COLLEGE OF VOCATIONAL STUDIES

UNIVERSITY OF DELHI

ASHISH KUMAR

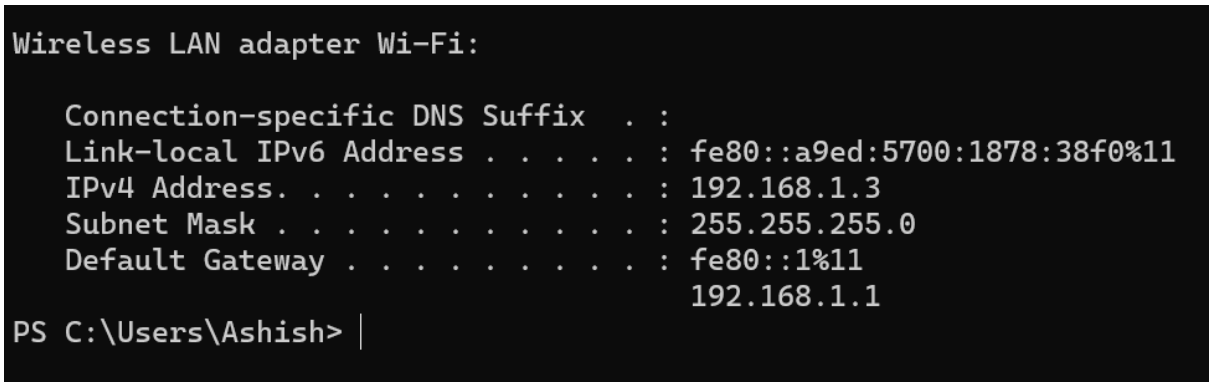
2K21/CS/21

EXAMINATION ROLL NO.:- 21013570018

BSc.(H) COMPUTER SCIENCE

SEMESTER :- VTH

1. 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.



IP address:**192.168.1.3**

Subnet Mask: **255.255.255.0**

Network Address: -

A bitwise *AND* between the two would give us the network address:

11000000.10101000.00000001.00000011:192.168.1.3 (IP Address)

AND

11111111.11111111.11111111.00000000:255.255.255.0 (Subnet Mask)

The Required Network Address is:

11000000.10101000.00000001.00000000:192.168.1.0

A bitwise *OR* between network address and the **inverted Subnet Mask** would give Broadcast address:

11000000.10101000.00000001.00000000:192.168.1.0 (Network Address)

OR

00000000.00000000.00000000.11111111:0.0.0.255 (Inverted subnet mask)

The Required Broadcast address is:

11000000.10101000.00000001. 11111111: 192.168.1.255

The Maximum number of system possible in the network is : 2^h-2

2^h-2 = 2^8-2 = 256-2 = 254.

Range of IP address available on the system is: **192.168.1.1 – 192.168.1.254**

2. 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.

Ping Scan:-

```
PS C:\Users\Ashish> ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
PS C:\Users\Ashish>
```

Route using tracet:-

```
PS C:\Users\Ashish> tracert 192.168.1.3

Tracing route to HILFLIGHER [192.168.1.3]
over a maximum of 30 hops:

  1    <1 ms    <1 ms    <1 ms  HILFLIGHER [192.168.1.3]

Trace complete.
PS C:\Users\Ashish>
```

All the processes using netstat that uses TCP protocol:-

```
PS C:\Users\Ashish> netstat

Active Connections

  Proto  Local Address          Foreign Address        State
  TCP    192.168.1.3:53980      20.198.119.143:https   ESTABLISHED
  TCP    192.168.1.3:54037      sb-in-f188:5228        ESTABLISHED
  TCP    192.168.1.3:54042      del11s16-in-f10:https  ESTABLISHED
  TCP    192.168.1.3:54063      aa1ba9bef7b18c265:https  ESTABLISHED
  TCP    192.168.1.3:54075      aa1ba9bef7b18c265:https  ESTABLISHED
  TCP    192.168.1.3:54091      aa1ba9bef7b18c265:https  ESTABLISHED
  TCP    192.168.1.3:54125      whatsapp-cdn-shv-01-del1:https  ESTABLISHED
  TCP    192.168.1.3:54128      a23-32-28-115:https    CLOSE_WAIT
  TCP    192.168.1.3:54144      20.198.118.190:https   ESTABLISHED
  TCP    192.168.1.3:54150      142.91.159.205:https   ESTABLISHED
  TCP    192.168.1.3:54157      a23-32-28-98:https     CLOSE_WAIT
  TCP    192.168.1.3:54192      52.108.44.3:https      ESTABLISHED
  TCP    192.168.1.3:54226      233:https              ESTABLISHED
  TCP    192.168.1.3:54539      a23-32-28-64:https     ESTABLISHED
  TCP    192.168.1.3:54551      103.95.86.97:https     ESTABLISHED
  TCP    192.168.1.3:54557      ec2-54-164-145-43:https  LAST_ACK
  TCP    192.168.1.3:54564      yx-in-f94:https        ESTABLISHED
  TCP    192.168.1.3:54566      1drv:https             ESTABLISHED
  TCP    192.168.1.3:54567      e2a:https              TIME_WAIT
  TCP    192.168.1.3:54568      1drv:https             ESTABLISHED
  TCP    192.168.1.3:54569      1drv:https             ESTABLISHED
  TCP    192.168.1.3:54570      20.189.173.11:https    ESTABLISHED
  TCP    192.168.1.3:54576      52.109.56.129:https    TIME_WAIT
  TCP    192.168.1.3:54577      52.109.56.129:https    TIME_WAIT
  TCP    192.168.1.3:54578      40.99.31.146:https     ESTABLISHED
  TCP    192.168.1.3:54579      52.109.56.129:https    TIME_WAIT
  TCP    192.168.1.3:54580      199.232.22.217:https   ESTABLISHED
  TCP    192.168.1.3:54581      ec2-3-88-238-34:https  ESTABLISHED
  TCP    192.168.1.3:54582      ec2-3-88-238-34:https  ESTABLISHED
  TCP    192.168.1.3:54583      ec2-54-235-104-53:https  ESTABLISHED
  TCP    192.168.1.3:54584      55:https               ESTABLISHED
  TCP    192.168.1.3:54585      52.109.56.129:https    TIME_WAIT
  TCP    192.168.1.3:54586      52.98.57.130:https     ESTABLISHED
  TCP    192.168.1.3:54587      del11s12-in-f4:https   CLOSE_WAIT
  TCP    192.168.1.3:54588      52.109.56.129:https    ESTABLISHED
PS C:\Users\Ashish>
```

3. 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.

