

PRACTICALS 1-6

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Course- BSc (H) Computer Science

Semester- 5

Subject- Information of Technologies.

Roll No- 20/88037

Q1. 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.

```
/blob/main/ping_and_tracert/netstat.png
Command Prompt
C:\Users\Kamal>netstar -ano
'netstar' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\Kamal>netstat -ano
Active Connections
Proto Local Address Foreign Address State PID
TCP 0.0.0.0:135 0.0.0.0:0 LISTENING 1224
TCP 0.0.0.0:445 0.0.0.0:0 LISTENING 4
TCP 0.0.0.0:5040 0.0.0.0:0 LISTENING 8324
TCP 0.0.0.0:6646 0.0.0.0:0 LISTENING 6444
TCP 0.0.0.0:49664 0.0.0.0:0 LISTENING 864
TCP 0.0.0.0:49665 0.0.0.0:0 LISTENING 528
TCP 0.0.0.0:49666 0.0.0.0:0 LISTENING 464
TCP 0.0.0.0:49667 0.0.0.0:0 LISTENING 3104
TCP 0.0.0.0:49668 0.0.0.0:0 LISTENING 3876
TCP 0.0.0.0:49670 0.0.0.0:0 LISTENING 8
TCP 10.10.5.93:139 0.0.0.0:0 LISTENING 4
TCP 10.10.5.93:49423 20.198.119.84:443 ESTABLISHED 5760
TCP 10.10.5.93:49424 20.198.119.84:443 ESTABLISHED 5760
TCP 10.10.5.93:50698 20.198.118.190:443 ESTABLISHED 5044
TCP 10.10.5.93:50833 35.247.144.219:443 ESTABLISHED 6444
TCP 10.10.5.93:50845 52.98.33.162:443 ESTABLISHED 9988
TCP 10.10.5.93:51240 157.240.16.52:443 ESTABLISHED 14248
TCP 10.10.5.93:51254 152.199.43.62:443 CLOSE_WAIT 9988
TCP 10.10.5.93:51256 72.21.91.29:80 CLOSE_WAIT 9988
TCP 10.10.5.93:51257 117.18.232.200:443 CLOSE_WAIT 9988
TCP 10.10.5.93:51264 142.250.192.170:443 ESTABLISHED 17292
TCP 10.10.5.93:51274 8.8.8.8:443 ESTABLISHED 17292
TCP 10.10.5.93:51276 142.250.194.170:443 TIME_WAIT 0
TCP 10.10.5.93:51277 142.250.194.170:443 ESTABLISHED 17292
TCP 10.10.5.93:51278 142.250.194.170:443 ESTABLISHED 17292
TCP 10.10.5.93:51280 13.73.252.129:8883 ESTABLISHED 14252
TCP 10.10.5.93:51284 104.208.16.88:443 ESTABLISHED 11072
TCP 10.10.5.93:51285 20.207.73.82:443 ESTABLISHED 17292
TCP 10.10.5.93:51286 8.8.8.8:443 ESTABLISHED 17292
TCP 10.10.5.93:51287 20.207.73.82:443 ESTABLISHED 17292
TCP 10.10.5.93:51288 20.189.173.5:443 ESTABLISHED 17292
TCP 10.10.5.93:51289 20.189.173.5:443 ESTABLISHED 17292
TCP 10.10.5.93:51290 185.199.110.154:443 ESTABLISHED 17292
TCP 10.10.5.93:51291 185.199.111.133:443 ESTABLISHED 17292
TCP 10.10.5.93:51292 140.82.113.22:443 ESTABLISHED 17292
TCP 10.10.5.93:51293 140.82.113.22:443 ESTABLISHED 17292
TCP 10.10.5.93:51294 20.207.73.85:443 ESTABLISHED 17292
TCP 10.10.5.93:51297 185.199.109.133:443 ESTABLISHED 17292
TCP 10.10.5.93:51298 185.199.109.133:443 ESTABLISHED 17292
TCP 10.10.5.93:51299 142.250.194.78:443 ESTABLISHED 17292
TCP 10.10.5.93:51300 142.250.194.78:443 ESTABLISHED 17292
TCP 127.0.0.1:8884 0.0.0.0:0 LISTENING 4
TCP 127.0.0.1:49798 127.0.0.1:49799 ESTABLISHED 14384
TCP 127.0.0.1:49799 127.0.0.1:49798 ESTABLISHED 14384
TCP 127.0.0.1:49803 127.0.0.1:49804 ESTABLISHED 14384
TCP 127.0.0.1:49804 127.0.0.1:49803 ESTABLISHED 14384
```

