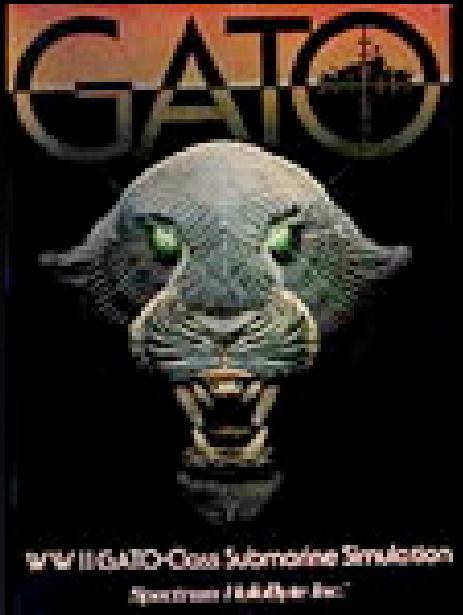




# Prototyping the Rich Web Experience

Bill Scott  
Yahoo! Ajax Evangelist  
[b.scott@yahoo.com](mailto:b.scott@yahoo.com)

# stuff i've done



# stuff i've done

**Rico** JavaScript for Rich Internet Applications

[Home](#) [Features](#) [Demos](#) [Documentation](#) [Downloads](#) [About](#)

An open-source JavaScript library for creating rich internet applications. Rico provides full Ajax support, drag and drop management and a cinematic effects library.

**BACKGROUND**  
Rico is a Spanish word meaning rich. The goal of Rico is to provide a rich experience for web sites using Ajax technology.

Rico is just one small part of a larger effort at Sabre Airline Solutions to create a suite of rich internet components, behaviors and effects for the web application space.

The library is a fully object-oriented JavaScript library. Recently we refactored the library to extend the excellent `prototype.js` effort from the Ruby on Rails folks.

**OPEN SOURCE**  
Rico is provide free and open-source ([Apache 2.0 License](#)) for either your personal or commercial use. [Sabre Airline Solutions](#) retains the copyright on the Rico code produced at Sabre.

**BROWSER SUPPORT**  
Rico has been tested on IE 5.5, IE 6, Firefox 1.0x/Win, Camino/Mac, Firefox 1.0x/Mac. Currently there is no Safari or Mac IE 5.2 support. Support will be provided in a near future release for Safari.

**AJAX SUPPORT**  
Ajax is the term that describes a set of web development techniques for creating interactive web applications. One of the key ingredients is the JavaScript object XMLHttpRequest. Rico provides a very simple interface for registering Ajax request handlers as well as HTML elements or JavaScript objects as Ajax response objects. Multiple elements and/or objects may be updated as the result of one Ajax request. Want to get started learning? Check out our [demos](#) and then read our two Ajax tutorials on the [Documentation page](#).

**DRAG AND DROP**  
Desktop applications have long used drag and drop in their interfaces to simplify user interaction. Rico provides one of the simplest interfaces for enabling your web application to support drag and drop. Just register any HTML element or JavaScript object as a draggable and any other HTML element or JavaScript object as a drop zone and Rico handles the rest.

**CINEMATIC EFFECTS**  
When actions are no longer occurring just at the page level but within the page itself, more clues are required to clue the user on what has transpired. Cinematic effects such as scaling and smooth sliding transitions can communicate change in richer ways than traditional web applications have explored before. Rico provides several cinematic effects as well as some simple visual style effects in a very simple interface.

**BEHAVIORS**  
Take some raw HTML and sprinkle in some behaviors and what do you get? Well in Rico you can get an Accordion component like those found in Macromedia Flex and Laszlo. Just nest some DIVs and with one line of JavaScript turn your div panels into an accordion. And the latest behavior is the LiveGrid. LiveGrid allows you to connect an HTML table up to a stream of Ajax responses. Ajax requests are automatically called during table scrolling. The result is now HTML tables can hold an unlimited amount of data scrolled into view on the fly as needed! More behaviors are planned!

**NEW! LiveGrid Behavior!**  
RICO A JAX SEARCH

Search Results: Flowers in India

Flowers in India  
Flowers in India  
Flowers in India  
Flowers in India  
Flowers in India  
Flowers in India  
Flowers in India

Check out the Alternative to Paging!

Current Conditions  
Dallas, TX (75204)

77°F

Humidity: 20%  
Barometric Pressure: 30.02 in  
Wind: From SE at 6 mph  
Dewpoint: 59°F  
Heat Index: 70°F

See Rico in Action!

# stuff i've done

The screenshot shows the Rico JavaScript library website. At the top, there's a large banner featuring a green alien head with the word "GATO" in large, stylized letters. Below the banner, the Rico logo is displayed, followed by the tagline "JavaScript for Rich Internet Applications". A navigation bar includes links for Home, Features, Demos, Documentation, and Downloads. The main content area starts with a heading "An open-source JavaScript library for creating rich web applications. Rico provides full Ajax support, drag and drop management and a cinematic effects library." It then branches into several sections: BACKGROUND, which explains Rico is a Spanish word for rich; AJAX SUPPORT, detailing its Ajax capabilities; DRAG AND DROP, showing how it handles drag and drop; BEHAVIORS, explaining its behavior features; and finally, a section on OPEN SOURCE, BROWSER SUPPORT, and CINEMATIC EFFECTS.

The screenshot shows the Yahoo! Developer Network Design Pattern Library. At the top, the Yahoo! logo is visible, followed by the "DEVELOPER NETWORK" header. A search bar is at the top right. The main content area has a "Welcome" section with a brief introduction to the library. Below it is a "What's a Pattern?" section defining a pattern as an optimal solution to a common problem. There are several examples of patterns, each shown with a screenshot and a brief description:

- Welcome:** Welcome to the Yahoo! Design Pattern Library. We are very happy to be sharing our library with the design and development community. This is our first drop of what we hope to be a monthly release cycle for the publication of patterns. In many cases we have bundled the patterns with pointers to related code from the [Yahoo! User Interface Code Library](#). We hope this is a useful resource and look forward to your [feedback](#).
- What's a Pattern?** A pattern describes an optimal solution to a common problem within a specific context. [more...](#)
- Recent Patterns:** A list of recent patterns including Auto Complete, Calendar Picker, Pagination, Item Pagination, Search Pagination, Drag and Drop Modules, Auto-Complete, Breadcrumbs, Ratings & Reviews, Architecture Review, Rating an Object, Writing a Review, Perform Action, Drag and Drop, Drag and Drop Modules, Drag and Drop Objects, In Page Editing, Sliders, Application Needs To, Call Attention, Improve Readability, Ratings & Reviews, Review Architecture, Group Related Items, Organize Screen/Page, and Search Pagination.
- Auto-Complete:** User needs to enter an item into a text box which could be ambiguous or hard to remember and therefore has the potential to be mis-typed.
- Breadcrumbs:** User needs to navigate potentially large quantities of information efficiently, without becoming lost.
- Drag and Drop Modules:** The user needs to re-arrange the layout of modules on a web page directly with the mouse.
- Module Tabs:** The user needs to navigate through one or more stacked panes of content without refreshing the page.
- Navigation Tabs:** The user needs to view data items from a potentially large set of sorted data that will not be easy to display within a single page.
- Object Pagination:** The user wants to quickly leave their opinion on an object, with minimal interruption to any other task flow they are involved in.
- Rating an Object:** A user wants to share her opinion with others about an object (place, person, thing) in greater detail than a simple rating.
- Writing a Review:** User wants to share her opinion with others about an object (place, person, thing) in greater detail than a simple rating.

At the bottom, there's a screenshot of a weather application showing current conditions for Dallas, TX, with a temperature of 77°F and a link to "See Rico in Action!"

# stuff i've done

The screenshot shows the Rico homepage. At the top, there's a large banner featuring a green alien head with the word "GATO" in large, stylized letters. Below the banner, the Rico logo is displayed with the tagline "JavaScript for Rich Internet Applications". A navigation bar includes links for Home, Features, Demos, Documentation, and Downloads. The main content area starts with a heading "An open-source JavaScript library for creating rich web applications. Rico provides full Ajax support, drag and drop management and a cinematic effects library." It then lists several sections: BACKGROUND, AJAX SUPPORT, DRAG AND DROP, CINEMATIC EFFECTS, BEHAVIORS, and BROWSER SUPPORT. Each section contains a brief description and some code snippets.

The screenshot shows the Yahoo! Design Pattern Library. At the top, the Yahoo! logo and "DEVELOPER NETWORK" are visible. Below that, the title "Design Pattern Library" and a breadcrumb trail "Yahoo! Developer Network > Design Pattern Library". On the left, a sidebar titled "USER NEEDS TO" lists categories like NAVIGATE, EXPLORE DATA, ORGANIZE DATA, GIVE FEEDBACK, PERFORM ACTION, CUSTOMIZE, APPLICATION NEEDS TO, and more. The main content area has a "Welcome" section with a welcome message and a "What's a Pattern?" section defining a pattern as an optimal solution to a common problem. It features a grid of cards, each showing a screenshot of a web application and a brief description of the pattern it illustrates, such as "Breadcrumbs", "Drag and Drop Modules", "Rating an Object", and "Writing a Review".

The screenshot shows the Yahoo! Gobbler interface. It has a sidebar titled "Scratchpad" with a "Projects(3)" section containing three items: "National Mapping - Fab Facts, Landforms", "Geography: Landfor...", and "Civil War Battles". Below the sidebar, there's a main content area with a "Create a new Project" button and a "Scratchpad" section showing a preview of a weather application.

# prototyping

- Have been involved with prototyping for a number of years
- Last summer wrote a quick dragdrop proto library that was based on CSS class names and associating behavior to these classes ('dragme', 'drophere')
  - Goal was to make it easy for designers to start prototyping
  - However it was not possible to provide enough logic without resorting to writing code
  - Been planning to get back to the idea for a year
- This got me thinking about simplifying the experience of prototyping with dhtml/ajax

# what i really want



Bill Scott

Total Projects 12

Total Points 24

## My Portfolio

Sort by: Recent | Alpha | Points

### Project One

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat.

Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.

[view](#) | [delete](#)

### Project Two

Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.

[view](#) | [delete](#)

### Project Three

Maecenas est mauris, volutpat sed, sollicitudin sed, dignissim ac, risus. Praesent rutrum gravida tortor. In in mi. Donec porttitor massa ut velit. Cras mollis sollicitudin quam. Cras felis sapien, dictum et, auctor eget, volutpat at, magna. Nunc id augue non quam varius molestie. Vestibulum quis ligula. Nunc semper. Vivamus ut turpis vel lorem vulputate sagittis. Proin tincidunt elit vitae augue tempus sagittis. Ut convallis nunc ut metus. Vestibulum dictum. Sed posuere est quis arcu. Suspendisse vitae nibh pretium velit lacinia venenatis. Nullam mattis congue neque. Vestibulum mattis, mauris quis eleifend ornare, ligula lectus ullamcorper enim, vel tempor tellus eros sed dui.

[view](#) | [delete](#)

## Scratchpad



take a rough prototype

# what i really want



Bill Scott

Total Projects 12

Total Points 24

## My Portfolio

Sort by: Recent | Alpha | Points

### Project One

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.

[view](#) | [delete](#)

### Project Two

Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.

[view](#) | [delete](#)

### Project Three

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[view](#) | [delete](#)

take a rough prototype

## Scratchpad



Animate ColorAnimate Fade Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
Show ToggleClass ToggleOpenClose  
ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

sprinkle in some behaviors

# what i really want



Bill Scott

Total Projects 12

Total Points 24

## My Portfolio

Sort by: Recent | Alpha | Points

### Project One

Lore ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.

[view](#) | [delete](#)

### Project Two

Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.

[view](#) | [delete](#)

### Project Three

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[view](#) | [delete](#)

take a rough prototype

## Scratchpad



Animate Color  
Animate Fade  
Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
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ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

sprinkle in some behaviors

# what i really want

The image shows a user interface prototype on the left and a list of behaviors on the right.

**User Interface Prototype:**

- Header:** Bill Scott, Total Projects 12, Total Points 24
- Section: My Portfolio**
  - Sort by: Recent | Alpha | Points
  - Project One:** Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.
    - [view](#) | [delete](#)
  - Project Two:** Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.
    - [view](#) | [delete](#)
  - Project Three:** Maecenas est mauris, volutpat sed, sollicitudin sed, dignissim ac, risus. Praesent rutrum gravida tortor. In in mi. Donec porttitor massa ut velit. Cras mollis sollicitudin quam. Cras felis sapien, dictum et, auctor eget, volutpat at, magna. Nunc id augue non quam varius molestie. Vestibulum quis ligula. Nunc semper. Vivamus ut turpis vel lorem vulputate sagittis. Proin tincidunt elit vitae augue tempus sagittis. Ut convallis nunc ut metus. Vestibulum dictum. Sed posuere est quis arcu. Suspendisse vitae nibh pretium velit lacinia venenatis. Nullam mattis congue neque. Vestibulum mattis, mauris quis eleifend ornare, ligula lectus ullamcorper enim, vel tempor tellus eros sed dui.

**Section: Scratchpad**

- (circled in red)
- 
- 
- 
- 
- 

A large yellow arrow points from the circled photo in the Scratchpad section towards the list of behaviors on the right.

**Behaviors List:**

- Animate Color
- Animate Fade
- Move Spotlight
- Close
- DragDrop
- Hide Open
- Popup
- ReplaceClass
- Script
- SetClass
- SetStyle
- Show
- ToggleClass
- ToggleOpenClose
- ToggleShowHide
- FetchHtml
- SetHtml
- Blur
- Click
- DblClick
- Focus
- Keypress
- Mousedown
- Mousemove
- Mouseout
- Mouseover
- Mouseup
- Timer

take a rough prototype

sprinkle in some behaviors

# what i really want



Bill Scott

Total Projects 12  
Total Points 24

## My Portfolio

Sort by: Recent | Alpha | Points

### Project One

Lore ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.

