

Front End Development

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Functions, Events and Scope

SESSION TYPE : LESSON

WBD4300

Functions, Events and Scope

- Functions (and calls)

Global & Local Scope of Variables

Vector Graphics

Validation

- Vector Graphics
(e.g. Mesh Tool, Livetrace)

Self Directed:
Practice Custom Function
creation

Functions Events and Scope

Functions and Calls, Local and Global

A JavaScript function is a block of code designed to perform a particular task. A JavaScript function is executed when "something" invokes it (calls it).

A function call is an expression that passes control and arguments (if any) to a function

Events

Here are some examples of HTML events:
An HTML web page has finished loading
An HTML input field was changed
An HTML button was clicked

Local and Global, Scope of Variable

A local variable is a variable which is either a variable declared within the function or is an argument passed to a function. As you may have encountered in your programming.

Functions

Their purpose and how to use them.

A JavaScript function is a block of code designed to perform a particular task.

A JavaScript function is executed when "something" invokes it (calls it).

Structure of a function.

```
function name(parameter1, parameter2, parameter3) {  
    code to be executed  
}
```

Functions

Example of a Function

From the sample script I have given you, the drop_down menu_shopping_cart example. What is it doing?

```
function changeMainImage(){  
  
    phoneCoverColor =  
document.getElementById("phoneCoverColor").value;  
  
document.getElementById("mainImg").src="images/"+phoneC  
overColor+".png";  
    document.getElementById("modelColor").innerHTML =  
"&nbsp; &nbsp; &nbsp; <b>" + phoneCoverColor + "</b>";  
  
}
```

Calls

Definition of a call

The JavaScript call() Method

The call() method is a predefined JavaScript function method.

It can be used to invoke (call) a function with an owner object as the first argument (parameter).

Use of Calls: With call(), you can use a method belonging to another object.

Examples of Calls

```
person.fullName.call(myObject);  
// Will return "Full Name from a declared Object"
```

Local JS Variables

It's purpose

Local JavaScript Variables. Variables declared within a JavaScript function, become LOCAL to the function.

Local variables have local scope:

They can only be accessed within the function.

Global JS Variables

The scope of a variable declared with `var` is its current execution context, which is either the enclosing function or, for variables declared outside any function, global. If you re-declare a JavaScript variable, it will not lose its value

Global JavaScript Variables. A variable declared outside a function, becomes GLOBAL. A global variable has global scope: All scripts and functions on a web page can access it.

Validation

Form validation is when we put in controls so that the user cannot submit the form until all the relevant information is complete

When we include forms in our websites we must bear in mind the users and their abilities

As good developers we must cater for the easily confused and make sure we help them along the way!

Validation

HTML validation and JS validation, what is the difference?

- JavaScript Can Validate Numeric Input
- HTML have introduced a pattern attribute but there are situation where JavaScript is easier or works better with the project.
- Some have suggested that JS is harder to hack. Another layer of security.

Validation

Ensure that the name has been entered

Make sure that the values entered such as an email address in a contact form.

Make sure that the correct value has been entered including correct formatting.

Some form redirect to a new page with a error message or on the same page with an alert built in to the script which is not visible unless the form is sent or sent with errors and needs resending.

Validation

FORM VALIDATION - PRESENCE example.

```
<input type="text" id="name" />
```

```
var name = document.getElementById('name').value;
```

```
if (name=="") alert("You haven't entered your name")
```

Check against an “empty string”!

Validation – Email Addresses

A simple email check could be to see if the string included the “@” symbol

To do this we use the “indexOf” function, which returns the position where the first occurrence happens or -1 if it does not occur

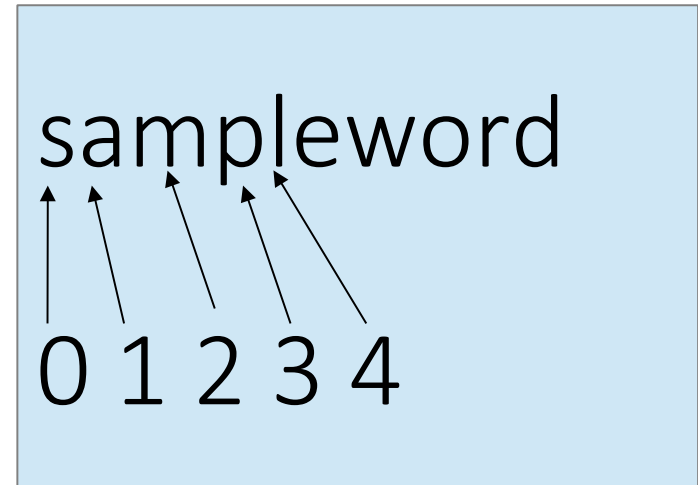
```
var email1 = t.owens@sae.edu;
```

```
var email2 = tomATsomething.com
```

```
email1.indexOf("@") would give 7
```

```
email2.indexOf("@") would give -1
```

NOTE: the counting starts at ZERO!



Validation – Email Addresses

When form validation has found a problem, it obviously should be set so that the form does not submit

You could:

Show an alert to tell the user which fields aren't correctly filled in

Change the background colour of the fields which aren't correct

Show a previously hidden text/image next to the incorrect field using an if or function.

Validation – Exercises

Lets look over 1 or 2 of the exercises available on Moodle, which I have sent to you. If you dont have them let me know.


Lets take the Form Validation exercises and dissect them.

 javascript_Events

 Mouseover_Effect

 Custom_Timer

 Progress_Bar

 System_Time

 Form_validation_simple

 Form_validation_advanced

 3_Form_validation_js_advanced_2

 Image_Zoom_In_Out

 Image_opacity_fadein_fadeout

Week 3

 javascript_Form_Validation

Week 4

 javascript_Making_Decisions

Scope or JS Variables

Examples of Scope

Scope refers generally to how pervasive a data type is and how it applies to any other element throughout a project.

Scope in terms of variables can be local or global

Its purpose

Vector Graphics

A Vector Graphic is the opposite of a Raster Graphic and is used in scaling. Essentially an image is made of nodes which maintain aspect ratio regardless of size so will reduce overall file size and loading times. The image can appear less detailed.

Mesh Tools

To add a mesh point, select the Mesh tool within an application such as Illustrator and select a fill colour for the new mesh points. Then click anywhere in the mesh object.

Live Trace

When you are satisfied with the tracing results, you can convert the tracing to vector paths or a Live Paint object. Illustrator CS6 users: Use the Image Trace feature to trace an image into vector artwork.

Self Directed

Practice Custom Function Creation.

Using the exercise given try creating your own function.

Later we will build a website with validation...

FYI: Google Digital Garages

I wanted to introduce you to Google Garages a recently offered tool for learning code.



References

Google Digital Garages –
learndigital.withgoogle.com/digitalgarage/topic-library

W3Schools.com

Adobe.com

London Additional Content P.Croaker

developer.mozilla.org