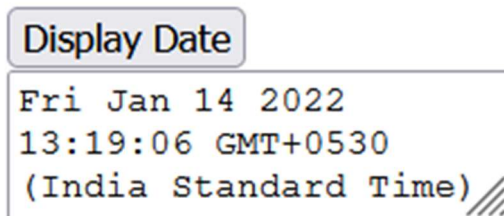**WEEK-5 JAVASCRIPT**

Web Programming Lab

- Develop and demonstrate JavaScript with POP-UP boxes and functions for the following problems:
  a) Input: Click on Display Date button using on click ( ) function
  Output: Display date in the textbox

```html
<!DOCTYPE html>
<head>
    <title> Q1-a</title>
    <script>
        function showDate(){
            document.getElementById("ta").innerHTML=Date();
        }
    </script>
</head>
<body>
    <button onclick=showDate()> Display Date </button>
    <br>
    <textarea id="ta"> </textarea>
</body>
</html>
```

```
Display Date

Fri Jan 14 2022
13:19:06 GMT+0530
(India Standard Time)
```

  b) Input: A number n obtained using prompt
  Output: Factorial of n number using alert

```html
<!DOCTYPE html>
<head>
    <title> Q1-b</title>
```

```html
    <script>
        var n=parseInt(prompt("Enter a number"));
        if(n<0){
            alert("Not Defined");
        }
        else{
            let f=n;
            for(i=2;i<n;i++){
                f*=i;
            }
            alert("Factorial is " + f);
        }
    </script>
</head>
<body>
</body>
</html>
```

⊕ file://

Enter a number

10

OK   Cancel

⊕ file://

Factorial is 3628800

☐ Don't allow this site to prompt you again

OK

c) Input: A number n obtained using prompt
Output: A multiplication table of numbers from 1 to 10 of n using alert

```html
<!DOCTYPE html>
<head>
    <title> Q1-c</title>
    <script>
        var n=parseInt(prompt("Enter a number"));
        let txt="";
        let f=n;
        for(i=1;i<=10;i++){
```

```
                txt+= n + "*" + i + "=" + n*i + "\n";
            }
            alert(txt);
    </script>
</head>
<body>
</body>
</html>
```

⊕ file://

Enter a number

5|

OK   Cancel

⊕ file://

5*1=5
5*2=10
5*3=15
5*4=20
5*5=25
5*6=30
5*7=35
5*8=40
5*9=45
5*10=50

☐ Don't allow this site to prompt you again

OK

d) Input: A number n obtained using prompt and add another number using confirm
Output: Sum of the entire n numbers using alert

```
<!DOCTYPE html>
<head>
    <title> Q1-d</title>
    <script>
        let n=parseInt(prompt("Enter a number"));
        let k=confirm("Want to add another number?");
        while(k==true){
            n+=parseInt(prompt("Enter a number"));
            k=confirm("Want to add another number?");
        }
        alert("Sum = " + n);
    </script>
```

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

⊕ file://

Enter a number

10

OK   Cancel

⊕ file://

Want to add another number?

☐ Don't allow this site to prompt you again

OK   Cancel

⊕ file://

Enter a number

30

☐ Prevent this page from creating additional dialogs

OK   Cancel

⊕ file://

Sum = 40

☐ Don't allow this site to prompt you again

OK

- Write a java script program to sort a list of elements using quick sort.

```
<!DOCTYPE html>

<head>

    <title> Q2</title>
    <script>
        function quick_Sort(origArray) {
            if (origArray.length <= 1) {
                return origArray;
            } else {

                var left = [];
                var right = [];
```

```
                var newArray = [];
                var pivot = origArray.pop();
                var length = origArray.length;
                for (var i = 0; i < length; i++) {
                    if (origArray[i] <= pivot) {
                        left.push(origArray[i]);
                    } else {
                        right.push(origArray[i]);
                    }
                }
                return newArray.concat(quick_Sort(left), pivot,
quick_Sort(right));
            }
        }
        var myArray = [8, 0, 2, 5, 4, 11, 9];
        document.write("Original array: " + myArray + "<br>");
        var sortedArray = quick_Sort(myArray);
        document.write("Sorted array: " + sortedArray);
    </script>
</head>
<body>
</body>
</html>
```