### Project Two

Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.

### Project Three

Maecenas est mauris, volutpat sed, sollicitudin sed, dignissim ac, risus. Praesent rutrum gravida tortor. In in mi. Donec porttitor massa ut velit. Cras mollis sollicitudin quam. Cras felis sapien, dictum et, auctor eget, volutpat at, magna. Nunc id augue non quam varius molestie. Vestibulum quis ligula. Nunc semper. Vivamus ut turpis vel lorem vulputate sagittis. Proin tincidunt elit vitae augue tempus sagittis. Ut convallis nunc ut metus. Vestibulum dictum. Sed posuere est quis arcu. Suspendisse vitae nibh pretium velit lacinia venenatis. Nullam mattis congue neque. Vestibulum mattis, mauris quis eleifend ornare, ligula lectus ullamcorper enim, vel tempor tellus eros sed dui.

take a rough prototype

## Popup

### Scratchpad



Animate Color  
Animate Fade  
Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
Show ToggleClass ToggleOpenClose  
ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

sprinkle in some behaviors

# what i really want



Bill Scott

Total Projects 12  
Total Points 24

## My Portfolio

Sort by: Recent | Alpha | Points

### Project One

Lore ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.

[view](#) | [delete](#)

### Project Two

Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.

[view](#) | [delete](#)

### Project Three

Maecenas est mauris, volutpat sed, sollicitudin sed, dignissim ac, risus. Praesent rutrum gravida tortor. In in mi. Donec porttitor massa ut velit. Cras mollis sollicitudin quam. Cras felis sapien, dictum et, auctor eget, volutpat at, magna. Nunc id augue non quam varius molestie. Vestibulum quis ligula. Nunc semper. Vivamus ut turpis vel lorem vulputate sagittis. Proin tincidunt elit vitae augue tempus sagittis. Ut convallis nunc ut metus. Vestibulum dictum. Sed posuere est quis arcu. Suspendisse vitae nibh pretium velit lacinia venenatis. Nullam mattis congue neque. Vestibulum mattis, mauris quis eleifend ornare, ligula lectus ullamcorper enim, vel tempor tellus eros sed dui.

take a rough prototype

Popup

## Scratchpad



Animate ColorAnimate Fade Move Spotlight  
Close DragDrop Hide Open Popup  
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ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

sprinkle in some behaviors

# what i really want

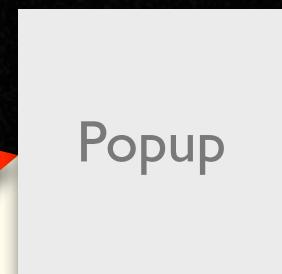
The screenshot shows a user profile for "Bill Scott" with a total of 12 projects and 24 points. Below this is a "My Portfolio" section with three items: "Project One", "Project Two", and "Project Three". Each project item has a "view" and "delete" link. Red arrows highlight the "Total Projects 12" link in the profile and the "view" links in the portfolio items.

**Bill Scott**  
Total Projects 12  
Total Points 24

**My Portfolio**  
Sort by: Recent | Alpha | Points

- Project One**  
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.  
[view](#) [delete](#)
- Project Two**  
Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.  
[view](#) [delete](#)
- Project Three**  
Maecenas est mauris, volutpat sed, sollicitudin sed, dignissim ac, risus. Praesent rutrum gravida tortor. In in mi. Donec porttitor massa ut velit. Cras mollis sollicitudin quam. Cras felis sapien, dictum et, auctor eget, volutpat at, magna. Nunc id augue non quam varius molestie. Vestibulum quis ligula. Nunc semper. Vivamus ut turpis vel lorem vulputate sagittis. Proin tincidunt elit vitae augue tempus sagittis. Ut convallis nunc ut metus. Vestibulum dictum. Sed posuere est quis arcu. Suspendisse vitae nibh pretium velit lacinia venenatis. Nullam mattis congue neque. Vestibulum mattis, mauris quis eleifend ornare, ligula lectus ullamcorper enim, vel tempor tellus eros sed dui.

take a rough prototype



The screenshot shows a "Scratchpad" interface with a grid of nine images. A red circle highlights the top-left image, and a yellow arrow points from the "view" link in the "Project One" item of the main screenshot to this image.

**Scratchpad**

Animate ColorAnimate Fade Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
Show ToggleClass ToggleOpenClose  
ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

sprinkle in some behaviors

# what i really want

Bill Scott  
Total Projects 12  
Total Points 24

My Portfolio

Sort by: Recent | Alpha | Points

Project One

view | delete

Project Two

view | delete

Project Three

view | delete

Scratchpad

Animate ColorAnimate Fade Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
Show ToggleClass ToggleOpenClose  
ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

take a rough prototype

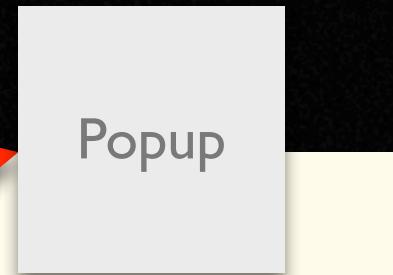
sprinkle in some behaviors

# what i really want

The screenshot shows a user profile for "Bill Scott" with a total of 12 projects and 24 points. Below this is a "My Portfolio" section with three projects listed:

- Project One**: Includes a large red circle around the project title and a red arrow pointing from the top left towards the "view" and "delete" links.
- Project Two**: Includes a red circle around the project title and a red arrow pointing from the top right towards the "view" and "delete" links.
- Project Three**: Includes a red circle around the project title and a red arrow pointing from the bottom right towards the "view" and "delete" links.

Each project has a "view" and "delete" link at the end of its description.



Animate ColorAnimate Fade Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
Show ToggleClass ToggleOpenClose  
ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

take a rough prototype

sprinkle in some behaviors

# what i really want

The screenshot shows a user profile for "Bill Scott" with a total of 12 projects and 24 points. Below this is a "My Portfolio" section with three projects listed:

- Project One**: Includes a detailed description of the project's content.
- Project Two**: Includes a detailed description of the project's content.
- Project Three**: Includes a detailed description of the project's content.

Each project item has "view" and "delete" buttons next to it. A red arrow points from the "Total Points 24" text to the "view" button of the first project. Another red arrow points from the "view" button of the first project to a "Popup" window.

On the right side of the portfolio, there is a "Scratchpad" section containing several small images of people and landscapes, each with its own "view" and "delete" buttons. A large yellow arrow points from the "Scratchpad" area back towards the "view" button of the first project.

Popup

Scratchpad

Animate ColorAnimate Fade Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
Show ToggleClass ToggleOpenClose  
ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

take a rough prototype

sprinkle in some behaviors

# what i really want

The screenshot shows a user profile for "Bill Scott" with a total of 12 projects and 24 points. Below this is a "My Portfolio" section with three items:

- Project One**: Includes a description of placeholder text and two "view" and "delete" buttons.
- Project Two**: Includes a description of placeholder text and two "view" and "delete" buttons.
- Project Three**: Includes a description of placeholder text and two "view" and "delete" buttons.

To the right is a "Scratchpad" section containing several small images of people and landscapes.

Red annotations highlight the user profile picture, the "Total Projects 12" text, the "Total Points 24" text, and the "view" and "delete" buttons for each project item.

Popup

Scratchpad

Animate ColorAnimate Fade Move Spotlight  
Close DragDrop Hide Open Popup  
ReplaceClass Script SetClass SetStyle  
Show ToggleClass ToggleOpenClose  
ToggleShowHide FetchHtml SetHtml Blur  
Click DblClick Focus Keypress Mousedown  
Mousemove Mouseout Mouseover  
Mouseup Timer

take a rough prototype

sprinkle in some behaviors

# what we will discuss

- quick overview of common design patterns (behaviors)
- quick survey of techniques to prototype a rich web experience
- dive into protoscript and discuss how it can be used to sprinkle behaviors into web pages
- look at similar techniques emerging (jQuery, css behaviors, DED | Chain, etc.)

patterns  
(common interaction behaviors)

# RIA patterns

invitation. cursor invitation. hover invitation. tooltip invitation. page invitation. drop invitation. available. selected. auto complete. live suggest. refining search. dynamic filtering. live search. on-demand scrolling. deferred content loading. fresh content. on-demand content. periodic refresh. resizable modules. scrolling modules. hover detail. narrowing actions. narrowing choices. auto form fill. in-place drill down. dependent choices. look before you leap. drag and drop. drag and drop modules. drag and drop objects. persistant portals. in page edit. inline text edit. inline custom edit. direct state edit. rating an object. inline custom edit. inline tag edit. popup custom edit. grid cell edit. slide out custom edit. module configure. module flip configure. module inline configure. module slide out configure. module faceplate. expandable content. in-context tools. in-context links. in-context hover menu. silent submit. remembered collection. auto save. remembered preferences. hover spy. inline assistant. inline validation. validate then suggest. indicator. busy indicator. progress indicator. inline status. in-context busy. cursor busy. opacity fade. high contrast. balloon error tip. dynamic goal. opacity focus. detail zoom. lightbox. transition. brighten. cross-fade. dim. expand. fade-in. fade-out. flip. move. self-heal. collapse. slide. animate.

# Design Pattern Library

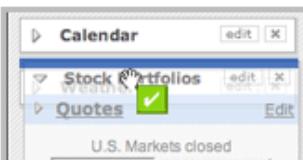
[Yahoo! Developer Network](#) > [Design Pattern Library](#) > Patterns from A to Z

## Patterns from A to Z



### Alphanumeric Filter Links

The user needs the ability to look up information alphabetically within a large data set.



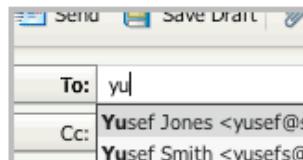
### Animate Transition

The designer needs to communicate that an object is changing its spatial relationship within the page.



### Architecture of a Review

A product or website needs to present ratings and reviews with a variety of informational elements.



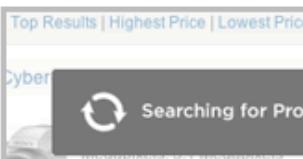
### Auto Complete

The user needs to enter an item into a text box which could be ambiguous or hard to remember and therefore has the potential to be mis-typed.



### Breadcrumbs

User needs to navigate potentially large quantities of information efficiently, without becoming lost.



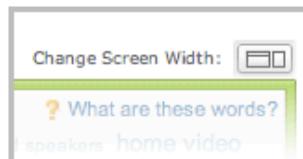
### Brighten Transition

Designer wants to make a previously dimmed object a point of focus by making the object bright again.



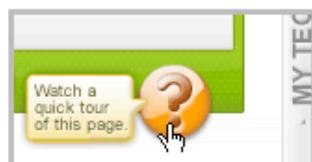
### Calendar Picker

User wants to find or submit a particular piece of information based on a date or between a date range.



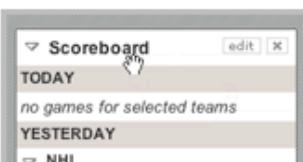
### Collapse Transition

The designer needs to communicate that an object is no longer of primary importance, yet wants to keep it available in a smaller form.



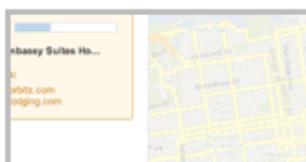
### Cross Fade Transition

Designer wants to communicate that a new view of an object is replacing the previous view.



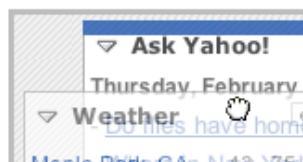
### Cursor Invitation

Designer needs to cue the user that an object can be interacted with.



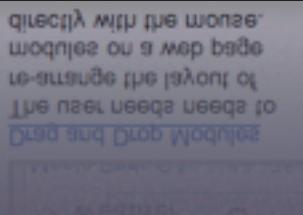
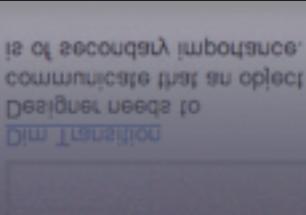
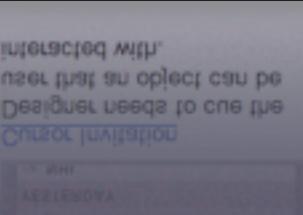
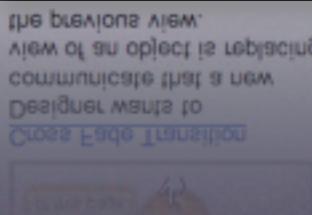
### Dim Transition

Designer needs to communicate that an object is of secondary importance.



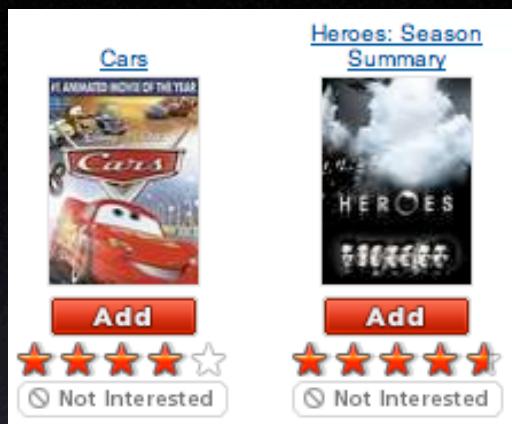
### Drag and Drop Modules

The user needs to re-arrange the layout of modules on a web page directly with the mouse.



