Announcements

- Due date changes
  * Labs 7/8 due before noon this Wed. (May 14)
  * Project 2B due before noon next Wed. (May 21)
Announcements

- Check your email for common problems and solutions for the final pages of Labs 7/8
Announcement

• Lecture Friday is canceled
  * MGH is venue for Undergraduate Research Symposium
  * Noon - 5pm throughout Mary Gates
  * You're excused from lecture to attend!
  * 4th floor labs are still available
Announcement

• Reminder
  * At end of quarter, we will drop your
    • Lowest two Quiz scores
    • Lowest two Lab scores
    • Lowest two Quick Write scores
• This class has...

No:
• Midterms
• Final

Yes:
• Labs
• Quizzes
• Projects
• Quick Writes
Project 2B

- Project 2B and its “quiz” are linked on our online calendar
  - “Quiz” is
    - Open book
    - Save and resume
    - Retake as often as you want to improve your score
    - Be sure to submit it before the quiz closes!
Quiz and Quick Write

• Next week
  * Review the questions at the end of these chapters:
    • Fluency chapters 18 and 20
    • QuickStart chapters 1 and 2
  • All JavaScript!

• Topics will include:
  • Variables
  • Values & data types
  • Assignment statements
  • Rules for identifiers
  • Conditionals
  • Loops
  • Arrays
  • Functions
  • Curly brackets
Quick Write

- Put everything on the floor except a pen or pencil
- No laptops, pda's, cell phones, etc.
- No notes, textbooks, etc.
- No discussions with your neighbors
- No wandering eyes
- Write for five minutes
Browser Object Model and Document Object Model

Understanding the document tree
• All the images on the page are part of an array
  * `document.images[]`
• Recall an image tag:
  `<img src="puppy.jpg" alt="description"/>
• Attributes can be reached—and changed—with dot notation:
  * `document.images[1].src`
  * Another way to do an image rollover
Navigating the DOM

Each frame in a frames collection is itself a window.
The child frames are Objects. The others are Collections.

window
- history
  - mimeTypes
- navigator
- location
  - event
  - screen
- all
- anchors
- applets
- embeds
- filters
- images
  - areas
- links
- plugins
- scripts
- selection
- styleSheets

button
- checkbox
- text
- textarea
- password
- fileupload
- radio
- reset
- submit
- hidden
- select
- options
Video

Essentials of the DOM and JavaScript

http://www.youtube.com/watch?v=URF2sVQWuxU
Use the Document Object Model.

The web browser uses the Document Object Model to represent your web page. When you change this model with your JavaScript code, the web page will automatically change, too.

The DOM lets you look at this web page in this format:

Your JavaScript can work with the DOM much easier than working directly with HTML or CSS.
• The Document object gives you access to the browser's DOM tree
• You've used it for several labs now:
  ```javascript
  document.getElementById("zone1").value
  ```
• Here's the HTML

```html
<html>
<head>
  <title>Webville Tree Farm</title>
</head>
<body>
  <h1>Webville Tree Farm</h1>
  <p>Welcome to the Webville Tree Farm. We’re still learning about CSS, so pardon our plain site. We just bought <a href="http://www.headfirstlabs.com/books/hfhtml/">Head First HTML with CSS &amp; XHTML</a>, though, so expect great things soon.</p>
  <p>You can visit us at the corner of Binary Blvd. and Drive. Come check us out today!</p>
</body>
</html>
```
• As the browser sees it!

Welcome to the Webville Tree Farm. We're still learning about CSS, so pardon our plain site. We just bought “Head First HTML with CSS & XHTML”, though, so expect great things soon.

You can visit us at the corner of Binary Blvd. and DOM Drive. Come check us out today!
• `getElementById("id")`
  * attach ID-attributes to HTML tags and access page elements by this notation, instead of having to wade through the hierarchy.

• `appendChild()`
  * Use `appendChild()` and `.text` or `.innerHTML` instead of `+=` concatenation
- `getElementsByTagName("div")`
  * Search through all the `<div>` tags.
DOM Exercise
node: Any single piece of markup, such as an element or text. The <a> element is an element node, while the “Head First HTML with CSS & XHTML” text is a text node.

leaf: A piece of markup that has no children, such as an element with no text content, like <img>, or textual data. Also known as: leaf node

“Webville Tree Farm”

child: Any piece of markup that is contained by another piece of markup. The text “Head First HTML with CSS & XHTML” is the child of the <a> element, and the <p>s in this markup are children of the <body> element. Also known as: child node, children.

parent: Any piece of markup that contains other markup. <h1> is the parent of the text “Webville Tree Farm”, and <html> is the parent of the <body> element. Also known as: parent element, parent node.

root element: The element in a document that contains all other elements. In HTML, the root element is always <html>.

branch: A branch is a collection of elements and content. So the “body” branch is all the elements and text under the <body> element in the tree.