

Web Technologies

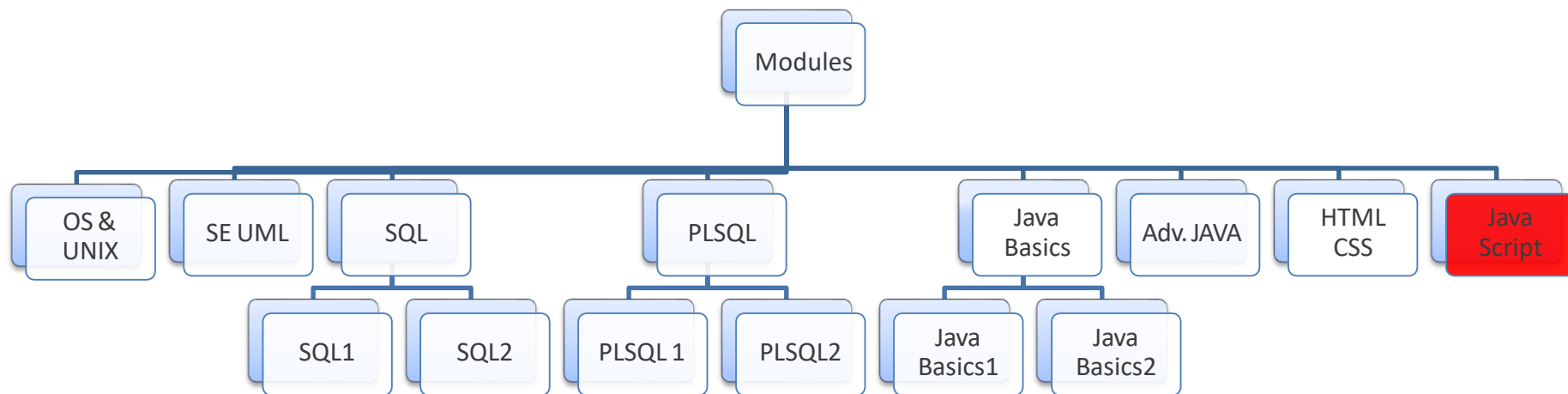
Java Script

Module Overview

Purpose:

The following module hierarchy presents the technical modules required to build the basic IT skills and acquaints you with relevant technology basics.

The current module – **JavaScript** (highlighted in red) underwrites Basics of using JavaScript in Web Pages to access HTML Elements and validate HTML forms.



*** Recommended duration to complete JavaScript module: 8 hours**

Module Objectives

By the end of this module, you will be able to:

- Explain Java Script and it's usage in web pages
- Define Java Script Objects
- Define Java Script Functions
- Define HTML DOM
- Use Java script Events to perform client side validations

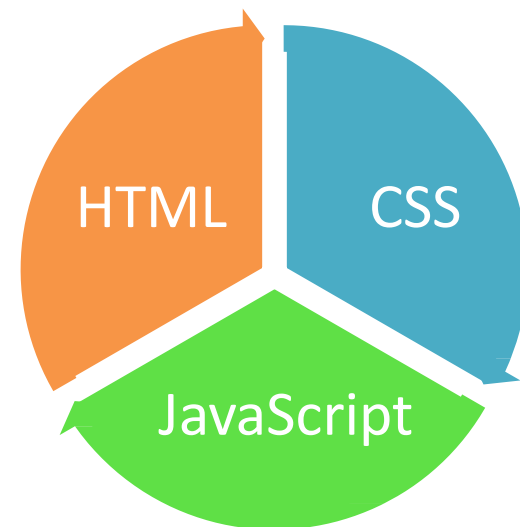
Java Script - Explain Java Script and it's usage in web pages

Why study JavaScript?

- JavaScript to program the behavior of web pages.

What is Java Script?

- JavaScript is the most popular scripting language in the world.
- The HTML DOM (the Document Object Model) is the standard for accessing HTML elements.
- Using the DOM, JavaScript can change and manipulate HTML.
- Can be used change HTML content,HTML attributes, HTML styles and much more.



References

- http://www.w3schools.com/js/js_intro.asp

Java Script Objects – Define Java Script Objects

What are JavaScript Objects?

JavaScript is an object oriented programming language and all the elements are treated as objects. In JavaScript, all values, except primitive values, are objects.