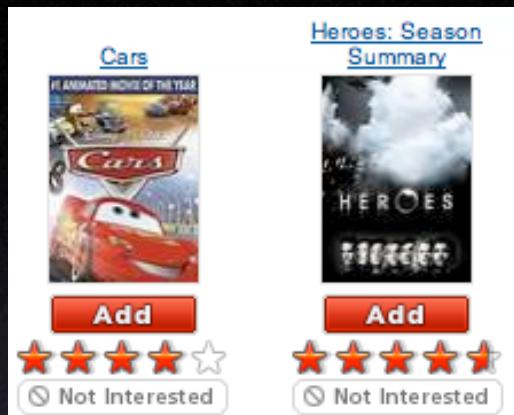
# patterns

# patterns



pattern. in-page action.

# patterns

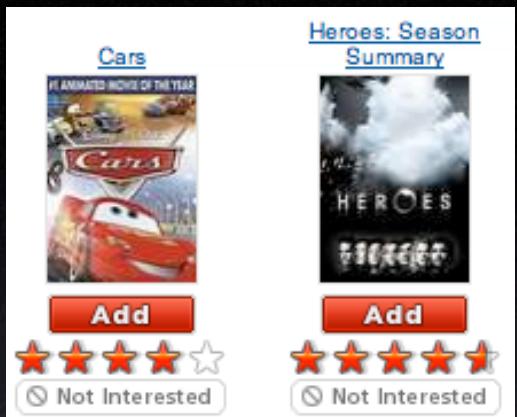


pattern. in-page action.

The screenshot shows a travel planning interface. At the top, there are tabs for 'Schedule View' (selected) and 'Map View'. Below the tabs are buttons for '+ Add' (Hotels, Things to do, Restaurants, Shopping, Entertainment), '+ Create Item', and 'Expand all'. A 'Trip Album' section contains a grid of photo thumbnails and an 'Add Photos' button. Under 'Yosemite National Park', there's a link to 'John Muir Vernal Falls Mist Trail Hike' with a 'Schedule' link. A dashed line separates this from the 'Scheduled Items' section, which lists three activities: 'Wed 11/23/05 (day 1) - Yosemite Natl Pk, Yosemite National Park', 'Yosemite Lodge', 'Tunnel View', and 'Bridalveil Falls Day Hike', each with a checkbox and a camera icon.

pattern. in-context expand.

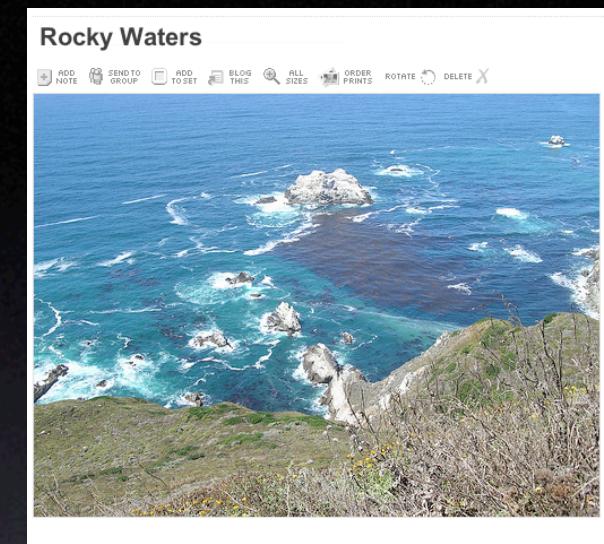
# patterns



pattern. in-page action.

A screenshot of a travel planning application. It shows a 'Trip Album' section with a grid of photo thumbnails and an 'Add Photos' button. Below it is a 'Scheduled Items' section listing three activities: 'John Muir Vernal Falls Mist Trail Hike', 'Yosemite Lodge', 'Tunnel View', and 'Bridalveil Falls Day Hike'. Each item has a checkbox and a small icon next to it.

pattern. in-context expand.



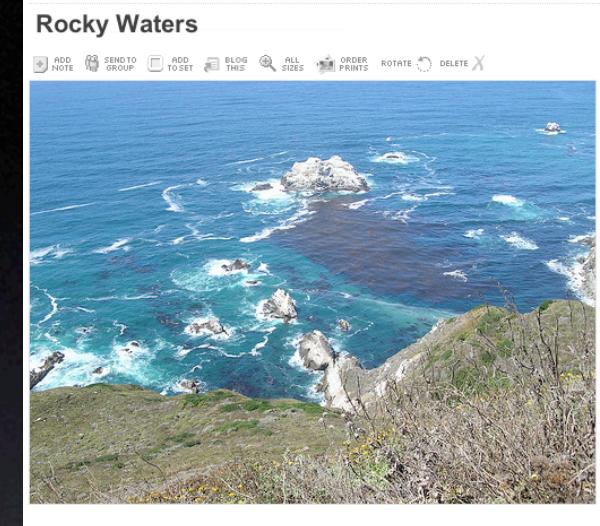
pattern. inline editing.

# patterns

This screenshot shows two movie reviews side-by-side. On the left, 'Cars' is described as 'THE ANIMATED MOVIE OF THE YEAR' with a 5-star rating and an 'Add' button. On the right, 'Heroes' has a 5-star rating and an 'Add' button. Both reviews include a 'Not Interested' link.

pattern. in-page action.

This screenshot shows a trip planning interface. It includes tabs for 'Schedule View' and 'Map View'. Under 'Scheduled Items', it lists a hike to John Muir Vernal Falls Mist Trail on Wednesday, November 23, 2005, along with stops at Yosemite Lodge, Tunnel View, and Bridalveil Falls. There are also buttons for 'Add' and 'Create Item'.



pattern. inline editing.

pattern. in-context expand.

This screenshot shows a Yahoo! homepage with a sidebar containing various news and weather feeds. The feeds include 'Weather' (Dallas, TX; Denton, TX; Sunnvalle, CA; Boulder Creek, CA; Gilroy, CA; San Jose, CA), 'Scoreboard' (MLB, Texas vs. Minnesota, Yesterday), 'eHub' (links to MODx, Oler, Moodle, Kruge, Kartoo), 'BayCHI Monthly Program Events' (2006/08/08: Monthly Program Meeting), 'Personal Technology News' (links to Norway, Apple, Google, XM Satellite, Google Radio), 'Message Center' (Check Email, Launch Messenger, 41 friends on), 'Best Fare Tracker' (Depart: Wichita, KS; San Francisco, CA; Depart: Kansas City, MO; San Francisco, CA; Depart: San Francisco, CA), and 'Maps' (Travelocity - SFO-DFW, Travelocity - SJC - DFW, HNL, LAX, SAN).

pattern. drag & drop.

# patterns

Cars  
PE ANIMATED MOVIE OF THE YEAR  
 Cars  
[Add](#)

Heroes: Season Summary  
 HEROES  
[Add](#)

pattern. in-page action.

Schedule View Map View [Expand all](#)

+ Add Hotels Things to do Restaurants Shopping Entertainment + Create Item

Trip Album [Add Photos >](#)

Yosemite National Park

John Muir Vernal Falls Mist Trail Hike » [Schedule](#)

Scheduled Items

Wed 11/23/05 (day 1) - Yosemite Natl Pk, Yosemite National Park

Yosemite Lodge

Tunnel View

Bridalveil Falls Day Hike

pattern. in-context expand.

Category: Web Images Video Local News Shopping

Search:  [Yahoo Search](#) Advanced My Web

Add Content Change Layout Change Colors

Weather [edit](#) [x](#)  
Dallas, TX 80...100 F   
Denton, TX 78...101 F   
Sunnyvale, CA 57...79 F   
Boulder Creek, CA 53...80 F   
Gilroy, CA 56...86 F   
San Jose, CA 59...82 F   
[Search by Zip Code or City](#)  
**678** Your Credit Score - \$0

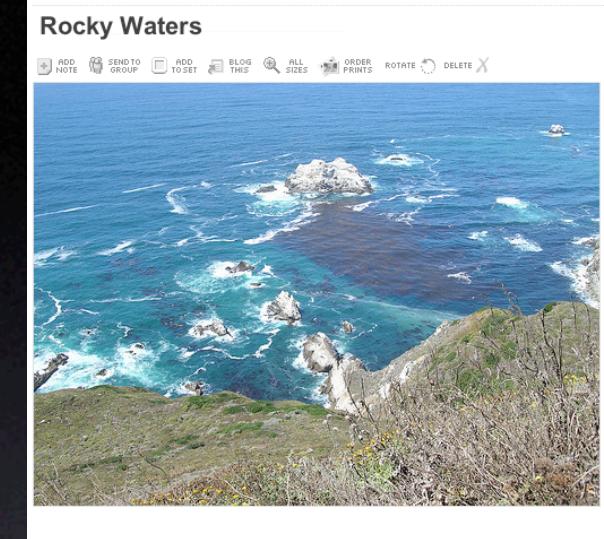
Scoreboard [edit](#) [x](#)  
TODAY eHub  
Texas vs. Minnesota 10 E  
YESTERDAY MLB  
Texas vs. Minnesota 9 E  
[Y! Fantasy Football '06. Where Fantasy Rules. Sign up now!](#)

Message Center [edit](#) [x](#)  
[Check Email](#)  
[Launch Messenger](#) 41 friends on

Maps [edit](#) [x](#)  
Select From My Locations or Recently Used [clear recent](#)  
---- My Locations ----  
Or Map a New Address:  
Street Address [or Airport Code](#)  
City, State or a Postal Code

Best Fare Tracker [edit](#) [x](#)  
Depart: Wichita, KS  
San Francisco, CA \$256.00  
San Jose, CA \$254.00  
Depart: Kansas City, MO  
San Francisco, CA \$241.00  
Depart: San Francisco, CA

pattern. drag & drop.



pattern. inline editing.

Bill, the following movies were chosen based on your interest in:  
[Animal Crackers](#)  
[Something the Lord Made](#)  
[X2: X-Men United](#)

All Discs Guaranteed!

**You loved it.**  
Now own it for just **\$5.99**

**Monkey Business**  
One of the Marx Brothers' funniest movies, the title of the film says it all as Groucho, Harpo, Chico and Zeppo stow away on a luxury liner. Before ... [Read More](#)

**Lackawanna Blues**

pattern. hover details.

# patterns

**Cars**  
PE ANIMATED MOVIE OF THE YEAR  
 [Heroes: Season Summary](#)  
  
**Add** **Add**  
★★★★★ **Not Interested**

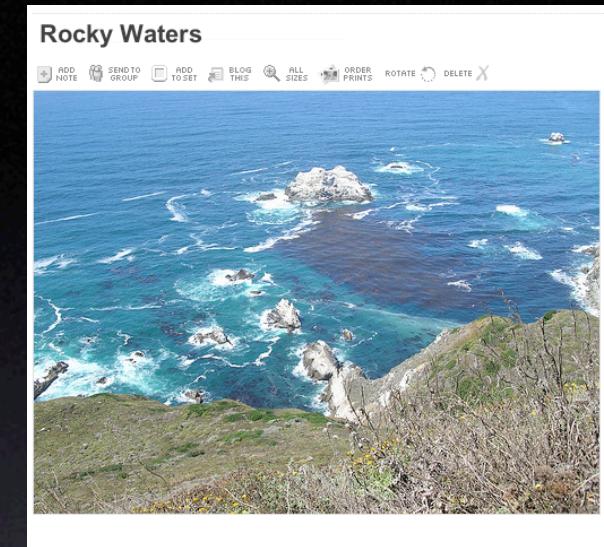
pattern. in-page action.

Schedule View Map View **Add** Hotels | Things to do | Restaurants | Shopping | Entertainment **Create Item**  
Trip Album **Add Photos**  
Yosemite National Park  
John Muir Vernal Falls Mist Trail Hike » Schedule  
Scheduled Items  
Wed 11/23/05 (day 1) - Yosemite Natl Pk, Yosemite National Park  
Yosemite Lodge  
Tunnel View  
Bridalveil Falls Day Hike

pattern. in-context expand.

Category: Web Images Video Local News Shopping  
Search:  Yahoo Search Advanced My Web  
Add Content Change Layout Change Colors  
Weather edit x Scoreboard edit x Select Page: My Front Page  
Dallas, TX 80...100 F eHub TODAY  
Denton, TX 78...101 F MLB Texas vs. Minnesota 10 E  
Sunnyvale, CA 57...79 F Y! Fantasy Football '06, Where Fantasy Rules. Sign up now!  
Boulder Creek, CA 53...80 F Yesterday  
Gilroy, CA 56...86 F BayCHI Monthly Program Events  
San Jose, CA 59...82 F Message Center edit x  
678 Your Credit Score - \$0 Check Email Launch Messenger 41 friends on  
Best Fare Tracker edit x Maps edit x  
Depart: Wichita, KS Select From My Locations or Recently Used clear recent  
San Francisco, CA \$256.00 ----- My Locations -----  
San Jose, CA \$254.00 Or Map a New Address:  
Depart: Kansas City, MO Street Address or Airport Code  
San Francisco, CA \$241.00 City, State or a Postal Code  
Depart: San Francisco, CA

pattern. drag & drop.



pattern. inline editing.

All Discs Guaranteed!  
You loved it. Now own it for just \$5.99!  
Monkey Business  
Something the Lord Made  
X2: X-Men United  
Bill, the following movies were chosen based on your interest in:  
[Animal Crackers](#)  
[Something the Lord Made](#)  
[X2: X-Men United](#)  
**Add**  
One of the Marx Brothers' funniest movies, the title of the film says it all as Groucho, Harpo, Chico and Zeppo stow away on a luxury liner. Before ... [Read More](#)

pattern. hover details.

