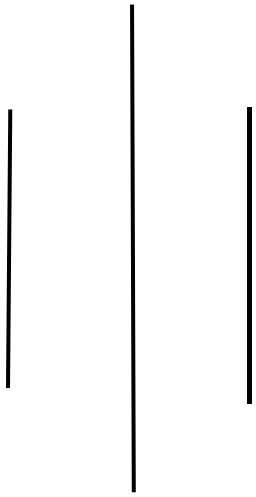
NEPAL COLLEGE OF INFORMATION TECHNOLOGY
BALKUMARI, LALITPUR

(Affiliated to Pokhara University)

Subject: Web Technology



Lab Report# 6
Title:- Javascript implementation

Submitted by:

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Faculty:-Science & Technology

Year:- 1st

Semester:- 2nd

Submitted to:

Instructor: Er. Simanta Kasaju

Department of Software Engineering

Submission date: 2023/08/14

1. How we can access element in DOM explain each of them with an example(id, name, class, tag
name, queryselector)

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <!-- <h2>Learning DOM</h2>
    <p id="Demo">DOM IN JS</p>
    <p class="a">DOM IN JS 1</p>

    <script>
       let a=document.getElementById("Demo").innerHTML="DOM IS tree
like structure."
        document.getElementsByClassName("a").innerHTML="xxx";
        document.getElementsByName("p");

    </script> -->
    <!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <div class="container">
        <div class="A">
         <p id="A">Hello</p>
         <p id="B">Hi</p>
         <p id="C">Bye</p>
        </div>
        <div class="A">
         <p id="D">Computer</p>
         <p id="E">Java</p>
         <p id="F">WebTechnology</p>
        </div>
        <div class="B">
        <p id="G">Apple</p>
```

```
        <p id="H">Banana</p>
        <p id="I">Kiwi</p>
        </div>
        <form action="">
            Marks<input type="text" name="" id="W"> <br><br>
            <input type="submit" name="" id="E">
        </form>
    </div>
    <script>
        let a=document.getElementById('G');
        a.innerHTML="Grapes";
        let b=document.getElementsByClassName('B')
        for(let i=0; i<=3; i++)
        {
        b[i].style.backgroundColor="red";
        }
        let c=document.querySelector('#W')
        {
          c.style.fontsize
        }
    </script>
</body>
</html>
</body>
</html>
```

OUTPUT:

Hello

Hi

Bye

Computer

Java

WebTechnology

Grapes

Banana

Kiwi

Marks.

2. Give an example of addEventListener and the removeListener.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <!-- addEventListener() -->
    <h1>The element objects</h1>
    <h2>lab 10</h2>
    <p>Solve this report</p>
    <button id="button">OPEN</button>
    <p id="demo">

    <script>
        let
a=document.getElementById("button");a.addEventListener("click",myFunctio
on)
        function myFunction()
        {
             document.getElementById('demo').innerHTML="This is qs 2";
        }
     </script>
</body>
</html>
```

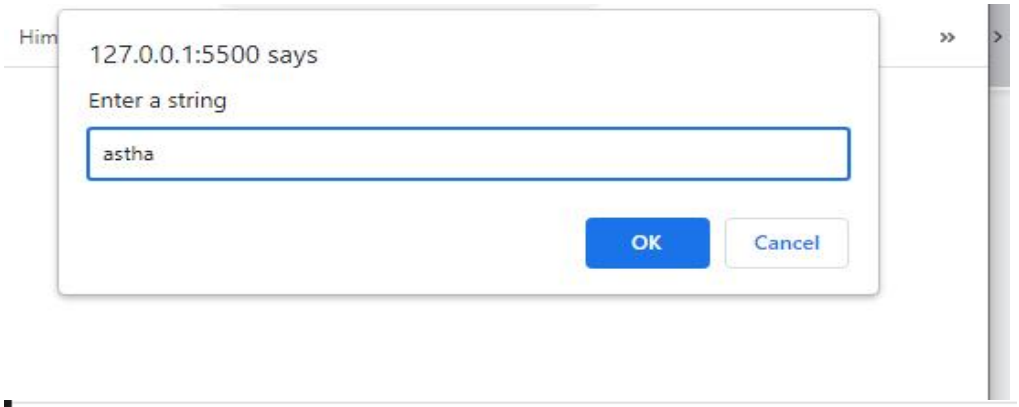
```
<!DOCTYPE html>
<html>

<style>
#myDIV {
  background-color: coral;
  padding: 16px;
}
</style>
<body>
<h1>The Element Object</h1>
```

```
<h2>The removeEventListener() Method</h2>
<div id="myDIV">This orange element has an onmousemove event handler
that displays a random number when you move the mouse inside.
  <p>Click "Remove" to remove the event handler.</p>
  <button onclick="removeHandler()">Remove</button>
</div>
<p id="demo"></p>
<script>
const myDiv = document.getElementById("myDIV");
myDiv.addEventListener("mousemove", myFunction);
function removeHandler() {
  myDiv.removeEventListener("mousemove", myFunction);
}
function myFunction() {
  document.getElementById("demo").innerHTML = Math.random();
}
</script>
</body>
</html>
```

3. Write a program to convert the first letter(alphabet) of a given string to uppercase in JS. Ask a string from the user using a prompt and display the result in the document. Also, make sure user has provided an alphabet as the first letter.
Hint:
console.log("match");
const word = a;
const capitalized =word.charAt(0).toUpperCase()+ word.slice(1)
console.log(capitalized);

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
        document.write('<br>')
        let aa=String(prompt('Enter a string'));
```

```
        let bb=aa.charAt(0)
        let cc=bb.toUpperCase()
        let dd=cc+aa.slice(1);
        document.write(dd);
    </script>
</body>
</html>
```



Astha

4.Write a program to differentiate dom 0 and 2.
Dom level 0:
-initial release of js DOM.
-came with bunch of HTML attributes where we specify our js code or simply point out our existing function.
-Some of the attributes were: onclick, ondbclick, onfocus,etc

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <button id="button" onclick="()">Click</button>
```

```
<script>
    document.getElementById("button").onclick=function()
    {
        document.write("you have click on into");
    }
</script>

</body>
</html>
```

you have click on into

DOM Level 1:
Released in 1998.
Basic structure for interacting with HTML and XML documents.
Introduced core interfaces for elements, attributes, and text manipulation.