HTML FILE:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Ashish Kumar</title>
    <link rel="stylesheet" href="prac.css">
</head>
<body>
    <header>
        <h1>Ashish Kumar</h1>
        <img src="Ashish.png.png" alt="Ashish Logo">
    </header>
    <main>
        <h2>About Me</h2>
        <p>
            Hi there! this is Ashish a student, a coding enthusiastic.
        </p>
        <h2>My Course</h2>
        <p>
            All the Courses i have studied till and will study in future for
my Bsc.(H) Computer Science Course are listed below:


            <ul>
                <p>Semester I</p>
               <li>Programming in C++</li>
               <li>Computer system and architecture</li>
               <li>Calculas</li>
               <li>Environmental Science</li>
               <p>Semester II</p>
               <li>Programming in Java</li>
               <li>Discrete Structures</li>
               <li>Linear Algebra</li>
               <li>English-A</li>
               <p>Semester III</p>
               <li>Data Structures</li>
               <li>operating System</li>
               <li>Computer Networks</li>
               <li>Programming in python</li>
               <li>Linear Programming And Game Theory</li>
               <p>Semester IV</p>
               <li>Design And Analysis Of Algorithm</li>
               <li>Software Engineering</li>
               <li>Database Management System</li>
               <li>Android Programming</li>
               <li>Element Of Analysis</li>
               <p>Semester V</p>
```

```
                <li>Theory Of Computation</li>
                <li>Interner Technologies</li>
                <li>Microprocessor</li>
                <li>Data Analysis And Visualisation</li>
                <p>Semester VI</p>
                <li>Data Mining</li>
                <li>Machine Learning</li>
                <li></li>
                <li></li>
            </ul>
        </p>
        <h2>My Hobbies</h2>
        <ul>
            <li>Reading Novels</li>
            <li>Coding</li>
            <li>watching Movies</li>
        </ul>
        <h2>My Address</h2>
        <p>
            Currently i am living in chirag delhi 110017.
        </p>
        <h2>My Plans</h2>
        <p>
            As of Now there is no any Plan of my own.
        </p>
    </main>
    <footer>
        <p>&copy; all copyrights claimed</p>
    </footer>
</body>
</html>
```

CSS FILE:

```
body {
    font-family: sans-serif;
    margin: 0;
    padding: 0;
}

header {
    background-color: #d82a2a;
    padding: 20px;
}

header h1 {
    font-size: 3em;
    margin: 0;
```

```
    border-radius: 5px;
}

header img {
    margin-top: -75px;
    height: 95px;
    width: 200px;
    float: inline-end;
}

main {
    padding: 20px;
}

main h2 {
    background-color: aqua;
    margin-top: auto;
    text-align: center;
    font-size: 2em;
    margin-bottom: 10px;
}

main p {
    margin-left: 10%;
    font-style: oblique;
    line-height: 1.5;
    margin-bottom: 20px;
}

main ul {
    margin-left: 10%;
    list-style: none;
    padding: 0;
    margin: 0;
}

main li {
    margin-left: 10%;
    margin-bottom: 10px;
}

footer {
    background-color: #f1f1f1;
    padding: 10px;
    text-align: center;
}
```

OUTPUT:-

Ashish Kumar

About Me

Hi there! this is Ashish a student, a coding enthusiastic.

My Course

All the Courses i have studied till and will study in future for my Bsc.(H) Computer Science Course are listed below:

Semester I

Programming in C++
Computer system and architecture
Calculas
Environmental Science

Semester II

Programming in Java
Discrete Structures
Linear Algebra
English-A

Semester III

Data Structures
operating System
Computer Networks
Programming in python
Linear Programming And Game Theory

Semester IV

Design And Analysis Of Algorithm
Software Engineering
Database Management System
Android Programming
Element Of Analysis

Semester V

Theory Of Computation
Interner Technologies
Microprocessor
Data Analysis And Visualisation

Semester VI

Data Mining
Machine Learning

My Hobbies

Reading Novels
Coding
watching Movies

My Address

Currently i am living in chirag delhi 110017.

My Plans

As of Now there is no any Plan of my own.

4. 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.

HTML FILE:-

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Multiplication Tables </title>
    <script src="./prac.js"></script>
  </head>
  <body>
    <div id="container"></div>
  </body>
</html>
```

JAVASCRIPT FILE:-

```
var i = 1;

function displayNextTable() {
  var div = document.createElement("div");
  var br = document.createElement("br");
  var randomColor = Math.floor(Math.random()*16777215).toString(16);
  i++;
  if (i < 11) {
    for (let j = 1; j < 11; j++) {
      div.innerHTML += "\t" + i * j;
    }
    div.style.textAlign = "center";
    div.style.fontSize = 8 * i + "px";
    div.style.color = "#" + randomColor;
    document.getElementById("container").appendChild(div);
    document.getElementById("container").appendChild(br);
  } else {
    clearInterval(interval);
  }
}

var interval = document.addEventListener("DOMContentLoaded", () => {
  setInterval(displayNextTable, 5000);
})
```

OUTPUT:-

---

5. Create an HTML page with a paragraph written on it and under which 9 buttons are placed in a 3X3 grid. The first row is for buttons labeled with colors names Red, Green, and Blue, the second row with numbers 10, 20, 30, and the third row with different font names. Click event of each of the buttons should make the appropriate change in the style of paragraph.

HTML FILE:-

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Color, Size and Font Changer | Shubhang Gupta</title>
    <link rel="stylesheet" href="prac.css"/>
    <link rel="icon" type="jpg" href="../favicon_octocat.png">
    <script src="prac.js">
    </script>
  </head>
  <body>
    <div class="container">
      <h2>TEXT</h2>
      <div id="text" class="text">
```

```
        <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit.
Tempore provident doloremque distinctio cupiditate odit qui amet
similique corporis ab deserunt.</p>
        <p>Lorem ipsum dolor sit, amet consectetur adipisicing elit.
Cum aut sunt velit adipisci doloremque inventore!</p>
        </div>
    </div>
    <div class="container">
      <div class="buttons">
        <button id="b11" type="button" onclick="b11Function()"
>Red</button>
        <button id="b12" type="button" onclick="b12Function()"
>Green</button>
        <button id="b13" type="button" onclick="b13Function()"
>Blue</button>
        <button id="b21" type="button" onclick="b21Function()"
>10</button>
        <button id="b22" type="button" onclick="b22Function()"
>20</button>
        <button id="b23" type="button" onclick="b23Function()"
>30</button>
        <button id="b31" type="button" onclick="b31Function()"
>Courier</button>
        <button id="b32" type="button" onclick="b32Function()"
>Copperplate</button>
        <button id="b33" type="button" onclick="b33Function()"
>Monaco</button>
      </div>
    </div>
  </body>
</html>
```

CSS FILE:-

```
body {
    background-color: rgba(180, 180, 180, 0.932);
  }

  .container {
    margin: 20px auto;
    padding: 15px 25px;
    width: 800px;
    border: 4mm ridge #ff009d;
  }

  .container h2 {
    text-align: center;
```

```css
}

.buttons {
  padding: 10px;
  display: -ms-grid;
  display: grid;
  -ms-grid-rows: auto auto auto;
      grid-template-rows: auto auto auto;
  -ms-grid-columns: auto auto auto;
      grid-template-columns: auto auto auto;
  gap: 20px;
}

.buttons button {
  width: 100%;
  padding: 10px;
  font-size: large;
  border-radius: 5px;
  -webkit-box-shadow: 10px 20px 10px rgba(0, 0, 0, 0.5);
          box-shadow: 10px 20px 10px rgba(0, 0, 0, 0.5);
}

.buttons button:hover {
  -webkit-transform: scale(1.1);
          transform: scale(1.1);
  -webkit-transition: all 0.95s;
  transition: all 0.95s;
}

.buttons button:active {
  -webkit-transform: scale(0.9);
          transform: scale(0.9);
  -webkit-transition: none;
  transition: none;
}

