JAVASCRIPT

What is JavaScript?

JavaScript is a programming language designed for Web pages

History

- First web scripting language
- Developed by Netscape and Sun
- Initiated by Netscape and called LiveScript
- In parallel with this, Sun was developing Java

Why Use JavaScript?

- JavaScript enhances Web pages with dynamic and interactive features.
- JavaScript runs in client software.
- JavaScript 1.3 works with version 4.0 browsers.

What can a JavaScript Do?

- JavaScript gives HTML designers a programming tool.
- JavaScript can react to events.
- Validate data.
- It can be used to detect the visitor's browser
- Create cookies.
- Read/write/modify HTML elements

JavaScript Terminology.

- JavaScript programming uses specialized terminology.
- Understanding JavaScript terms is fundamental to understanding the script.
  - Objects, Properties, Methods, Events, Functions, Values, Variables, Expressions, Operators.

Objects

- Objects refers to windows, documents, images, tables, forms, buttons or links, etc.
- Objects should be named.
- Objects have properties that act as modifiers.

Client-Side Script

- When client makes the request, the HTML and all scripts will be downloaded into your browser and then the resultant HTML will be displayed in the browser is called client-side script.

Example: JavaScript, VB-Script etc.

JavaScript Statements

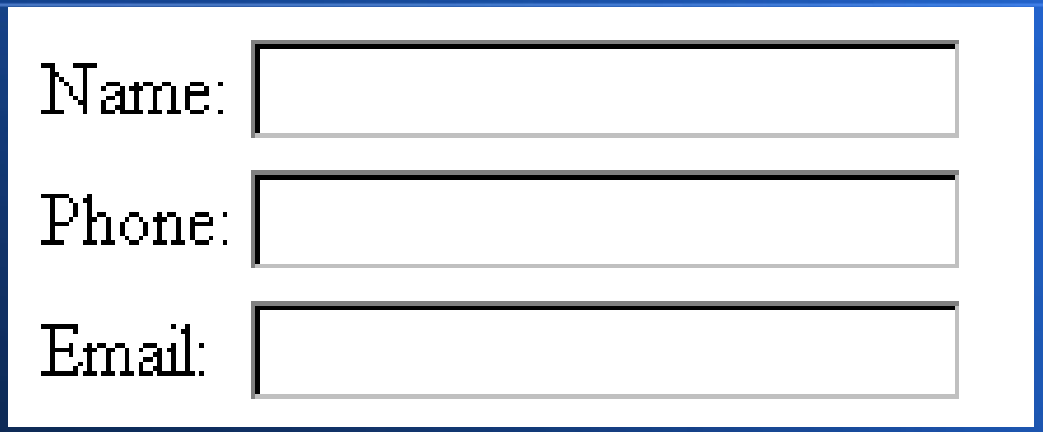
```
<html>
<head><title>My Page</title></head>
<body>
<script language="JavaScript">

document.write('This is my first →
JavaScript Page');

</script>
</body>
</html>
```

Note the symbol for line continuation

Naming Form Elements in HTML



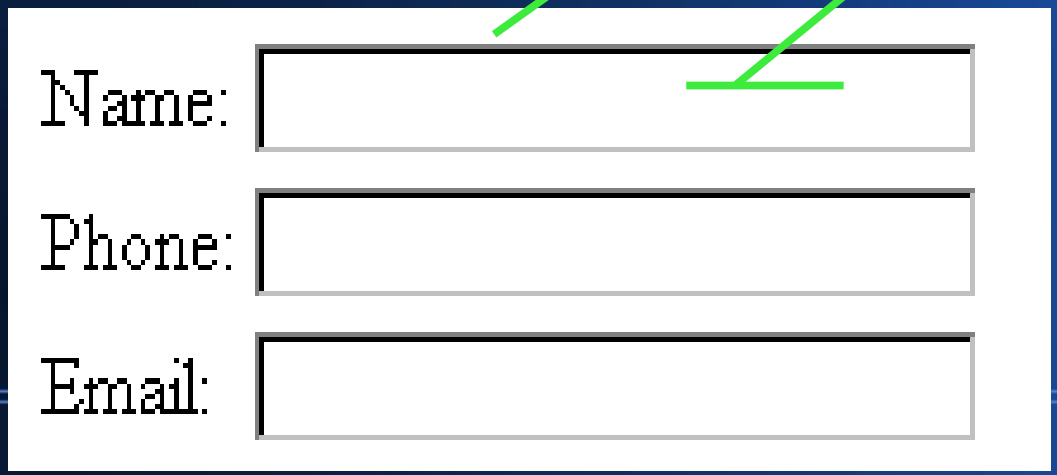

```
<form name="addressform">
Name:  <input
  name="yourname"><br />
Phone: <input name="phone"><br />
Email: <input name="email"><br />
</form>
```

Forms and JavaScript

*document.**formname.elementname**.value*

Thus:

```
document.addressform.yourname.value
document.addressform.phone.value
document.addressform.email.value
```



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Properties

Properties are object attributes.

Object properties are defined by using the object's name, a period, and the property name.

e.g., background color is expressed by: **`document.bgcolor`** .

`document` is the object.

`bgcolor` is the property.

Methods

Methods are actions applied to particular objects. Methods are what objects can do.

- e.g., `document.write("Hello World")`
- `document` is the object.
- `write` is the method.

Functions

- Functions are named statements that performs tasks.
  - e.g., `function doWhatever () {statement here}`
  - The curly braces contain the statements of the function.
- JavaScript has built-in functions, and you can write your own.

Values

Values are bits of information.

