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### **Web Technology Practical 4**

Implement an application in Java Script using following:

- a) Design UI of application using HTML, CSS etc.
- b) Include Java script validation
- c) Use of prompt and alert window using Java Script

#### **Code**

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Scientific Calculator</title>

  <style>

    .calculator {

      width: 450px;

      background: navy;

      padding: 30px;

      border-radius: 20px;

      text-align: center;

      box-shadow: 20px 20px 20px lightskyblue;

    }

    #display {

      width: 100%;
```

```
height: 50px;

font-size: 1.5em;

text-align: right;

background: #1a2a42;

color: white;

padding: 10px;

border: none;

border-radius: 10px;

}

.buttons {

display: grid;

grid-template-columns: repeat(6, 1fr);

gap: 10px;

margin-top: 20px;

}

.btn {

padding: 15px;

font-size: 25px;

border: none;

background: #2b4a6f;

color: white;

cursor: pointer;

border-radius: 10px;

transition: 0.2s;

}
```

```

.btn:hover {

    background: lightskyblue;

    transform: scale(1.5);

}

</style>

</head>

<body><center><h1>Scientific Calculator</h1>

<h3>Piyusha Supe</h3>

<div class="calculator">

    <input type="text" id="display" disabled>

    <div class="buttons">

        <button class="btn" onclick="clearDisplay()">C</button>

        <button class="btn" onclick="calculate()">=</button>

        <button class="btn" onclick="append('(')">(</button>

        <button class="btn" onclick="append(')'">)</button>

        <button class="btn" onclick="append('Math.log()'">ln</button>

        <button class="btn" onclick="append('Math.sin(toRadians()'">sin</button>

        <button class="btn" onclick="append('1'">1</button>

        <button class="btn" onclick="append('2'">2</button>

        <button class="btn" onclick="append('3'">3</button>

        <button class="btn" onclick="append('+)">+</button>

        <button class="btn"
onclick="append('Math.log10()'">log<sub>&nbsp; 10</sub></button>

        <button class="btn" onclick="append('Math.cos(toRadians()'">cos</button>

        <button class="btn" onclick="append('4'">4</button>

        <button class="btn" onclick="append('5'">5</button>

```

```

<button class="btn" onclick="append('6')">6</button>

<button class="btn" onclick="append('-')">-</button>

<button class="btn"
onclick="append('Math.log2()')>log<sub>&nbsp; 2</sub></button>

<button class="btn" onclick="append('Math.tan(toRadians()')>tan</button>

<button class="btn" onclick="append('7')">7</button>

<button class="btn" onclick="append('8')">8</button>

<button class="btn" onclick="append('9')">9</button>

<button class="btn" onclick="append('/')">/</button>

<button class="btn" onclick="append('*')">x<sup>&nbsp; n</sup></button>

<button class="btn" onclick="append('Math.asin()')>sin<sup>&nbsp; 1</sup></button>

<button class="btn" onclick="append('.')">.</button>

<button class="btn" onclick="append('0')">0</button>

<button class="btn" onclick="append('Math.PI')"> $\pi$ </button>

<button class="btn" onclick="append('*')">*</button>

<button class="btn" onclick="append('*2')">x<sup>&nbsp; 2</sup></button>

<button class="btn" onclick="append('Math.acos()')>cos<sup>&nbsp; 1</sup></button>

<button class="btn" onclick="append('Math.E')">e</button>

<button class="btn" onclick="append('Math.exp()')>e<sup>&nbsp; x</sup></button>

<button class="btn" onclick="append('Math.sqrt()')"> $\sqrt{\phantom{x}}$ </button>

<button class="btn" onclick="append('%')">%</button>

<button class="btn" onclick="append('factorial()')>x!</button>

<button class="btn" onclick="append('Math.atan()')>tan<sup>&nbsp; 1</sup></button>

</div>

```

```
</div>
```

```
<script>
```

```
function append(value) {
```

```
    document.getElementById("display").value += value;
```

```
}
```

```
function clearDisplay() {
```

```
    document.getElementById("display").value = "";
```

```
}
```

```
function calculate() {
```

```
    try {
```

```
        let expression = document.getElementById("display").value;
```

```
        let result = eval(expression.replace(/factorial\((\d+)\)/g, (_, num) =>
factorial(parseInt(num))));
```

