LAB 2

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Activity 1:

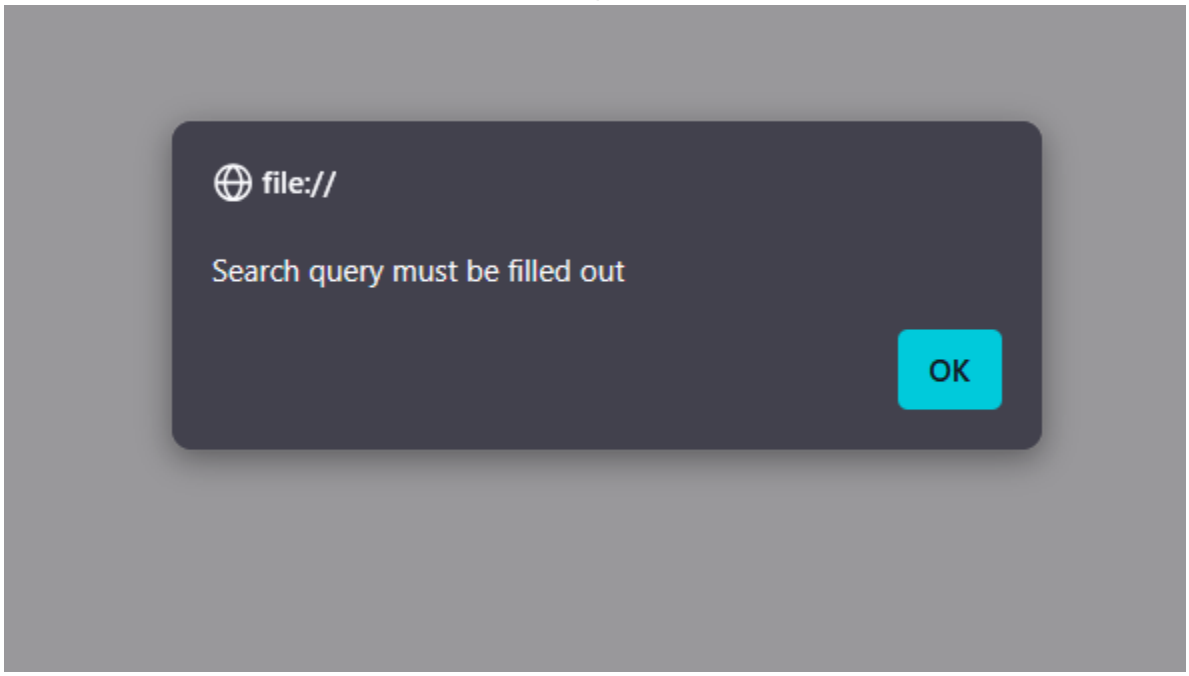
Output:

Code:

```
<script src="script.js"></script>
<h2>Google Search Wrapper</h2>
    <form name="searchForm" action="https://www.google.com/search?"
      onsubmit="return validateSearchForm()" target="_blank">
      <label>Search Query </label> <input type="text" id="searchText" name="q" value="">
      <input type="submit" value="Google Search"> <br/><br/>
    </form>
```

Activity 2:

Output:



Code:

```
function validateSearchForm() {
    let x = document.getElementById('searchText').value;
    if (x == "" || x == " " ) {
        alert("Search query must be filled out");
        return false;
    }
    else{

        return true;
    }
}
```

Exercise 1:

code:

```
let x = document.getElementById('searchText').value;
```

Activity 3:

Output:

