Designing for Web 2.0

Ch. 12

Usability

- Summarize
- Organize
- Write compactly
- Don’t be too creative!

Navigation and links

- Menus:
  - Horizontal
  - Vertical
  - Flyout
- Efficient forms
  - Proper input elements
  - Min number of fields
  - Javascript/PHP for validation

Visual Effects

Scriptaculous overview

Scriptaculous : a JavaScript library, built on top of Prototype, that adds:

□visual effects (animation, fade in/out, highlighting)

□drag and drop

□some DOM enhancements

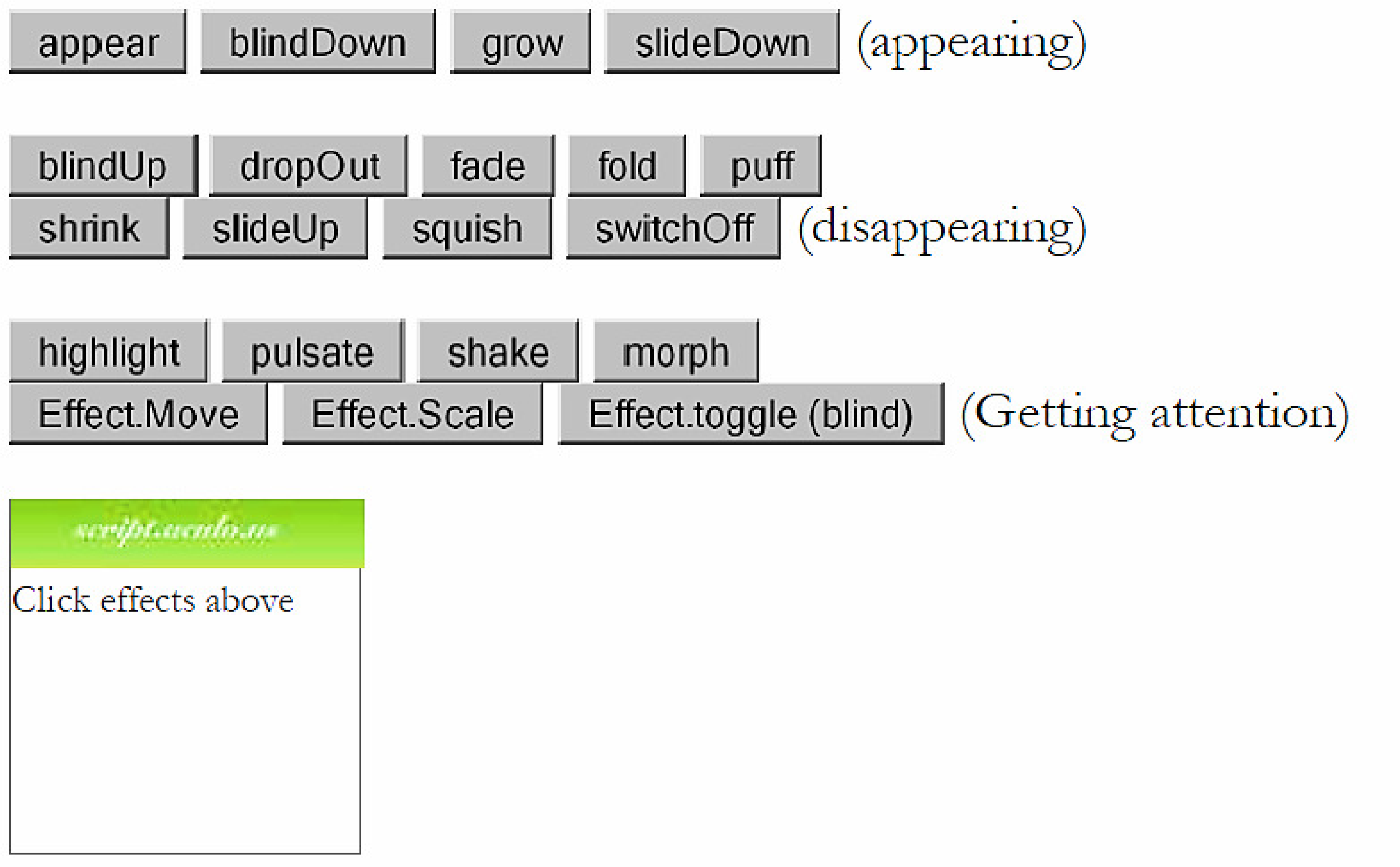
□other stuff (unit testing, etc.)