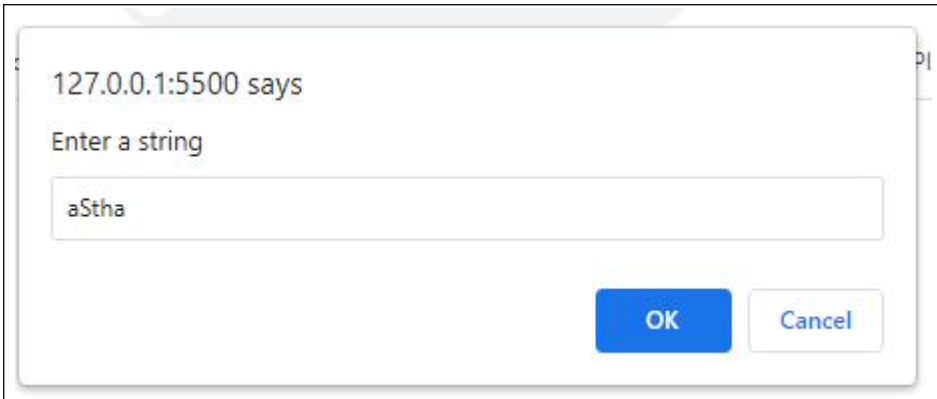
DOM Level 2:
Released in 2000.
Added more refined interfaces and better support for CSS styling.
Introduced events and listeners for better interactivity.
Introduced the getElementById and getElementsByTagName methods.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Document</title>
</head>
<body>

  <button id="button">click</button>
```

```
  <script>
    function dosomething()
    {
       console.log("You have cilicked me");
    }
    document.getElementById("button").addEventListener('dbclick',dosome
thing,false);

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

5. JS code to convert string form user to uppercase and lowercase respectively.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
        let a= prompt("Enter a string");
        document.write(a.toLowerCase())
        document.write('<br>')
        document.write(a.toUpperCase())
        document.write('<br>')

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

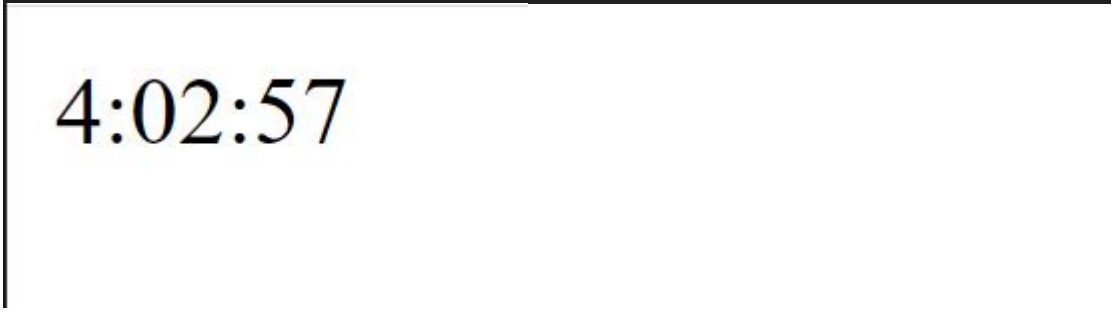


astha
ASTHA

6. Write a program in JavaScript to display a digital clock on a web page.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
    <style>
        #clock{
            align-content: center;
            background-color: rgb(124, 149, 174);
            color: antiquewhite;
            height: 50px;
            width: 75px;
            border-radius: 5px;

        }
    </style>
</head>
<body>
    <div id="clock"></div>
    <script id="A" >
        function clock()
        {
        let time=new Date();
        let hour= time.getHours();
        let min=time.getMinutes();
        let sec= time.getSeconds();
        let meri="AM";
```

```
        if(hour>12)
        {
            hour-=12;
            meri="PM";
        }
        if(hour==0)
        {
            hour=12;
        }
        if(min<10)
        {
         min="0"+min;
        }
        if(sec<10)
        {
            sec="0"+sec;
        }
        let ghadi=hour+":"+min+":"+sec+meri;
        document.getElementById("clock").innerHTML=ghadi;
        document.write(hour,":",min,":",sec);
        let mili=time.getMilliseconds();
        let month =time.getMonth();
        let year= time.getFullYear();
        }
    setInterval(clock,1000)
    </script>
</body>
</html>
```



7. Write number of day of a week in js.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <h3>Write Number of day of a week:</h3>
    <input type="number" name="" id="days">
```

```
    <button id="button" onclick="Week()">Try it</button>
    <div id="output"></div>
    <script>
        function Week() {
            let week = parseInt(document.getElementById('days').value);
            let outputElement = document.getElementById('output'); //

            switch (week) {
                case 1:
                    outputElement.innerHTML = 'Sunday';
                break;

                case 2:
                    outputElement.innerHTML = 'Monday';
                    break;
                case 3:
                    outputElement.innerHTML = 'Tuesday';
                    break;
                case 4:
                    outputElement.innerHTML = 'Wednesday';
                    break;
                case 5:
                    outputElement.innerHTML = 'Thursday';
                    break;
                case 6:
                    outputElement.innerHTML = 'Friday';
                    break;
                case 7:
                    outputElement.innerHTML = 'Saturday';
                    break;
                default:
                    outputElement.innerHTML = 'Invalid choice';
            }
        }
    </script>
</body>
</html>
```

Write Number of day of a week:

2 Try it

Write Number of day of a week:

2 Try it

Monday

8. Write a JS code Adding 10 each time whenever you click the Sum Button.

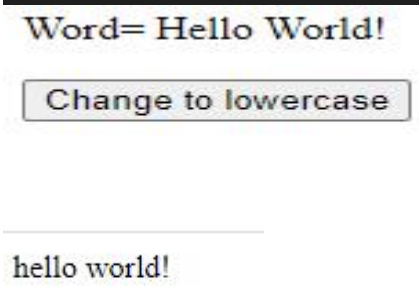
```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initialscale=
1.0">
<title>Document</title>
<link rel="stylesheet"
href="//code.jquery.com/ui/1.12.1/themes/base/jquery-ui.css">
<script src="https://code.jquery.com/jquery-1.12.4.js"></script>
<script src="https://code.jquery.com/ui/1.12.1/jquery-ui.js"></script>
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/fontawesome/
4.7.0/css/font-awesome.min.css">
</head>

<body>
<h1> Adding 10 each time whenever you click the Sum
Button......</h1>
<b id="firstValue">10</b>
<button type="button" onclick="addTheValue(10)">Sum </button>
<script>
    function addTheValue(secondValue) {
        var fValue = document.getElementById("firstValue");
        firstValue.innerHTML = parseInt(fValue.innerHTML) +
parseInt(secondValue);
    }
</script>
</body>
</html>
```

Adding 10 each time whenever you click the Sum Button.....

