CSE3026: Web Application Development Scriptaculous

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Visual Effects

- Visual Effects
- Sortable Lists; Drag and Drop
- Auto-completing Text Fields
- Other Features

Scriptaculous overview

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

- visual effects (animation, fade in/out, highlighting)
- drag and drop
- Ajax features:
 - Auto-completing text fields (drop-down list of matching choices)
 - In-place editors (clickable text that you can edit and send to server)
- some DOM enhancements
- other stuff (unit testing, etc.)

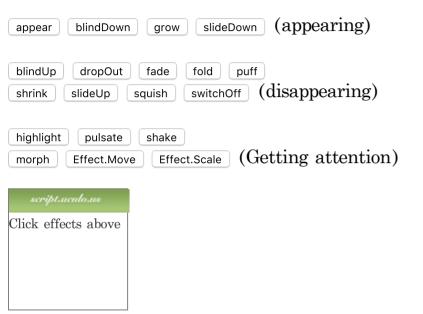
Downloading and using Scriptaculous

```
<script src="http://ajax.googleapis.com/ajax/libs/prototype/1.7.3.0/prototype.js"
type="text/javascript"></script>

<script src="http://ajax.googleapis.com/ajax/libs/scriptaculous/1.9.0/scriptaculous.js"
type="text/javascript"></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></script></scr
```

- or download it, extract its .js files to your project folder
- documentation available on the Scriptaculous wiki
- Scriptaculous Effects Cheat Sheet

Visual effects



Adding effects to an element

- 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

Effect options

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

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

- many effects can be customized by passing additional options (note the {})
- options (wiki): delay, direction, duration, fps, from, queue, sync, to, transition
- Q: How would we show two effects in a row on the same element?

Effect events

```
$("my_element").fade({
    duration: 3.0,
    afterFinish: displayMessage
});

function displayMessage(effect) {
    alert(effect.element + " is done fading now!");
}
```

- 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 to do something to the element (style, remove, etc.) when effect is done
- 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 effects[0].element rather than just effect.element

Sortable Lists; Drag and Drop

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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

Draggable

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

- 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

script.aculo.us

Draggable demo 1.
Default options.

script.aculo.w

Draggable demo 2. {snap:[40, 40], revert:true}

Draggables

- a global helper for accessing/managing all Draggable objects on a page
- (not needed for this course)
- properties: drags, observers
- methods: register, unregister, activate, deactivate, updateDrag, endDrag, keyPress, addObserver, removeObserver, notify

Droppables

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

- specifies an element as an area that react to draggable items that are dropped on it
- options: accept, containment, hoverclass, overlap, greedy
- event options: onHover, onDrop
 - each callback accepts three parameters: the Draggable, the Droppable, and the event

Drag/drop shopping cart demo

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

document.observe("dom:loaded", function() {
    new Draggable("shirt");
    new Draggable("cup");
    Droppables.add("droptarget", {onDrop: productDrop});
});

function productDrop(drag, drop, event) {
    alert("You dropped " + drag.id);
```







Sortable

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

- 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

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

- 1. Homer
- 2. Marge
- 3. Bart
- 4. Lisa
- 5. Maggie

Sortable list events

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)

- onChange handler function receives the dragging element as its parameter
- onUpdate handler function receives the list as its parameter

Sortable list events example

- 1. Homer
- 2. Marge
- 3. Bart
- 4. Lisa
- 5. Maggie

Subtleties of **Sortable** events

• for onUpdate to work, each li **must** have an id of the form <code>listID_index</code>

```
      Homer
      Marge
      Bart
      Lisa
      Maggie

HTML
```

- if the elements of the list change after you make it sortable (if you add or remove an item using the DOM, etc.), the new items can't be sorted
 - must call Sortable.create on the list again to fix it

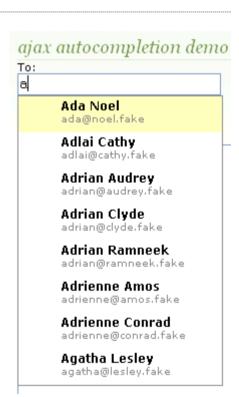
Auto-completing Text Fields

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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
- * (won't be necessary once HTML5 datalist element is well supported)



Using Autocompleter.Local

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

);
```

- 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 { }
 - o options: choices, partialSearch, fullSearch, partialChars, ignoreCase

Autocompleter.Local demo

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

Autocompleter styling

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

Ajax.InPlaceEditor

Makes it possible to edit the content of elements on a page "live" and send the edits back to the server using Ajax.

- 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.InPlaceCollectionEditor

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

- 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

Other Features

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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)
- uses your browser's built-in audio plugin to play sounds (e.g. Quicktime)

Other neat features

• slider control:

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

• 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);
```

• Tabbed UIs