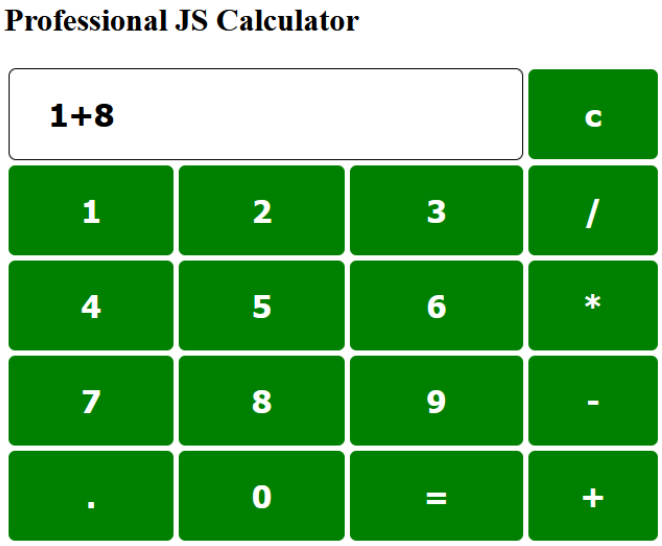
Code:

```
<h2>Simple Calculator</h2>
    <form name="simpleCalculator" onsubmit="return false">
        <label> Enter the expression </label>
        <input type="text" name="operand1" value="" />
        <select name="operator">
            <option value="+">+</option>
            <option value="-">-</option>
            <option value="*">*</option>
            <option value="/">/</option>
        </select>
        <input type="text" name="operand2" value="" />
        <button onclick="calculate()"> = </button>
        <input class="readOnlyTextBox" type="text" name="result" value="" readonly /> <br/>
        </form>
```

```
function calculate(){
    let op1 = Number(document.forms["simpleCalculator"]["operand1"].value);
    let oper = document.forms["simpleCalculator"]["operator"].value;
    let op2 = Number(document.forms["simpleCalculator"]["operand2"].value);
    let result = 0;

    if(isNaN(op1) || isNaN(op2)){
        alert("Please enter valid numbers for operands");

    } else if(op1 == "" || op2 == ""){
        alert("Please enter a Value for the operands");

    } else {
        switch(oper){
            case '+':
                result = op1 + op2;
                break;
            case '-':
                result = op1 - op2;
                break;
            case '*':
                result = op1 * op2;
                break;
            case '/':
                if(op2 == 0){
                    alert("Division by zero is not allowed");
                    return;
                }
                result = op1 / op2;
                break;
            default:
                alert("Invalid operator");
                return;
        }
        document.forms["simpleCalculator"]["result"].value = result;
    }
}
```

Exercise 2:

Output:

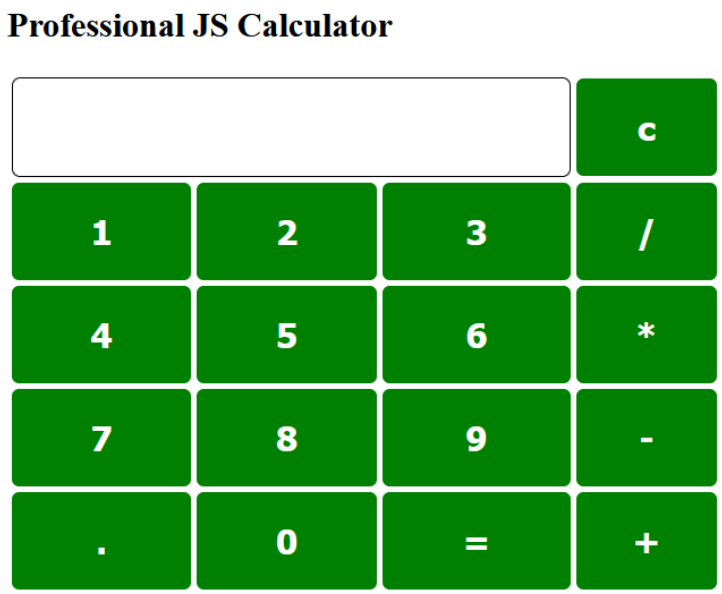


Code:

```
function calculate(){
    let op1 = Number(document.forms["simpleCalculator"]["operand1"].value);
    let oper = document.forms["simpleCalculator"]["operator"].value;
    let op2 = Number(document.forms["simpleCalculator"]["operand2"].value);
    let result = 0;

    if(isNaN(op1) || isNaN(op2)){
        alert("Please enter valid numbers for operands");

    } else if(op1 == "" || op2 == ""){
        alert("Please enter a Value for the operands");

    } else {
        switch(oper){
            case '+':
                result = op1 + op2;
                break;
            case '-':
                result = op1 - op2;
                break;
            case '*':
                result = op1 * op2;
                break;
            case '/':
                if(op2 == 0){
                    alert("Division by zero is not allowed");
                    return;
                }
                result = op1 / op2;
                break;
            default:
                alert("Invalid operator");
                return;
        }
        document.forms["simpleCalculator"]["result"].value = result;
    }
}
```