10 Sum

9. Write a JS code Click the button to convert the string to lowercase letters.

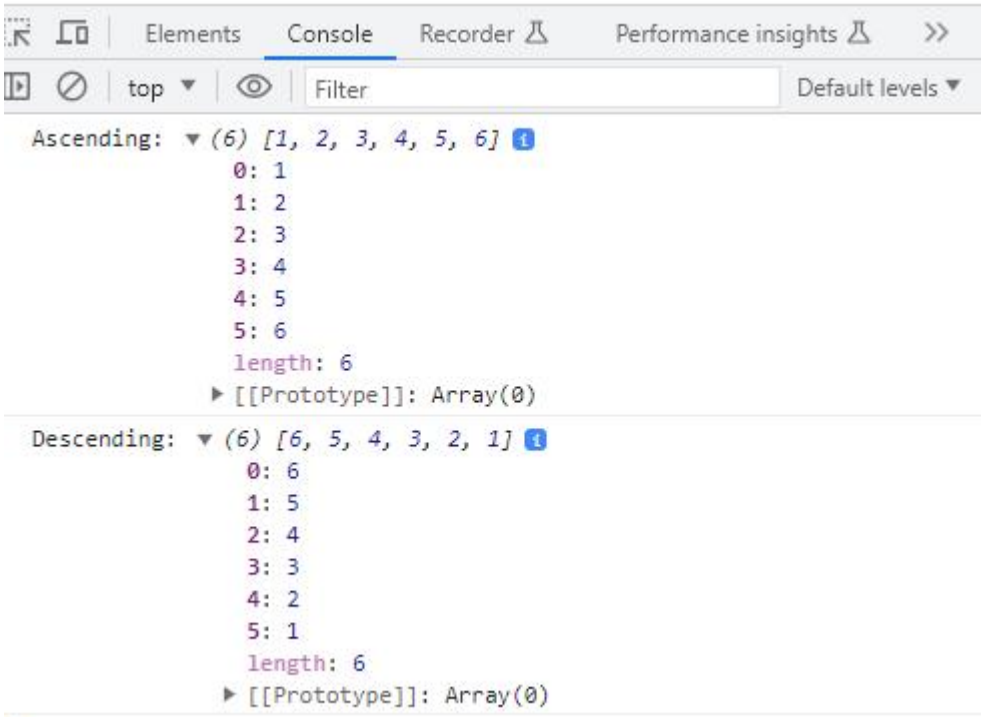
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <p>Word= Hello World!</p>
    <button id="button" onclick="stg()">Change to lowercase</button>
    <script>
        function stg()
        {
        let a= 'Hello world!';
        document.write(a.toLowerCase())
        document.write('<br>')
        }
    </script>
</body>
</html>
```



10. Write JS to sort an array both descending and ascending.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>

  let numbers= [1,2,3,4,5,6];
```

```
  let asc= [...numbers].sort((a, b) => a - b);
  console.log("Ascending:", asc);
  let desc= [...numbers].sort((a, b) => b - a);
  console.log("Descending:", desc);

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



11. Explain all mouse event with an example.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
    <style>
        div{
            background-color: maroon;
            padding: 90px;
        }
    </style>
</head>
```

```html
<body>
    <!-- mouse event -->
    <!-- <div onmousedown="AB()"> Mouse over me!</div> -->
    <!-- <div onmouseup="AB()"> Mouse over me!</div> -->
    <!-- <div onmouseleave="AB()"> Mouse over me!</div> -->
    <!-- <div onmouseenter="AB()"> Mouse over me!</div> -->
    <div onmouseover="AB()"> Mouse over me!</div>
    <div onmousemove="AB()"> Mouse over me!</div>
    <div onmousewheel="AB()"> Mouse over me!</div>
    <div onmouse="AB()"> Mouse over me!</div>
    <script>
     function AB()
     {
        alert('hello Astha');
     }
    </script>
</body>
</html>
```

12. Explain onkeydown,onkeypress and onkeyup with an example.(also mention difference)

onkeydown:

The onkeydown event is fired when a key on the keyboard is pressed down. It triggers as soon as the key is pressed, and it repeats if the key is held down.

onkeypress:
The onkeypress event is fired when a key that produces a character value is pressed down. It doesn't trigger for non-character keys like Shift, Ctrl, or Alt.

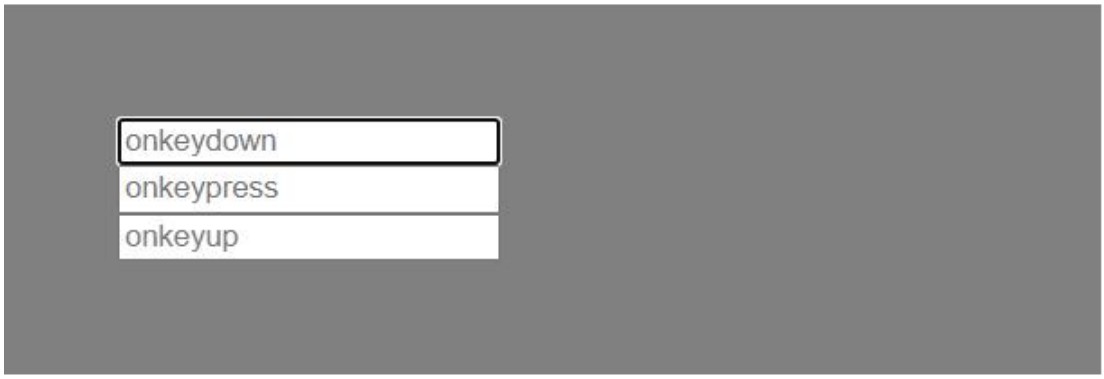
onkeyup:
The onkeyup event is fired when a key on the keyboard is released after being pressed down. It triggers when the key is released.

Key Differences:

- onkeydown triggers as soon as the key is pressed and repeats if held down, while onkeypress triggers only for character keys.
- onkeyup triggers when the key is released after being pressed.
- onkeydown and onkeypress provide information about the key pressed, including non-character keys, while onkeyup provides information about the released key.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
    <style>
        form{
            background-color: aqua;
            padding: 50px;
        }
    </style>
</head>
```

```
<body>
    <!-- key press event -->
    <form action="" id="A">
        <input type="text" name="" id="" placeholder="onkeydown"
onkeydown="document.getElementById('A').style.backgroundColor=this.valu
e">
        <br>
        <input type="text" name="" id=""
placeholder="onkeypress"  onkeypress="document.getElementById('A').styl
e.backgroundColor=this.value">
        <br>
        <input type="text" name="" id=""
placeholder="onkeyup"  onkeyup="document.getElementById('A').style.back
groundColor=this.value">
    </form>
</body>
</html>
```



13. Write a program in JavaScript that takes username as input from Prompt box and display that name as an output in Alert box.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
         let username= prompt("What is your name?")
        alert("My name is: "+username);
```

