () => {
    console.log('Server is listening on port http://127.0.0.1:10000');
});

```

//index.html

```

<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.7.1/jquery.min.js"></script>
        <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></scrip
t>
        <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
        <link rel="stylesheet" href="">
        <style>
            *{
                padding: 0;
                margin: 0;
                box-sizing: border-box;
                /* outline: 1px solid limegreen; */
            }
            body{
                background: url('https://source.unsplash.com/random?Mountains');
                background-size: 100%;
                display: flex;
                justify-content: space-around;
            }
        </style>
    </head>
    <body>

```

```

        align-items: center;
        height: 100vh;
    }
    form{
        height: 70vh;
        width: 30%;
        color: white;
        display: flex;
        flex-direction: column;
        justify-content: flex-start;
        gap: 1.5rem;
        align-items: center;
        background-color: #00000044;
        backdrop-filter: blur(12px);
        border-radius: 2rem;
    }
    form>h1{
        margin-block: 10%;
        width: 100%;
        background-color: #586274;
        text-align: center;
    }
    label{
        width: 95%;
        display: flex;
        flex-direction: column;
        justify-content: center;
        align-items: center;
    }
    input{
        width: 90%;
        background-color: #ffffff22;
        padding-inline: 2%;
        outline: 1px solid white;
        border: none;
        border-radius: 1rem;
    }
    input[type="submit"]{
        font-size: 20px;
        width: 80%;
        background-image: conic-gradient(#23272e,#586274);
        outline: none;
        height: 10%;
    }
</style>

```