```
        document.getElementById("display").value = result;
```

```
    } catch (error) {
```

```
        alert("Error! Maybe you missed a parentheses!");
```

```
    }
```

```
}
```

```
function toRadians(degrees) {
```

```
    return degrees * (Math.PI / 180);
```

```
}
```

```
function factorial(n) {
```

```
    if (n === 0 || n === 1) return 1;
```

```
    let result = 1;
```

```
    for (let i = 2; i <= n; i++) {
```

```
        result *= i;
```

```

    }

    return result;

}

</script>

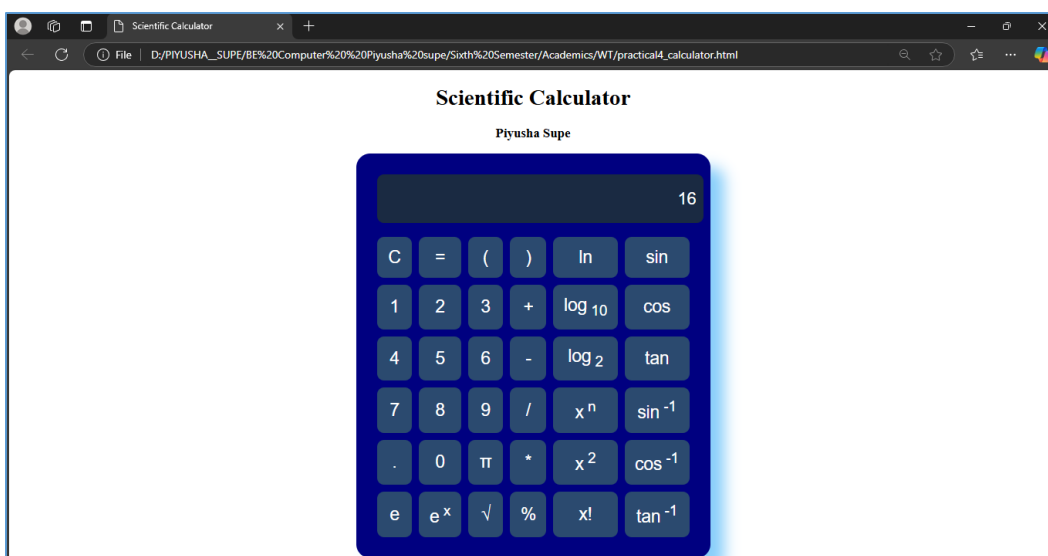
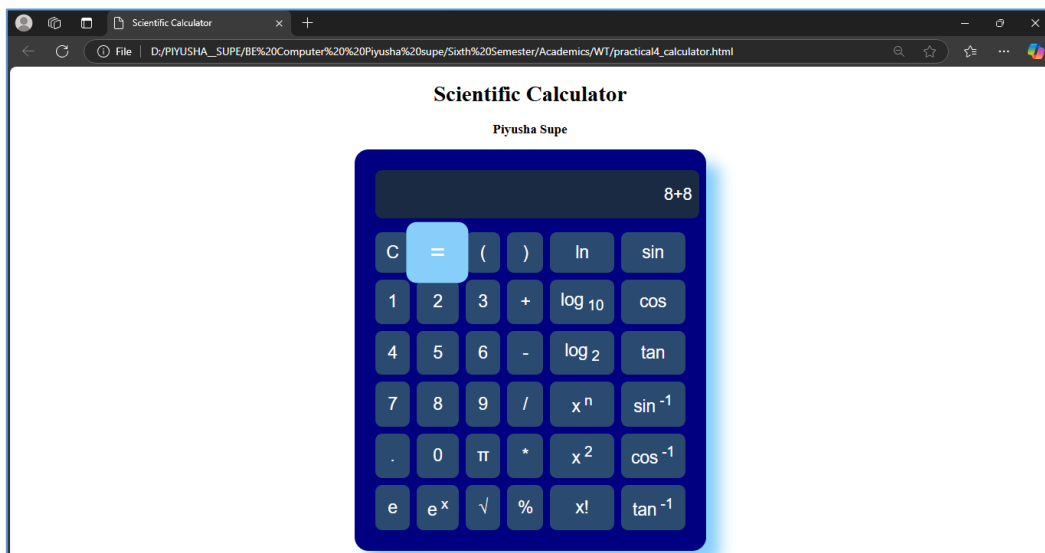
</center>

</body>

</html>

```

## OUTPUT:



## Error messages displayed using alert()