Downloading and using Scriptaculous

```
<script
src="http://ajax.googleapis.com/ajax/libs/scriptaculous/1.
9.0/scriptaculous.js" type="text/javascript"></script>
                                                         JS
```

- documentation available on their wiki
- Scriptaculous Effects Cheat Sheet

Visual Effects



Click effects above

Adding effects to an element

```
element.effectName(); // for most effects

// some effects must be run the following way:
new Effect.name(element or id);                          JS
```

```
$("sidebar").shake();
var buttons = $$("results > button");
for (var i = 0; i < buttons.length; i++) {
      buttons[i].fade();
}                                                        JS
```

- the effect will begin to animate on screen (asynchronously) the moment you call it
- six core effects are used to implement all effects on the previous slides:
  - `Effect.Highlight`, `Effect.Morph`, `Effect.Move`, `Effect.Opacity`, `Effect.Parallel`, `Effect.Scale`

Adding effects to an element

```
element.effectName(
{
       option: value,
       option: value,
       ...
}
);                                                        JS
```

```
$("my_element").pulsate({
       duration: 2.0,
       pulses: 2
});                                                       JS
```

- many effects can be customized by passing additional options (note the {})
- options (wiki): `delay, direction, duration, fps, from, queue, sync, to, transition`

Adding effects to an element

```
$("my_element").fade({
      duration: 3.0,
      afterFinish: displayMessage
});
function displayMessage(effect) {
      alert(effect.element + " is done fading now!");
}                                                    JS
```

- all effects have the following events that you can handle:
  - `beforeStart, beforeUpdate, afterUpdate, afterFinish`
- the afterFinish event fires once the effect is done animating
  - useful do something to the element (style, remove, etc.) when effect is done

Adding effects to an element

```
$("my_element").fade({
      duration: 3.0,
      afterFinish: displayMessage
});
function displayMessage(effect) {
      alert(effect.element + " is done fading now!");
}
```

JS

- each of these events receives the Effect object as its parameter
  - its properties: `element, options, currentFrame, startOn, finishOn`
  - some effects (e.g. Shrink) are technically "parallel effects", so to access the modified element, you write `effect.effects[0].element` rather than just `effect.element`

Drag and drop

Scriptaculous provides several objects for supporting drag-and-drop functionality:

- Draggable : an element that can be dragged
- Draggables : manages all Draggable objects on the page
- Droppables : elements on which a Draggable can be dropped
- Sortable : a list of items that can be reordered
- Puzzle Game demo

Draggable

```
new Draggable(element or id,
        { options }
);                                                      JS
```

- specifies an element as being able to be dragged
- options: `handle, revert, snap, zindex, constraint, ghosting, starteffect, reverteffect, endeffect`
- event options: `onStart, onDrag, onEnd`
  - each handler function accepts two parameters: the Draggable object, and the mouse event

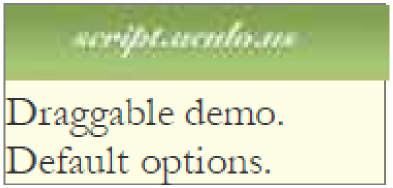
Draggable Example

```
<div id="draggabledemo1">Draggable demo. Default
options.</div>
<div id="draggabledemo2">Draggable demo.
{snap: [40,40], revert: true}</div>
```

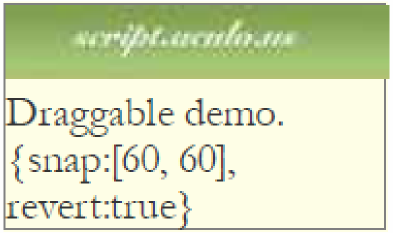
HTML

```
document.observe("dom:loaded", function() {
      new Draggable("draggabledemo1");
      new Draggable("draggabledemo2", {revert: true,
snap: [40, 40]});
});
```

JS



Draggable demo.
Default options.