```

        <title></title>
    </head>
    <body class="container">
        <form action="http://127.0.0.1:10000/signin" class="" method="post"
id="signin">
            <h1>Sign in</h1>
            <label for="username">Username : <input type="text" name="username"
id="username"></label>
            <label for="passwd">Password : <input type="password" name="password"
id="passwd"></label>
            <input type="submit" value="SignIn">
        </form>
        <form action="http://127.0.0.1:10000/signup" method="post" id="signup">
            <h1>Sign up</h1>
            <label for="name">Full Name : <input type="text" name="name"
id="name"></label>
            <label for="newusername">Create Username : <input type="text"
name="newusername" id="newusername"></label>
            <label for="crtpasswd">Create Password : <input type="password"
name="crtpassword" id="crtpasswd"></label>
            <label for="email">Email : <input type="email" name="email"
id="email"></label>
            <input type="submit" value="SignUp">
        </form>
        <script></script>
    </body>
</html>

```

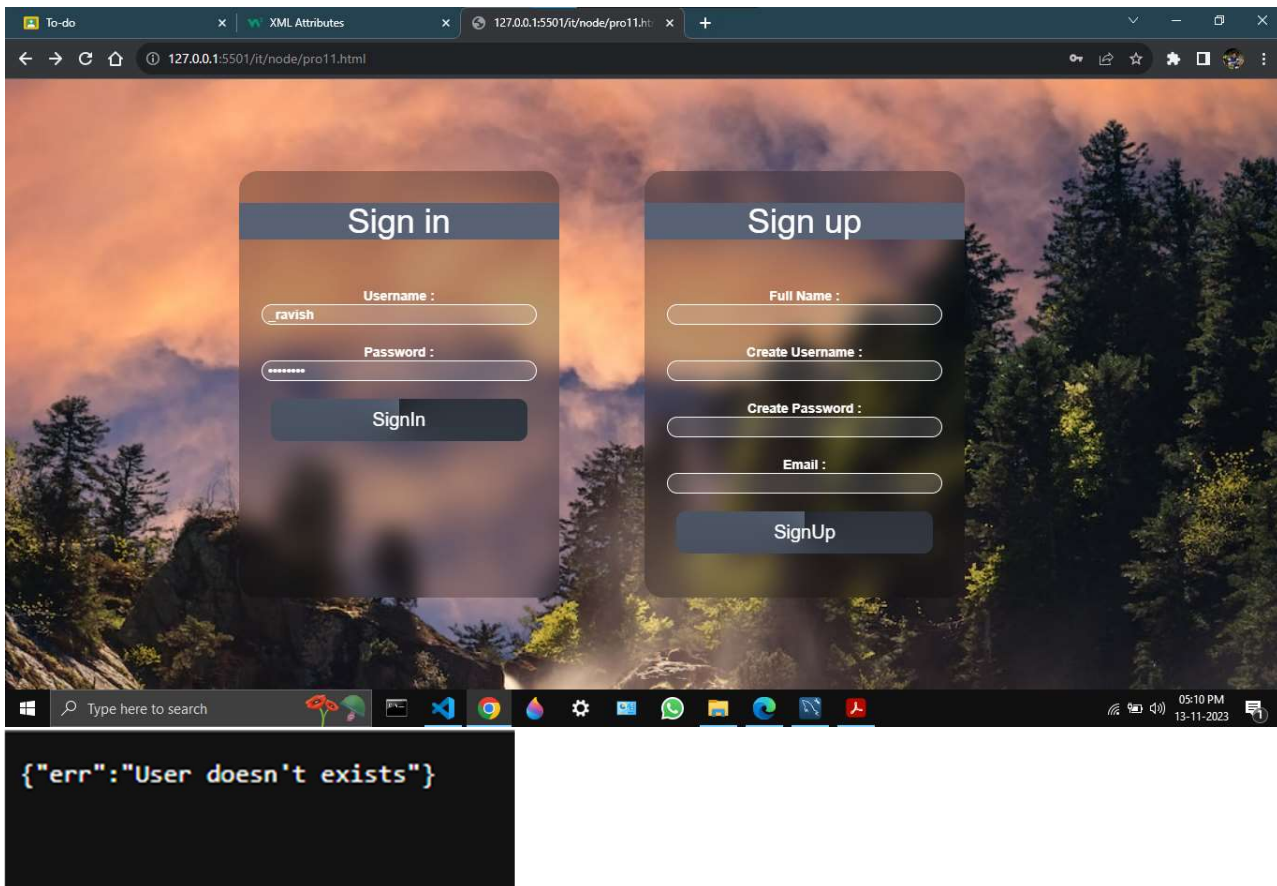
//Output

//sign in existing user

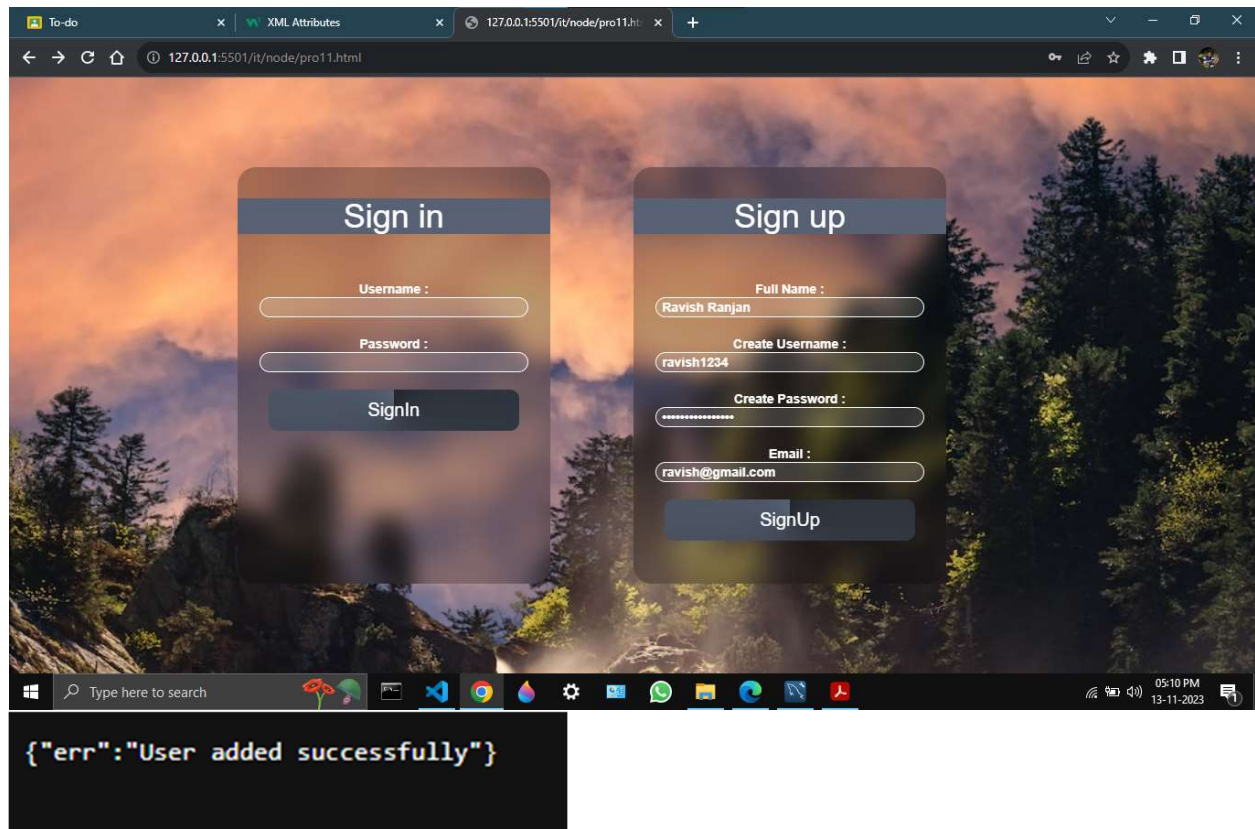
The screenshot shows a web browser window with two tabs: 'To-do' and 'XML Attributes'. The address bar displays '127.0.0.1:5501/it/node/pro11.html'. The main content area features a scenic background of a forest at sunset. Overlaid on this are two semi-transparent forms. The 'Sign in' form on the left has fields for 'Username :' (containing '_ravishranjan_') and 'Password :', followed by a 'SignIn' button. The 'Sign up' form on the right has fields for 'Full Name :', 'Create Username :', 'Create Password :', and 'Email :', followed by a 'SignUp' button. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons. The system clock indicates 05:12 PM on 13-11-2023.