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

14. Write a JavaScript to find the reverse of a string supplied using prompt.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>

        function reverse_a_number(num) {
  let reversed_num = 0;
  while (num !== 0) {
    reversed_num = reversed_num * 10 + num % 10;
    num = Math.floor(num / 10);
  }
  return reversed_num;
 }
const num = 12345;
console.log("Original number: "+num);
const result = reverse_a_number(num);
console.log("Reversed number: "+result);
    </script>
</body>
</html>
```

15. Write JS code for the following.If You click male then

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
```

```
</head>
<body>
    <input type="radio" name="" id="" onclick="m()">Male
    <br>
    <div onmouseover="m()"></div>
    <input type="radio" name="" id="" onclick="f()">Female
    <br>
    <div onmouseover="f()"></div>
    <input type="radio" name="" id="" onclick="o()">Other
    <script>
     // let a= prompt('You are male')
     function m(){
      alert('You are male');
     }
     function f(){
      alert('You are female');
     }
     function o()
     {
        alert('Others')
     }
    </script>
</body>
</html>
```

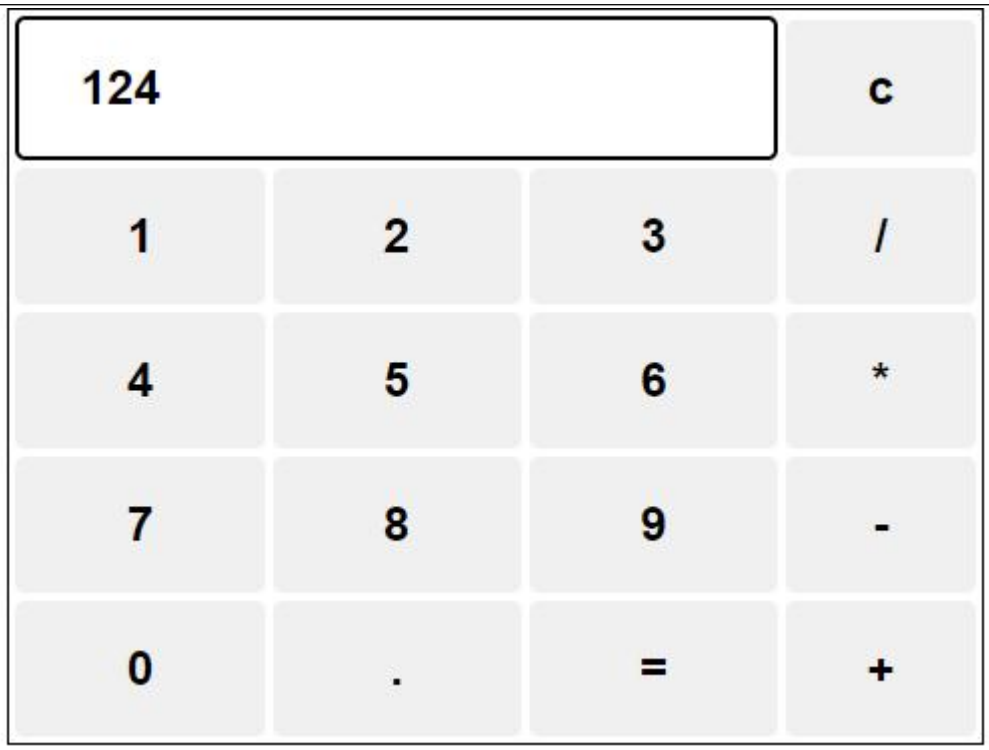
16. Design a calculator.

```
<!DOCTYPE html>
<html>

<head>
      <title>JavaScript Calculator</title>
    <script src=
"https://cdnjs.cloudflare.com/ajax/libs/mathjs/10.6.4/math.js"
        integrity=
"sha512-
BbVEDjbqdN3Eow8+empLMrJlxXRj5nEitiCAK5A1pUr66+jLVejo3PmjIaucRnjlB0P9R3r
BUs3g5jXc8ti+fQ=="
        crossorigin="anonymous"
```

```
        referrerpolicy="no-referrer"></script>
    <script src=
"https://cdnjs.cloudflare.com/ajax/libs/mathjs/10.6.4/math.min.js"
        integrity=
"sha512-
iphNRh6dPbeuPGIrQbCdbBF/qcqadKWLa35YPVfMZMHBSI6PLJh1om2xCTWhpVpmUyb4IvV
S9iYnnYMkleVXLA=="
        crossorigin="anonymous"
        referrerpolicy="no-referrer"></script>

    <!-- For styling -->
    <style>
        table {
            border: 1px solid black;
            margin-left: auto;
            margin-right: auto;
        }

        input[type="button"] {
            width: 100%;
            padding: 20px 40px;
            font-size: 24px;
            font-weight: bold;
            border: none;
            border-radius: 5px;
        }

        input[type="text"] {
            padding: 20px 30px;
            font-size: 24px;
            font-weight: bold;
            border: none;
            border-radius: 5px;
            border: 2px solid black;
        }
    </style>
</head>

<body>

      <!-- Use Table to Create Calculator Structure Design -->
    <table id="calcu">
        <tr>
            <td colspan="3"><input type="text" id="result"></td>
            <td><input type="button" value="c" onclick="clr()" /> </td>
        </tr>
        <tr>
            <td><input type="button" value="1" onclick="dis('1')"
```

```
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="2" onclick="dis('2')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="3" onclick="dis('3')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="/" onclick="dis('/')"
                    onkeydown="myFunction(event)"> </td>
        </tr>
        <tr>
            <td><input type="button" value="4" onclick="dis('4')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="5" onclick="dis('5')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="6" onclick="dis('6')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="*" onclick="dis('*')"
                    onkeydown="myFunction(event)"> </td>
        </tr>
        <tr>
            <td><input type="button" value="7" onclick="dis('7')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="8" onclick="dis('8')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="9" onclick="dis('9')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="-" onclick="dis('-')"
                    onkeydown="myFunction(event)"> </td>
        </tr>
        <tr>
            <td><input type="button" value="0" onclick="dis('0')"
                    onkeydown="myFunction(event)"> </td>
            <td><input type="button" value="." onclick="dis('.')"
                    onkeydown="myFunction(event)"> </td>

            <!-- solve function call function solve to evaluate value -
->
            <td><input type="button" value="=" onclick="solve()"> </td>

            <td><input type="button" value="+" onclick="dis('+')"
                    onkeydown="myFunction(event)"> </td>
        </tr>
    </table>

    <script>

        // Function that display value
        function dis(val) {
            document.getElementById("result").value += val
```

```
        }

        function myFunction(event) {
            if (event.key == '0' || event.key == '1'
                || event.key == '2' || event.key == '3'
                || event.key == '4' || event.key == '5'
                || event.key == '6' || event.key == '7'
                || event.key == '8' || event.key == '9'
                || event.key == '+' || event.key == '-'
                || event.key == '*' || event.key == '/')
                document.getElementById("result").value += event.key;
        }

        var cal = document.getElementById("calcu");
        cal.onkeyup = function (event) {
            if (event.keyCode === 13) {
                console.log("Enter");
                let x = document.getElementById("result").value
                console.log(x);
                solve();
            }
        }

        // Function that evaluates the digit and return result
        function solve() {
            let x = document.getElementById("result").value
            let y = math.evaluate(x)
            document.getElementById("result").value = y
        }

        // Function that clear the display
        function clr() {
            document.getElementById("result").value = ""
        }
    </script>
</body>

</html>
```



