Walk through previous lectures

What can we do with JavaScript?

- To create interactive user interface in a web page (e.g., menu, pop-up alert, windows, etc.)

- Manipulating web content dynamically
  - Change the content and style of an element
  - Replace images on a page without page reload
  - Hide/Show contents

- Generate HTML contents on the fly
- Form validation
- AJAX (e.g. Google complete)
- etc.

Writing a JavaScript Program

- The Web browser runs a JavaScript program when the Web page is first loaded, or in response to an event.
- JavaScript programs can either be placed directly into the HTML file or they can be saved in external files.
  - placing a program in an external file allows you to hide the program code from the user
  - source code placed directly in the HTML file can be viewed by anyone

Using the <script> Tag

- To embed a client-side script in a Web page, use the element:

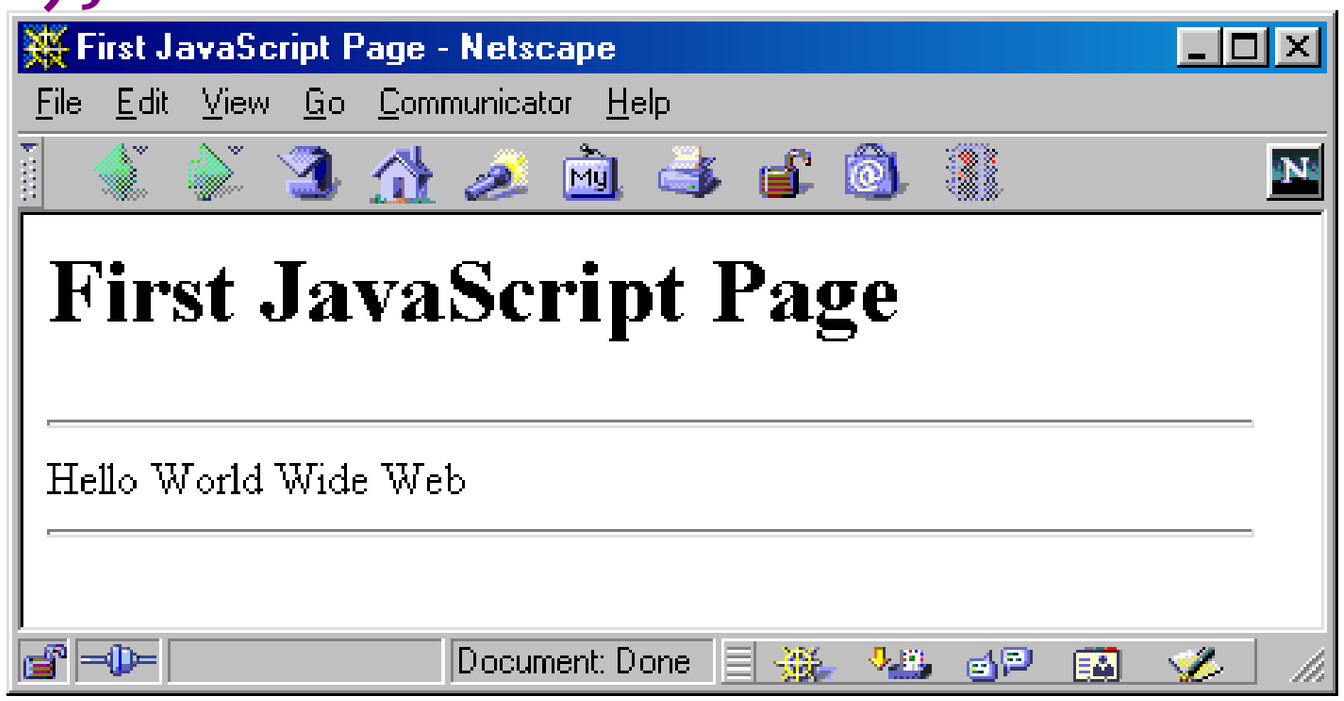
```
<script type="text/javascript" >
        script commands and comments
</script>
```

- To access an external script, use:

```
<script src="url" type="text/javascript">
        script commands and comments
</script>
```

A Simple Script

```
<html>
<head><title>First JavaScript
Page</title></head>
<body>
<h1>First JavaScript Page</h1>
<script type="text/javascript">
  document.write("<hr>");
  document.write("Hello World Wide Web");
  document.write("<hr>");
</script>
</body>
</html>
```



Writing output to a Web Page

- JavaScript provides two methods to write text to a Web page:
  - **document.write(“text”);**
  - **document.writeln(“text”);**
- The document.writeln() method differs from document.write() in that it attaches a carriage return to the end of each text string sent to the Web page.

```
document.write("<h3>News Flash!</h3><br />");
```

Embedding JavaScript

```
<html>
<head><title>First JavaScript Program</title></head>
<body>
<script type="text/javascript"
        src="your_source_file.js"></script>
</body>
</html>
```

Inside your_source_file.js

```
document.write("<hr>");
document.write("Hello World Wide Web");
document.write("<hr>");
```

- Use the **src** attribute to include JavaScript codes from an external file.
- The included code is inserted in place.

Embedding JavaScript

- The scripts inside an HTML document is interpreted in the order they appear in the document.
  - Scripts in a function is interpreted when the function is called.
- So where you place the <script> tag matters.

alert(), confirm(), and prompt()

```
<script type="text/javascript">
alert("This is an Alert method");
confirm("Are you OK?");
prompt("What is your name?");
prompt("How old are you?","20");
</script>
```

alert() and confirm()

```
alert("Text to be displayed");
```

- Display a message in a dialog box.
- The dialog box will block the browser.

```
var answer = confirm("Are you sure?");
```

- Display a message in a dialog box with two buttons: "OK" or "Cancel".
- confirm() returns true if the user click "OK". Otherwise it returns false.

Prompt()

```
prompt("What is your student id number?");
prompt("What is your name?”, "No name");
```

- Display a message and allow the user to enter a value
- The second argument is the "default value" to be displayed in the input textfield.
- Without the default value, "undefined" is shown in the input textfield.

- If the user click the "OK" button, **prompt()** returns the value in the input textfield as a string.
- If the user click the "Cancel" button, **prompt()** returns null.

Variables and data

- A **variable** is a named element in a program that stores information. The following restrictions apply to variable names:
  - the first character must be either a letter or an underscore character (_)
  - the remaining characters can be letters, numbers, or underscore characters
  - variable names cannot contain spaces
- Variable names are case-sensitive.
- **document.write(Year);**

Types of Variables

JavaScript supports four different types of variables:

- numeric variables can be a number, such as 13, 22.5, or -3.14159
- string variables is any group of characters, such as “Hello” or “Happy Holidays!”
- Boolean variables are variables that accept one of two values, either true or false
- null variables is a variable that has no value at all

Comments

- The syntax for a single-line comment is:

// comment text

- The syntax of a multi-line comment is:

```
/*
        comment text covering several lines
*/
```

Advantages of JavaScript

- **Speed:** JavaScript is executed on the client side.
- **Simplicity: J**avaScript is a relatively easy language
  - The JavaScript language is relatively easy to learn and comprises of syntax that is close to English.
- **Versatility:** JavaScript plays nicely with other languages and can be used in a huge variety of applications.

to be continued...