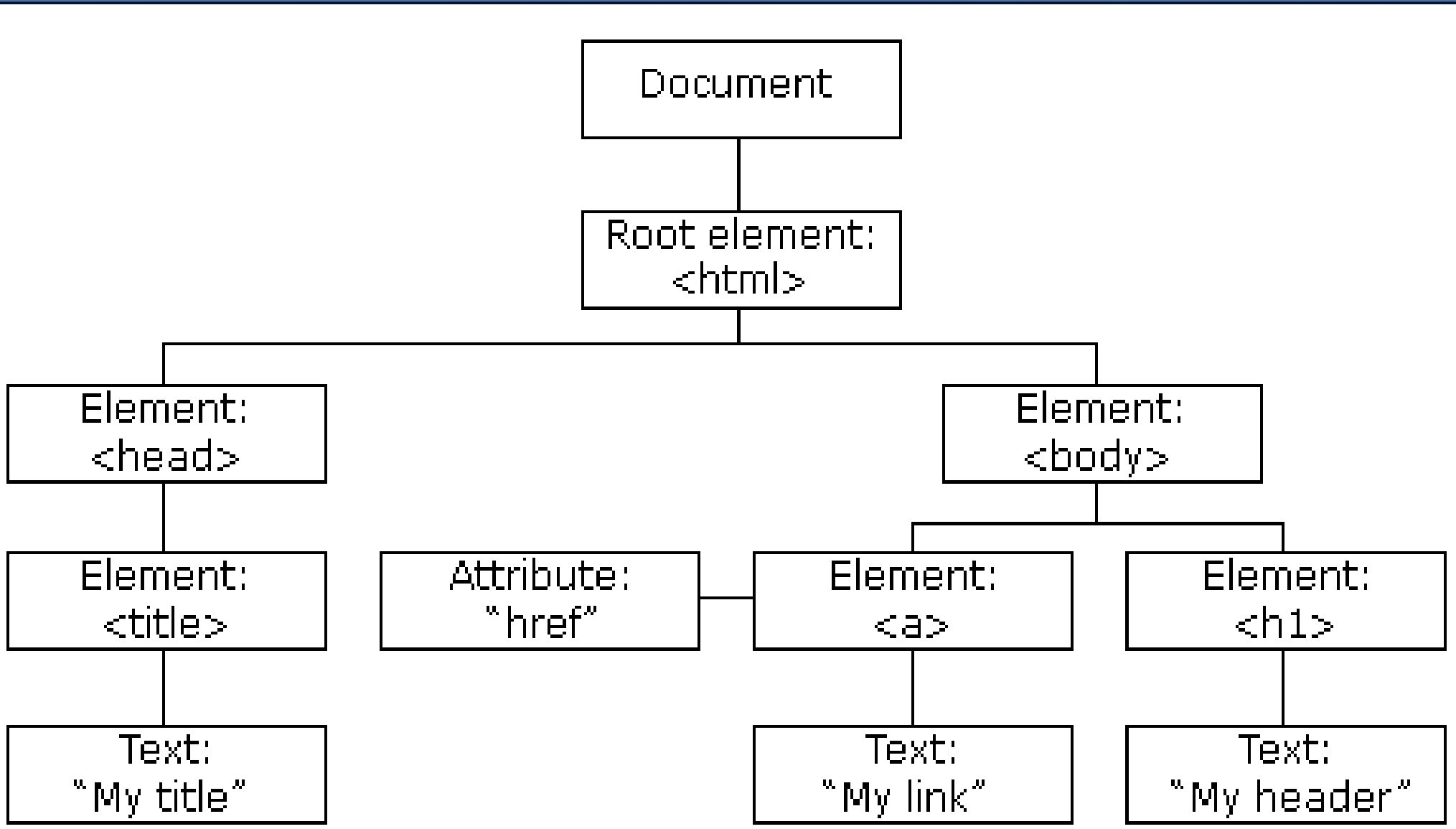
Values types and some examples include:

- Number: 1, 2, 3, etc.
- String: characters enclosed in quotes.
- Boolean: true or false.
- Object: image, form
- Function: validate, doWhatever

Variables

- Variables contain values and use the equal sign to specify their value.
- Variables are created by declaration using the **`var`** command with or without an initial value state.
  - e.g. **`var month;`**
  - e.g. **`var month = April;`**

The HTML DOM (Document Object Model)



Finding HTML Elements

Finding HTML Elements by Id :

Example: var x=document.getElementById("intro");

Finding HTML Elements by Tag Name:

Example: var x=document.getElementById("main");

var y=x.getElementsByTagName("p");

Using Separate JavaScript Files.

- Linking can be advantageous if many pages use the same script.
- Use the source element to link to the script file.

```
<script src="myjavascript.js”
    language="JavaScript1.2”
    type="text/javascript">
</script>
```

JavaScript RegExp Object

```
var dob_regex = /^([0-9]){2}(\/){1}([0-9]){2}(\/)([0-9]){4}$/; //DD/MM/YYYY
var email_regex = /^[a-zA-Z0-9._-]+@([a-zA-Z0-9.-]+\.)+[a-zA-Z0-9.-]{2,4}$/;
                                                        // email address
 var username_regex = /^[\w.-]+$/;
  // allowed characters: any word . -,
     ( \w ) represents any word character (letters, digits, and the underscore _ ),
     equivalent to [a-zA-Z0-9_]
var num_regex = /^\d+$/;  // numeric digits only
var password_regex = /^[A-Za-z\d]{6,8}$/;
    // any upper/lowercase characters and digits, between 6 to 8 characters in total
var phone_regex = /^\(\d{3]\) \d{3}-\d{4}$/;  // (xxx) xxx-xxxx
```