17. Write JavaScript programs for:

a. Moving Element & Element Visibility

Element Visibility

```
<!DOCTYPE html>
<html>

<head>

    <style>
        .container {
            height: 80px;
            width: 250px;
            border: 2px solid black;
            background-color: green;
            color: white;
        }
    </style>
</head>

<body>
    <div class="container">
        <h1>Assignment</h1>
```

```
    </div>


<p>
        Click the buttons to show or hide the green box
    </p>


    <button onclick="showElement()">
            Show Element
    </button>

    <button onclick="hideElement()">
            Hide Element
    </button>

    <script type="text/javascript">
        function showElement() {
            element = document.querySelector('.container');
            element.style.visibility = 'visible';
        }

        function hideElement() {
            element = document.querySelector('.container');
            element.style.visibility = 'hidden';
        }
    </script>
</body>

</html>
<!DOCTYPE html>
<html>

<head>

    <style>
        .container {
            height: 80px;
            width: 250px;
            border: 2px solid black;
            background-color: green;
            color: white;
        }
    </style>
</head>

<body>
    <div class="container">
```

```
        <h1>Assignment</h1>
    </div>


<p>
        Click the buttons to show or hide the green box
    </p>


    <button onclick="showElement()">
            Show Element
    </button>

    <button onclick="hideElement()">
            Hide Element
    </button>

    <script type="text/javascript">
        function showElement() {
            element = document.querySelector('.container');
            element.style.visibility = 'visible';
        }

        function hideElement() {
            element = document.querySelector('.container');
            element.style.visibility = 'hidden';
        }
    </script>
</body>

</html>
```

Moving Element

```
<!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" />
    <style>
        body {
            background-color: aqua;
```

```
            display: flex;
            align-items: center;
        }

        .ball {
            height: 12rem;
            width: 12rem;
            background-color: white;
            border-radius: 50%;
            margin-top: 20rem;
        }
    </style>
</head>
<body>
    <div class="container">
        <div class="ball"
             id="ballID"></div>
    </div>
    <script>
        let ball = document.getElementById("ballID");

        var myVar = setInterval(spostaDiv, 90);
        var margin = 0;

        let l = window.screen.width;
        let w = 1300;

        function spostaDiv() {
            console.log(w);
            if (margin == w) {
                margin = 0 + "px";
            } else {
                ball.style.marginLeft = margin + "px";
            }
            margin += 10;
        }
    </script>
</body>
</html>
```

b Changing Colors & Fonts

```
<html>
<head>
   <style>
      button {
```

```
            height: 30px;
            width: 100px;
        }
        body {
            color: blue;
        }
    </style>
</head>
<body>
    <h2> Change the font color using JavaScript.</h2>
    <div id = "fonts"> Click the button to change the color of font of
the whole body</div>
    <button onclick = "changeFontColor()" id = "btn">change
color</button>
    <script>

        // function to change the font color of button
        function changeFontColor() {

            // toggle the body text color on button click.
            let color = document.body.style.color;
            if (color == "blue") {
                document.body.style.color = 'pink';
            } else {
                document.body.style.color = 'blue';
            }
        }
    </script>
</body>
</html>
```

c. Dynamic Content & Stacking Elements

```
<!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">

    <style>
        html,
        body {
```

```
            height: 100%;
            width: 100%;
        }

        .button {
            display: flex;
            align-items: center;
            justify-content: center;
        }

        .tasks {
            display: flex;
            justify-content: center;
            align-items: center;
            flex-direction: column;
            margin-top: 20px;
        }
    </style>
</head>

<body>
    <div class="button">
        <button id="addTask">Add task</button>
    </div>
    <div class="tasks"></div>
    <script type="text/javascript">

        // Getting the parent element in which
        // the new div will be created
        let task = document.getElementsByClassName("tasks");

        // Getting the addTask button element
        let addTask = document.getElementById("addTask");

        // Adding onclick event to the button
        addTask.addEventListener('click', function () {

            // Traversing through collection of HTML
            // elements (tasks here)
            for (let i = 0; i < task.length; i++) {

                // New div element is created
                let newDiv = document.createElement("div");

                // Setting the attribute of class type to newDiv
                newDiv.setAttribute("class", "list");

                // innerText used to write the text in newDiv
```

```
                newDiv.innerText = "New Div created";

                // Finally append the newDiv to the
                // parent i.e. tasks
                task[i].append(newDiv);
            }
        })
    </script>
</body>

</html>
```

d. Dragging and Dropping Elements

```
<!DOCTYPE html>
<html>
  <head>
    <title>Title of the Document</title>
  </head>
  <body>
    <p id='text'>Drag the text</p>
    <script>
      text.onmousedown = function(event) { //  start the process
        // get ready to move: make an absolute and top z-index
        text.style.position = 'absolute';
        text.style.zIndex = 1000;
        // move it from any existing parents directly to the body
        // to position it relative to the body
        document.body.append(text);
        // and put this absolutely positioned text under the pointer
        moveAt(event.pageX, event.pageY);
        // centers the text on the coordinates (pageX, pageY)
        function moveAt(pageX, pageY) {
          text.style.left = pageX - text.offsetWidth / 2 + 'px';
          text.style.top = pageY - text.offsetHeight / 2 + 'px';
        }
        function onMouseMove(event) {
          moveAt(event.pageX, event.pageY);
        }
        //  move the text on mousemove
        document.addEventListener('mousemove', onMouseMove);
        // drop the text, remove unneeded handlers
        document.onmouseup = function() {
          document.removeEventListener('mousemove', onMouseMove);
          text.onmouseup = null;
        };
      };
    </script>
```

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

e. Event Handling

Onclick event type

This is the most frequently used event type which occurs when a user clicks the left button of his mouse.

Example:

```
<html>
<head>
<script type = "text/javascript">
function sayHello() {
alert("Hello World")
}
document.getElementById("myBtn").onclick = displayDate;
function displayDate() {
document.getElementById("demo").innerHTML = Date();
}
</script>
</head>
<body>
<p>Click the following button and see result</p>
<button id="myBtn">Try it</button>
<p id="demo"></p>
<form>
<input type = "button" onclick = "sayHello()" value = "Say Hello" />
</form>
</body>
</html>
```

Onsubmit event type

onsubmit is an event that occurs when you try to submit a form.