Q2. 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.

```
Command Prompt

Pinging github.com [20.207.73.82] with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 20.207.73.82:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Users\Kamal>ping www.arsd.du.ac.in
Ping request could not find host www.arsd.du.ac.in. Please check the name and try again.

C:\Users\Kamal>ping arsd.du.ac.in
Ping request could not find host arsd.du.ac.in. Please check the name and try again.

C:\Users\Kamal>ping google.com

Pinging google.com [216.58.200.206] with 32 bytes of data:
Reply from 216.58.200.206: bytes=32 time=102ms TTL=117
Reply from 216.58.200.206: bytes=32 time=42ms TTL=117
Reply from 216.58.200.206: bytes=32 time=24ms TTL=117
Reply from 216.58.200.206: bytes=32 time=23ms TTL=117

Ping statistics for 216.58.200.206:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 23ms, Maximum = 102ms, Average = 47ms

C:\Users\Kamal>
```

```
Command Prompt

Microsoft Windows [Version 10.0.22000.978]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Kamal>tracert google.com

Tracing route to google.com [216.58.200.206]
over a maximum of 30 hops:

  0  *          *          *          Request timed out.
  1  575 ms     757 ms     63 ms     10.115.1.2
  2  727 ms     724 ms     *         10.103.1.11
  3  80 ms      88 ms      74 ms     14.139.227.81
  4  *          *          *         Request timed out.
  5  207 ms     69 ms     42 ms     10.119.234.162
  6  43 ms      43 ms     47 ms     72.14.194.160
  7  32 ms      78 ms     46 ms     74.125.244.193
  8  42 ms      42 ms     58 ms     142.250.46.131
  9  58 ms      38 ms     40 ms     nrt12s12-in-f206.1e100.net [216.58.200.206]

Trace complete.

C:\Users\Kamal>
```

Q3. 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 CODE-

```
<html>
<head>
```

```

<title>My Portfolio</title>
<link rel="stylesheet" href="style.css">
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.0.0-
beta3/css/all.min.css" integrity="sha512-
Fo3rlrZj/k7ujTnHg4CGR2D7kSs0v4LLanw2qksYuRLEzO+tcaEPQogQ0KaoGN26/zrn20ImR1Dful
Wn0o7aBA==" crossorigin="anonymous" referrerpolicy="no-referrer" />
</head>
<body>
  <div class="Top">
    <div class="logo">Dynamic Coding with Kamal</div>
    <div class="Nav">
      <a href="#">Home</a>
      <a href="#">Services</a>
      <a href="#">About</a>
      <a href="#">Skills</a>
      <a href="#">Portfolio</a>
      <a href="#">Contact</a>
    </div>
  </div>

  <div class="heading">
    <div class="left">
      <div class="SocialMedia">
        <i class="fa-brands fa-facebook"></i>
        <i class="fa-brands fa-twitter"></i>
        <i class="fa-brands fa-instagram"></i>
        <i class="fa-brands fa-linkedin-in"></i>
        <i class="fa-brands fa-youtube"></i>
      </div>

      <h2>I am Kamal Patni</h2>

<div>
      <p>I'm Kamal Patni, Web developer with so much interest in
coding related things. Web Dvelopment for life. </p>
      <br>
      <p> Hobbies- Playing Cricket, Sleeping.</p>
      <p> Address=" Block WZ 1179M S/F Nangal Raya, New Delhi,
110046</p>

      <p>College- University of Delhi</p>
      <p> Course- BSC (H) in Computer Science.</p>
      <p> Technical Skills- HTML, CSS, JAVASCRIPT, NODE JS, JQUERY,
PYTHON,</p>

      <p> Database- MYSQL</p>
      <p> Operating System- WINDOWs 7, 8,10,11, Linux</p>

```

```

        <p> Experience- Created an academic website for the school.
<br> Have a look- <a
href="www.soarvalleypublicschool.com">www.soarvalleypublicschool.com</a></p>
</div>

        <div class="button">
            <button class="Portfolio_Button">My Portfolio</button>
            <button class="Youtube_button">
                <i class="fa-solid fa-play"></i>
            </button>
        </div>
    </div>

    <div class="right">
        
    </div>
</div>
</body>
</html>

