

Javascript and Dyamic HTML

We want to write create an addition form in HTML that has three input fields and two buttons. We add the two numbers in the first two input fields and show the result in the third input field when the “Add them up” button is pushed.

The diagram shows a form layout with three input fields and two buttons. The first input field is labeled 'Enter the first number:' and is pointed to by a callout box labeled 'field called add1'. The second input field is labeled 'Enter the second number:' and is pointed to by a callout box labeled 'field called add2'. The third input field is labeled 'The sum is:' and is pointed to by a callout box labeled 'field called sum'. Below the input fields are two buttons: 'Add them up' and 'Clear numbers'.

```
<html>
<head>
<title>Add sample</title>
<script type="text/javascript" language="JavaScript">
<!--
function addit(val1, val2) {
    document.ADDUP.sum.value = eval(val1) + eval(val2);
}

function clearfields() {
    document.ADDUP.add1.value = "0";
    document.ADDUP.add2.value = "0";
    document.ADDUP.sum.value = "0";
}
-->
</script>
</head>

<body>

<form NAME="ADDUP">
<p>First number: <input name="add1"><br>
Second number:  <input name="add2"><br>
Answer: <input name="sum"><br>
<input type="button" value="Add them up"
onClick =
"addit(document.ADDUP.add1.value,document.ADDUP.add2.value);">
<input type="button" value="Reset" onClick="clearfields();" > </p>
</form>
</body>
</html>
```

Note how the value of the input box named “sum” is referenced.

It would be a mistake to refer to the form elements as document.add1, document.add2, and document.sum because these are *form* elements. The **form** object is subordinate to the document object. The form elements are subordinate to the form object.

The parameters to the addit function are the values from the input box elements. These values are expressed as strings.

- Note:
1. the event traps for the two buttons used onClick
 2. the syntax for getting at the value of the form elements add1 and add2 contained in the call to the add function.
 3. the name attributes ascribed to the form and the form elements

4. any non-numeric input into add1 or add2 will cause a Javascript error when the function add tries to sum them up

There are JavaScript functions you can use to verify the type of input.

These include functions such as isFloat(), isZipCode(), isAlphabet ic(), isCreditCard()

Let's change the form so that instead of input text boxes, a selection list is used instead.

```
<html>
<head>
<title>Add sample</title>
<script type="text/javascript" language="JavaScript">
<!--
function addit() {
    val1 = document.ADDUP.add1.value;
    val2 = document.ADDUP.add2.value;
    document.ADDUP.sum.value = eval(val1) + eval(val2);
}

function clearfields() {
    document.ADDUP.add1.value = "0";
    document.ADDUP.add2.value = "0";
    document.ADDUP.sum.value = "0";
}
-->
</script>
</head>
<body>
<form NAME="ADDUP">
<p>First number: <select name="add1" size="1" onChange="addit();">
    <option selected value="1">One</option>
    <option value="2">Two</option>
    <option value="3">Three</option>
</select><br>
Second number: <select name="add2" size="1" onChange="addit();">
    <option selected value="7">Seven</option>
    <option value="8">Eight</option>
    <option value="9">Nine</option>
</select><br>
Answer: <input name="sum" size="20"><br>
<input type="button" value="Add them up" onClick="addit();">
<input type="button" value="Reset" onClick="clearfields();"> </p>
</form>
</body>
</html>
```

The addit function is rewritten. No parameters are provided; however, the function can get the values it needs by directly accessing the form element values.

The selection list form element makes it easy to restrict input to a certain list of values. When the user makes a selection from the list, the addit() function is called.

Note: the onChange event trap for the selection lists

Now let's add radio buttons for addition or subtraction:

```

<html>

<head>
<title>Add sample</title>
<script type="text/javascript" language="JavaScript">
<!--
function addit() {
    val1 = document.ADDUP.add1.value;
    val2 = document.ADDUP.add2.value;

    // check if the first radio button (addition) is checked
    if (document.ADDUP.operation[0].checked)
        document.ADDUP.sum.value = eval(val1) + eval(val2);
    else
        // the subtraction radio button was checked
        document.ADDUP.sum.value = eval(val1) - eval(val2);
}

function clearfields() {
    document.ADDUP.add1.value = "0";
    document.ADDUP.add2.value = "0";
    document.ADDUP.sum.value = "0";
}
-->
</script>
</head>

<body>

<form NAME="ADDUP">
    <p><input type="radio" name="operation" checked value="add" onClick="addit();">
    addition <br>
    <input type="radio" name="operation" value="subtract" onClick="addit();">
    subtraction<br>
    </p>
    <p>First number: <select name="add1" size="1" onChange="addit();">
        <option selected value="1">One</option>
        <option value="2">Two</option>
        <option value="3">Three</option>
    </select><br>
    Second number: <select name="add2" size="1" onChange="addit();">
        <option selected value="7">Seven</option>
        <option value="8">Eight</option>
        <option value="9">Nine</option>
    </select><br>
    Answer: <input name="sum" size="20"><br>
    <input type="button" value="Add them up" onClick="addit();" <input
    type="button"
    value="Reset" onClick="clearfields();" > </p>
</form>
</body>
</html>

```

Note: the addition of the radio buttons and the onClick event trap
the NAME attribute of the radio buttons is used in the addit() function
how the radio button form element is checked to determine which one is pushed