#b11 {
  color: red;
  border: 3px solid red;
}

#b12 {
  color: green;
  border: 3px solid green;
}
```

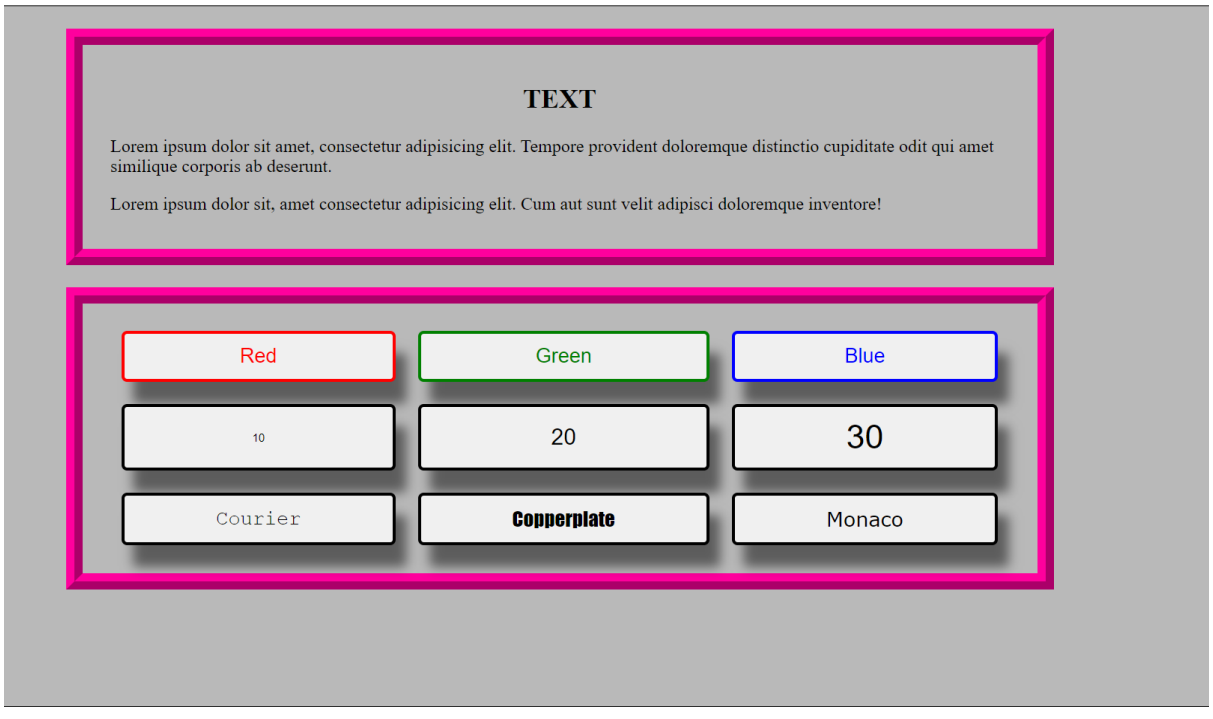
```css
#b13 {
  color: blue;
  border: 3px solid blue;
}

#b21 {
  font-size: 10px;
  border: 3px solid black;
}

#b22 {
  font-size: 20px;
  border: 3px solid black;
}

#b23 {
  font-size: 30px;
  border: 3px solid black;
}

#b31 {
  font-family: courier;
  border: 3px solid black;
}

#b32 {
  font-family: fantasy;
  border: 3px solid black;
}

#b33 {
  font-family: Verdana, Geneva, Tahoma, sans-serif;
  border: 3px solid black;
}
/*# sourceMappingURL=styles.css.map */
```

JAVASCRIPT FILE:-

```javascript
function b11Function() {
    document.getElementById('text').style = 'color: red;';
}

function b12Function() {
    document.getElementById('text').style = 'color: green;';
}

function b13Function() {
```

```
    document.getElementById('text').style = 'color: blue;';
  }

  function b21Function() {
    document.getElementById('text').style = 'font-size: 10px;';
  }

  function b22Function() {
    document.getElementById('text').style = 'font-size: 20px;';
  }

  function b23Function() {
    document.getElementById('text').style = 'font-size: 30px;';
  }

  function b31Function() {
    document.getElementById('text').style = 'font-family: courier;';
  }

  function b32Function() {
    document.getElementById('text').style = 'font-family: fantasy;';
  }

  function b33Function() {
    document.getElementById('text').style = 'font-family: Verdana,
Geneva, Tahoma, sans-serif;';
  }
```

OUTPUT:-



6. 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.

HTML FILE:-

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Pet Information</title>
    <link rel="stylesheet" href="prac.css"/>
    <script src="prac.js"></script>
    <link rel="icon" type="jpg" href="../favicon_octocat.png">
  </head>
  <body>
    <div class="container">
      <u>
        <h1>PET INFORMATION</h1>
      </u>
      <div class="form">
        <form onsubmit="event.preventDefault(); logData();" class="input-
group">
            <label>Pet's Name*</label>
            <input id="pet_name" type="text" placeholder="Bruno" autofocus
required size="50">

            <label>Pet's Age*</label>
            <input id="pet_age" type="number" placeholder="In years" required
size="70">

            <label>Pet's Weight*</label>
            <input id="pet_weight" type="number" placeholder="In Kg" required
size="70">

            <label>Pet's Type*</label>
            <input id="pet_type" type="text" placeholder="Eg. Dog" required
size="50">

            <label>Pet's Likes*</label>
            <input id="pet_likes" type="text" placeholder="Walking" required
size="50">

            <button type="submit" class="button">Register</button>
        </form>
```

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

CSS FILE:-

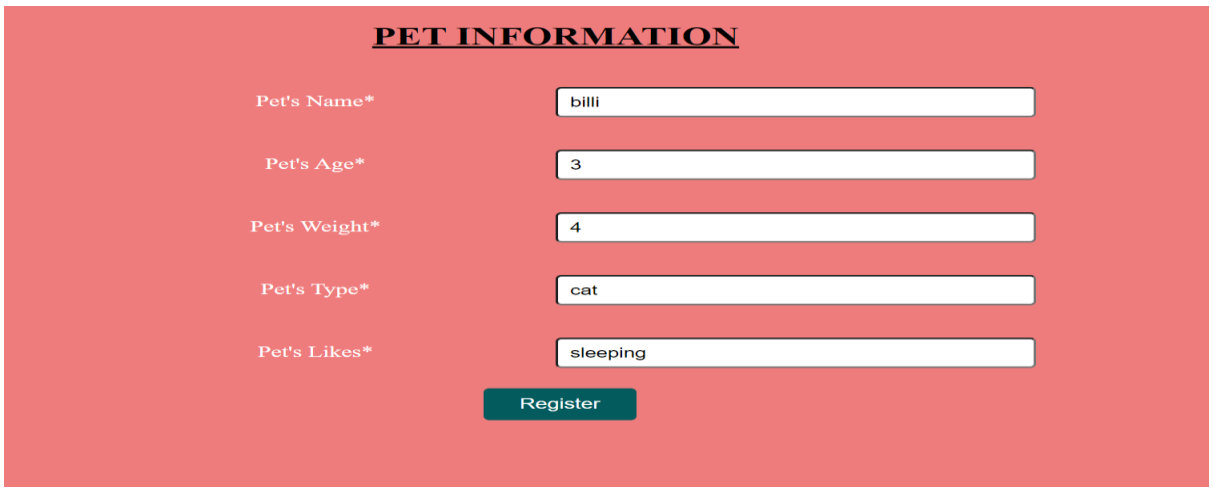
```
body {
    background-color: #ef7c7c;
  }

  .container {
    text-align: center;
  }

  .container .form form {
    -webkit-box-pack: center;
        -ms-flex-pack: center;
            justify-content: center;
  }

  .input-group {
    display: -ms-grid;
    display: grid;
    -ms-grid-rows: (5em)[];
        grid-template-rows: repeat(5, 5em);
    -ms-grid-columns: 25em 25em;
        grid-template-columns: 25em 25em;
  }

  .input-group label {
    color: #fff;
    text-align: center;
    padding-top: 32px;
    font-size: 20px;
  }

  .input-group input {
    height: 25px;
    padding: 5px 10px;
    font-size: 17px;
    margin-top: 25px;
    border-radius: 5px;
  }

  .button {
    -ms-grid-column: 2;
    -ms-grid-column-span: 1;
    grid-column: span 1 / 3;
    margin-left: -60px;
    margin-top: 10px;
    width: -webkit-fit-content;
```

```
    width: -moz-fit-content;
    width: fit-content;
    padding: 10px 30px 10px 30px;
    font-size: 18px;
    color: white;
    background: #035b5e;
    border: none;
    border-radius: 5px;
  }

  .button:hover {
    background-color: #00383a;
  }

  .button:active {
    -webkit-transform: scale(0.9);
            transform: scale(0.9);
  }
```