```

CSS CODE-

```

*{
    padding:0;
    margin:0;
}
.Top{
    background-color:rgb(31,34,53);
    height: 70px;
    color:white;
    display:flex;
    justify-content: space-evenly;
    align-items:center;
    flex-wrap: wrap;
}
.logo{
    font-size: 20px;
}
.Nav{
    display: flex;
    flex-wrap: wrap;
}
a{
    color:white;
    text-decoration: none;
    font-size: 18px;
    padding:15px;
    letter-spacing: 0.5px;
}

```

```

a:hover{
    color:red;
    text-decoration: underline;
    text-underline-position: under;
    text-decoration-style:dotted;
}
/*****heading*****/
.heading{
    background-color:rgb(35,37,58);
    height:555px;
    color:white;
    display:flex;
    flex-wrap: wrap;
    flex-direction: row;
    align-items: center;
    justify-content:space-evenly;
}
.SocialMedia{
    margin:15px 0px;
}
.SocialMedia i{
    padding:10px;
    border-radius: 50px;
    border:1px solid #800900;
    color:white;
}
.SocialMedia i:hover{
    background-color:white;
    color:rgb(35,37,58);
    border:1px solid transparent;
}
h2{
    font-size: 50px;
    margin:10px 0px;
}
p{
    font-size: 18px;
    width:500px;
    margin:5px 0px;
}
.Portfolio_Button{
    width: 150px;
    height: 50px;
    border:1px solid white;
    font-size: 18px;
    color:white;
    background-color:transparent;
    border-radius: 50px;
}

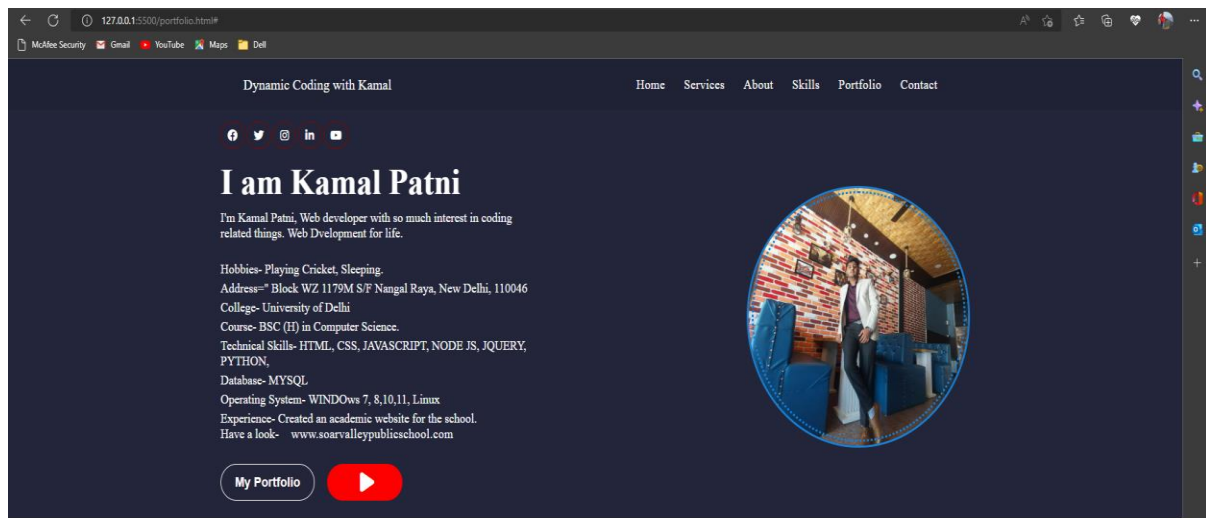
```

```

    font-weight: bold;
    margin: 5px 0px;
}
.Portfolio_Button:hover{
    background-color: red;
    border: 1px solid transparent;
}
.Youtube_button{
    width: 120px;
    height: 50px;
    border: none;
    font-size: 30px;
    color: white;
    background-color: red;
    border-radius: 50px;
    margin: 0px 20px;
}
.button{
    display: flex;
    align-items: center;
    margin: 25px 0px;
}
/*****right*****/
.right{
    border: 3px solid #1980d4;
    border-radius: 300px;
    overflow: hidden;
    display: flex;
    justify-content: center;
    align-items: center;
    flex-wrap: wrap;
}
.right::before{
    content: "";
    position: absolute;
    width: 335px;
    height: 335px;
    border-radius: 300px;
    border: 3px dotted #1980d4;
}