Activity 4:

Output:



Code:

```
<script src="https://cdnjs.cloudflare.com/ajax/libs/mathjs/14.8.1/math.js"></script>
<h2>Professional JS Calculator</h2>
    <form name="proCalculator" onsubmit="return false;">
        <table id="calculator">
            <tr>
                <td colspan="3"><input class="result" type="text" name="result" readonly/></td>
                <td><input type="button" class="key" value="c" onclick="clr('proCalculator')"/></td>
            </tr>
            <tr>
                <td><input type="button" class="key" value="1" onclick="dis('1','proCalculator')"/></td>
                <td><input type="button" class="key" value="2" onclick="dis('2','proCalculator')"/></td>
                <td><input type="button" class="key" value="3" onclick="dis('3','proCalculator')"/></td>
                <td><input type="button" class="key" value="/" onclick="dis('/','proCalculator')"/></td>
            </tr>
            <tr>
                <td><input type="button" class="key" value="4" onclick="dis('4','proCalculator')"/></td>
                <td><input type="button" class="key" value="5" onclick="dis('5','proCalculator')"/></td>
                <td><input type="button" class="key" value="6" onclick="dis('6','proCalculator')"/></td>
                <td><input type="button" class="key" value="*" onclick="dis('*','proCalculator')"/></td>
            </tr>
            <tr>
                <td><input type="button" class="key" value="7" onclick="dis('7','proCalculator')"/></td>
                <td><input type="button" class="key" value="8" onclick="dis('8','proCalculator')"/></td>
                <td><input type="button" class="key" value="9" onclick="dis('9','proCalculator')"/></td>
                <td><input type="button" class="key" value="-" onclick="dis('-','proCalculator')"/></td>
            </tr>
            <tr>
                <td><input type="button" class="key" value="." onclick="dis('.','proCalculator')"/></td>
                <td><input type="button" class="key" value="0" onclick="dis('0','proCalculator')"/></td>
                <td><input type="button" class="key" value="=" onclick="solve('proCalculator')"/></td>
                <td><input type="button" class="key" value="+" onclick="dis('+','proCalculator')"/></td>
            </tr>
        </table>
    </form>
```

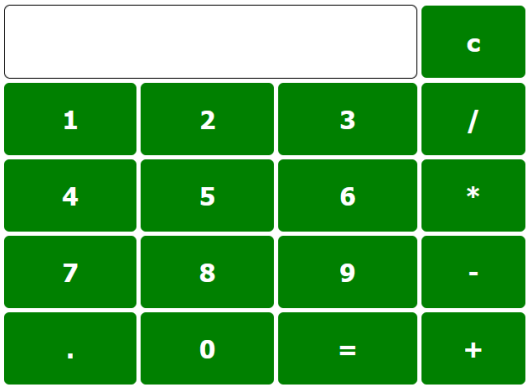
```
50
51  function dis(val, formName) {
52      document.forms[formName]["result"].value += val;
53  }
54
55  function clr(formName) {
56      document.forms[formName]["result"].value = "";
57  }
58
59  function solve(formName) {
60      let x = document.forms[formName]["result"].value;
61      let y = math.evaluate(x);
62      document.forms[formName]["result"].value = y ;
63  }
64
65  function delChar(formName) {
66      const form = document.forms[formName];
67      const resultBox = form.result;
68      resultBox.value = resultBox.value.slice(0, -1);
69  }
```

```css
.key {
    width: 100%;
    padding: 20px 40px;
    background-color: green;
    color: white;
    font-size: 24px;
    font-weight: bold;
    border: none;
    border-radius: 5px;
}

.result {
    padding: 20px 30px;
    font-size: 24px;
    font-weight: bold;
    border: 1px solid black;
    border-radius: 5px;
}
```