## Pick Up at the Store

- Milk
- Orange Juice
- Tomatoes
- Lettuce
- Bread
- Chips

pattern. in-context tools.

Rate Your

patterns

# patterns

The screenshot shows a product page for a "Pique polo" shirt. At the top, there's a navigation bar with a shopping bag icon and the text "0 items in my bag", followed by a "checkout" button. Below the navigation, the product title "Pique polo" is displayed in bold black text, with the note "only at gap.com" in blue text below it. There are two tabs: "overview" (which is selected) and "you'll also like". A detailed description follows: "Soft cotton pique knit. Short-sleeved, button neckline." It includes a bullet list: "Need large quantities? Click for Corporate Apparel" and "100% Cotton. Machine wash, imported." Below this, there are two size options: "regular" and "tall".  
  
A promotional section titled "Buy More and Save" offers a discount: "Buy 2 or more, \$25.00 each". The item number "#346927" and a note "prices may vary" are also present. A color selection area shows six color swatches: white, dark blue, grey, black, purple, and pink. The price is listed as "\$29.50 \$9.99".  
  
A "select Size:" dropdown menu shows options from XS to XXXL, with XS currently selected. A "size chart" link is provided.  
  
At the bottom, there's a "Quantity:" dropdown set to "1", a color selector showing "royal grape", and a price summary "\$29.50 \$9.99". A "add to bag" button is located to the right.

pattern. remembered collections.

# patterns

0 items in [my bag](#) [checkout](#)

## Pique polo

only at gap.com

[overview](#) [you'll also like](#)

Soft cotton pique knit.  
Short-sleeved, button neckline.

- Need large quantities? Click for Corporate Apparel
- 100% Cotton. Machine wash, imported.

[regular](#) [tall](#)

**Buy More and Save**

select Color: **royal grape**  
\$29.50 **Buy 2 or more, \$25.00 each**

\$29.50 **\$9.99**

select Size:

[XS](#) [S](#) [M](#) [L](#) [XL](#) [XXL](#) [XXXL](#)

[size chart](#)

Quantity: [1 ▾](#) royal grape **\$29.50 \$9.99** [add to bag](#)

pattern. remembered collections.

Welcome, b.scott | [Sign Out](#) | [My Account](#) | [Switch Back](#) | Search the Web...

Inbox 2324 messages

[Send Feedback](#) | [Options](#) | [Help](#)

From	Subject	Receive
me	Re: rico question	Thu, ▲
Bill Scott	[Looks Good Works Well] 1/19/2006 01:13: Thu,	
JDJ Industry Newsletter	Java Named "Programming Language of the Year", Price Alert! Flight + 5 Night Hotel to Honolulu, Thu,	
Travelocity Member Services	Re: Job Description	Thu,
Theresa Neil	Job Description	Thu,
Damon Hougland	RE: Speaking Engagement Opportunity	Thu,
Finan, Angelique	Re: [ng-dthml] assert(), isNumeric(), isOff(), Thu,	
David Schontzler	This week in TagWorld	Thu,
TagWorld	rico question	Thu,
me	[Looks Good Works Well] 1/19/2006 10:22: Thu,	
Anonymous	[Looks Good Works Well] 1/19/2006 10:19: Thu,	
Anonymous	[Looks Good Works Well] 1/19/2006 10:19: Thu,	
Anonymous	[Looks Good Works Well] 1/19/2006 10:19: Thu,	

[Check Mail](#) [Compose](#)

[Find Messages...](#) [Go](#)

[Reply](#) [Forward](#) [Move](#) [Print](#) [Spam](#) [Delete](#) [More](#)

[Inbox](#) [Drafts](#) [Sent](#) [Spam \(501\)](#) [Empty](#) [Trash \(3\)](#) [Empty](#)

[Contacts](#) [Calendar](#) [Notepad](#) [All RSS Feeds](#) [Add](#)

**My Folders**

- [dojo-maillist \(4\)](#)
- [ID Disc](#)
- [Karthik-Referrals](#)
- [Keep](#)
- [MerchantSpam \(149\)](#)
- [ux mail lists \(1863\)](#)

[What's your Credit Score?](#)

[Netflix-Try Free! No Late Fees](#)

[Online Degree Programs](#)

pattern. on-demand scrolling.

# patterns

A screenshot of a product page for a Pique polo shirt. At the top, there's a navigation bar with a shopping bag icon showing "0 items in my bag" and an orange "checkout" button. Below the navigation, the product title "Pique polo" is displayed, followed by the text "only at gap.com". There are two tabs: "overview" (selected) and "you'll also like". A detailed description follows: "Soft cotton pique knit. Short-sleeved, button neckline." A bullet list includes: "Need large quantities? Click for Corporate Apparel" and "100% Cotton. Machine wash, imported.". Below this, size options "regular" and "tall" are shown. A "Buy More and Save" section offers "Buy 2 or more, \$25.00 each" with a price reduction from "\$29.50" to "\$9.99". A color swatch shows "royal grape" as the selected color, with other colors available. A "select Size:" dropdown menu lists sizes XS through XXXL. A "size chart" link is provided. At the bottom, a quantity selector shows "1", a price summary "royal grape \$29.50 \$9.99", and an "add to bag" button.

pattern. remembered collections.

## Ask Your Question

### 1. Enter your question

You can ask 5 more questions today.

You have 110 characters to work with. Add a question.

### 2. Add details (optional)

No spam, please! When in doubt, please refer to our [community guidelines](#).

You have 1000 characters to work with.

pattern. auto complete.

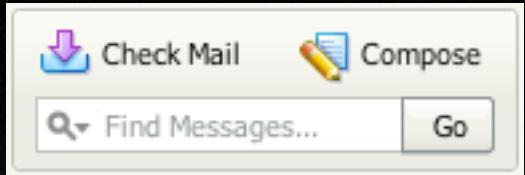
A screenshot of the Yahoo! Mail inbox. The interface includes a header with "YAHOO! MAIL BETA", user information "Welcome, b.scott", and links for "Sign Out", "My Account", "Switch Back", and "Search the Web...". The main area shows the "Inbox" with 2324 messages. A message from "me" is selected, showing the subject "rico question" and the body "[Looks Good Works Well] 1/19/2006 01:13: Thu, Java Named 'Programming Language of the Year'". Other messages in the inbox include emails from Bill Scott, JDJ Industry Newsletter, Travelocity Member Services, Theresa Neil, Damon Hougland, Finan, Angelique, David Schontzler, TagWorld, and several anonymous messages. On the left, there's a sidebar with links for "Check Mail", "Compose", "Find Messages...", "Inbox", "Drafts", "Sent", "Spam (501)", "Trash (3)", "Empty", "Contacts", "Calendar", "Notepad", "All RSS Feeds", "My Folders" (with sub-folders like "dojo-mailist", "ID Disc", "Karthik-Referrals", "Keep", "MerchantSpam (149)", and "ux mail lists (1863)"), and promotional banners for "What's your Credit Score?", "Netflix-Try Free! No Late Fees", and "Online Degree Programs".

Got your eye on one of those messages up there?  
To view your message down here in this handy Reading pane, just click on it.  
To select more than one, hold the Shift or Command key.

pattern. on-demand scrolling.

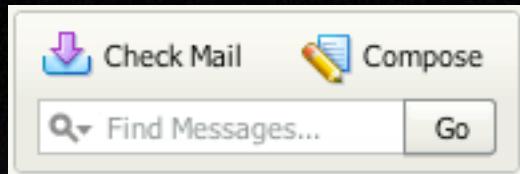
patterns

# patterns



pattern. **busy indicator.**

# patterns



pattern. **busy indicator.**

The screenshot shows the Netflix Recommendations section. At the top, there's a navigation bar with links for 'Browse', 'Recommendations' (which is highlighted), 'Friends', 'Queue', and 'Buy DVDs'. Below that is a search bar. The main content area has a yellow gradient background with a large yellow star containing the text 'You Have Recommendations!'. It encourages users to 'Get more recommendations by rating more movies.' and provides a 'Rate More Movies' button. To the right, there's a sidebar with a summary: 'You have 869 Recommendations from 234 ratings.' Below this are sections for 'Browse' (listing genres like Action & Adventure, Drama, Sci-Fi & Fantasy, etc.) and 'Other Genres' (listing genres like Anime & Animation, Children & Family, Foreign, etc.). At the bottom, there's a 'Helpful Tip' box with the text '◀ Seen any of these movies?' and a row of five stars with the middle one being yellow.

NETFLIX

Bill Scott | Your Account | Buy / Redeem Gift | Help

Browse Recommendations Friends Queue Buy DVDs

Movies, actors, directors, genres Search

Get Recommendations (869) Rate Movies Movies You've Rated (234)

## Recommendations

Movie suggestions based on your ratings

### NEW RECOMMENDATIONS

**Samurai Champloo (7-Disc Series)**  
Director Shinichiro Watanabe mixes a maturity rarely found in anime with a historical Japanese setting and a funky hip-hop soundtrack. Fuu is a spacey waitress at a teahouse where a sword fight ... [Read More](#)

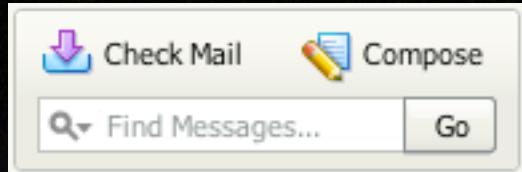
**12 Angry Men**  
A guilty verdict means death -- but the jury's not about to let that spoil their day. Twelve men must decide the fate of an 18-year-old boy accused of fatally stabbing his father. Only one (Henry Fonda) wants to take the time to coolly deliberate ... [Read More](#)

[See All Recommendations >>](#)

### CLASSICS DRAMA

pattern. **lightweight popup + lightbox.**

# patterns



pattern. **busy indicator.**

The screenshot shows the Netflix Recommendations section. At the top, there's a navigation bar with links for 'Check Mail', 'Compose', 'Find Messages...', and a 'Go' button. Below the navigation is a search bar with placeholder text 'Movies, actors, directors, genres' and a 'Search' button. The main content area has a yellow gradient background with star icons. It features a 'Recommendations' section with the sub-headline 'Movie suggestions based on your ratings'. A large yellow star-shaped callout box in the center says 'You Have Recommendations!' with a link to 'Rate More Movies'. To the left, there's a 'NEW RECOMMENDATIONS' section with a thumbnail for 'Samurai Champloo (7-Disc Series)' and another for '12 Angry Men'. Both items have a 5-star rating icon and a 'Not Interested' checkbox. Below these are sections for 'CLASSICS' and 'DRAMA'. A sidebar on the right lists 'Browse' categories like 'All Recommendations', 'Favorite Genres', and 'Other Genres' with their counts. A 'Helpful Tip' box at the bottom right suggests seeing movies from the list.

pattern. **lightweight popup + lightbox.**

The screenshot shows a 'Lists' interface. On the left, there's a sidebar with a trash can icon and an 'Edit' button. To the right, there are three checkboxes with labels: 'Remove this item', 'And this one too', and 'adding a new item'. Below these checkboxes is a large input field. At the bottom, there are buttons for 'Add item' and 'I'm done adding items'.

pattern. **fade transition + self-healing transition**

# interesting moments

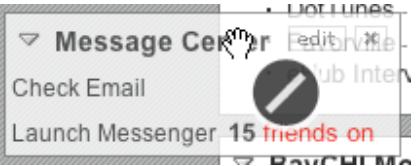
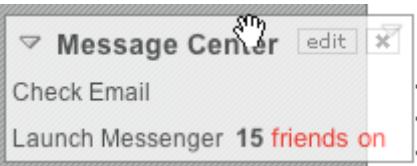
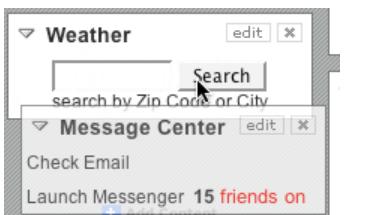
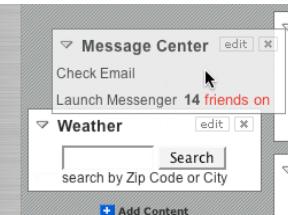
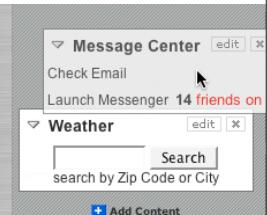
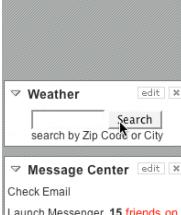
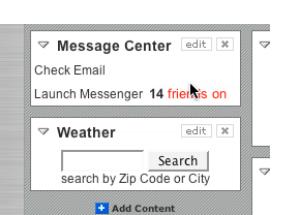
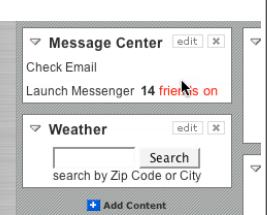
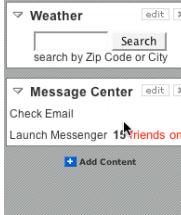
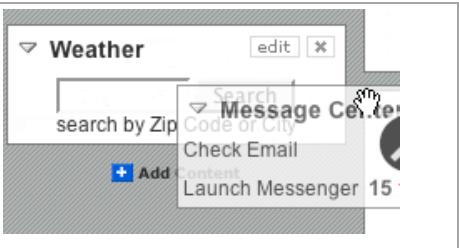
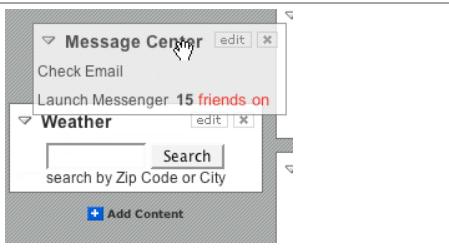
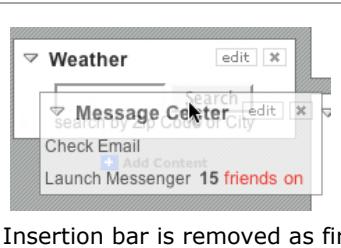
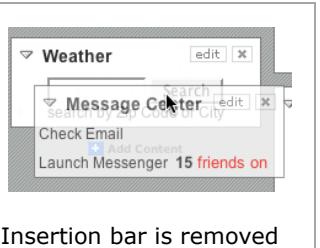
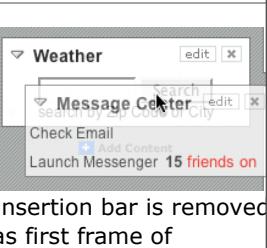
# interesting moments

