JavaScript and the Browser

Built-in Objects

- JavaScript has an ever-increasing number of objects that are built-in to the language.

- Some of these objects are part of the browser environment itself, called the Browser Object Model.

- Two such objects are of particular interest:
  - Window
  - Document

Browser Object Model

- The browser object model creates a tree-like structure, the root of which is the "window" object.

- The window object has several descendants:
  - Self
  - Document
  - Navigator
  - Screen
  - Forms
  - History
  - Location

The Window Self

- The window object is global and represents the currently open window in the browser.

- There are several properties, methods, and child objects of window.

- We've seen some of these already:
  - alert()
  - prompt()

- The global nature of window means that we don't have to preface every call with window..

Selected Methods of window

- blur() – Changes focus away

- focus() – Changes focus towards the window

- close() – Closes the browser window

- open() – Opens a window

- print() – Causes the print function to be invoked.

Fun with Window

- Create a new HTML5 page and create a new JavaScript function called myFunction.

- Add an onclick handler within a section:

<section onclick="return myFunction();">Click Here</section>

- Within the function, execute window.open();

Event-Related Methods

- Covered in more detail in a forthcoming lecture...

- addEventListener() – Adds event handlers

- attachEvent() – Adds event handlers for older versions of IE (less than 9).

- detachEvent() – Removes an event handler from older versions of IE.

- removeEventListener – Removes an event handler.

Timer-Related Methods

- setTimeout() – Executes a function when the timer runs out

- setInterval() – Executes a function at a given interval

- clearTimeout() – Clears a timeout timer

- clearInterval() – Clears an interval timer

Getting Style Info

- The window.getComputedStyle() method is used to obtain the styles that have been applied to an element.

- Demo!

Screen Object

- Get information about the screen with the screen object:

- screen.availHeight;

- screen.availWidth;

- screen.colorDepth;

- screen.height;

- screen.width;

Try It Out: Screen

- Change your myFunction to execute this:

console.log("Available Height: " + screen.availHeight);

console.log("Total Height: " + screen.height);

- The avail... functions display the height/width minus the space used by other controls.

Navigator Object

- The navigator Object shows properties about the user's browser environment.

- You can get the user agent, whether Java is enabled, a list of plugins, languages, and more.

- See it in action. Change your function to execute:

```
for (var prop in navigator) {

        console.log(prop + ": " + navigator[prop]);

}
```

Navigator in Action

- Is Java enabled?

```
if (navigator.javaEnabled()) {

        console.log("Java is enabled");

} else {

        console.log("Java is not enabled");

}
```

Location Object

- The location object provides an excellent way to interact with the current URI including information from the query string.

- HTTP Username/Password

- Hostname

- Port

- Path/Href

- Try it out:

- Change your navigator loop to use location.

Window Summary and Next Steps

- The window object provides an interface into the browser.

- You can work with various methods and properties of the window object, such as location, navigator, screen, and others, to work with and change the user's browser.

- Events will be covered in a forthcoming lecture.