Draggable demo.
{snap:[60, 60],
revert:true}

Draggables

- a global helper for accessing/managing all Draggable objects on a page
- properties: `drags, observers`
- methods: `register, unregister, activate, deactivate, updateDrag, endDrag, keyPress, addObserver, removeObserver, notify`

Droppables

```
Droppables.add(element or id,
      { options }
);                                                    JS
```

- To make an element react when a Draggable is dropped onto it, you'll add it to the *Droppables* of the page
- options: `accept, containment, hoverclass, overlap, greedy`
- event options: `onHover, onDrop`
  - each callback accepts three parameters: the Draggable, the Droppable, and the event

Draggable Example

```
<img id="product1" src="images/shirt.png" alt="shirt" />
<img id="product2" src="images/cup.png" alt="cup" />
<div id="droptarget"></div>                             HTML
```

```
document.observe("dom:loaded", function() {
       new Draggable("product1");
       new Draggable("product2");
       Droppables.add("droptarget", {onDrop:
productDrop});
});
function productDrop(drag, drop, event) {
       alert("You dropped " + drag.id);
}
                                                         JS
```

Sortable

```
Sortable.create(element or id of list,
      { options }
);                                                          JS
```

- specifies a list (ul, ol) as being able to be dragged into any order
- implemented internally using Draggables and Droppables
- options: `tag, only, overlap, constraint, containment, format, handle, hoverclass, ghosting, dropOnEmpty, scroll, scrollSensitivity, scrollSpeed, tree, treeTag`
- to make a list un-sortable again, call `Sortable.destroy` on it

Sortable demo

```
<ol id="simpsons">
      <li id="simpsons_0">Homer</li>
      <li id="simpsons_1">Marge</li>
      <li id="simpsons_2">Bart</li>
      <li id="simpsons_3">Lisa</li>
      <li id="simpsons_4">Maggie</li>
</ol>
```

HTML

```
document.observe("dom:loaded", function() {
      Sortable.create("simpsons");
});
```

JS

Sortable demo

event	description
onChange	when any list item hovers over a new position while dragging
onUpdate	when a list item is dropped into a new position (more useful)

```
            onUpdate: listUpdate
        });
});
```

JS

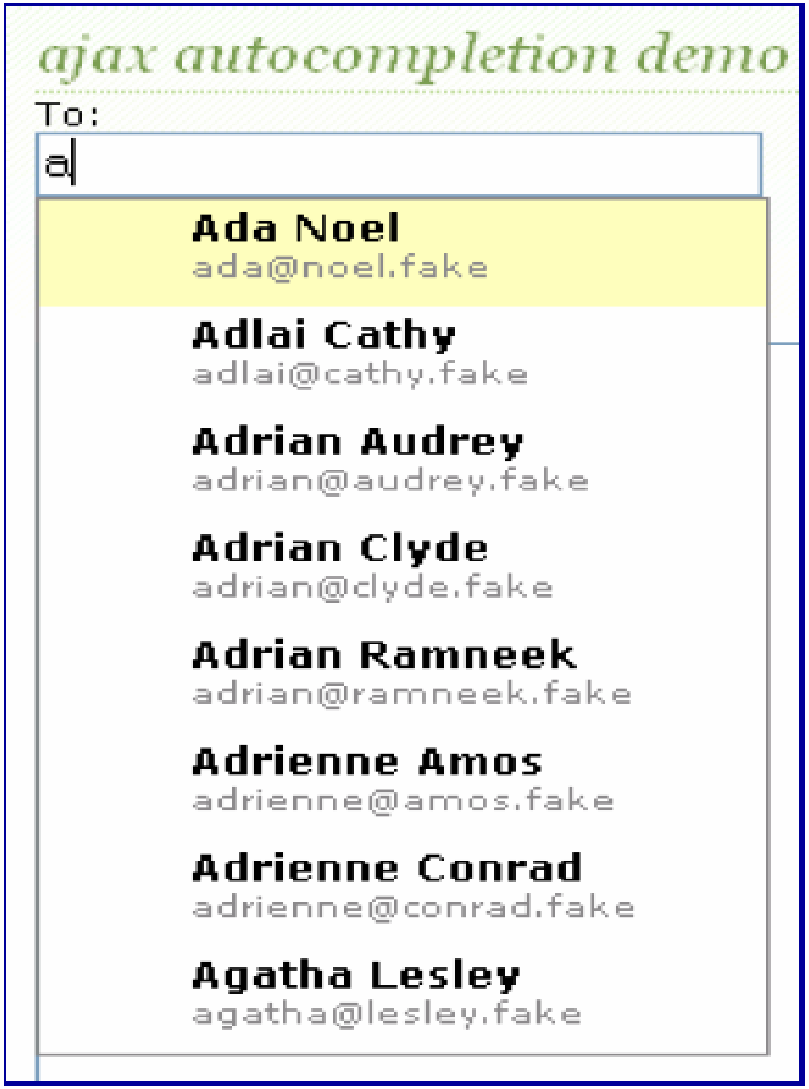
Sortable list events example

```
document.observe("dom:loaded", function() {
      Sortable.create("simpsons", {
      onUpdate: listUpdate
      });
});
function listUpdate(list) {
      // can do anything I want here; effects, an Ajax
request, etc.
      list.shake();
}
```