Drag and Drop Modules - Interesting Moments Grid

Currently on beta.my.yahoo.com		ID: Bill Scott & Eric Miraglia	Date: November 2011					
		Drag Initiated	Drag Over Valid Target	Drag Over Invalid Target	Drag Over Parent Container	Drop Accepted	Drop Rejected	
Cursor	Mouse Hover	Mouse Down						
Tool Tip	CSS Move cursor	Normal Cursor	Normal Cursor					
Drag Object	Message Center Check Email Launch Messenger 15 friends on							
Drop Target	Message Center Check Email Launch Messenger 15 friends on	Message Center Check Email Launch Messenger 15 friends on	Weather search by Zip Code or City	Weather search by Zip Code or City	Message Center Check Email Launch Messenger 15 friends on	Message Center Check Email Launch Messenger 15 friends on	Message Center Check Email Launch Messenger 15 friends on	

Annotations for the Drag and Drop Modules grid:

- Row 1: Shows the current state of the browser window.
- Row 2: Describes the cursor types for each column.
- Row 3: Describes the tool tips for each column.
- Row 4: Describes the drag objects for each column.
- Row 5: Describes the drop targets for each column.
- Column 1: "Full Opacity" (Message Center) and "No insertion bar, just a gap" (Message Center).
- Column 2: "Reduced Opacity" (Message Center) and "No insertion bar, just a gap" (Message Center).
- Column 3: "Reduced Opacity" (Message Center) and "Insertion bar showing where it will drop" (Weather).
- Column 4: "Reduced Opacity & Invalid Badge" (Message Center) and "No insertion bar, just a gap" (Message Center).
- Column 5: "Reduced Opacity" (Message Center) and "No insertion bar, just a gap" (Message Center).
- Column 6: "Modules animates into the area just below insertion bar" (Message Center) and "Module comes to rest in new area" (Message Center).
- Column 7: "Modules slide up in a self-healing transition to close hole" (Message Center) and "Insertion bar is removed as first frame of animation" (Message Center).
- Column 8: "Modules animates back to the home area" (Message Center) and "Module comes back to rest at full opacity" (Message Center).

Drag Over Invalid Target	Drag Over Parent Container	Drop Accepted	Drop Rejected	Drop On Parent Container
 CSS Move cursor	 CSS Move cursor	Normal Cursor	Normal Cursor	Normal Cursor
		 Modules animates into the area just below insertion bar	 Modules animates back to the home area	 Modules animates back to the home area
Reduced Opacity & Invalid Badge	Reduced Opacity	 Module comes to rest in new area	 Module comes back to rest at full opacity	 Module comes back to rest at full opacity
		 Modules slide up in a self-healing transition to close hole		
 it will drop	 No insertion bar, just a gap	 Insertion bar is removed as first frame of animation	 Insertion bar is removed as first frame of animation	 Insertion bar is removed as first frame of animation

# interesting moments for drag drop

	Page Generation	Mouse Hover	Drag Initiated	Drag over Valid	Drag over Invalid	Drag over Original	Drop Accepted	Drop Rejected	Drop on Original
Page Content	Hint	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cursor	Normal	Move Cursor	Move Cursor	Move Cursor	Move Cursor	Move Cursor	Normal	Normal	Normal
Drag Object	Normal	Normal	Reduced Opacity & Tracking	Reduced Opacity & Tracking	Reduced Opacity & Tracking + Invalid Badge	Reduced Opacity & Tracking	2. Modules animates into the area just below insertion bar 3. Module comes to rest in new area 4. Modules slide up in a self-healing transition to close hole	Normal Opacity + Zoom Back to Original	Normal Opacity + Zoom Back to Original
Orig Location	Normal	Normal	Hole Opens	Hole Remains	Hole Remains	Hole Remains	Hole Remains	Hole refilled with drag object	Hole refilled with drag object
Drop Target	Normal	Normal	Normal	Insertion Bar	N/A	N/A	1. Insertion Bar Removed	N/A	N/A
target drop									

# non-dhtml prototyping techniques

# challenge of interesting moments



*Wireframing AJAX is a bitch. The best our agency has come up with is the Chuck Jones approach: draw the key frames. Chuck Jones had an advantage: he knew what Bugs Bunny was going to do. We have to determine all the things a user might do, and wireframe the blessed moments of each possibility.*

- Jeffrey Zeldman

<http://www.alistapart.com/articles/web3point0/>

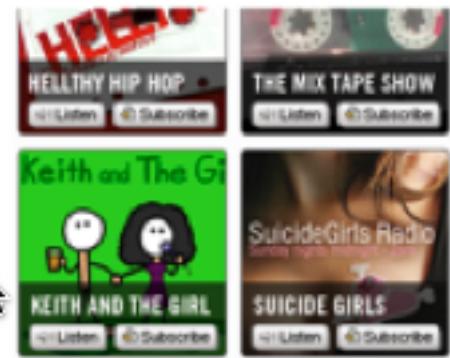
- Blessed Moments = Microstates = Interesting Moments  
behavior is not static
  - Multiple states need to be captured
  - Happens within a context
  - Not suited for wireframes

# using keyframes

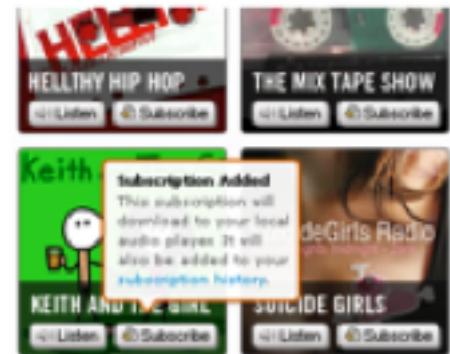
AJAX Status Interaction

The screenshot shows the Y! Mediicast homepage. At the top, there's a navigation bar with links for HOME, GETTING STARTED, PUBLISH A PODCAST, PREFERENCES, and HELP. Below the navigation is a search bar containing the placeholder text "what the heck is a podcast? (Hint...they're free)". Underneath the search bar are three main sections: "what we like this week", "what other people like", and "find your own podcasts". The "what we like this week" section features "new and noteworthy" podcasts like "HEALTHY HIP HOP" and "THE MIX TAPE SHOW". The "what other people like" section lists "Most Popular" and "Highly Rated" podcasts such as "Left Right & Center", "Keith and The Girl", and "SuicideGirls Radio". The "find your own podcasts" section includes a grid of "main categories" with links to arts, food, religion, books, media, science, business, movies, sex, comedy, music, sports, documentary, news, technology, and entertainment. There's also an "ADVERTISEMENT" for Coca-Cola.

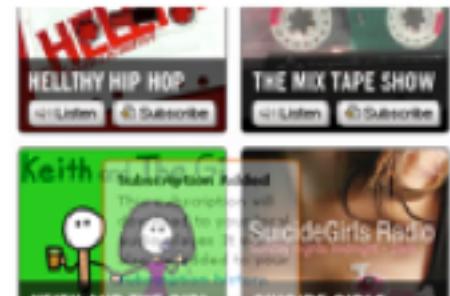
1. On Page Load



2a. On Click display message  
("listen" and "subscribe" buttons have same



2b. Fade (50% opacity)



# using keyframes

## AJAX Status Interaction

MEDIACAST Welcome, Jayashri  
[Sign Out, My Account]

HOME GETTING STARTED PUBLISH A PODCAST PREFERENCES HELP

what the heck is a [podcast?](#)? (Hint...they're free)

podcast search:  Series and Episodes [Search](#)

Search Tips: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

what we like this week

new and noteworthy [\(View More\)](#)

- HELLTHY HIP HOP** [Listen](#) [Subscribe](#)
- THE MIX TAPE SHOW** [Listen](#) [Subscribe](#)
- Keith and The Girl** [Listen](#) [Subscribe](#) **Subscription Added** This subscription will download to your local audio player. It will also be added to your subscription history.
- SUICIDE GIRLS Radio** [Listen](#) [Subscribe](#)

what other people like

Most Popular Highly Rated

- Left Right & Center** Innovative, up-to-the-minute, alive and witty, KCRW's weekly... [Listen](#) [Subscribe](#)
- On the Media from KPFA/KRHC** Innovative, up-to-the-minute, alive and witty, KCRW's weekly... [Listen](#) [Subscribe](#)
- YoGHH Morning Shows** Innovative, up-to-the-minute, alive and witty, KCRW's weekly... [Listen](#) [Subscribe](#)
- KCRW's Martini Shot** Innovative, up-to-the-minute, alive and witty, KCRW's weekly... [Listen](#) [Subscribe](#)
- Size of SoFi** Funny, alive and witty, KCRW's weekly confrontation... [Listen](#) [Subscribe](#)
- Orange Lounge** Innovative, up-to-the-minute, alive and witty, KCRW's weekly... [Listen](#) [Subscribe](#)
- KCRW's The Score** Innovative, up-to-the-minute, alive and witty, KCRW's weekly... [Listen](#) [Subscribe](#)
- The Radio Adventures of Dr. Floyd** The Radio Adventures of Dr. Floyd... [Listen](#) [Subscribe](#)

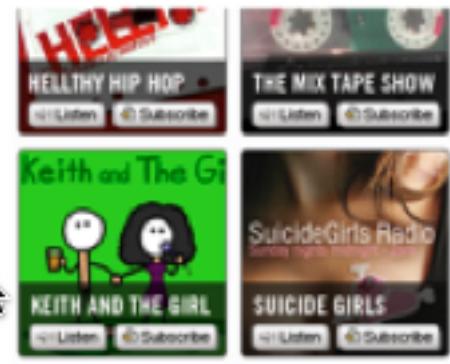
find your own podcasts

main categories (What's this?)

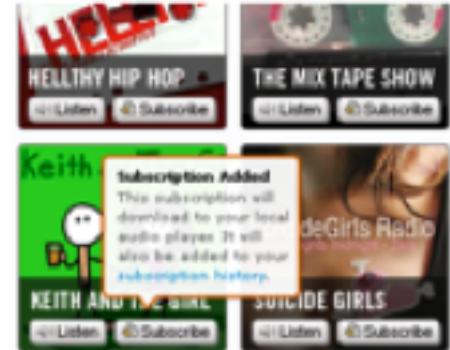
arts	food	religion
books	media	science
business	movies	sex
comedy	music	sports
documentary	news	technology
entertainment	politics	weird

ADVERTISEMENT

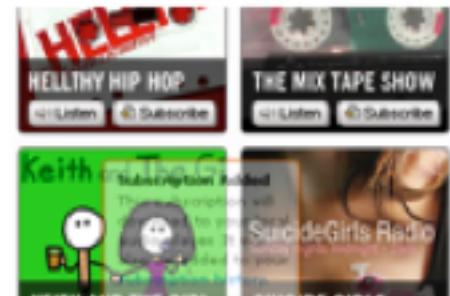
1. On Page Load



2a. On Click display message  
(listen and subscribe buttons have same



2b. Fade (50% opacity)



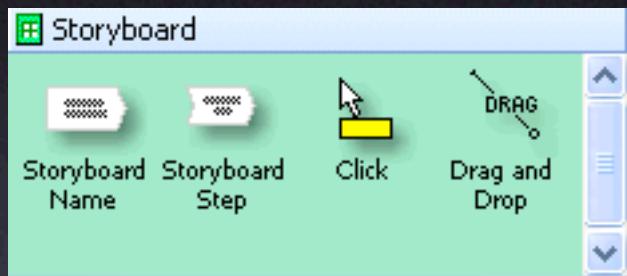
# prototyping with visio

- Changes in state placed in different layers
- Storyboard steps toggle visibility of associated layers
- Each storyline serves as a use case in the wireframe

Source: [http://www.boxesandarrows.com/view/storyboarding\\_rich\\_internet\\_applications\\_with\\_visio](http://www.boxesandarrows.com/view/storyboarding_rich_internet_applications_with_visio)