JAVASCRIPT FILE:-

```
function logData() {
    const name = document.getElementById("pet_name").value;
    const age = document.getElementById("pet_age").value;
    const weight = document.getElementById("pet_weight").value;
    const type = document.getElementById("pet_type").value;
    const likes = document.getElementById("pet_likes").value;
const pet = {
        name: name,
        age: age,
        weight, weight,
        type: type,
        likes: likes
    };
    console.log("Pet Object: ", pet);
    console.log("JSON Object: ", JSON.stringify(pet));
}
```

OUTPUT:-



```
Pet Object:  ▶ {name: 'billi', age: '3', weight: '4', type: 'cat', likes: 'sleeping'}
JSON Object:  {"name":"billi","age":"3","weight":"4","type":"cat","likes":"sleeping"}
>
```

7. 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.

HTML FILE:-

```
<!DOCTYPE html>
<html>

<head>
    <title>Pet Details</title>
    <link rel="stylesheet" href="prac.css" />
</head>

<body>
    <h1>Pet Data</h1>
    <table id="pets">
        <tr>
            <th>Name</th>
            <th>Age</th>
            <th>weight</th>
            <th>Pet type</th>
            <th>Vaccinated</th>
            <th>Likes</th>
        </tr>
    </table>
    <script src="https://code.jquery.com/jquery-3.6.0.js"></script>
    <script src="prac.js"></script>
</body>

</html>
```

CSS FILE:-

```
body {
    background-color: bisque;
    font-family: 'Oswald', 'Futura', sans-serif;
    margin: 0;
    padding: 0;
   }
   table {
    margin-left: auto;
    margin-right: auto;
    color: #ffffff;
    background-color: darkcyan;
    margin-top: 100px;
    border: 1px solid #000;
    border-collapse: collapse;
   }
```

```
   td {
    font-size: large;
    padding: 5px;
    border: 1px solid black;
   }
   th {
    background-color: yellow;
    color: red;
    padding: 5px;
    border: 1px solid black;
   }
   a {
    padding: 10px;
    background-color: pink;
    text-align: center
   }
   h1 {
    margin-top: 50px;
    text-align: center;
    font-weight: bold;
    font-style: normal;
    font-family: Georgia, 'Times New Roman', Times, serif;
    text-decoration: underline;
   }
```

JAVASCRIPT FILE:-

```
var xhr = new XMLHttpRequest();
xhr.onload = function() {
        responseObject = JSON.parse(xhr.responseText);
        var allpets = responseObject.pets;
        var newContent = '';
        var $table = $('#pets');
        for(var i = 0; i < allpets.length; i++)
        {
            var pet = allpets[i];
            var $new_row = $("<tr>");
            var $new_cell = $("<td>");
            $new_row.append($new_cell.clone().text(pet.name));
            $new_row.append($new_cell.clone().text(pet.age));
            $new_row.append($new_cell.clone().text(pet.weight));
            $new_row.append($new_cell.clone().text(pet.type));
            $new_row.append($new_cell.clone().text(pet.vaccinated));
            $new_row.append($new_cell.clone().text(pet.likes));
            $table.append($new_row);
    }
};

xhr.open('GET','prac.json',true);
xhr.send(null);
```

JASON FILE:-

```
{
    "pets": [
        {"name":"belli","age":"4","weight":"18","type":"cat",
        "likes":"She likes to play with wool balls.","vaccinated":true},
        {"name":"tommy","age":"9","weight":"25","type":"dog",
        "likes":"He likes to eat dog food.","vaccinated":false},
```

```
        {"name":"kalin","age":"5","weight":"20","type":"dog",
        "likes":"She likes to walk every morning","vaccinated":true},
        {"name":"tiger","age":"11","weight":"35","type":"dog",
        "likes":"He likes to play with Frisbee.","vaccinated":true}
    ]
}
```

OUTPUT:-

Pet Data

Name	Age	weight	Pet type	Vaccinated	Likes
belli	4	18	cat	true	She likes to play with wool balls.
tommy	9	25	dog	false	He likes to eat dog food.
kalin	5	20	dog	true	She likes to walk every morning
tiger	11	35	dog	true	He likes to play with Frisbee.

8. 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.

HTML FILE:-

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>BSc. (Hons.) Course Details</title>
    <link rel="stylesheet" href="prac.css"/>
    <link rel="icon" type="jpg" href="../favicon_octocat.png">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
    <script src="prac.js"></script>
  </head>

  <body>
    <div class="container">
      <h1>Bachelor of Science (Hons.) Computer Science Course Details</h1>
      <div class="eligibility">
        <h2>Eligibility Criteria</h2>
```

```
        <p class="eligibilty-details">
          The whole eligibility is now depends on cuet examination.
        </p>
      </div>

      <div class="fee">
        <h2>Fee</h2>
        <p>Fee for B.Sc. (Hons.) Computer Science (self-financing course) is Approx. Rs.60,000
65,000/- per year.</p>
      </div>

      <div class="paper-details">
        <h2>Papers with Names and Credits</h2>
        <button id="show-table">Show</button>
        <table>
          <tr>
            <th>Semester</th>
            <th>Course Opted</th>
            <th>Course Name</th>
            <th>Semester</th>
          </tr>
          <tr>
            <td rowspan="6">I</td>
            <td>Core Course - I</td>
            <td>Programming Fundamentals using C++</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - I<br>Practical/Tutorial</td>
            <td>Programming Fundamentals using C++ Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - II</td>
            <td>Computer System Architecture</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - II<br>Practical/Tutorial</td>
            <td>Computer System Architecture Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Generic Elective - I</td>
            <td>GE - I</td>
            <td>4/5</td>
          </tr>
          <tr>
            <td>Generic Elective - I<br>Practical/Tutorial</td>
            <td></td>
            <td>2/1</td>
          </tr>

          <tr>
            <td rowspan="6">II</td>
            <td>Core Course - III</td>
            <td>Programming in Java</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - III<br>Practical/Tutorial</td>
            <td>Programming in Java Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - IV</td>
```

```
            <td>Discrete Structure</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - IV<br>Practical/Tutorial</td>
            <td>Discrete Structure Tutorial</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Generic Elective - II</td>
            <td>GE - II</td>
            <td>4/5</td>
          </tr>
          <tr>
            <td>Generic Elective - II<br>Practical/Tutorial</td>
            <td></td>
            <td>2/1</td>
          </tr>

          <tr>
            <td rowspan="9">III</td>
            <td>Core Course - V</td>
            <td>Data Structures</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - V<br>Practical/Tutorial</td>
            <td>Data Structures Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - VI</td>
            <td>Operating System</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - VI<br>Practical/Tutorial</td>
            <td>Operating System Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - VII</td>
            <td>Computer Networks</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - VII<br>Practical/Tutorial</td>
            <td>Computer Networks Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Skill Enhancement Course - I</td>
            <td>SEC - I</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Generic Elective - III</td>
            <td>GE - III</td>
            <td>4/5</td>
          </tr>
          <tr>
            <td>Generic Elective - III<br>Practical/Tutorial</td>
            <td></td>
            <td>2/1</td>
          </tr>
```