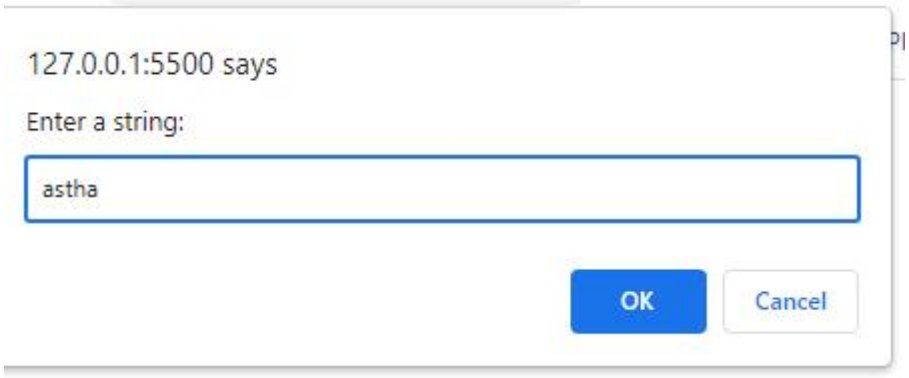
Example:

```
<!DOCTYPE html>
<html>
<head>
<title></title>
</head>
<body>
<form method="post" action="___" target="_blank">
<br><input type="text" name="firstName">
<br><input type="text" name="secondName">
```

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

18. JavaScript: Count the number of vowels in a given string.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
        function countVowel(str) {

// find the count of vowels
    let count = str.match(/[aeiou]/gi).length;
// return number of vowels
    return count;
}
// take input
   let string = prompt('Enter a string: ');
   let result = countVowel(string);
  document.write(result);
    </script>
</body>
</html>
```



2

19. Write an example for an array method (slice, splice, join, delete, add, pop, push, etc)

Program we did in class

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <script>
        // let a=[19.35,55,'astha',222,'apple']
        // console.log(a);
        // let b=new Array(3,4,5,'ball','bat')
        let fruits=['Mango','Orange','Banana','Apple','Strawberry']
          let vegetable=['Potato','Tomato','Saag','Cauli']
          let num=[100,3,1,5,10,11,12,1323434,432]
        // console.log(b);
        // console.log(typeof(b));
        // console.log(a[2]);
        // console.log(a[6]);
        // console.log(a.length);
        // document.write('<ul>')
        // for(let i=0; i<a.length; i++)
        // {
        //     document.write('<li>')
        //     document.write(a[i]);
        //     document.write('<li>')
        // }
        // document.write('</ul>')

    //     document.write(fruits.length);
    //     document.write('<br>');
    //    fruits[1]='Grapes';
    //    document.write(fruits);
    //    fruits.push('Apple','Strawberry');
    //    document.write('<br>');
    //    document.write(fruits);
    //    document.write('<br>');
    //   document.write( fruits.pop());
    //   delete fruits[2];
    //   document.write('<br>');
    //   document.write(fruits)
    //   document.write('<br>');
    //   document.write(fruits[2])
    //   document.write(fruits.shift())
    //   document.write('<br>');
```

```
    //    document.write(fruits)
    //    document.write(fruits.unshift('starfruit'))
    //    document.write('<br>');
    //    document.write(fruits)
    //    document.write('<br>');
    //    document.write(fruits.join('**-**'))
    //    document.write('<br>');
    //    let vegetable=['Potato','Tomato','Saag','Cauli']
    //    document.write(fruits.concat(vegetable))
    //    document.write('<br>');
    //    document.write(fruits.concat('radish'))

    //    let c=fruits.slice(-4,-1);
    //    console.log(c)
    //    let c=fruits.splice(1,5,'A','naspati')
    //    console.log(c)
    //    console.log(fruits)
      let compare=(a,b)=>{
        return b-a;
      }
    //    let a=num.sort(compare);
    //    console.log(a[0])
    console.log(fruits.sort(compare))
   console.log( fruits.includes('Orange'))
   console.log(Array.isArray(fruits))

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

20. Write a program in JavaScript to alter the visibility of an image of an HTML document.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
    <style>
        p{
            background-color: maroon;
            font-size: 20px;
            height: 100px;
        }
```

```
    </style>
</head>
<body>
    <p id="A" >Want to know today's date?</p>
    <button onclick="AB()">Hide</button>
    <button onclick="CD()">SHow</button>
   <script src="a.js"></script>
</body>
</html>
```

21. Explain the Regular expression function with an example (exec, test, match, search, replace).

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <!-- string method -->
    <script>
        let a='   Astha Thapa    ';
        let A='Apple Ball Cat';
        document.write(a );
        document.write('<br>')
        document.write(a.length);
        document.write('<br>')
        document.write(a.slice(6))
        document.write('<br>')
        document.write(a.substr(0,5))
        document.write('<br>')
        document.write(a.toLowerCase())
        document.write('<br>')
```

```
        document.write(a.toUpperCase())
        document.write('<br>')
         let b='Astha Thapa  is Astha not astha'
        document.write(b.replace('Ast','XXX'))
        document.write('<br>')
        document.write(b.replaceAll(/Ast/ig,'XXX'))
        document.write('<br>')

        let c='CONCAT';
        let d='enate';
        document.write(c+d);
        document.write('<br>')
        document.write(c.concat("",d))

        let h=a.trim();
        document.write('<br>')
        document.write(h.length)
        let z=a.trimStart();
        document.write('<br>')
        document.write(z.length)
        let p=a.trimEnd();
        document.write('<br>')
        document.write(p.length)

        document.write('<br>')
        let i="2";
        let j=i.padStart(4,'*')
        document.write(j);
        document.write('<br>')
        let ast="apple";
        document.write(ast.charAt('2'))
        document.write('<br>')
        document.write(ast.charCodeAt('4'))
        document.write('<br>')
        let aa=string(prompt('Enter a string'));
        let bb=a.charAt(0)
        let cc=bb.toUpperCase()
        let dd=cc+aa.slice(1);
        document.write(dd)


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

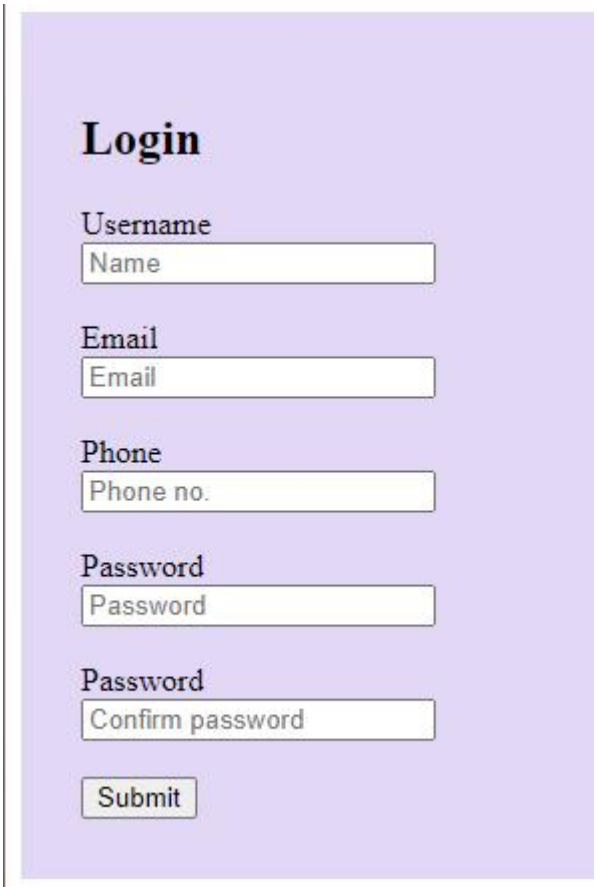
22. Create the following form and validate with JS. (Class example)