# prototyping with visio

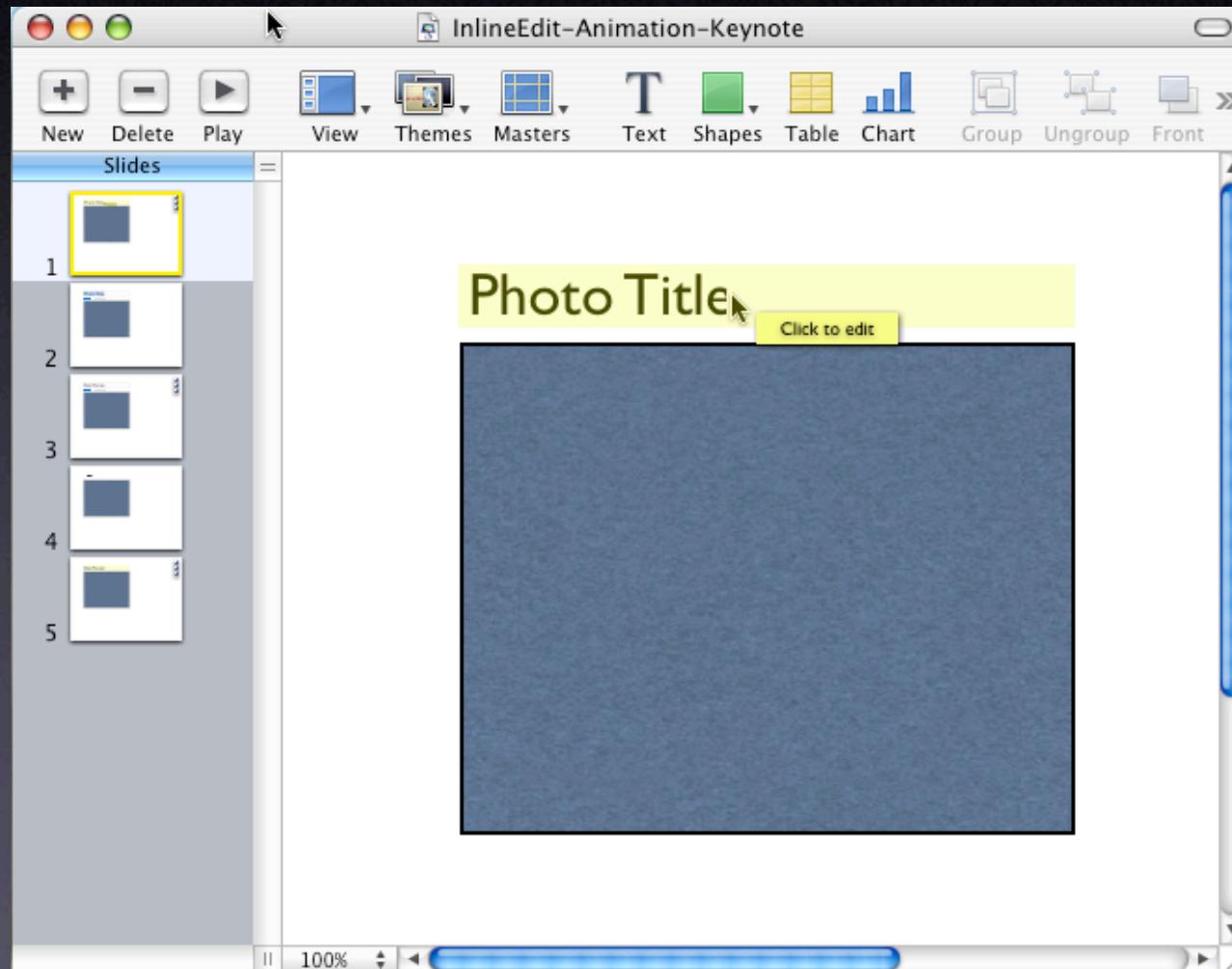
- Changes in state placed in different layers
- Storyboard steps toggle visibility of associated layers
- Each storyline serves as a use case in the wireframe



Source: [http://www.boxesandarrows.com/view/storyboarding\\_rich\\_internet\\_applications\\_with\\_visio](http://www.boxesandarrows.com/view/storyboarding_rich_internet_applications_with_visio)

# prototyping with keynote/powerpoint

- Slides make major steps
- Builds used to bring in transitions, animations





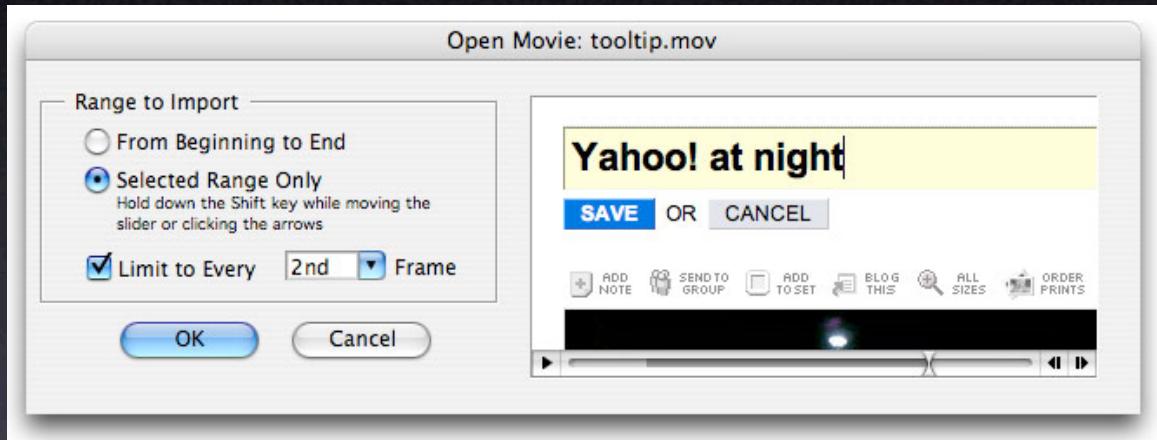
# **prototyping with photoshop**

- Easy to create from a series of images
- Images can be created by hand or from other apps

# animations from screencasts

Start with screencast (SnapZPro/SnagIt)

Turn movie into animated GIF (Adobe ImageReady)



# other approaches

Flash

Flex

iRise ([www.irise.com](http://www.irise.com)) \$\$\$

Axure ([www.axure.com](http://www.axure.com))

Interactive PDFs

Fireworks + PDF

Powerpoint

DHTML

# dhtml prototyping

# prototyping with DHTML

- Benefits

- Can start simple and layer in complexity
- Works well across different teams (design to code)
- Technology the same or similar to final implementation
- Most capable to approximate final result
- Living example

- Disadvantages

- Requires technical savvy
- Bugs can suck down time
- Too much time spent 'messing with code'
- Hard to extract into documentation

# dhtml prototyping skills/techniques

- Keep structure, style and logic separate
  - Avoid adding onclick handlers in the HTML (unobtrusive)
  - Avoid any direct styles or html style tags (font, etc.)
- Use style class switching for visual changes
- Use CSS to simulate most mouse hover behavior
- Use innerHTML for content changes
- Understand when to use a class vs. id
- Use CSS query libraries for referencing interface parts
  - CSS selector syntax allows non-intrusive behavior injection

# dhtml prototyping skills/techniques

- Use anchors as basic navigation/action hooks
- Use background images in CSS with style switching
- Use a grid layout system
  - YUI Grid
- Use Firebug
- Understand CSS Selectors
  - Ext, jQuery, Dojo, Mootools, Prototype, cssQuery()
- Use JSON syntax (options)

# underlying desire for protoscript

- address the conceptual phase of interface development
  - think “interaction theme”  
*(free from solving production issues)*
- express an interaction as a configuration  
*(no code; declarative approach)*
- dynamically insert interaction themes (behaviors) to any web page  
*(allows experimentation)*
- create a gui tool for configuring & exploring interactions

# **protoscript approach**

- JSON used to express interaction theme to express relationship between dom elements, behaviors, attributes, and callbacks
- jQuery CSS Selector syntax for dom elements
- Chain dependent behavior as well as parallel behavior with JSON syntax
- Simple to add behaviors (class with 2 methods)
- Focus is on prototyping

# Demo

<http://protoscript.com/demos.php>

# simple example

Here's an example that fades & closes the image when the user clicks on it. (It's live, so go ahead and try it!)



```
$proto('img#avatar', {
  Click: {
    onClick: {
      Fade: {
        opacity: {to: 0},
        onComplete: (Close : () => void) =>
          Close()
      }
    }
  }
});
```

The protoscript above says: *for an image with id **avatar**, fade it out when the user clicks on it and close it when the fade completes.*

Simple Click, Fade, Close  
(self-healing delete)

# sprinkling in behaviors



Bill Scott

Total Projects 12

Total Points 24

## My Portfolio

Sort by: Recent | Alpha | Points

### ▼ Project One

view | delete  
Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.

### ▼ Project Two

view | delete  
Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a

## Scratchpad



## My Portfolio

Sort by: Recent | Alpha | Points

### ▼ Project One

view | delete

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Proin tempor, lectus aliquet ornare suscipit, diam turpis suscipit velit, rhoncus feugiat purus metus gravida turpis. Nam nisl. Nulla et est in neque laoreet consequat. Quisque quis pede. Curabitur pretium. Etiam varius. Suspendisse tempus nisl eu lectus. Integer et velit. Quisque quis magna. Nunc pellentesque pharetra ligula. Morbi semper.

### ▼ Project Two

view | delete

Quisque nunc. In ac urna egestas arcu egestas imperdiet. Donec id erat id nulla molestie venenatis. Nam a quam. Nulla ornare. Fusce dignissim ultricies turpis. Fusce molestie odio ac eros. Nunc auctor massa in metus. Etiam mollis lorem in eros. Aliquam mi. Nam feugiat ante et felis.

# anatomy of an interaction

## DOM elements

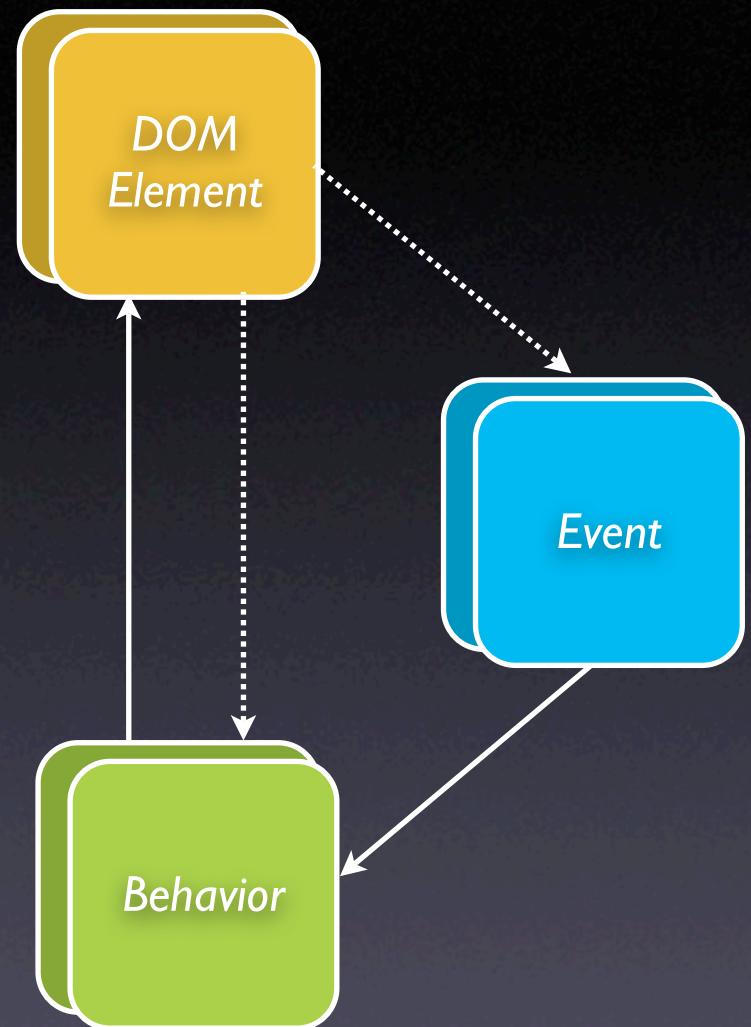
Target an element or elements for attaching events & behaviors.

## Events

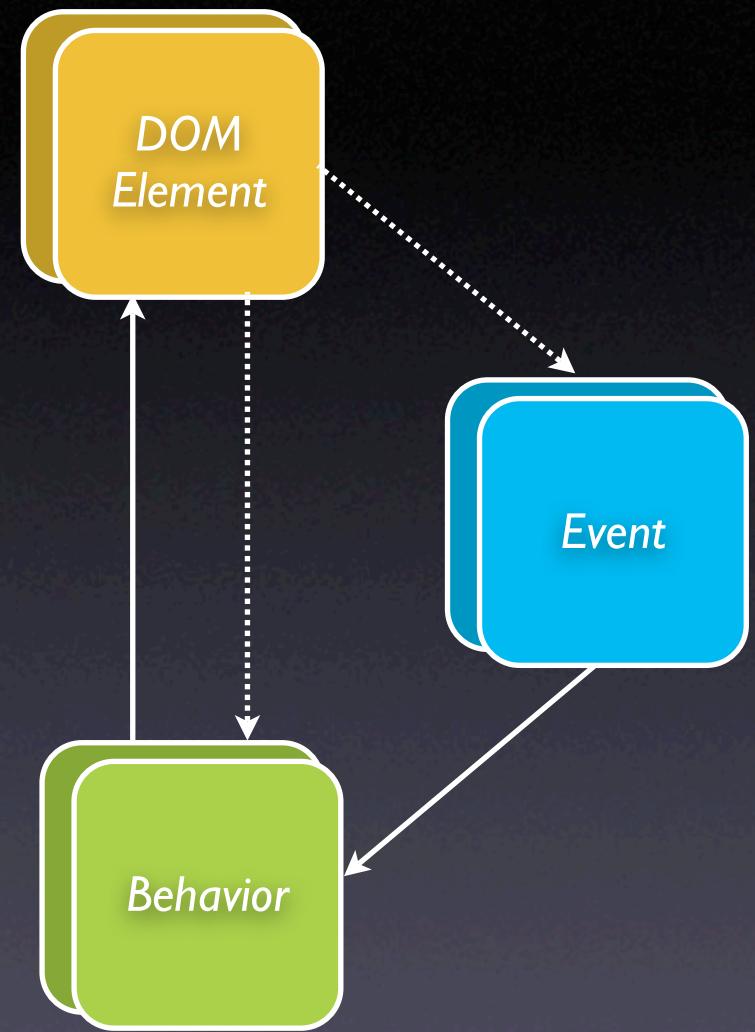
Events are the glue between the user and behaviors. They start behaviors.