How to create a Object in JavaScript?

There are different ways to create new objects:

- Define and create a single object, using an object literal.
- Define and create a single object, with the keyword new.
- Define an object constructor, and then create objects of the constructed type.

Example:

```
var person = new Object();
person.firstName = "John";
person.lastName = "Doe";
person.age = 50;
person.eyeColor = "blue";
```

References

- http://www.w3schools.com/js/js_object_definition.asp

*image source: <http://javascript.info/files/tutorial/browser/JSTop.png>

JavaScript Function - Define Java Script Functions

What is a JavaScript Function?

- JavaScript functions are defined with the function keyword.
- You can use a function declaration or a function expression.
- Function are reusable block of code.
- Declared functions are not executed immediately. They are "saved for later use", and will be executed later, when they are invoked (called upon)

Function Syntax:

```
function functionName ( parameters ) {
    code to be executed
}
```

Example:

```
<script type="text/javascript">
<!--
function concatenate(first, last)
{
    var full;

    full = first + last;
    return full;
}
//-->
</script>
```

References

- http://www.w3schools.com/js/js_functions.asp
- http://www.w3schools.com/js/js_function_definition.asp

*image source: http://codesupport.info/wp-content/uploads/2013/03/javascript_function_05.png

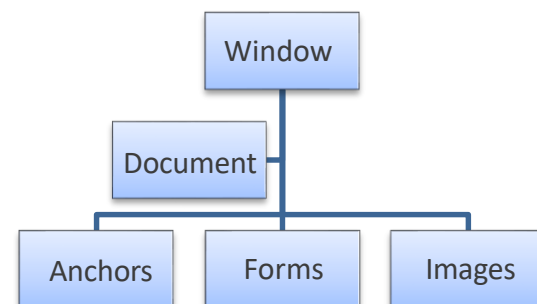
HTML DOM - Define HTML DOM

What does DOM represent ?

A Document object represents the HTML document that is displayed in that window. The Document object has various properties that refer to other objects which allow access to and modification of document content.

How does DOM help?

- When a web page is loaded, the browser creates a Document Object Model of the page.
- JavaScript can change all the HTML elements, HTML attributes and the CSS styles in the page.
- You can also remove existing elements or add new HTML elements and attributes.
- JavaScript can react to all existing HTML events in the page.



References

- http://www.w3schools.com/js/js_htmlDOM.asp
- http://www.w3schools.com/js/js_htmlDOM_elements.asp

*image source: <https://dhhmzgirqh63s.cloudfront.net/410.gif>

JavaScript – Events - Use JavaScript Events to perform client side validations

What is an Event ?

JavaScript's interaction with HTML is handled through events that occur when the user or browser manipulates a page.

Example of Events:

When the page loads, that is an event. When the user clicks a button, that click, too, is an event. Another example of events are like pressing any key, closing window, resizing window etc.

How are Events Used?

Developers can use these events to execute JavaScript coded responses, which cause buttons to close windows, messages to be displayed to users, data to be validated, and virtually any other type of response imaginable to occur.

Example of HTML Events Types

OnClick

- Script runs when a mouse click

Onsubmit

- Script runs when the form is submitted

Onchange

- Script runs when the element changes

References

- http://www.w3schools.com/js/js_events.asp
- http://www.w3schools.com/js/js_htmldom_events.asp

*image source: http://www.webstepbook.com/supplements/slides/images/figure_3_event.png

Additional References

To explore more on the subject, refer the below links and books:

Links:

- <http://www.w3schools.com/js/default.asp>
- <http://www.tutorialspoint.com/javascript/>

Books:

- JavaScript: The Complete Reference
- JavaScript: Pocket Reference

Self Check?

Instructions to write Self Evaluation Sheet:

Open the excel sheet, refer Java Script sheet, write down the solutions for all questions, save a local copy in your machine.

Lab Assignment

- Refer ***Assignment Document*** for this module to proceed with **Lab Assignment**.
- Do **submit the Solutions** for the given assignment and refer the ***Participant guide*** for submission procedure.

Module Summary

Now that you have completed this module, you will be able to:

- Use JavaScript to access the HTML elements
- Use JavaScript validating the HTML forms

Thank you!