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
    <style>
        form{
            background-color: rgb(226, 216, 246);
            padding: 30px;
        }
        p{
            color: red;
            margin: 0px;
            font-size: 20px;
        }
    </style>
</head>
<body>
    <form action="welcome.html"  onsubmit="return validate()">
        <input type="text" name="" id="Name" placeholder="Name"
autocomplete="none">
        <p id="Nameerr"></p>
        <br>
        <input type="email" name="" id="Email" placeholder="Email">
        <p id="Emailerr"></p>
        <br>
        <input type="tel" name="" id="Phone" placeholder="Phone no.">
        <p id="Phoneerr"></p>
        <br>
        <input type="password" name="" id="Password"
placeholder="Password">
        <p id="Passerr"></p>
        <br>
        <input type="password" name=""
id="Cpassword"placeholder="Confirm password">
        <p id="Cpasserr"></p>
        <br>
        <input type="submit" name="" id="">
    </form>
    <script>
      flag=1;
        function validate()
        {
        //    for name
        let name=document.getElementById('Name').value;
        let namereg=/[0-9]{3}[ABC]{3}/;
```

```
        if(name===''||name==null)
        {
           document.getElementById('Nameerr').innerHTML= "* name cant
be empty";
           flag= 0;
        }
        else if(name.search(namereg)<0)
        {
            document.getElementById('Nameerr').innerHTML= "* name
pattern is not matched";
           flag= 0;
        }
        else {
            document.getElementById('Nameerr').innerHTML="";
            flag= 1;
        }
         //    for Email
         let Email=document.getElementById('Email').value;
        let Emailreg=/[A-Z0-9]{5}\.[0-9]{3}\@ncit\.edu\.np/gi;
        if(Email===''||Email==null)
        {
           document.getElementById('Emailerr').innerHTML= "*Email cant
be empty";
           flag= 0;
        }
        else if(Email.search(Emailreg)<0)
        {
            document.getElementById('Emailerr').innerHTML= "*Email
pattern is not matched";
           flag= 0;
        }
        else {
            document.getElementById('Emailerr').innerHTML="";
            flag= 1;
        }


        //    for Phone
        let Phone=document.getElementById('Phone').value;
        let Phonereg=/[0-9]{3}\-[0-9]{3}\-[0-9]{4}/;
        if(Phone===''||Phone==null)
        {
           document.getElementById('Phoneerr').innerHTML= "*Phone cant
be empty";
           flag= 0;
        }
        else if(Phone.search(Phonereg)<0)
        {
```

```
            document.getElementById('Phoneerr').innerHTML= "*Phone
pattern is not matched";
           flag= 0;
        }
        else {
            document.getElementById('Phoneerr').innerHTML="";
            flag= 1;
        }
          //    for Password
          let Password=document.getElementById('Password').value;
        let Passwordreg=/[A-Z][@$#]{2}[0-9]{5}/;
        if(Password===''||Password==null)
        {
           document.getElementById('Passerr').innerHTML= "*Password
cant be empty";
           flag= 0;
        }
        else if(Password.search(Passwordreg)<0)
        {
            document.getElementById('Passerr').innerHTML= "*Password
pattern is not matched";
           flag= 0;
        }
        else {
            document.getElementById('Passerr').innerHTML="";
            flag= 1;
        }
        //    for  confirm Password
        let CPassword=document.getElementById('Cpassword').value;

        if(CPassword===''||CPassword==null)
        {
           document.getElementById('Cpasserr').innerHTML= "* confirm
Password cant be empty";
           flag= 0;
        }
        else if(CPassword!=Password)
        {
            document.getElementById('Cpasserr').innerHTML= "*confirm
Password and password not matched";
           flag= 0;
        }
        else {
            document.getElementById('Cpasserr').innerHTML="";
            flag= 1;
        }
        if(flag)
        {
```

```
            return true;
        }
        else{
            return false;
        }

        }

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



23. Write a JS for following when user click total it gives total.(class example)

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>

</head>
```

```
<body>
    <table border="1" cellpadding="4px" cellspacing="2px">
        <tr id="S">
            <th>Product name</th>
            <th>Price</th>
            <th>Quantity</th>
             <th>Total price</th>
        </tr>
        <tr id="E">
            <td>French vanila</td>
            <td>200</td>
            <td><input type="number" name="" id="HC"
onchange="BC()"></td>
            <td><input type="number" name="" id="HCH"></td>
        </tr>
        <tr id="F">
            <td>Hazelnut</td>
            <td>300</td>
            <td><input type="number" name="" id="A"
onchange="BC()"></td>
            <td><input type="number" name="" id="AM"></td>
        </tr>
        <tr id="G">
            <td>Colombian</td>
            <td>500</td>
            <td><input type="number" name="" id="B"
onchange="BC()"></td>
            <td><input type="number" name="" id="LA"></td>
        </tr>
    </table><br>
    <input type="number" name="" id="total" readonly>
    <input type="submit" name="" id="" onclick="AB()">
    <script>
    function AB()
    {
        let HC=document.getElementById('HC').value;
        let A=document.getElementById('A').value;
        let B=document.getElementById('B').value;
        let c=HC*200+A*300+B*500;
        let total=document.getElementById('total').value=c;
    }
    function BC()
    {
        let HC=document.getElementById('HC').value;
        let d= HC*200;
        let tot=document.getElementById('HCH').value=d;

        let A= document.getElementById('A').value;
```

```
        let e= A*300;
        let totl=document.getElementById('AM').value=e;
        let B= document.getElementById('B').value;
        let f= B*500;
        let total=document.getElementById('LA').value=f;

