

# DHTML (Dynamic HTML)

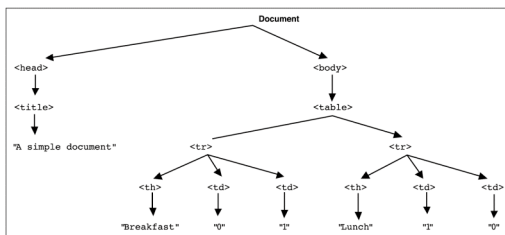
Nan Niu ([nn@cs.toronto.edu](mailto:nn@cs.toronto.edu))  
CSC309 -- Summer 2008

## What's DHTML?

- Not static
  - Attributes and contents can be changed after the document has been and is still being displayed
  - Requested by users or at timed intervals
- Being dynamic
  - Positioning
  - Visibility
  - Colors, fonts, contents
  - ...

2

## DOM Structure for an XHTML



3

## Modifying DOM

- Node
  - `appendChild(newChild)` //add node newChild to the end of the child list
  - `replaceChild(newChild, oldChild)`
  - `insertBefore(newChild, oldChild)`
  - `cloneNode(deep)`
  - `removeChild(aChild)`
  - (all methods in Node are available to Document and Element)
- Document
  - `createElement(tagName)`
  - `createTextNode(data)`
- Element
  - `removeAttribute(name)`
  - `setAttribute(name, value)`
- <http://www.w3.org/TR/2000/REC-DOM-Level-2-Core-20001113/ecma-script-binding.html>

4

## Example: Adding Table Rows

### User Database Table

Add a new row:

First Name:

Last Name:

FIRST NAME	LAST NAME
Nan	Niu

5

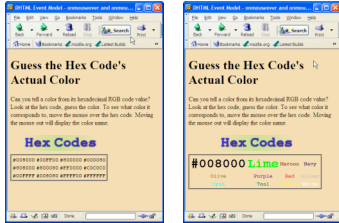
## Event Bubbling/Propagation

- Basic flow
  - Capture phase
    - The process by which an event can be handled by one of the event's target's ancestors before being handled by the event's target node
    - Capture operates from the top of the tree, generally the Document, dispatching the event downward to the target
  - At target
    - When the event reaches the target, any event listeners registered on EventTarget are triggered
  - Bubble phase
    - The process by which an event propagates upward through its ancestors after being handled by the event's target
    - Bubbling events will then trigger any additional event listeners found by following the EventTarget's parent chain upward, until Document (some events are non-bubbling: load)

6

### Event Bubbling (cont'd)

- To cancel bubbling, set event property
  - `event.cancelBubble = true;`
- Example



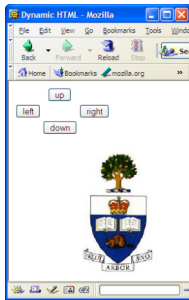
7

### Changing Style Attributes

- CSS1 and CSS-P (CSS-Positioning) are scriptable from JavaScript
  - All dynamic style update on XHTML elements
- The **style** property
  - position, top, left, visibility, backgroundColor, color, etc.
  - zIndex
    - The effect of the 3rd dimension
    - The larger value is on the top

8

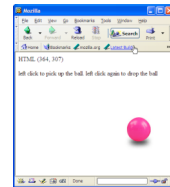
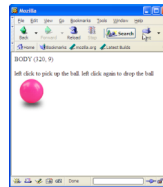
### Example: Move Image on Screen



9

### Tracking Mouse Movements

- Track mouse position on screen
- Drag and drop ball on click
- Events onmousemove and onclick



10