```

OUTPUT-



Q4. 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 CODE-

```
<!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>
    <link rel="stylesheet" href="./styleq4.css">
  </head>

  <body>
    <main id="main">
      </main>

    <script src="./scriptq4.js"></script>
  </body>

</html>
```

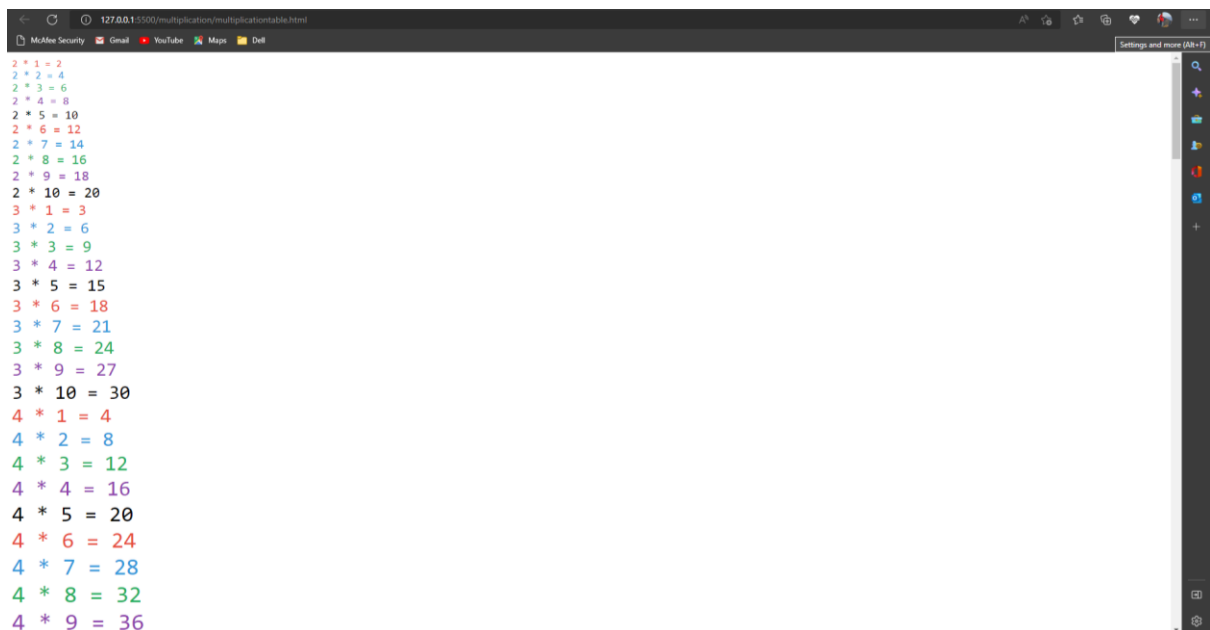
CSS CODE-

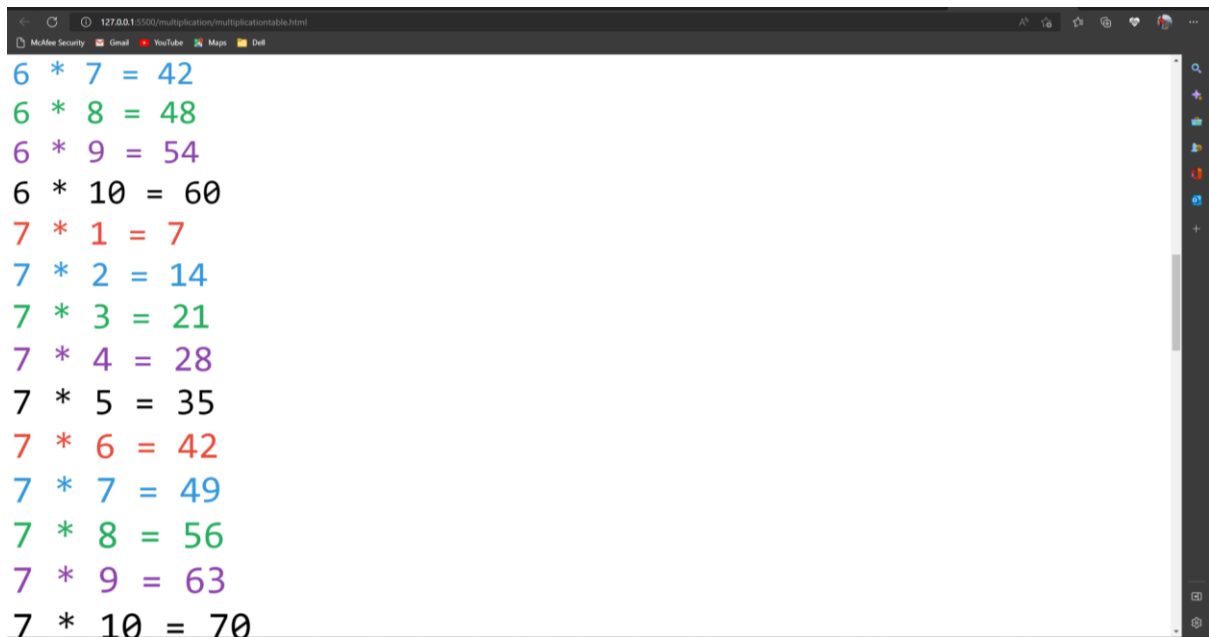
```
body {  
  font-family: monospace;  
}  
  
p {  
  margin: 0;  
}
```