## Behaviors

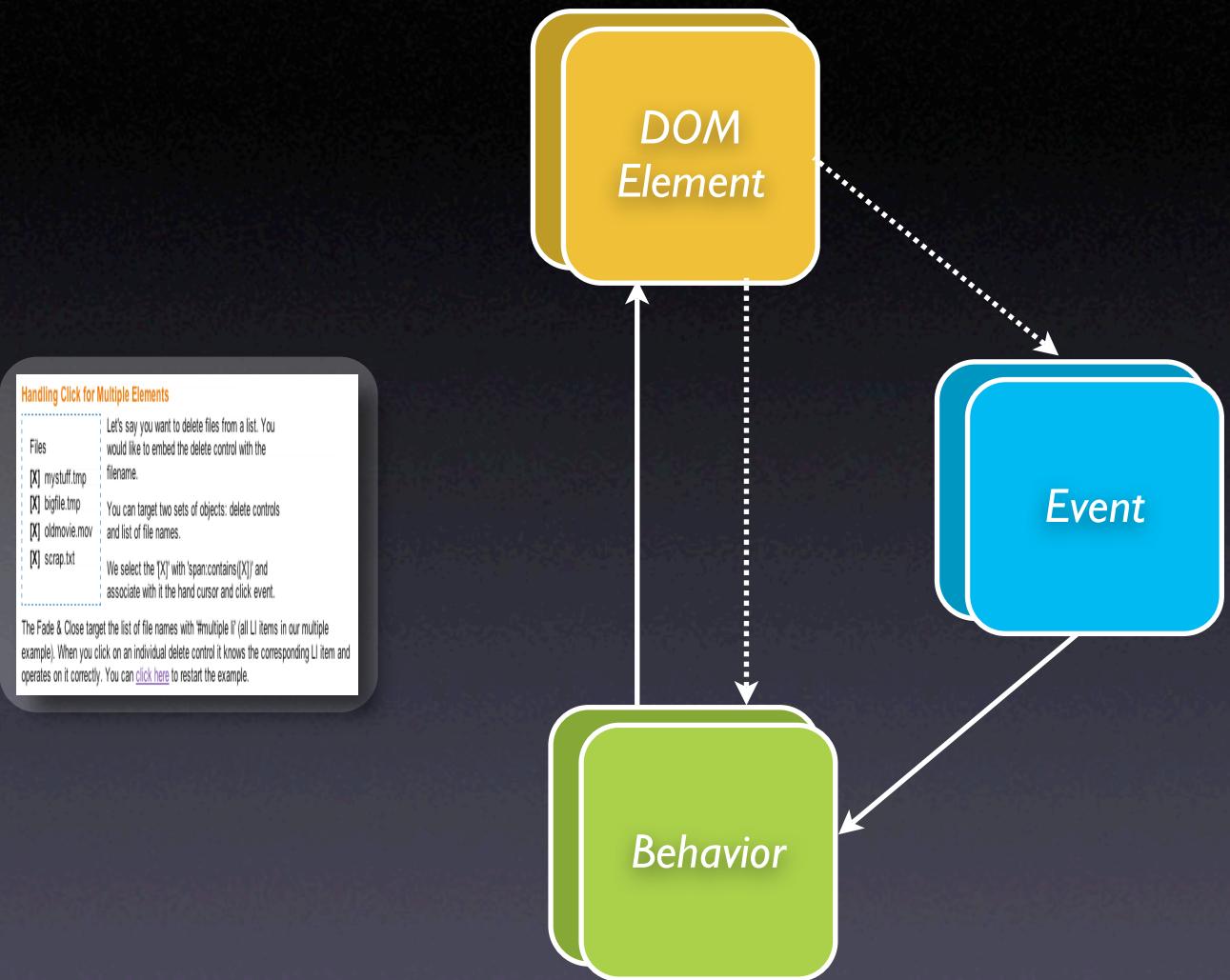
Blocks of logic, patterns, actions that operate on elements.



# anatomy of self-healing delete



# anatomy of self-healing delete



# anatomy of self-healing delete

## DOM elements

[ X ]  
<LI>[ X ] oldmove.mov</LI>

**Handling Click for Multiple Elements**

Let's say you want to delete files from a list. You would like to embed the delete control with the filename.

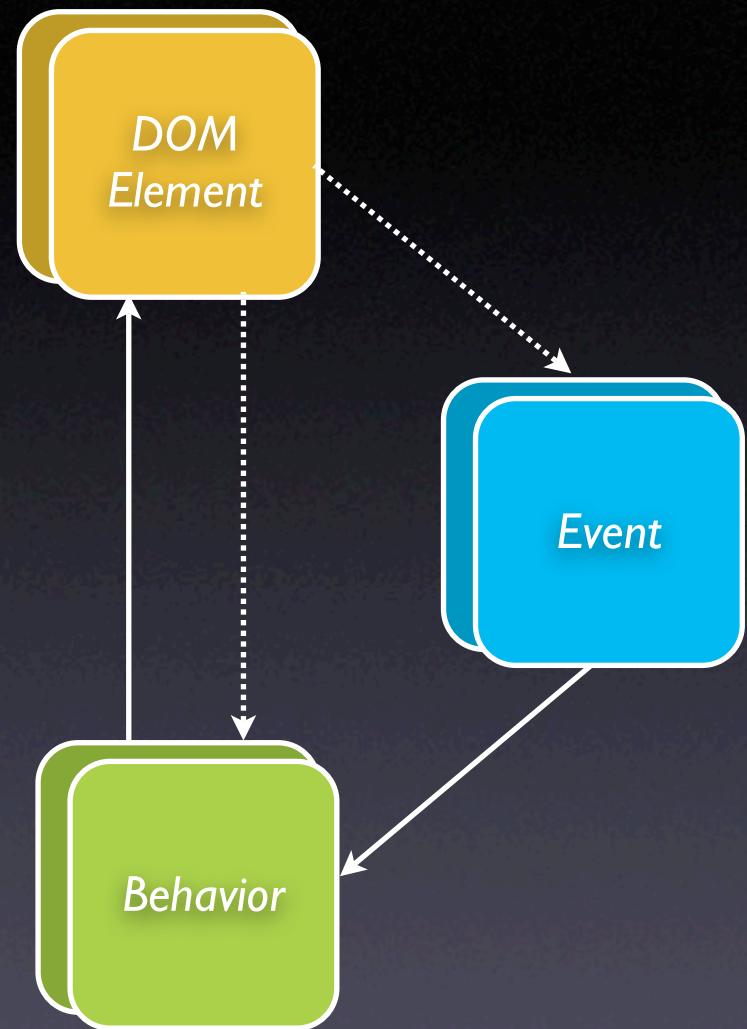
Files

- [X] mystuff.tmp
- [X] bigfile.tmp
- [X] oldmovie.mov
- [X] scrap.txt

You can target two sets of objects: delete controls and list of file names.

We select the '[X]' with 'span[contains([X])]' and associate it with the hand cursor and click event.

The Fade & Close target the list of file names with '#multiple' (all LI items in our multiple example). When you click on an individual delete control it knows the corresponding LI item and operates on it correctly. You can [click here](#) to restart the example.



# anatomy of self-healing delete

## DOM elements

[ X ]  
<LI>[ X ] oldmove.mov</LI>

## Events

Click  
onClick (callback)

**Handling Click for Multiple Elements**

Let's say you want to delete files from a list. You would like to embed the delete control with the filename.

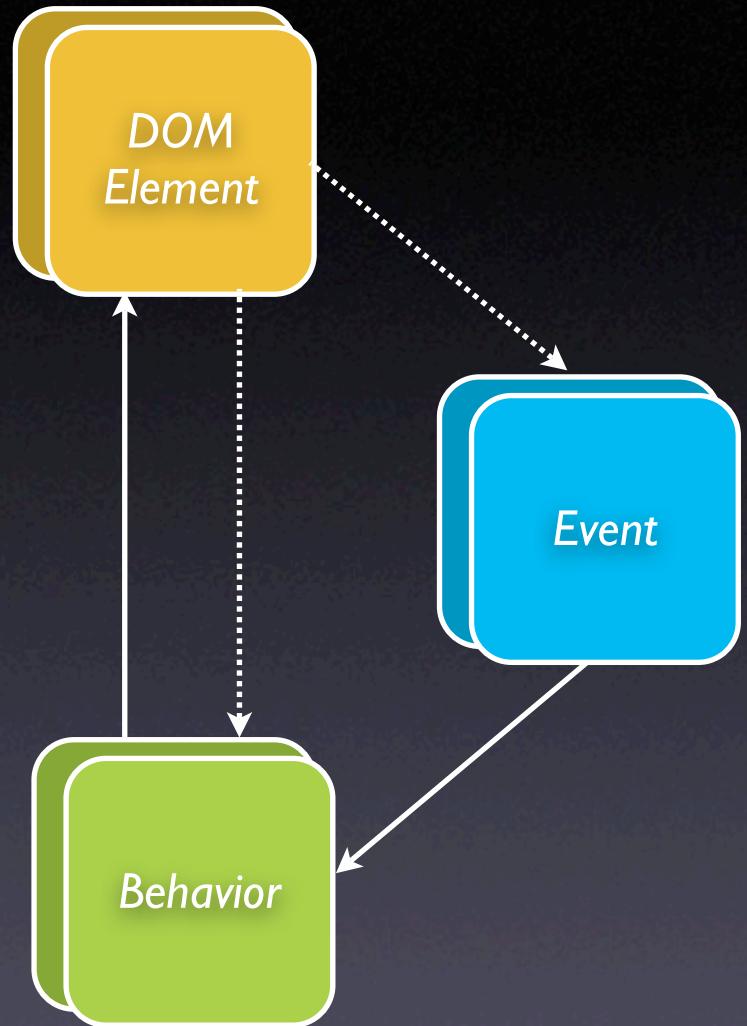
Files

- [X] mystuff.tmp
- [X] bigfile.tmp
- [X] oldmovie.mov
- [X] scrap.txt

You can target two sets of objects: delete controls and list of file names.

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# anatomy of self-healing delete

## DOM elements

[ X ]  
<LI>[ X ] oldmove.mov</LI>

## Events

Click  
onClick (callback)

## Behaviors

Fade  
Close

**Handling Click for Multiple Elements**

Let's say you want to delete files from a list. You would like to embed the delete control with the filename.

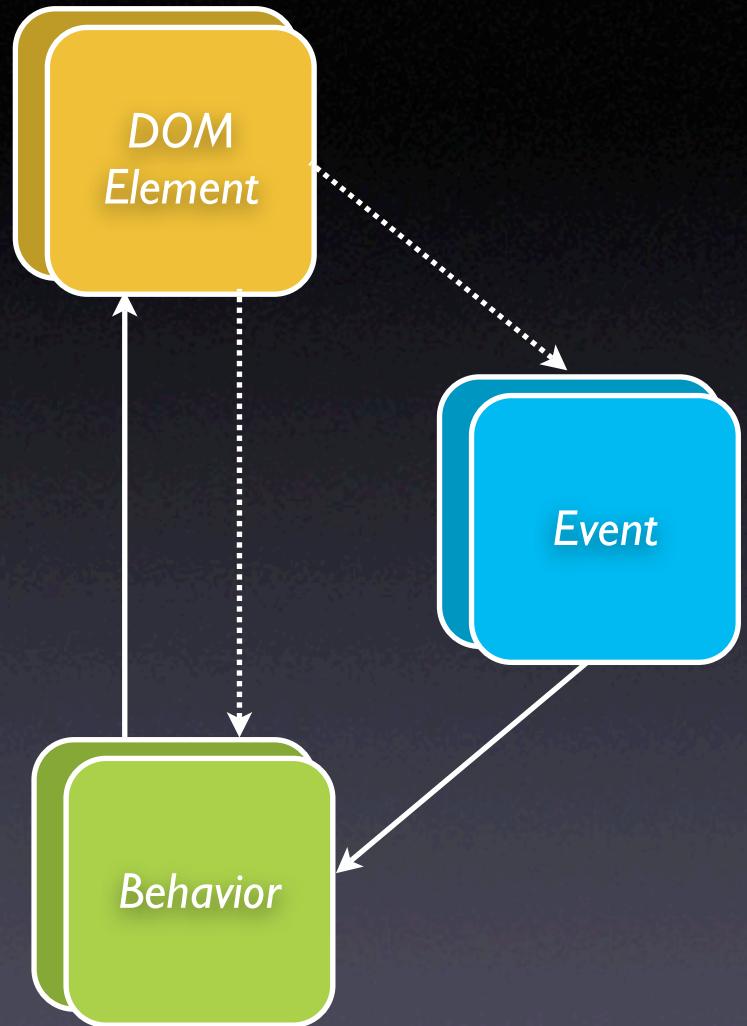
Files

- [X] mystuff.tmp
- [X] bigfile.tmp
- [X] oldmovie.mov
- [X] scrap.txt

You can target two sets of objects: delete controls and list of file names.

We select the '[X]' with 'span[contains([X])]' and associate it with the hand cursor and click event.

The Fade & Close target the list of file names with '#multiple' (all LI items in our multiple example). When you click on an individual delete control it knows the corresponding LI item and operates on it correctly. You can [click here](#) to restart the example.