JS

Auto-completing text fields

- Scriptaculous offers ways to make a text box that auto-completes based on prefix strings:
  - `Autocompleter.Local` : auto-completes from an array of choices
  - `Ajax.Autocompleter` : fetches and displays list of choices using



ajax autocompletion demo

To:

a

Ada Noel
ada@noel.fake

Adlai Cathy
adlai@cathy.fake

Adrian Audrey
adrian@audrey.fake

Adrian Clyde
adrian@clyde.fake

Adrian Ramneek
adrian@ramneek.fake

Adrienne Amos
adrienne@amos.fake

Adrienne Conrad
adrienne@conrad.fake

Agatha Lesley
agatha@lesley.fake

Using Autocompleter.Local

```
new Autocompleter.Local(
        element or id of text box,
        element or id of div to show completions,
        array of choices,
        { options }
);                                                    JS
```

- you must create an (initially empty) div to store the auto-completion matches
  - it will be inserted as a ul that you can style with CSS
  - the user can select items by pressing Up/Down arrows; selected item is given a class of selected
- pass the choices as an array of strings
- pass any extra options as a fourth parameter between { }
  - options: `choices, partialSearch, fullSearch, partialChars, ignoreCase`

Using Autocompleter.Local

```
<input id="bands70s" size="40" type="text" />
<div id="bandlistarea"></div>
```

HTML

```
document.observe("dom:loaded", function() {
      new Autocompleter.Local(
            "bands70s",
            "bandlistarea",
            ["ABBA", "AC/DC", "Aerosmith", "America",
"Bay City Rollers", ...],
            {}
      );
});
```

JS

Using Autocompleter.Local

```html
<input id="bands70s" size="40" type="text" />
<div id="bandlistarea"></div>
```

HTML

```css
#bandlistarea {
	border: 2px solid gray;
}
/* 'selected' class is given to the autocomplete item
currently chosen */
#bandlistarea .selected {
	background-color: pink;
}
```