JAVASCRIPT CODE-

```
const mainEl = document.getElementById('main');  
  
var i = 2;  
var j = 1;  
var t = 1;  
  
var colors = ['#E74C3C', '#3498DB', '#27AE60', '#8E44AD', '#000000'];  
  
setInterval(() => {  
  if (j > 10) {  
    i++;  
    j = 1;  
  }  
  
  if (i > 10) return;  
  
  const child = document.createElement('p');  
  child.innerHTML = `${i} * ${j} = ${i * j}`;  
  child.style.color = colors[(j - 1) % 5];  
  child.style.fontSize = `${t}rem`;  
  mainEl.appendChild(child);  
  window.scrollTo(0, document.body.scrollHeight);  
  
  j++;  
  t += 0.05;  
}, 5e3);
```

OUTPUT-





Q5. 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 CODE-

```
<!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>Paragraph Styling</title>
    <link rel="stylesheet" href="./style.css">
  </head>

  <body>
    <main>
      <div>
        <p>Lorem ipsum dolor sit amet consectetur, adipisicing elit. Nihil
sapiante hic provident, quo quae deleniti
        obcaecati corrupti doloreque. Ipsum provident a, nesciunt
necessitatibus rerum recusandae illo ipsam
        cupiditate? Itaque nemo voluptatibus deleniti velit labore quibusdam
officiis laborum maiores illo
```

```

        dignissimos. Veritatis illum adipisci nemo ea eligendi nulla. Nemo
aliquam impedit cupiditate odit recusandae
        eos, autem magnam placeat perspiciatis ipsam aliquid repudiandae et
provident, ullam magni rem deleniti
        repellendus nihil asperiores repellat quibusdam quae inventore
minima. Aperiam, natus fuga cumque commodi
        quasi non.</p>
</div>
<div class="grid">
    <button id="c-red">Red</button>
    <button id="c-green">Green</button>
    <button id="c-blue">Blue</button>
    <button id="s-10">10</button>
    <button id="s-20">20</button>
    <button id="s-30">30</button>
    <button id="f-mono">Monospace</button>
    <button id="f-sans">Sans-Serif</button>
    <button id="f-serif">Serif</button>
</div>
</main>

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

</html>

```

CSS Code-

```

body, html {
    margin: 0;
    padding: 0;
}

body {
    background-color: #000;
    color: #fff;
    font-size: 1.2rem;
    font-family: monospace;
}

main {
    width: 60%;
    margin: 0 auto;
    display: flex;
    flex-direction: column;
    align-items: center;
    justify-content: center;
    position: absolute;

```

```

top:0;
bottom:0;
right:0;
left:0;
}

p {
padding: 0 2.85em;
}

.grid {
width: 60%;
margin: 0 auto;
display: grid;
grid-template-columns: repeat(3, 1fr);
}

button {
border: none;
margin: 1em auto;
width: 8em;
height: 2em;
transition-duration: 500ms;
cursor: pointer;
font-family: monospace;
}

button:hover {
background-color: #ccc;
}