```
          <tr>
            <td rowspan="9">IV</td>
            <td>Core Course - VIII</td>
            <td>Design and Analysis of Algorithms</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - VIII<br>Practical/Tutorial</td>
            <td>Design and Analysis of Algorithms Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - IX</td>
            <td>Software Engineering</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - IX<br>Practical/Tutorial</td>
            <td>Software Engineering Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - X</td>
            <td>Database Management Systems</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - X<br>Practical/Tutorial</td>
            <td>Database Management Systems Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Skill Enhancement Course - II</td>
            <td>SEC - II</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Generic Elective - IV</td>
            <td>GE - IV</td>
            <td>4/5</td>
          </tr>
          <tr>
            <td>Generic Elective - IV<br>Practical/Tutorial</td>
            <td></td>
            <td>2/1</td>
          </tr>

          <tr>
            <td rowspan="8">V</td>
            <td>Core Course - XI</td>
            <td>Internet Technologies</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - XI<br>Practical/Tutorial</td>
            <td>Internet Technologies Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - XII</td>
            <td>Theory of Computation</td>
            <td>5</td>
          </tr>
          <tr>
            <td>Core Course - XII<br>Practical/Tutorial</td>
            <td>Theory of Computation Tutorial</td>
```

```
            <td>1</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - I</td>
            <td>DSE - I</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - I<br>Practical/Tutorial</td>
            <td>DSE - I Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - II</td>
            <td>DSE - II</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - II<br>Practical/Tutorial</td>
            <td>DSE - II Lab</td>
            <td>2</td>
          </tr>

          <tr>
            <td rowspan="8">VI</td>
            <td>Core Course - XIII</td>
            <td>Artificial Intelligence</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - XIII<br>Practical/Tutorial</td>
            <td>Artificial Intelligence Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Core Course - XIV</td>
            <td>Computer Graphics</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Core Course - XIV<br>Practical/Tutorial</td>
            <td>Computer Graphics Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - III</td>
            <td>DSE - III</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - III<br>Practical/Tutorial</td>
            <td>DSE - III Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - IV</td>
            <td>DSE - IV</td>
            <td>4</td>
          </tr>
          <tr>
            <td>Discipline Specific Elective - IV<br>Practical/Tutorial</td>
            <td>DSE - IV Lab</td>
            <td>2</td>
          </tr>
          <tr>
            <td>Total Credits</td>
```

```
            <td colspan="3">140</td>
          </tr>
        </table>
      </div>

      <div class="scope">
        <h2>Scope of the course</h2>
        <p>
          <ul>
            <li>College Placements: If you are good enough to compete with others you can get a campus placement, with an average salary.</li>
            <li>Masters: If you want to continue with your further studies. Yuo can prepare for CAT to get into MBA, in a good College like IIT OR IIM. You can go for M.SC. and MCA like degrees as well, and then pursue for PHD.</li>
            <li>Job: You may get into an entry-level coding or IT job, with salary around INR 20-25K per month.</li>
          </ul>
        </p>
      </div>

      <button id="redesign">Redesign</button>
    </div>
  </body>
</html>
```

CSS FILE:-

```
table, th, td {
    border: 1px solid black;
  }

  th, td {
    padding: 5px;
    text-align: center;
  }

  .paper-details table {
    display: none;
    margin-top: 10px;
  }
```

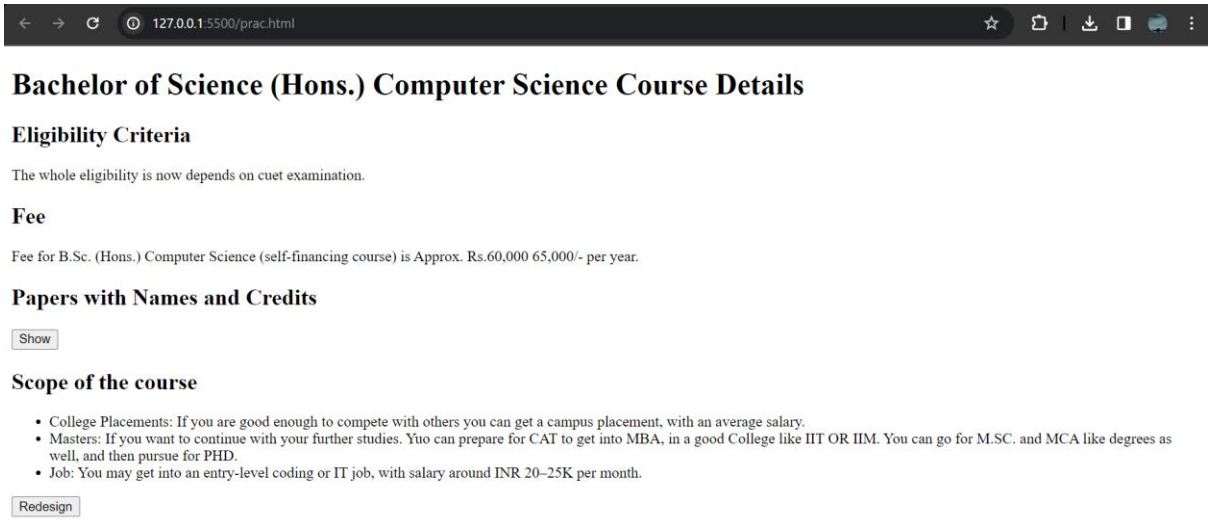
JAVASCRIPT FILE:-

