



# JavaScript – part 1

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# JavaScript

- JavaScript is put into the HTML code and is executed by the client computer
- We will be using JavaScript for browser control and input validation
- Various techniques will be ignored and implemented using PHP

# Inserting JavaScript into our HTML

- Placed in the head of the document

```
<script language='JavaScript'>  
function function_name1() {  
  commands  
}  
function function_name2() {  
  commands  
}  
etc etc  
</script>
```

# Browser Control

- `document.title` = stores the title of the page
- `document.location` = the location of the page
- `window.status` = text stored in status bar
- `document.write(data)`; = prints value of data to screen - string
- `document.write('data')`; = prints 'data' to screen – literal string
- Works both ways
  - `document.write(document.title)`;
  - `document.title='New Title'`;

```
function changetitle() {  
document.write(document.title);  
document.title='New Title';  
document.write(document.title);  
}
```

# Event Handlers

- ‘Trap’ a user’s actions and run a function
- `onAbort` // User aborts loading of an image
- `onBlur` // Item loses ‘focus’
- `onChange` // Text field is changed
- `onClick` // Item is clicked
- `onError` // Item cannot load correctly (path incorrect etc)
- `onFocus` // Item gains ‘focus’
- `onLoad` // Item has finished loading
- `onMouseOver` // Mouse goes over an item
- `onMouseOut` // Mouse moves off an item
- `onSelect` // User selects text in a text area
- `onSubmit` // Submit button is pressed
- `onUnload` // User leaves document

- When the appropriate event occurs, a function can be called
- The code is then executed

```
<input type='button' value='Click Me!' onClick='function_name();'>
```

- When the button is clicked the function is executed

```
<body bgcolor='black' onLoad='function_name();'>
```

- When the page loads the function is executed

```
<img src='pic.jpg' onMouseOver='function_name();'>
```

- When the mouse goes over the image the function is executed

```
<html>
  <head>
    <title>Old Title</title>
    <script language='javascript'>
function changetitle() {
document.write(document.title);
document.write('<br>');
document.title='New Title';
document.write(document.title);
}
    </script>
  </head>
  <body onLoad='changetitle();'>
  </body>
</html>
```

- We can write HTML to screen, and it will be automatically rendered

# Variables and Data Types

- Allow us to store a value in memory
- String
  - literal string - a series of characters - 'example'
  - document.title is a string
- Number
- Boolean (true/false)
- All the same variable – type depends on context
- `var example='This is a string';`
  - This creates a variable called 'example' with the value 'This is a string'.

- Number:
  - $342 + 23 = 365$
  - `var3=var1+var2 // var3 = value of var1 + var2`
- String:
  - `'342' + '23' = '34223'`
  - `var3=var1+var2 // var3 = var1 & var2 concatenated`

```
function testvar() {  
var test='The title is '  
test = test + document.title;  
document.title = test;  
}
```

# Conditionals

if (condition is true)

```
{ block }
```

else

```
{ block }
```

Conditions:

- Less than, Greater than:  $(x < 10)$  ,  $(x > 10)$
  - Less than or equal to, Greater than or equal to:  $(x \leq 10)$  ,  $(x \geq 10)$
  - Equal to, not equal to:  $(x == 10)$ ,  $(x != 10)$
- if (string1 == string2) {  
    document.write('Equal'); }  
else { document.write('Not Equal'); }

```
<html>
  <head>
    <title>Title 1</title>
    <script language='javascript'>
function changetitle() {
var titleset = false;
if (titleset==true) {
document.title=document.title + 'Title 2'; }
}
titleset = true;
if (titleset==true) {
document.title=document.title + 'Title 3'; }
}
    </script>
  </head>
  <body onLoad='changetitle();'>
  </body>
</html>
```

# Dialog Boxes

- `alert()`
  - `alert('Alert Message');`
  - Displays a message with 'OK' button. No user choice.
- `prompt()`
  - `prompt('Prompt Message', 'Default entry');`
  - Allows the user to enter data which will then be stored in a variable.
- `confirm()`
  - `confirm('Confirm Message');`
  - Displays a message with 'OK' and 'Cancel' buttons. User can choose to confirm or not.

```
<html>
  <head>
    <title>Old Title</title>
    <script language='javascript'>
      function prompts() {
        var val1 = prompt('Enter the first number', 'XXX');
        var val2 = prompt('Enter the second number', 'XXX');
        if (confirm('Do you confirm the data entered ?'))
        {
          var value = val1+val2;
          alert(value);
        }
        else
          alert('Forget It!!');
        }
    </script>
  </head>
  <body onLoad='prompts();'>
  </body>
</html>
```

# Image Rollovers

- When the mouse moves over an image, it changes, then returns to the original when the mouse leaves
- Place picture in memory to pre-load it
  - otherwise noticeable 'lag' between mouseOver and image change

```
image01= new Image();
```

```
image01.src='pic1.jpg';
```

- Event called – onMouseOver and onMouseOut
- Make the picture become equal to the picture in memory

```
<html>
  <head>
    <script>
      image01= new Image();
      image01.src='pic1.jpg';
      image02= new Image();
      image02.src='pic2.jpg';
      // any functions here
    </script>
  </head>
  <body>
    <a href='blank.html'
      onmouseover='document.images["example"].src=image02.src'
      onmouseout='document.images["example"].src=image01.src'>
      <img src='pic1.jpg' name='example'></a>
    </body>
</html>
```

- Notice quotation marks “ ” around [“example”]

# Coursework

- Try to re-create the following pages:
- <http://www.cgcu.net/internet/coursework/lecture4/part1.html>
- <http://www.cgcu.net/internet/coursework/lecture4/part2.html>
- <http://www.cgcu.net/internet/coursework/lecture4/part3.html>