CT1114
Web Development
HTML, CSS, JavaScript

Section 7 part 1:
HTML text fields, Javascript strings

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HTML tag:
<input type='text'>

Text Input Field

```
<input type="text" id="txtBox">
```
  `id` attribute used to identify the field in code

Specify default text with `value` attribute

```
<input type="text" value="Initial Text" id="txtBox">
```

Can also specify size through `style` attribute

```
<input type="text" style="width:50px;" id="txtBox">
```

Exercise

- Create a web page which provides:
    - an <input> box for the user to enter a number into
    - a button which the user clicks
- When the button is clicked, the user should be shown, in a <div> tag, the factors of their number.
    - The .value property tells you what the user has entered in the box
- If you have spare time, include some error checking (as shown below)
- See starting code on next slide

| 64 | Show Factors |

The factors of 64 are: 1, 2, 4, 8, 16, 32, 64.

| Hello | Show Factors |

Please type a positive number. 'Hello' is not a positive number

```html
<!DOCTYPE html>
<html>
  <head>
    <script>
      function showFactors() {
        /* to do: work out and display (in divOutput)
the factors of the number entered into txtInputBox */

      }
    </script>
  </head>
  <body>
    <input type='text' id='txtInputBox' value='1'>
   <button onclick="showFactors();">Show
Factors</button>
    <div id='divOutput'>Output will go here</div>
  </body>
</html>
```

HTML tag:
<textarea> … </textarea>

Accepts multiple lines of text
Uses `rows` and `cols` attributes to define size

```
<textarea rows="20" cols="40"
id="myTextArea" value="Default
text goes here"></textarea>
```

Strings

- A **string** is a group of characters
- A **string literal** is a group of characters enclosed in quotes
  - "This is a string literal"
  - 'This is too'
  - " "This" is not"
  - " 'This' is"
  - This isn't
- A **string variable** is a variable that holds a string
- Space is a valid character in a string (as are other special characters)

Concatenating Strings

- String operator '**+**' is used to join to strings

```
var name;
name = "John" + "Doe";
```

- We can of course also concatenate string variables

```
var first, last, full;
first = "John";
last = "Doe";
full = first + last;

var name = "John Smyth";
alert("Hello there, " + name + "!");
```

Escape Sequences

- Special Characters in a string

\n	New line
\r	Carriage Return
\t	Tab
\\	Backslash
\"	Double Quote
\'	Single Quote

Some string handling methods

These are methods of the string object. Hence the dot operator '.'

```
var a = "something";
a.Length          - returns the number of characters in the string
a.indexOf("s")    - returns the 1st position at which "s" occurs in string
                  - position is a 0-based index
                  - also .indexOf("s",5)  to start looking at position 5
a.substr(3,5)     – returns a portion of the string, in this case we start at
                  position 3 (i.e. the 4th character) and get 5 characters
```

Example that uses string handling. For code, see next slide:

Your Name: Sam Redfern

Process Name

Hi Sam Redfern, you have 11 characters in your name
The space character first appears at position 3
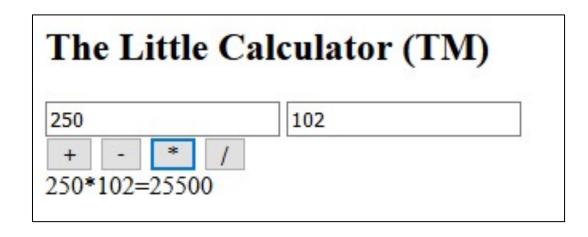Your first name is: Sam
Your surname is: Redfern

Example: string handling methods

```html
<!DOCTYPE html>
<html>
  <head>
    <script>
      function processName() {
        var myname = document.getElementById("txtName").value;
        var len = myname.length;
        var output = "Hi "+myname+", you have "+len+" characters in your name<br>";

        var spos = myname.indexOf(" ");
        output += "The space character first appears at position "+spos+"<br>";

        var firstname = myname.substr(0,spos);
        output += "Your first name is: "+firstname+"<br>";

        var surname = myname.substr(spos+1,len-spos-1);
        output += "Your surname is: "+surname+"<br>";
        document.getElementById("divOutput").innerHTML = output;
      }
    </script>
  </head>
  <body>
    Your Name: <input type='text' id='txtName' value=''><br>
    <button onclick="processName();">Process Name</button><br>
    <div id='divOutput'>Output will go here</div>
  </body>
</html>
```

Exercise (Graded!)

- Create a web page which provides:
  - two <input> boxes for the user to enter numbers
  - Four <button> objects, labelled +, -, *, /
  - A <div> tag, for displaying output
- When a button is clicked, the result of using the chosen operator (add, subtract, multiply, or divide) on the two numbers should be displayed
- **See starting code (next slide)**

```html
<!DOCTYPE html>
<html>
  <head>
  </head>
  <body>
    <h2>The Little Calculator (TM)</h2>
    <input type='text' id='txtInputBox1'>
    <input type='text' id='txtInputBox2'><br>
    <button>+</button> <button>-</button>
    <button>*</button> <button>/</button>
    <div id='divOutput'></div>
  </body>
</html>
```