```
$(document).ready(function() {
    $("#show-table").click(function() {
      $(".paper-details table").toggle(1000);
    });
    $("#redesign").click(function() {
      $("#redesign").toggle(100);
      $("body").css({
        "background-color":"black",
        "color":"white",
        "font-family":"'Courier New', Courier, monospace",
        "background":"linear-gradient(-45deg, #7873f5, #ec77ab, #537895, #09203f)",
          "background-size":"100% 200%",
          "animation":"gradient 10s ease infinite"
      });
      $(".container").css({
        "padding":"50px",
        "padding-top":"5px"
      });
      $(".container h1").css({
        "text-align":"center",
        "border":"2px solid white",
        "padding":"2px"
      });
```

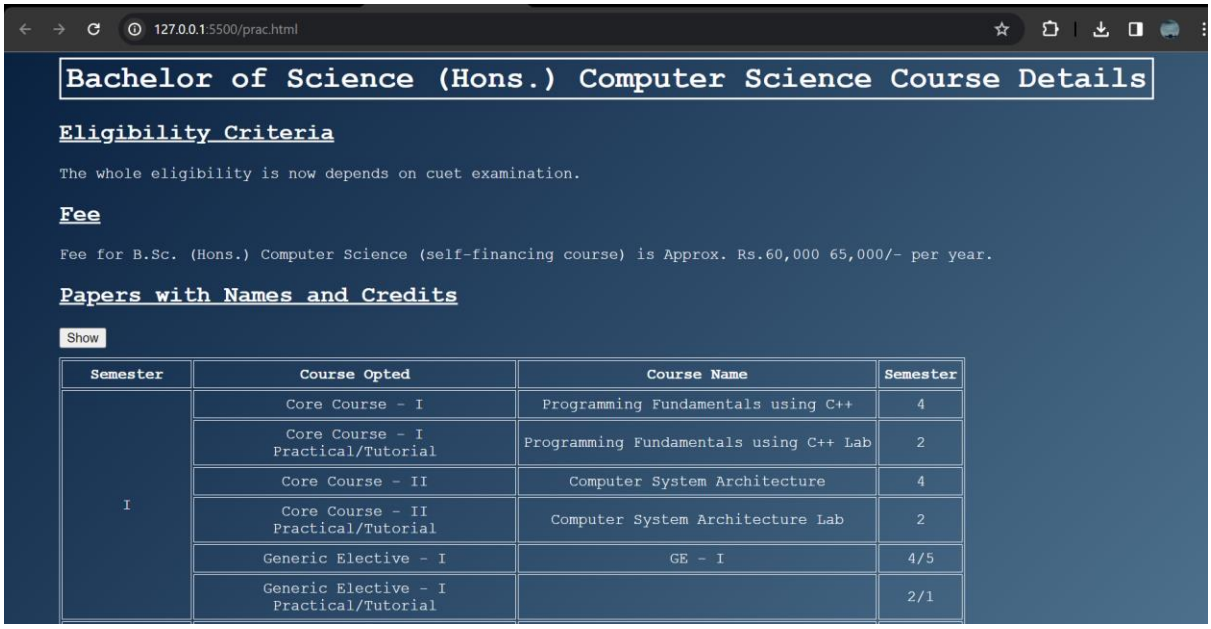
```
    $("table, th, td").css("border", "1px solid white");
    $("h2").css({
      "text-decoration":"underline"
    });
  });
});
```

OUTPUT:-

i)Before Redesign



ii)After Redesign



II	Core Course - III	Programming in Java	4
	Core Course - III Practical/Tutorial	Programming in Java Lab	2
	Core Course - IV	Discrete Structure	4
	Core Course - IV Practical/Tutorial	Discrete Structure Tutorial	2
	Generic Elective - II	GE - II	4/5
	Generic Elective - II Practical/Tutorial		2/1
III	Core Course - V	Data Structures	4
	Core Course - V Practical/Tutorial	Data Structures Lab	2
	Core Course - VI	Operating System	4
	Core Course - VI Practical/Tutorial	Operating System Lab	2
	Core Course - VII	Computer Networks	4
	Core Course - VII Practical/Tutorial	Computer Networks Lab	2
	Skill Enhancement Course - I	SEC - I	4
	Generic Elective - III	GE - III	4/5
	Generic Elective - III Practical/Tutorial		2/1
IV	Core Course - VIII	Design and Analysis of Algorithms	4
	Core Course - VIII Practical/Tutorial	Design and Analysis of Algorithms Lab	2
	Core Course - IX	Software Engineering	4
	Core Course - IX Practical/Tutorial	Software Engineering Lab	2
	Core Course - X	Database Management Systems	4
	Core Course - X Practical/Tutorial	Database Management Systems Lab	2
	Skill Enhancement Course - II	SEC - II	4
	Generic Elective - IV	GE - IV	4/5
	Generic Elective - IV Practical/Tutorial		2/1
V	Core Course - XI	Internet Technologies	4
	Core Course - XI Practical/Tutorial	Internet Technologies Lab	2
	Core Course - XII	Theory of Computation	5
	Core Course - XII Practical/Tutorial	Theory of Computation Tutorial	1
	Discipline Specific Elective - I	DSE - I	4
	Discipline Specific Elective - I Practical/Tutorial	DSE - I Lab	2
	Discipline Specific Elective - II	DSE - II	4
	Discipline Specific Elective - II Practical/Tutorial	DSE - II Lab	2
VI	Core Course - XIII	Artificial Intelligence	4
	Core Course - XIII Practical/Tutorial	Artificial Intelligence Lab	2
	Core Course - XIV	Computer Graphics	4
	Core Course - XIV Practical/Tutorial	Computer Graphics Lab	2
	Discipline Specific Elective - III	DSE - III	4
	Discipline Specific Elective - III Practical/Tutorial	DSE - III Lab	2
	Discipline Specific Elective - IV	DSE - IV	4
	Discipline Specific Elective - IV Practical/Tutorial	DSE - IV Lab	2
Total Credits	140		

Scope of the course

- College Placements: If you are good enough to compete with others you can get a campus placement, with an average salary.
- Masters: If you want to continue with your further studies. Yuo can prepare for CAT to get into MBA, in a good College like IIT OR IIM. You can go for M.SC. and MCA like degrees as well, and then pursue for PHD.
- Job: You may get into an entry-level coding or IT job, with salary around INR 20-25K per month.

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

HTML FILE:-

```
<!DOCTYPE html>
<html lang="en">

<head>
    <title>Image Gallery with use of Bootstrap</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
    <link rel="stylesheet" href="prac.css">
    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>
</head>

<body>
    <div class="container">
        <h1>IMAGE GALLERY</h1>
        <p id="intro">
            rom soaring eagles to hidden insects, Earth's diverse wildlife weaves a tapestry of
wonder and complexity, demanding our respect and protection.
        </p>
        <div class="row">
            <div class="col-md-4">
                <div class="thumbnail">
                    <img src="lion.jpg" alt="LION" style="height: 200px; width:100%">
                    <div class="caption">
                        <p>The lion (Panthera leo) is a large cat of the genus Panthera native
to
                            Africa and India.
                            Sun-drenched mane, a king's roar,
                            Ruler of the savanna,
                            Power in every stride.</p>
                    </div>
                </div>
            </div>
            <div class="col-md-4">
                <div class="thumbnail">
                    <img src="peacock.jpg" alt="PEACOCK" style="height: 200px; width:100%">
                    <div class="caption">
                        <p>Peacock, also called peafowl