```
{"user":{"name":"ravish","username":"_ravishranjan_","password":"12345678","email":"ravishranjan2003@gmail.com"}}
```

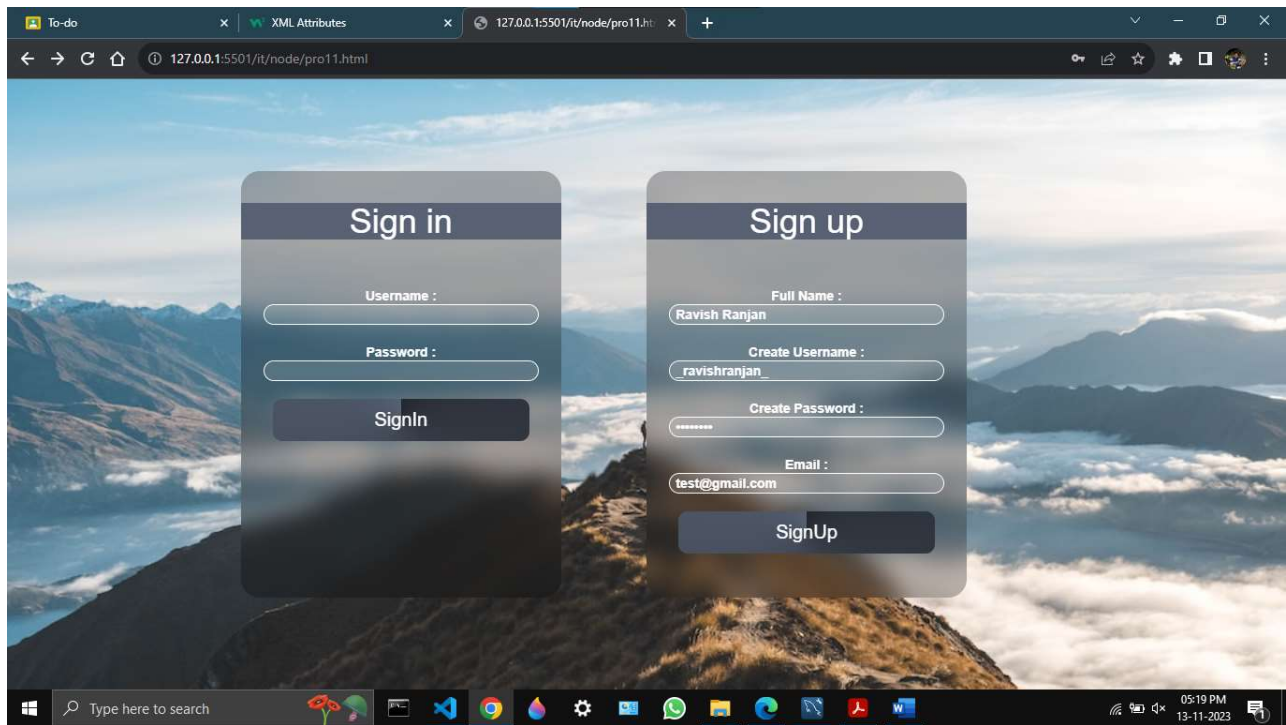
//sign in not-existing user



//sign up new user



//sign up existing user



```
{"err": "User already exists"}
```