Original array: 8,0,2,5,4,11,9
Sorted array: 0,2,4,5,8,9,11

- Write a java script for loop that will iterate from 0 to 15 for each iteration, it will check if the current number is odd or even, and display a message to the screen.

```
<!DOCTYPE html>

<head>
    <title> Q3</title>
    <script>
        for (var x = 0; x <= 15; x++) {
            if (x == 0 || x % 2 == 0) {
                document.write(x + " is even <br>");
            }
```

```
            else {
                document.write(x + " is odd <br>");
            }
        }
    </script>
</head>
<body>
</body>
</html>
```

0 is even
1 is odd
2 is even
3 is odd
4 is even
5 is odd
6 is even
7 is odd
8 is even
9 is odd
10 is even
11 is odd
12 is even
13 is odd
14 is even
15 is odd

- Write a java script program which compute, the average marks of the following Students then this average is used to determine the corresponding grade.

```
<!DOCTYPE html>

<head>
    <title> Q4</title>
    <script>
        var n=parseInt(prompt("Enter the number of students "));
        var Avgmarks = 0;
        for(i=1;i<=n;i++){
            Avgmarks += parseFloat(prompt("Enter the marks of student " + i));
        }
        var avm = (Avgmarks / n);
        let avg="";
        if (avm < 40) {
            avg="F";
        }
```

```
        else if (avm < 50) {
            avg="C";
        }
        else if (avm < 60) {
            avg="B";
        }
        else if (avm < 70) {
            avg="B+";
        }
        else if (avm < 80) {
            avg="A";
        } else if (avm < 90) {
            avg="A+";
        } else if (avm < 100) {
            avg="O";
        }
        alert("Average marks = " + avm + "\nAverage Grade = " + avg);
    </script>
</head>

<body>
</body>

</html>
```

🌐 file://

Enter the number of students

```
3
```

OK   Cancel

🌐 file://

Enter the marks of student 1

```
100
```

☐ Prevent this page from creating additional dialogs

OK   Cancel

- Write a java script program to sum the multiple s of 3 and 5 under 1000.

```html
<!DOCTYPE html>

<head>
    <title> Q5</title>
    <script>
        var sum = 0;
        for (var x = 0; x < 1000; x++) {
            if (x % 3 === 0 || x % 5 === 0) {
                sum += x;
            }
        }
        document.write("Sum of the multiples of 3 and 5 under 1000 = " + sum);
    </script>
</head>
<body>
</body>
</html>
```

Sum of the multiples of 3 and 5 under 1000 = 233168

- To design the scientific calculator and make event for each button using java script.

Html

```html
<html>
<head>
    <title> Q6 </title>
    <script src="6.js" type="text/javascript">
    </script>
    <link rel="stylesheet" href="6.css" />
</head>
<body>
    <div class=main>
        <h1>HTML Scientific Calculator</h1>
        <p align="right" id="info"><b>RAD</b></p>
        <form name="form">
            <input name="textinput" class="textinput" />
        </form>
        <table>
            <tr>
                <td><button onclick="clean()">C</button></td>
                <td><button onclick="back()">DEL</button></td>
                <td><button onclick="insert('+')">+</button></td>
                <td><button onclick="insert('-')">-</button></td>
                <td><button onclick="calc_sin()">sin</button></td>
                <td><button onclick="insert('**')">^</button></td>
                <td rowspan=2><button style="height:165"
onclick="calc_exp()">exp</button></td>
            </tr>
            <tr>
                <td><button onclick="insert(1)">1</button></td>
                <td><button onclick="insert(2)">2</button></td>
                <td><button onclick="insert(3)">3</button></td>
                <td><button onclick="insert('*')">*</button></td>
                <td><button onclick="calc_cos()">cos</button></td>
                <td><button id="deg" onclick="calc_deg()">deg</button></td>
            </tr>
            <tr>
                <td><button onclick="insert(4)">4</button></td>
                <td><button onclick="insert(5)">5</button></td>
                <td><button onclick="insert(6)">6</button></td>
                <td><button onclick="insert('/')">/</button></td>
                <td><button onclick="calc_tan()">tan</button></td>
```

```html
                <td><button id="rad" style="border: solid red"
onclick="calc_rad()">rad</button></td>
                <td><button onclick="calc_mod()">mod</button></td>
            </tr>
            <tr>
                <td><button onclick="insert(7)">7</button></td>
                <td><button onclick="insert(8)">8</button></td>
                <td><button onclick="insert(9)">9</button></td>
                <td><button onclick="calc_sqrt()">sqrt</button></td>
                <td><button onclick="insert('(')">(</button></td>
                <td rowspan=2><button style="height:165"
onclick="calc_log()">ln</button></td>
                <td rowspan=2><button style="height:165"
onclick="calculate()">=</button></td>
            </tr>
            <tr>
                <td colspan=2><button style="width:165"
onclick="insert(0)">0</button></td>
                <td><button onclick="insert('.')">.</button></td>
                <td><button onclick="calc_percent()">%</button></td>
                <td><button onclick="insert(')')">)</button></td>
            </tr>
        </table>
    </div>
</body>

</html>
```