    }
    </script>
</body>
</html>
```

Product name	Price	Quantity	Total price
French vanila	200	1	200
Hazelnut	300	1	300
Colombian	500	1	500

1000 Submit

24. Design a following such that when user click button it follows it.

Hint:
js
function move_img(str) {
var step=50; // change this to different step value
switch(str){
case "down":
var x=document.getElementById('i1').offsetTop;
x= x + step;
document.getElementById('i1').style.top= x +
"px";
break;
case "up":
var x=document.getElementById('i1').offsetTop;
x= x -step;

document.getElementById('i1').style.top= x + "px";
break;
case "left":
var y=document.getElementById('i1').offsetLeft;
y= y - step;
document.getElementById('i1').style.left= y + "px";
break;
case "right":
var y=document.getElementById('i1').offsetLeft;
y= y + step;
document.getElementById('i1').style.left= y + "px";
break;
}}

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-
scale=1.0">
    <title>Document</title>
</head>
<body>
    <button onclick="move_img('up')">Up</button><br>
    <button onclick="move_img('left')">Left</button>
    <button onclick="move_img('right')">Right</button><br>
    <button onclick="move_img('down')">Down</button><br>
    <img src="/1.jpg" height="100px " id="i1" onclick="move_img('')">

    <script>
        function move_img(str)
        {
        var step=50; // change this to different step value
         switch(str)
         {
         case "down":
         var x=document.getElementById('i1').offsetTop;
        x= x + step;
```

```
        document.getElementById('i1').style.top= x + "px";
        break;
         case "up":
         var x=document.getElementById('i1').offsetTop;
         x= x-step;
         document.getElementById('i1').style.top= x + "px";
         break;
        case "left":
        var y=document.getElementById('i1').offsetLeft;
        y= y - step;
         document.getElementById('i1').style.left= y + "px";
        break;
        case "right":
        var y=document.getElementById('i1').offsetLeft;
         y= y + step;
        document.getElementById('i1').style.left= y + "px";
        break;
         }
        }
       </script>
</body>
</html>
```

25. Write jS that illustrate the positioning(absolute,static,relative)

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=h1, initial-scale=1.0">
    <title>Document</title>
    <style>
        body{
            text-align: center;
```

```
        }
        p{
            text-align: justify;
        }
        button{
            position: absolute;
            right: 5px;
            border-radius: 10px;
        }
    </style>
</head>
<body id="A">
    <button onclick="AB()">Mode</button>
    <h1This is something you like</h1>
    <hr>
    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Dolorum
debitis facilis reiciendis officiis accusamus molestiae, suscipit
veritatis! Consequatur minima veritatis placeat, fuga suscipit magni
dicta adipisci hic, cupiditate eveniet eligendi.
ecessitatibus molestiae magnam, facere consequuntur aliquid vel.
    Id recusandae quos ea iste fugit, mollitia atque iusto tempore
dolorum nihil fugiat necessitatibus aliquam perspiciatis quas, suscipit,
quaerat itaque non nemo illum optio debitis veritatis excepturi. Natus,
inventore itaque?</p>
    <script>
      function AB()
      {
        a= document.getElementById('A')
        if(a.style.backgroundColor=='white')
      {
        document.getElementById('A').style.backgroundColor='black';
        document.getElementById('A').style.color='white';
      }

      else{

        document.getElementById('A').style.backgroundColor='white';
        document.getElementById('A').style.color='black';
      }
    }
    </script>
</body>
</html>
```

This is something you like

Mode

Lorem ipsum dolor sit amet consectetur adipisicing elit. Dolorum debitis facilis reiciendis officiis accusamus molestiae, suscipit veritatis! Consequatur minima veritatis placeat, fuga suscipit magni dicta adipisci hic, cupiditate eveniet eligendi. Iusto, vel! Beatae quidem accusamus dignissimos ab consequatur rerum id reprehenderit, asperiores tenetur consectetur, obcaecati recusandae, culpa amet ipsam ad veniam earum quia officiis ipsum optio tempora autem mollitia nesciunt. Nam enim placeat eveniet odio hic quisquam explicabo distinctio quaerat repudiandae, expedita blanditiis consequatur, exercitationem quod. Corporis repudiandae commodi, similique, officiis doloribus possimus necessitatibus molestiae magnam, facere consequuntur aliquid vel. Consectetur neque nam veritatis error natus reprehenderit doloribus dolorum amet sapiente nobis laboriosam asperiores harum excepturi id perferendis aperiam enim, pariatur voluptas iure debitis non, tempore quibusdam. Quae, tenetur veniam! Sapiente dolores eum fugiat laborum, porro aliquid consequuntur dolorem veritatis libero praesentium aliquam facilis nesciunt magnam! Provident ipsum libero est fuga, officia quidem dicta amet soluta nisi porro ipsam voluptatum. Nisi culpa debitis labore deleniti unde natus ullam veniam optio! Facere dignissimos expedita odit quibusdam quia, reprehenderit itaque placeat at nisi, cupiditate asperiores mollitia rem eveniet distinctio suscipit eius a. Recusandae vero animi delectus magni, possimus qui a commodi, voluptatum maiores totam saepe est fuga pariatur fugiat nesciunt rem quaerat et soluta enim illum dolores, eveniet vitae? Repellat, rerum cupiditate? Nobis suscipit aspernatur quidem autem sunt ad molestiae culpa eos modi perferendis doloremque ipsum qui maxime quae possimus consequuntur architecto, tenetur officia. Nam doloremque quas ratione, iure officiis fugiat illum? Nostrum quibusdam pariatur animi debitis odio quam eveniet accusamus commodi porro labore consequuntur deserunt temporibus voluptates necessitatibus ratione incidunt rerum voluptatum velit vitae, perferendis autem aliquam? Repellat fugit velit similique. Consequatur, quam nobis. Qui aperiam et sunt, consectetur quas corporis quam recusandae odit quos quia, voluptatem amet consequuntur aut atque! Sit mollitia modi optio dolore illo odit laborum labore minima. Fuga natus autem animi temporibus dolorum nobis aliquam accusantium. Explicabo recusandae deleniti ducimus quae. Ut similique magnam dolores ea minus magni illum autem natus. Officiis magnam consequuntur et incidunt consectetur? Aut deleniti dignissimos est esse, facere

```
<!DOCTYPE html>
<html>
<head>
<style>
#myDIV {
  border: 1px solid black;
  background-color: lightblue;
  width: 300px;
  height: 300px;
  position: relative;
  top: 20px;
}
</style>
</head>
<body>

<p>Click the "Try it" button to change the position property of the DIV element:</p>
<button onclick="myFunction()">Try it</button>
<div id="myDIV">
  <p>This DIV element is placed 20 pixels from the top of its original position.</p>
  <p>Click the button to set the position property to "absolute" and see what happens.</p>
  <p>It will then be placed 20 pixels from the top the page.</p>
</div>
<script>
function myFunction() {
  document.getElementById("myDIV").style.position = "absolute";
}
</script>
</body>
</html>
```

Click the "Try it" button to change the position property of the DIV element:

Try it

This DIV element is placed 20 pixels from the top of its original position.

Click the button to set the position property to "absolute" and see what happens.

It will then be placed 20 pixels from the top the page.