                          Feathers like stained glass,
                          Fanning out in vibrant display,
                          A dance of beauty and pride.
                        </p>
                    </div>
                </div>
            </div>
            <div class="col-md-4">
                <div class="thumbnail">
                    <img src="elephant.jpg" alt="ELEPHANTS" style="height: 200px; width:100%">
                    <div class="caption">
                        <p>Elephants are the largest existing land animals.
```

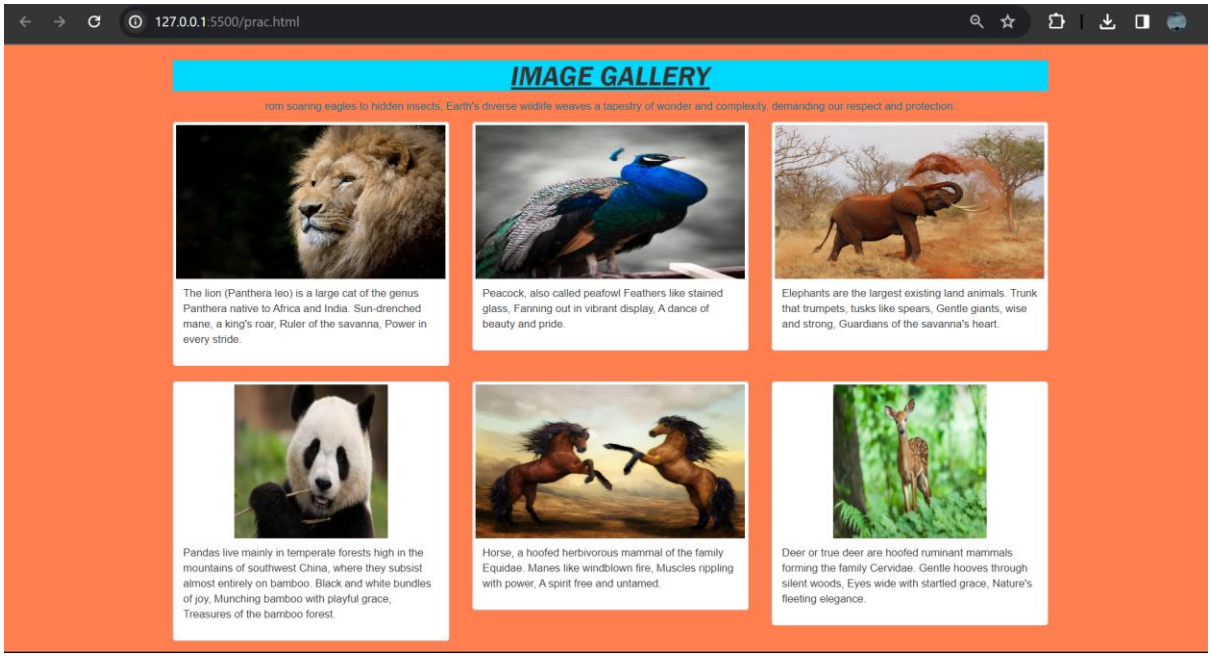
```
                        Trunk that trumpets, tusks like spears,
                        Gentle giants, wise and strong,
                        Guardians of the savanna's heart.
                    </p>
                </div>
            </div>
        </div>
        <div class="row">
            <div class="col-md-4">
                <div class="thumbnail">
                    <img src="panda.jpg" alt="PANDAS" style="height: 200px; width:200px">
                    <div class="caption">
                        <p>Pandas live mainly in temperate forests high in the mountains of
southwest
                        China, where they subsist almost entirely on bamboo.
                        Black and white bundles of joy,
                        Munching bamboo with playful grace,
                        Treasures of the bamboo forest.</p>
                    </div>
                </div>
            </div>
            <div class="col-md-4">
                <div class="thumbnail">
                    <img src="horse.jpg" alt="HORSE" style="height: 200px; width:100%">
                    <div class="caption">
                        <p>Horse, a hoofed herbivorous mammal of the family Equidae.
                        Manes like windblown fire,
                        Muscles rippling with power,
                        A spirit free and untamed.
                        </p>
                    </div>
                </div>
            </div>
            <div class="col-md-4">
                <div class="thumbnail">
                    <img src="deer.jpg" alt="DEER" style="height: 200px; width:200px">
                    <div class="caption">
                        <p>Deer or true deer are hoofed ruminant mammals forming the family
                        Cervidae.
                        Gentle hooves through silent woods,
                        Eyes wide with startled grace,
                        Nature's fleeting elegance.</p>
                    </div>
                </div>
            </div>
        </div>
    </div>
</body>

</html>
```

CSS FILE:-

```
body{
    background-color: coral;
}
h1{
    text-align: center;
    background-color: rgb(0, 217, 255);
    font-style: italic;
    font-family:'Franklin Gothic Medium', 'Arial Narrow', Arial, sans-serif;
```

```
    text-decoration: underline;
    font-weight: bold;
}
#intro {
    text-align:center;
    color: rgb(0, 114, 146);
}
```

OUTPUT:-



10. 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.

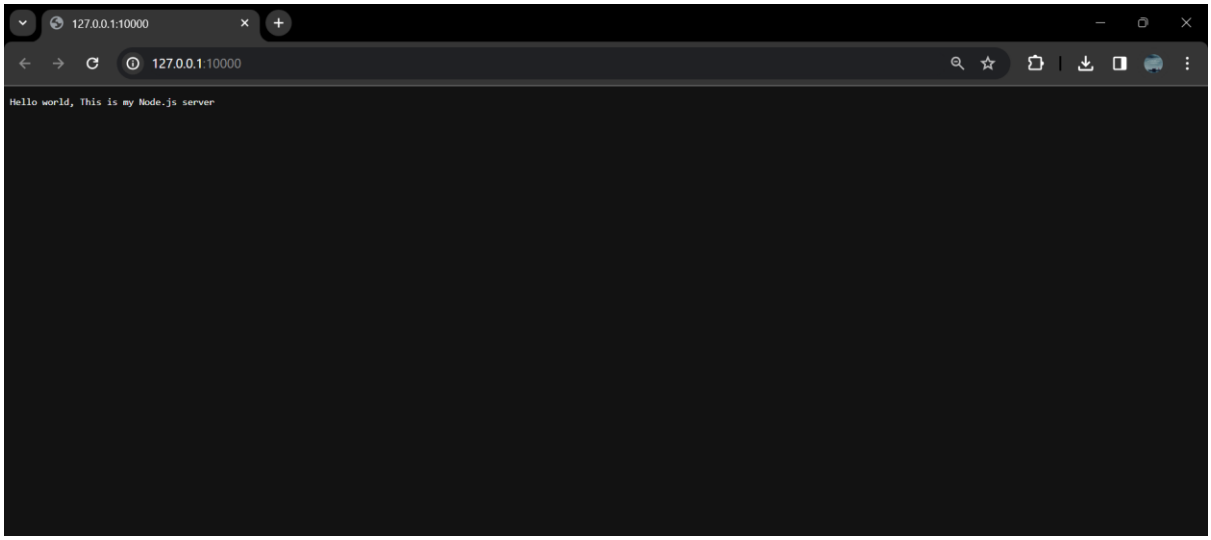
NODE.JS FILE:-

```
const http = require('http')
const hostname = '127.0.0.1'
const port = 10000
function sayHello(req,res)
{
    res.statusCode = 200
    res.setHeader('Content-Type','text/plain')
    res.write("Hello world, This is my Node.js server")
    res.end()
}
const server = http.createServer(sayHello)
server.listen(port, hostname, () => {
    console.log(`Server running at http://${hostname}:${port}`)
})
```

TERMINAL:-

```
PS D:\WD2.0> node .\prac.js
Server running at http://127.0.0.1:10000
```

OUTPUT:-



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.

HTML FILE:-

```html
<!DOCTYPE html>
<html lang="en">

  <head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>SignInUp</title>
    <link rel="stylesheet" href="prac.css">
  </head>

  <body>
    <main class="container" id="container">
      <div class="form-container sign-up-container">
```

```
        <form action="#">
          <h1>Sign Up</h1>
          <input type="text" placeholder="Name" />
          <input type="email" placeholder="Email" />
          <input type="password" placeholder="Password" />
          <a href="#">You agree to T&C</a>
          <button>Sign Up</button>
        </form>
      </div>
      <div class="form-container sign-in-container">
        <form action="#">
          <h1>Sign in</h1>
          <input type="email" placeholder="Email" />
          <input type="password" placeholder="Password" />
          <a href="#">Forgot your password?</a>
          <button>Sign In</button>
        </form>
      </div>
      <div class="overlay-container">
        <div class="overlay">
          <div class="overlay-panel overlay-left">
            <h1>Already Have An Account? 👀</h1>
            <p>Sign in to access your dashboard</p>
            <button class="ghost" id="signIn">Sign In</button>
          </div>
          <div class="overlay-panel overlay-right">
            <h1>Hey There 👋</h1>
            <p>Create an account with us and get access to your dashboard</p>
            <button class="ghost" id="signUp">Sign Up</button>
          </div>
        </div>
      </div>
      </div>

      <script src="prac.js"></script>
  </body>

</html>
```

CSS FILE:-

```
@import url('https://fonts.googleapis.com/css?family=Montserrat:400,800');