```

JAVA CODE-

```

const para = document.querySelector('p');

document.getElementById('c-red').addEventListener('click' ,()=>{
    para.style.color = 'red';
});

document.getElementById('c-green').addEventListener('click' ,()=>{
    para.style.color = 'green';
});

document.getElementById('c-blue').addEventListener('click' ,()=>{
    para.style.color = 'blue';
});

document.getElementById('s-10').addEventListener('click' , ()=>{

```

```

        para.style.fontSize = `${10}px`;
    });

    document.getElementById('s-20').addEventListener('click' , ()=>{
        para.style.fontSize = `${20}px`;
    });

    document.getElementById('s-30').addEventListener('click' , ()=>{
        para.style.fontSize = `${30}px`;
    });

    document.getElementById('f-ss').addEventListener('click' , ()=>{
        para.style.fontFamily = 'sans-serif';
    });

    document.getElementById('f-s').addEventListener('click' , ()=>{
        para.style.fontFamily = 'serif';
    });

    document.getElementById('f-m').addEventListener('click' , ()=>{
        para.style.fontFamily = 'monospace';
    })

```

OUTPUT-



Q6. 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 CODE-

```
<!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>PetForm</title>
    <link rel="stylesheet" href="./style.css">
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.15.4/css/all.min.css"
      integrity="sha512-1ycn6IcaQQ40/MKBBW2W4Rhis/DbILU74C1vSrLJxCq57o941Ym01SwNsOMqvEBFlcgUa6xLiPY/NS5R+E6ztJQ=="
      crossorigin="anonymous" referrerpolicy="no-referrer" />
  </head>

  <body>
    <main class="container">
      <div class="left-container">
        <h1>
          Pet Survey
        </h1>
        
      </div>
      <div class="right-container">
        <h1>information about your pet</h1>
        <header>
          <form id="petForm">
            <div class="field">
              <label for="name">Name</label>
              <input type="text" name="name" id="name" placeholder="Enter your pet's name" required />
            </div>
            <div class="field">
              <label for="age">Age</label>
              <input type="number" name="age" id="age" placeholder="Enter your pet's age" required />
            </div>
            <div class="field">
              <label for="weight">Weight</label>
```

```

        <input type="number" step="0.01" name="weight" id="weight"
placeholder="Enter your pet's weight"
        required />
    </div>
    <div class="field">
        <label for="type">Type</label>
        <select name="type" id="type" required>
            <option value="" disabled selected>Select your pet
type</option>
            <option value="dog">Dog</option>
            <option value="cat">Cat</option>
            <option value="bird">Bird</option>
            <option value="other">Other</option>
        </select>
    </div>
    <div class="field">
        <label for="likes">Likes</label>
        <input type="text" name="likes" id="likes" placeholder="Enter
what your pet likes" required />
    </div>
</header>
<footer>
    <input type="submit" value="Submit" />
    <input type="reset" value="Reset" />
</footer>
</form>
</div>
</main>

<script>
    document.getElementById('petForm').addEventListener('submit', (e) => {
        e.preventDefault();

        const name = document.getElementById('name').value;
        const age = parseInt(document.getElementById('age').value);
        const weight = parseFloat(document.getElementById('weight').value);
        const type = document.getElementById('type').value;
        const likes = document.getElementById('likes').value;

        const pet = {
            name,
            age,
            weight,
            type,
            likes,
        };

        console.log(pet);
    });

```

```

        console.log(JSON.stringify(pet, null, 2));
    });
</script>
</body>

</html>

```

CSS CODE-

```

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

body, html {
    margin: 0;
    padding: 0;
    background-color: #aaa;
}

body {
    font-family: 'Montserrat', sans-serif;
    font-size: 14px;
    font-weight: 400;
}

main {
    position: absolute;
    top:0;
    bottom:0;
    right:0;
    left:0;
    margin: auto ;
}

.container {
    display: flex;
    flex-direction: row;
    height: 50%;
    width: 50%;
    box-shadow: #444 0px 0px 10px;
}

@media screen and (max-width: 900px) {
    .container {
        display: flex;
        flex-direction: row;
        height: 50%;
        width: 80%;
    }
}