Activity 5:

Output:

Professional JS Calculator (2)



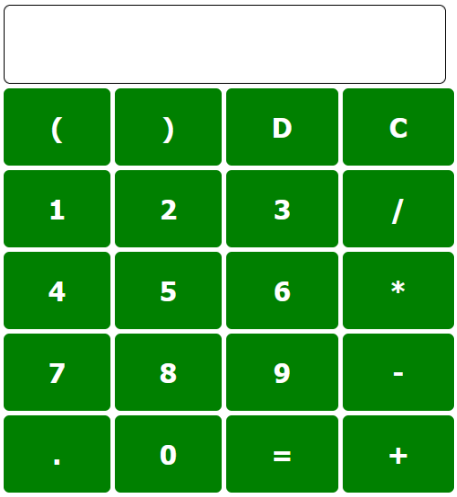
Code:

```
<h2>Professional JS Calculator (2)</h2>
    <form name="proCalculator2" onsubmit="return false;">
        <table id="calculator">
            <tr>
                <td colspan="3"><input class="result" type="text" name="result" readonly></td>
                <td><input type="button" class="key" value="c" onclick="clr('proCalculator2')" /></td>
            </tr>
            <script>
                const keys = [
                    ['1', '2', '3', '/'],
                    ['4', '5', '6', '*'],
                    ['7', '8', '9', '-'],
                    ['.', '0', '=', '+']
                ];
                for (let i = 0; i < 4; i++) {
                    document.write("<tr>\n");
                    for (let j = 0; j < 4; j++) {
                        if (keys[i][j] === '=') {
                            // solve function call function solve to evaluate value
                            document.write('<td><input type="button" class="key" value="' + keys[i][j]);
                            document.write('" onclick="solve(\'proCalculator2\')"></td>\n');
                        }
                        else {
                            document.write('<td><input type="button" class="key" value="' + keys[i][j]);
                            document.write('" onclick="dis(\'' + keys[i][j] + '\', \'proCalculator2\')"></td>\n');
                        }
                    }
                    document.write("</tr>\n");
                }
            </script>
        </table>
    </form>
```

Exercise 3:

Output:

Professional JS Calculator (3)



Code:

```
<h2>Professional JS Calculator (3)</h2>
    <form name="proCalculator3" onsubmit="return false;">
        <table id="calculator">
            <tr>
                <td colspan="4"><input class="result" type="text" name="result" readonly></td>
            </tr>
            <script>
                const keys2 = [
                    ['(', ')', 'D', 'C'],
                    ['1', '2', '3', '/'],
                    ['4', '5', '6', '*'],
                    ['7', '8', '9', '-'],
                    ['.', '0', '=', '+']
                ];
                for (let i = 0; i < keys2.length; i++) {
                    document.write("<tr>\n");
                    for (let j = 0; j < 4; j++) {
                        if (!keys2[i][j]) {
                            document.write('<td></td>\n');
                            continue;
                        }
                        if (keys2[i][j] === '=') {
                            // solve function call function solve to evaluate value
                            document.write('<td><input type="button" class="key" value="' + keys2[i][j]);
                            document.write('" onclick="solve(\'proCalculator3\')"></td>\n');
                        }
                        else if (keys2[i][j] === 'D') {
                            document.write('<td><input type="button" class="key" value="D" onclick="delChar(\'proCalculator3\')"></td>\n');
                        }
                        else if (keys2[i][j] === 'C'){
                            document.write('<td><input type="button" class="key" value="C" onclick="clr(\'proCalculator3\')"></td>\n');
                        }
                        else {
                            document.write('<td><input type="button" class="key" value="' + keys2[i][j]);
                            document.write('" onclick="dis(\'' + keys2[i][j] + '\', \'proCalculator3\')"></td>\n');
                        }
                    }
                    document.write("</tr>\n");
                }
            </script>
        </table>
    </form>
```

```
function delChar(formName) {
    const form = document.forms[formName];
    const resultBox = form.result;
    resultBox.value = resultBox.value.slice(0, -1);
}
```