Add appropriate images for each selection and the sum is also shown as an image.

```

<html>
<head>
<title>Add sample</title>
<script type="text/javascript" language="JavaScript">
<!--
function addit() {
    val1 = document.ADDUP.add1.value;
    val2 = document.ADDUP.add2.value;

    document.pict1.src = "balls" + val1 + ".gif";
    document.pict2.src = "balls" + val2 + ".gif";

    // check if the first radio button (addition) is checked
    if (document.ADDUP.operation[0].checked) {
        document.ADDUP.sum.value = eval(val1) + eval(val2);
        document.pict3.src = "balls" + document.ADDUP.sum.value + ".gif";
    }
    else {
        // the subtraction radio button was checked
        document.ADDUP.sum.value = eval(val1) - eval(val2);
        document.pict3.src = "blank.gif";
    }
}
function clearfields() {
    document.ADDUP.add1.value = "0";
    document.ADDUP.add2.value = "0";
    document.ADDUP.sum.value = "0";
}
-->
</script>
</head>
<body>
<form NAME="ADDUP">
  <p><input type="radio" name="operation" checked value="add" onClick="addit();">
  addition <br>
  <input type="radio" name="operation" value="subtract" onClick="addit();">
  subtraction<br>
  First number: <select name="add1" size="1" onChange="addit();">
    <option selected value="1">One</option>
    <option value="2">Two</option>
    <option value="3">Three</option>
    <option value="4">Four</option>
    <option value="5">Five</option>
  </select>  <br>

  Second number: <select name="add2" size="1" onChange="addit();">
    <option selected value="1">One</option>
    <option value="2">Two</option>
    <option value="3">Three</option>
    <option value="4">Four</option>
    <option value="5">Five</option>
  </select>  <br>

  Answer: <input name="sum" size="20">
     <br>
  <input type="button" value="Add them up" onClick="addit();"> <input type="button"
  value="Reset" onClick="clearfields();"> </p>
</form>
</body>
</html>

```

4. Set the images named "pict1" and "pict2" to the appropriate image file. Note the use of the src property.

5. Set the "pict3" image to the correct image file.

6. If the answer is less than zero, replace the "pict3" image with blank.

1. Add an image named "pict1" with a source of "blank.gif". Note the NAME attribute is needed to access the SRC attribute in step 4 above.

2. Add an image named "pict2" with a source of "blank.gif"

3. Add an image named "pict3" with a source of "blank.gif"

```

<html>
<head>
<title>Counting</title>
<script type="text/javascript" Language="javascript">
  <!--
    function ShowValue(number) {
      document.Counting.descbox.value = number;
    }
  -->
</script>
</head>

<body>
<table border="0" cellpadding="5" cellspacing="20" width="100%" height="115">
  <tr>
    <td width="20%" height="46">
      </td>
    <td width="20%" height="46">
      </td>
    <td width="20%" height="46">
      </td>
    <td width="20%" height="46">
      </td>
    <td width="20%" height="46">
      </td>
  </tr>
  <tr>
    <td width="20%" height="57">
      </td>
    <td width="20%" height="57">
      </td>
    <td width="20%" height="57">
      </td>
    <td width="20%" height="57">
      </td>
    <td width="20%" height="57">
      </td>
  </tr>
</table>

<form Name="Counting">
  <p><textarea name="descbox" size="20" rows="1" cols="20"> </textarea> </p>
</form>
</body>
</html>

```

Note that the text area is referenced as document.Counting.descbox.

A form named "Counting" contains a single element: a text area named "descbox".

```

<html>
<head>
<title>Add sample</title>
<script type="text/javascript" language="JavaScript">
<!--
function addit() {
    val1 = document.ADDUP.add1.value;
    val2 = document.ADDUP.add2.value;

    if ((val1 > 0 && val1 < 6) && (val2 > 0 && val2 < 6)) {
        document.pict1.src = "balls" + val1 + ".gif";
        document.pict2.src = "balls" + val2 + ".gif";

        // check if the first radio button (addition) is checked
        if (document.ADDUP.operation[0].checked) {
            document.ADDUP.sum.value = eval(val1) + eval(val2);
            document.pict3.src = "balls" + document.ADDUP.sum.value + ".gif";
        }
        else {
            // the subtraction radio button was checked
            document.ADDUP.sum.value = eval(val1) - eval(val2);
            document.pict3.src = "blank.gif";
        }
    }
    else {
        document.ADDUP.sum.value = "Error";
        alert("Numbers must be between 1 and 5.");
        if (val1 > 0 && val1 < 6)
            document.ADDUP.add2.focus();
        else
            document.ADDUP.add1.focus();
    }
}

function clearfields() {
    document.ADDUP.add1.value = "0";
    document.ADDUP.add2.value = "0";
    document.ADDUP.sum.value = "0";
}
-->
</script>
</head>
<body>
<form NAME="ADDUP">
    <p><input type="radio" name="operation" checked value="add" onClick="addit();">
    addition <br>
    <input type="radio" name="operation" value="subtract" onClick="addit();">
    subtraction<br>
    First number: <input name="add1" onChange="addit();">
    <br>
    Second number: <input name="add2" onChange="addit();">
     <br>
    Answer: <input name="sum" size="20">  <br>
    <input type="button" value="Add them up" onClick="addit();">
    <input type="button" value="Reset" onClick="clearfields();"> </p>
</form>
</body>
</html>

```

Are the values within acceptable ranges? If so, then proceed.

If either or both of the values do not fall within the accepted range, then display an error message in the text area, show an alert message, and then place the focus on the offending input box field.