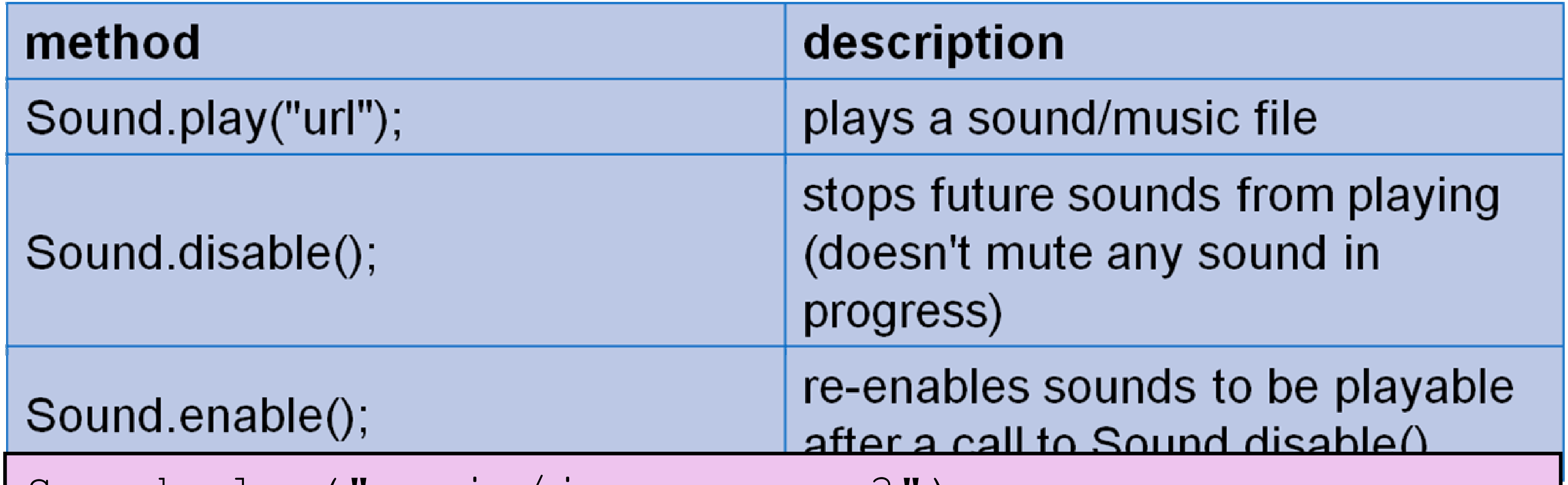
CSS

Using Ajax.Autocompleter

```
new Ajax.Autocompleter(
        element or id of text box,
        element or id of div to show completions,
        url,
        { options }
);                                                        JS
```

- when you have too many choices to hold them all in an array, you can instead fetch subsets of choices from the server using Ajax
- instead of passing choices as an array, pass a URL from which to fetch them
  - the choices are sent back from the server as an HTML ul with li elements in it
- options: `paramName, tokens, frequency, minChars, indicator, updateElement, afterUpdateElement, callback, parameters`

Playing sounds (API)



method	description
Sound.play("url");	plays a sound/music file
Sound.disable();	stops future sounds from playing (doesn't mute any sound in progress)
Sound.enable();	re-enables sounds to be playable after a call to Sound.disable()

```
Sound.play("music/java_rap.mp3");
Sound.play("music/wazzaaaaaap.wav");                PHP
```

- □ to silence a sound playing in progress, use `Sound.play('', {replace: true});`
- □ cannot play sounds from a local computer (must be uploaded to a web site)

Ajax.InPlaceEditor

```
new Ajax.InPlaceEditor(element or id,
      url,
      { options }
);                                                          JS
```

- **options:** okButton, okText, cancelLink, cancelText, savingText, clickToEditText, formId, externalControl, rows, onComplete, onFailure, cols, size, highlightcolor, highlightendcolor, formClassName, hoverClassName, loadTextURL, loadingText, callback, submitOnBlur, ajaxOptions
- **event options:** onEnterHover, onLeaveHover, onEnterEditMode, onLeaveEditMode

Ajax.InPlaceEditor

```
new Ajax.InPlaceCollectionEditor(element or id,
      url,
      {
            collection: array of choices,
            options
      }
);
```

JS

- a variation of `Ajax.InPlaceEditor` that gives a collection of choices
- requires `collection` option whose value is an array of strings to choose from
- all other options are the same as `Ajax.InPlaceEditor`

Ajax.InPlaceEditor

- □ slider control:

```
new Control.Slider("id of knob", "id of track",
{options});                                              JS
```

- □ Builder - convenience class to replace document.createElement:

```
var img = Builder.node("img", {
      src: "images/lolcat.jpg",
      width: 100, height: 100,
      alt: "I can haz Scriptaculous?"
});
$("main").appendChild(img);                              JS
```

- □ Tabbed UIs