* {
    box-sizing: border-box;
}

body {
    background: #f6f5f7;
    display: flex;
    justify-content: center;
    align-items: center;
    flex-direction: column;
    font-family: 'Montserrat', sans-serif;
    height: 100vh;
    margin: 0;
    padding: 0;
}

h1 {
    font-weight: bold;
```

```
    margin: 0;
}

h2 {
    text-align: center;
}

p {
    font-size: 14px;
    font-weight: 100;
    line-height: 20px;
    letter-spacing: 0.5px;
    margin: 20px 0 30px;
}

span {
    font-size: 12px;
}

a {
    color: #333;
    font-size: 14px;
    text-decoration: none;
    margin: 15px 0;
}

button {
    border-radius: 20px;
    border: 1px solid #07070A;
    background-color: #07070A;
    color: #ffffff;
    font-size: 12px;
    font-weight: bold;
    padding: 12px 45px;
    letter-spacing: 1px;
    text-transform: uppercase;
    transition: transform 80ms ease-in;
}

button:active {
    transform: scale(0.95);
}

button:focus {
    outline: none;
}

button.ghost {
    background-color: transparent;
    border-color: #ffffff;
}

form {
    background-color: #ffffff;
    display: flex;
    align-items: center;
    justify-content: center;
    flex-direction: column;
    padding: 0 50px;
    height: 100%;
    text-align: center;
}
```

```css
form h1 {
    margin-bottom: 0.33em;
}

input {
    background-color: #eee;
    border: none;
    padding: 12px 15px;
    margin: 8px 0;
    width: 100%;
}

.container {
    background-color: #fff;
    box-shadow: 0 14px 28px rgba(0,0,0,0.22), 0 10px 10px rgba(0,0,0,0.22);
    position: relative;
    overflow: hidden;
    width: 768px;
    max-width: 100%;
    min-height: 480px;
}

.form-container {
    position: absolute;
    top: 0;
    height: 100%;
    transition: all 0.6s ease-in-out;
}

.sign-in-container {
    left: 0;
    width: 50%;
    z-index: 2;
}

.container.right-panel-active .sign-in-container {
    transform: translateX(100%);
}

.sign-up-container {
    left: 0;
    width: 50%;
    opacity: 0;
    z-index: 1;
}

.container.right-panel-active .sign-up-container {
    transform: translateX(100%);
    opacity: 1;
    z-index: 5;
    animation: show 0.6s;
}

@keyframes show {
    0%, 49.99% {
        opacity: 0;
        z-index: 1;
    }

    50%, 100% {
        opacity: 1;
```

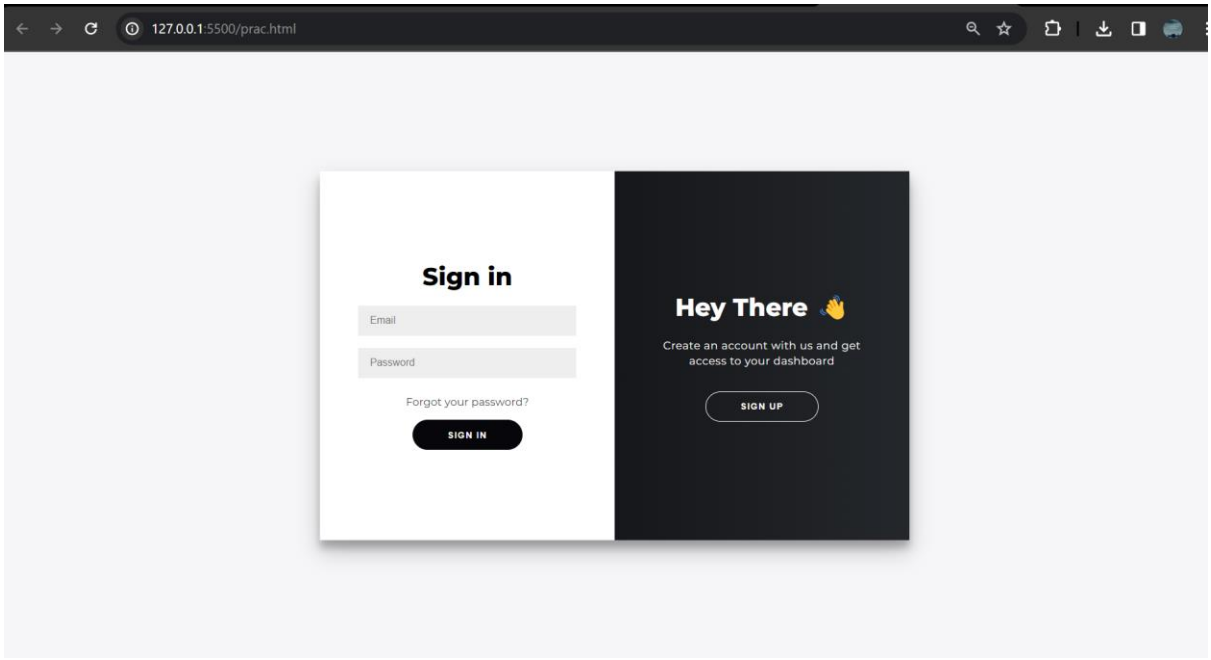
```
        z-index: 5;
    }
}

.overlay-container {
    position: absolute;
    top: 0;
    left: 50%;
    width: 50%;
    height: 100%;
    overflow: hidden;
    transition: transform 0.6s ease-in-out;
    z-index: 100;
}

.container.right-panel-active .overlay-container{
    transform: translateX(-100%);
}

.overlay {
    background: #24272B;
    background: linear-gradient(to right, #07070A, #24272B);
    background-repeat: no-repeat;
    background-size: cover;
    background-position: 0 0;
    color: #ffffff;
    position: relative;
    left: -100%;
    height: 100%;
    width: 200%;
    transform: translateX(0);
    transition: transform 0.6s ease-in-out;
}

.container.right-panel-active .overlay {
    transform: translateX(50%);
}

.overlay-panel {
    position: absolute;
    display: flex;
    align-items: center;
    justify-content: center;
    flex-direction: column;
    padding: 0 40px;
    text-align: center;
    top: 0;
    height: 100%;
    width: 50%;
    transform: translateX(0);
    transition: transform 0.6s ease-in-out;
}

.overlay-left {
    transform: translateX(-20%);
}

.container.right-panel-active .overlay-left {
    transform: translateX(0);
}

.overlay-right {
```

```
    right: 0;
    transform: translateX(0);
}

.container.right-panel-active .overlay-right {
    transform: translateX(20%);
}

.social-container {
    margin: 20px 0;
}

.social-container a {
    border: 1px solid #DDDDDD;
    border-radius: 50%;
    display: inline-flex;
    justify-content: center;
    align-items: center;
    margin: 0 5px;
    height: 40px;
    width: 40px;
}

footer {
    background-color: #222;
    color: #fff;
    font-size: 14px;
    bottom: 0;
    position: fixed;
    left: 0;
    right: 0;
    text-align: center;
    z-index: 999;
}

footer p {
    margin: 10px 0;
}

footer i {
    color: red;
}

footer a {
    color: #3c97bf;
    text-decoration: none;
}
```

JAVASCRIPT FILE:-

```
const signUpButton = document.getElementById('signUp');
const signInButton = document.getElementById('signIn');
const container = document.getElementById('container');

signUpButton.addEventListener('click', () => {
  container.classList.add("right-panel-active");
});

signInButton.addEventListener('click', () => {
  container.classList.remove("right-panel-active");
});
```

OUTPUT:-


127.0.0.1:5500/prac.html
Sign in
Email
Password
Forgot your password?
SIGN IN
Hey There 👋
Create an account with us and get access to your dashboard
SIGN UP