Exercise 03.01: `alert, confirm, prompt` and `switch`

Create the following four functions in a separate JavaScript file. Also create a separate HTML file to test the functions.

a) Create a function that uses an `alert` to display the `hostname` of the current URL when the button is clicked.

b) Create a function to display a `confirm`ation box with the message "`Are you human?`", and output what the user clicked

c) Display a `prompt` box which asks the user for her/his name, store the user's response in `person`, and output a message; "`Hello " + person + "! How are you today?`"

d) Use the `switch` statement together with `prompt()` to execute a block of code based on user input. Click the button to display a dialog box which will ask for the user's favourite drink.
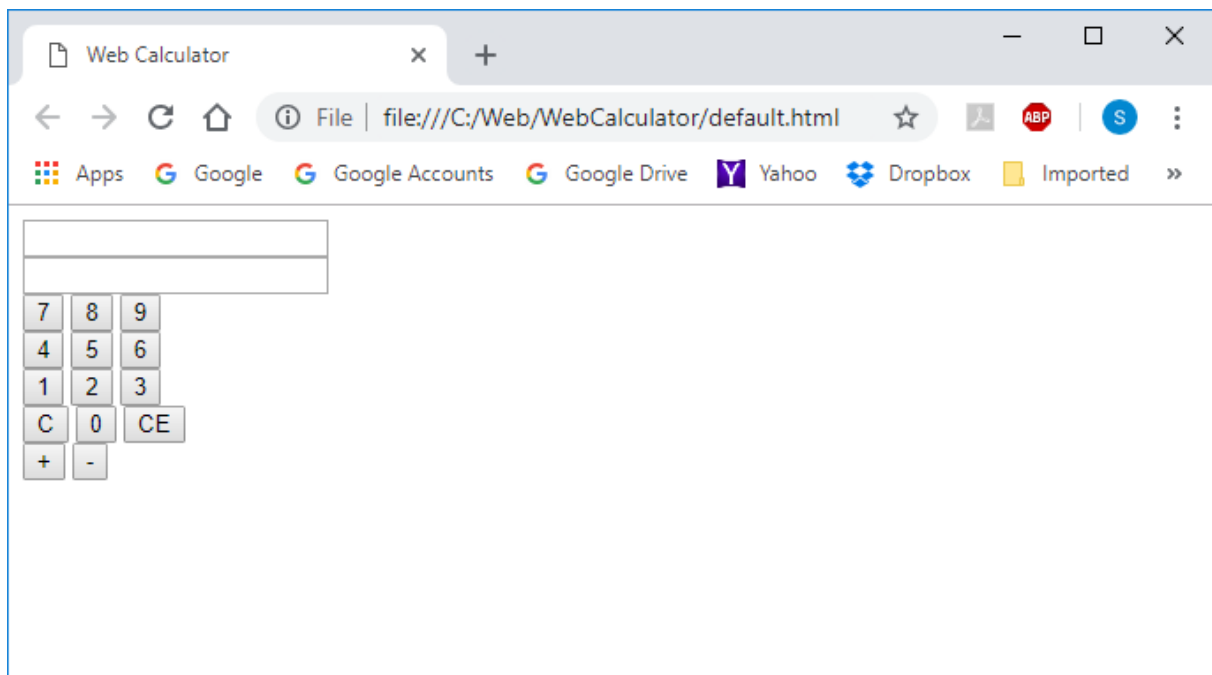
Exercise 03.02: Create a Calculator Webpage

In this exercise, you will have an opportunity to practice your JavaScript knowledge by creating a website with a single webpage that contains a calculator. The webpage itself will be very basic until CSS is covered later in the course.

1. Create a folder named **WebCalculator**. This folder will be used to store all the elements of the calculator webpage

2. Create a home page named **default.html**

3. In **default.html** enter **Web Calculator** into the **<title>** element

4. Enter the following HTML into the **<body>** element to provide a basic user interface for the calculator:

```html
<input id="txtResult" type="text" readonly="readonly" /><br />
<input id="txtInput" type="text" /><br />
<button id="btn7">7</button>
<button id="btn8">8</button>
<button id="btn9">9</button><br />
<button id="btn4">4</button>
<button id="btn5">5</button>
<button id="btn6">6</button><br />
<button id="btn1">1</button>
<button id="btn2">2</button>
<button id="btn3">3</button><br />
<button id="btnClear">C</button>
<button id="btn0">0</button>
<button id="btnClearEntry">CE</button><br />
<button id="btnPlus">+</button>
<button id="btnMinus">-</button>
```

5. Run **default.html**, the browser should be similar to the following:

6. Create a sub folder in **WebCalculator** named **Scripts**

7. Add a JavaScript file to the **Scripts** folder and name it **CalculatorLibrary.js**

8. Tell the HTML where to find the JavaScript file, add the following line to the **head** section of **default.html**:

```
<script type="text/javascript" src="Scripts/CalculatorLibrary.js"></script>
```

9. Add the following two functions to **CalculatorLibrary.js**, they contain the functionality of the **C** and **CE** calculator buttons

```
function clearEntry() {
    txtInput.value = '0';
}
function clear() {
    txtInput.value = '0';
    txtResult.value = '0';
}
```

10. Add the following two functions to **CalculatorLibrary.js**, they contain the functionality of the **+** and **−** calculator buttons

```javascript
function plusClick() {
    txtResult.value = Number(txtResult.value) + Number(txtInput.value);
    clearEntry();
}
function minusClick() {
    txtResult.value = Number(txtResult.value) - Number(txtInput.value);
  clearEntry();
}
```

11. The following method contains the functionality for all the number buttons, add it to **CalculatorLibrary.js**:

```javascript
function numberClick() {
    txtInput.value =
        (txtInput.value =='0' ? this.innerText :
         txtInput.value + this.innerText);
}
```

12. This method initialises the calculator and links the buttons with their associated events, add this method to **CalculatorLibrary.js**

```javascript
function initialize() {
    for (var i = 0; i < 10; i++) {
        document.getElementById('btn'+i).
            addEventListener('click', numberClick, false);
    }
    document.getElementById('btnPlus').
        addEventListener('click', plusClick, false);
    document.getElementById('btnMinus').
        addEventListener('click', minusClick, false);
    document.getElementById('btnClearEntry').
        addEventListener('click', clearEntry, false);
    document.getElementById('btnClear').
        addEventListener('click', clear, false);
    txtInput = document.getElementById('txtInput');
    txtResult = document.getElementById('txtResult');
    clear();
}
```

13. The calculator needs to be initialised everytime **default.html** is loaded, place the following code at the bottom of the **body** section of **default.html**:

```
<script type="text/javascript">
    window.addEventListener('load', initialize, false);
</script>
```

14. Save all files

15. Run and test **default.html**

16. Correct any errors

Exercise 03.03: Calculator Webpage Code Review

Carefully study all the code presented in **Exercise 03.02**, particularly:

- The link between the HTML and JavaScript files
- The window load event
- The button click event
- The association of the widget with the event handling code