```



```
.left-container, .right-container {
  padding-top: 1em;
}

.left-container {
  flex: 1;
  display: flex;
  flex-direction: column;
  justify-content: space-between;
  align-items: center;
  background: #444;
  text-align: center;
  padding-top: 1em;
  font-weight: 600;
}

.left-container h1 {
  color: #fff;
  display: inline-block;
  font-size: 28px;
  font-weight: 600;
  margin-top: 2em;
}

.left-container img {
  max-width: 200px;
  filter: grayscale(1);
}

.right-container {
  flex: 2;
  background: #fff;
}

.right-container h1 {
  text-align: center;
  color: rgba(0, 0, 0, 0.8);
  font-size: 28px;
  font-weight: 600;
  margin-bottom: 0;
  margin-top: 2em;
}

.right-container {
  display: flex;
  flex-direction: column;
  justify-content: space-between;
```

```
padding-bottom: 5em;
}

.field {
  width: 80%;
  margin: 0 auto;
  display: grid;
  grid-template-columns: 1fr 3fr;
  align-items: center;
  padding: 0.75em;
}

.field label {
  font-size: large;
  font-family: sans-serif;
}

.field input[type="text"], .field input[type="number"], .field select {
  padding: 0;
  margin: 0;
  border: none;
  border-bottom: 1px solid;
  font-size: large;
  background-color: transparent;
}

footer {
  display: flex;
  flex-direction: row;
  justify-content: center;
  align-items: center;
}

footer input {
  border: none;
  padding: 0.7em 2em;
  border: 2px solid #444;
  text-transform: uppercase;
  font-weight: bolder;
  margin: 0 2em;
  background: transparent;
  color: #444;
  cursor: pointer;
  font-family: "Montserrat", sans-serif;
  font-size: large;
  transition-duration: 500ms;
}
```

```

footer input:hover {
  background: #444;
  color: #fff;
}

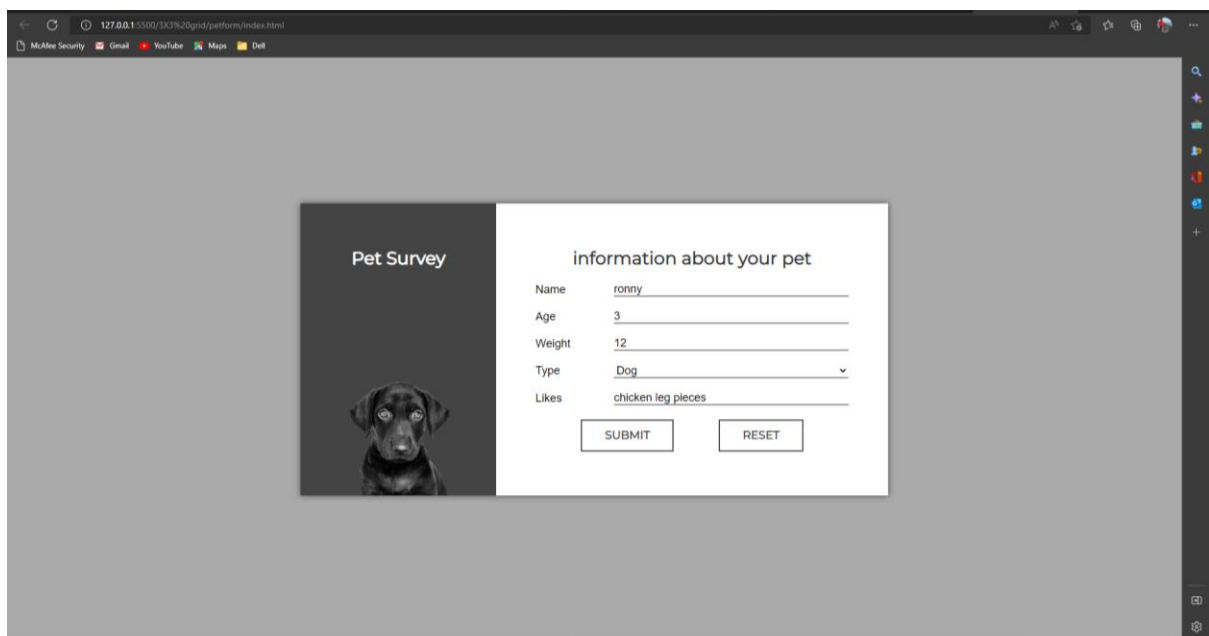
input:focus,
select:focus,
textarea:focus,
button:focus {
  outline: none;
}

input[type=number]::-webkit-outer-spin-button,
input[type=number]::-webkit-inner-spin-button {
  -webkit-appearance: none;
  margin: 0;
}

input[type=number] {
  -moz-appearance: textfield;
}

```

OUTPUT-



Pet Survey

information about your pet

Name

Age

Weight

Type

Likes