Css

```css
button {
    width: 80;
    height: 80;
    font-size: 25;
    border: solid;
}

.textinput {
    width: 590;
    height: 50;
    border: solid;
    font-size: 25;
    color: #43d995;
}

.main {
```

```css
    position: absolute;
    top:10%;
    left:30%;
    border: solid;
    background: linear-gradient(black, white);
}
h1,#info{
    color:white;
}
```

Js

```javascript
var selection = "rad";
function insert(num) {
    var text = document.form.textinput.value;
    document.form.textinput.value = text + num;
}
function clean() {
    document.form.textinput.value = "";
}
function calculate() {
    var text = document.form.textinput.value;
    document.form.textinput.value = eval(text);
}
function back() {
    var text = document.form.textinput.value;
    document.form.textinput.value = text.substring(0, text.length - 1);
}
function calc_sin() {
    var text = document.form.textinput.value;
    if (selection == "rad") {
        document.form.textinput.value = Math.sin(text);
    } else if (selection == "deg") {
        document.form.textinput.value = Math.sin(text * (Math.PI / 180));
    }
}
function calc_cos() {
    var text = document.form.textinput.value;
    if (selection == "rad") {
        document.form.textinput.value = Math.cos(text);
    } else if (selection == "deg") {
        document.form.textinput.value = Math.cos(text * (Math.PI / 180));
    }
}
function calc_tan() {
    var text = document.form.textinput.value;
```

```javascript
        if (selection == "rad") {
            document.form.textinput.value = Math.tan(text);
        } else if (selection == "deg") {
            document.form.textinput.value = Math.tan(text * (Math.PI / 180));
        }
}
function calc_sqrt() {
    var text = document.form.textinput.value;
    document.form.textinput.value = Math.sqrt(text);
}
function calc_percent() {
    var text = document.form.textinput.value;
    document.form.textinput.value = text / 100;
}
function change_label_selection() {
    var label = document.getElementById("info");
    label.innerHTML = "<b>" + selection.toUpperCase() + "</b>";
}
function calc_deg() {
    var element = document.getElementById("deg");
    element.style = "border: solid red";
    var element2 = document.getElementById("rad");
    element2.style = "border solid";
    selection = "deg";
    change_label_selection();
}
function calc_rad() {
    var element2 = document.getElementById("rad");
    element2.style = "border: solid red";
    var element = document.getElementById("deg");
    element.style = "border: solid";
    selection = "rad";
    change_label_selection();
}
function calc_log() {
    var text = document.form.textinput.value;
    document.form.textinput.value = Math.log(text);
}
function calc_exp() {
    var text = document.form.textinput.value;
    document.form.textinput.value = Math.exp(text);
}
function calc_mod() {
    var text = document.form.textinput.value;
    document.form.textinput.value+= "%";
```

}

HTML Scientific Calculator

RAD

C	DEL	+	-	sin	^	exp
1	2	3	*	cos	deg	
4	5	6	/	tan	rad	mod
7	8	9	sqrt	(	ln	=
0		.	%	)		