# protoscript code

```
<div id="multiple" class="example-live">
<p>Files</p>
<ul>
  <li><span><strong>[X]</strong></span><span>mystuff.tmp</span></li>
  <li><span><strong>[X]</strong></span><span>bigfile.tmp</span></li>
  <li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

Files

- [X] mystuff.tmp
- [X] bigfile.tmp
- [X] oldmovie.mov
- [X] scrap.txt

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  },
});
```

Element

Behavior

Event

# selecting dom elements (targeting)

Element

```
<div id="multiple" class="example-live">
<p>Files</p>
<ul>
  <li><span><strong>[X]</strong></span><span>mystuff.tmp</span></li>
  <li><span><strong>[X]</strong></span><span>bigfile.tmp</span></li>
  <li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  },
});
```

Behavior

Event

# selecting dom elements (targeting)

Element

```
<div id="multiple" class="example-live">
<p>Files</p>
<ul>
  <li><span><strong>[X]</strong></span><span>mystuff.tmp</span></li>
  <li><span><strong>[X]</strong></span><span>bigfile.tmp</span></li>
  <li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```



```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  },
});
```

Behavior

Event

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  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

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$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
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});
```

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  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
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        onComplete: {Close : {} }
      }
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  },
});
```

Behavior

Event

# chaining of target scope

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  <li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  },
});
```

# chaining of target scope

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  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  },
});
```

# chaining of target scope

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  <li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  },
});
```

# chaining of target scope

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  <li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
  <li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  },
});
```

# chaining of target scope

```
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<p>Files</p>
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<li><span><strong>[X]</strong></span><span>mystuff.tmp</span></li>
<li><span><strong>[X]</strong></span><span>bigfile.tmp</span></li>
<li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
<li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close: {}}
      }
    }
  },
}) ;
```

# chaining of target scope

```
<div id="multiple" class="example-live">
<p>Files</p>
<ul>
<li><span><strong>[X]</strong></span><span>mystuff.tmp</span></li>
<li><span><strong>[X]</strong></span><span>bigfile.tmp</span></li>
<li><span><strong>[X]</strong></span><span>oldmovie.mov</span></li>
<li><span><strong>[X]</strong></span><span>scrap.txt</span></li>
</ul>
</div>
```

The diagram illustrates the concept of target scope chaining in a JavaScript object. A large orange arrow points from the outermost scope (the main object) down to the innermost scope (the Fade function). Inside the Fade function, another orange arrow points from the target selector to the opacity property. A yellow arrow points from the opacity property to the onComplete function. The code shows how multiple properties can be defined on the same target object.

```
$proto('span:contains([X])', {
  SetStyle: {cursor: 'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close: {}}
      }
    }
  },
});
```

# selector syntax

Element

Consult jQuery docs:

[http://docs.jquery.com/DOM/Traversing>Selectors#CSS\\_Selectors](http://docs.jquery.com/DOM/Traversing>Selectors#CSS_Selectors)

If you are setting up your own prototypes, stick with class and identifier

.my-class-name

#my-id-name

Other useful examples

a:contains(Click Here)

.my-class-name #my-id-under-there

#my-specific-container .my-items

Consult CSS-1, CSS-2, CSS-3 and XPath

Behavior

Event

# behaviors

Behavior

Animate. ColorAnimate. Fade.  
Move. Spotlight. Close.  
DragDrop. Hide. Open.  
Popup. ReplaceClass. Script.  
SetClass. SetStyle. Show.  
ToggleClass. ToggleOpenClose.  
ToggleShowHide. FetchHtml.  
SetHtml.

Event

Element

# behavior demos

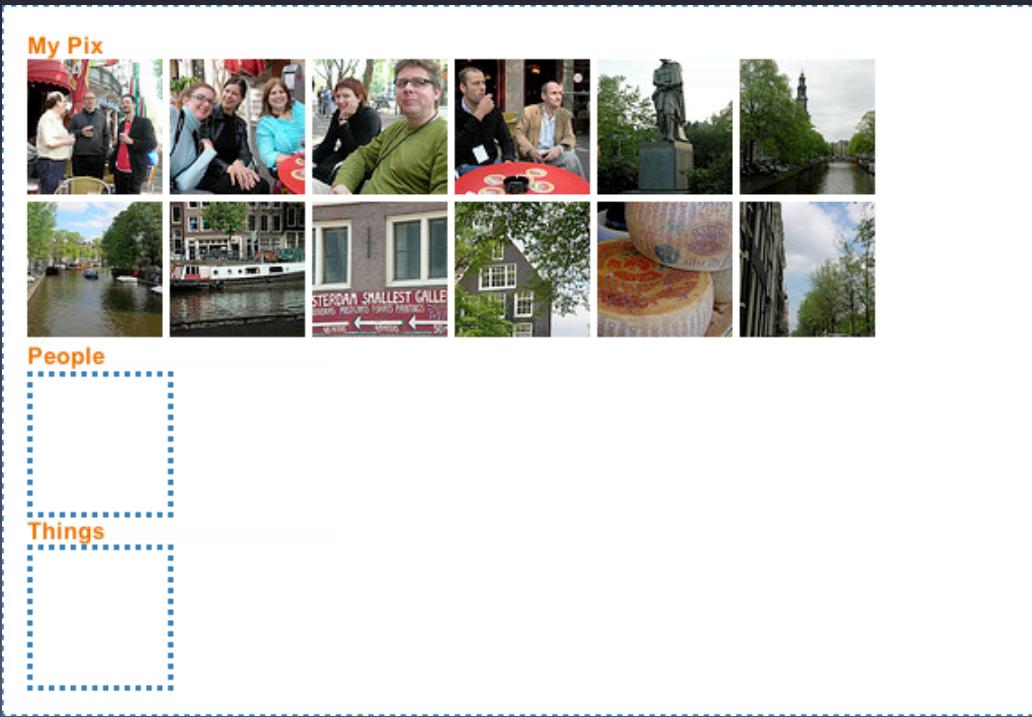
Behavior

Site has a demo page for each behavior

<http://protoscript.com/demos.php>

Site has a wiki with documentation page for each behavior

<http://docs.protoscript.com/>



Event

Element

# behavior attributes

Behavior

Behaviors may supply attributes for configuring the behavior

Where possible if an underlying YUI component or utility has a config object, this is exposed

EXAMPLE FROM Popup BEHAVIOR (bold denotes from Panel cfg)

```
close: true,  
draggable: true,  
underlay: 'shadow',  
model: false,  
visible: true,  
effect: null,  
monitorresize: true,  
x: null,  
y: null,  
xy: null,  
context: null,  
fixedcenter: true,  
  
width: '300px',  
height: null,  
zIndex: null,  
constraintviewport: false,  
iframe: false,  
id: 'popup_panel',  
hd: 'Panel Title',  
bd: 'This is the body',  
ft: null
```

Event

Element

# plug-in behavior

Behavior

Protoscript core is independent of any single toolkit selector is a plugin. *default* set uses jQuery behavior set is plugged in. *default* set uses YUI.

```
ProtoScript.Core.registerBehaviorSet($, YAHOO.protoscript);  
(yui-proto.js)
```

You are free to create your own behavior sets or plug in other selector technologies

Example: Mootools selector & behaviors

```
ProtoScript.Core.registerBehaviorSet($ES, MooBehaviors);  
(moo-proto.js)
```

You can also add behaviors to the default set

Event

Element

# peek under the hood of a behavior

Behavior

```
YAHOO.protoscript.Show = function (behaviorName, behaviorCfg) {  
    this.init(behaviorName, behaviorCfg);  
};  
YAHOO.protoscript.Show.prototype = {  
    defaultCfg : {  
        ,  
  
    init: function(behaviorName, behaviorCfg) {  
        this.name = behaviorName;  
        this.cfg = ProtoScript.Core.applyConfig(this.defaultCfg, behaviorCfg);  
        ,  
  
    action: function(currScope) {  
        YAHOO.util.Dom.setStyle(currScope.elems, 'visibility', 'visible');  
        if(this.cfg.onShow) {  
            ProtoScript.Core.callBehaviors(this.cfg.onShow, currScope);  
        }  
    }  
};
```

'Show' behavior

Event

Element

# adding a behavior (to default YUI set)

Behavior

1. Add behavior to `YAHOO.protoscript` namespace
2. In `init` store name & apply config parameters
3. In `action` put your behavior logic

The action performs the behavior

`action(currScope)`

`currScope.elems`: list of elems resolved from the current target scope

`currScope.idx`: if multiple elems, the index into the active element for this action

`currScope.pseudoElems`: some behaviors set dynamic elements (like \$drag, \$drop in DragDrop behavior).

4. For any interesting moments, call  
`ProtoScript.Core.callBehaviors` to process the callback

Event

5. Add attributes as needed (in your `defaultCfg`)

6. Start using it in your scripts

Element

# events

Event

Blur. Click. Dblclick. Focus.  
Keypress. Mousedown.  
Mousemove. Mouseout.  
Mouseover. Mouseup. Timer.

Element

Behavior

# events are actually behaviors

Event

```
YAHOO.protoscript.Click = function(behaviorName, behaviorCfg) {  
    this.init(behaviorName, behaviorCfg);  
};  
YAHOO.protoscript.Click.prototype = {  
    defaultCfg : {},  
    init: function(behaviorName, behaviorCfg) {  
        this.name = behaviorName;  
        this.cfg = ProtoScript.Core.applyConfig(this.defaultCfg, behaviorCfg);  
    },  
    action: function(currScope) { YAHOO.protoscript.Trigger(this.cfg,  
currScope, 'click');}  
};
```

## 'Click' behavior

Element

Behavior

# callbacks

Event

onComplete. onTween. onStart. onClose.  
onStartDrag. onDrag. onDragEnter. onDragOver.  
onDragDrop. onDragOut. onEndDrag. onMouseUp.  
onInvalidDrop. onBlur. onClick. onDblClick. onFocus.  
onKeypress. onMousedown. onMousemove.  
onMouseout. onMouseover. onMouseup. onTimer.  
onHide. onOpen. onReplaceClass. onSetClass.  
onSetStyle. onShow. onToggleClass.  
onToggleOpenClose. onToggleShowHide.  
onSuccess. onFailure. onSetHtml.

Element

Behavior

# callbacks are interesting moments



## Interesting Moments

Simply making an object draggable rarely suffices to achieve the desired interaction behavior for a drag-and-drop implementation. In most cases, Drag and Drop requires that you write code to respond to the interesting moments in the interaction: when the drag event starts, when the dragged object enters another object, and so on. The Drag and Drop Utility provides methods that fire during each of the interesting moments of the interaction. You customize your implementation by supplying the code for these methods (all of which are members of the `YAHOO.util.DD`, `YAHOO.util.DDProxy`, and `YAHOO.util.DDTarget`).

Moment	Description
onMouseDown	Provides access to the mousedown event. The mousedown does not always result in a drag operation.
startDrag	Occurs after a mouse down and the drag threshold has been met. The drag threshold default is either 3 pixels of mouse movement or 1 full second of holding the mousedown.
onDrag	Occurs every mousemove event while dragging.
onDragEnter	Occurs when the dragged object first interacts with another targettable drag and drop object.
onDragOver	Fires every mousemove event while over a drag and drop object.
onDragOut	Fires when a dragged object is no longer over an object that had the onDragEnter fire.
onDragDrop	Fires when the dragged objects is dropped on another.
onInvalidDrop	Fires when the dragged objects is dropped in a location that contains no drop targets.
endDrag	Fires on the mouseup event after a drag has been initiated (startDrag fired).
onMouseUp	Fires on the mouseup event whether or not a drag was initiated.

# callbacks are invoked in behaviors

Event

```
YAHOO.protoscript.Open = function (behaviorName, behaviorCfg) {  
    this.init(behaviorName, behaviorCfg);  
};  
YAHOO.protoscript.Open.prototype = {  
    defaultCfg : {  
        ,  
  
    init: function(behaviorName, behaviorCfg) {  
        this.name = behaviorName;  
        this.cfg = ProtoScript.Core.applyConfig(  
            this.defaultCfg, behaviorCfg);  
    },  
  
    action: function(currScope) {  
        YAHOO.util.Dom.setStyle(currScope.elems, 'display', 'block');  
        if(this.cfg.onOpen) {  
            ProtoScript.Core.callBehaviors(this.cfg.onOpen, currScope);  
        }  
    }  
};
```

'Open' behavior invoking onOpen

Element

Behavior

# Bookmarklet\*

\*humble beginnings

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- [Senor Jalapeno](#) (6.0) 415 N Mary Ave # 117
- [Tacos Jalapa](#) (6.5) 154 W El Camino Real
- [Taqueria Latina](#) (8.0) 195 E Maude Ave
- [Tres Potrillos Taqueria](#) (no reviews) 670 S Fair Oaks Ave
- [Tres Potrillos Taqueria](#) (no reviews) 670 N Falroaks Ave
- [Una Mas \(Lawrence Expy\)](#) (5.5) 548 Lawrence Expy
- [Una Mas \(Sunnyvale Saratoga Rd\)](#) (no reviews) 725 Sunny

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Oakland, CA

### Protoscripter

For elements matching:

```
ul.bulleted li .small
```

[Find](#)

Do the following:

```
SetHtml: {  
    html: '<span class="small">&nbsp;[X]&nbsp;</span>'  
},  
  
SetStyle: {  
    cursor: 'move'  
},  
  
Click: {  
    onClick: {  
        target: 'ul.bulleted li',  
        Fade: {  
            duration: 1,  
            onComplete: {  
                Close: {}  
            }  
        }  
    }  
}
```

[Add Behaviors](#)

Protoscript is a simplified scripting language for creating  
Ajax-style prototypes for the Web. With Protoscript it's easy...

**Protoscripter**

For elements matching:

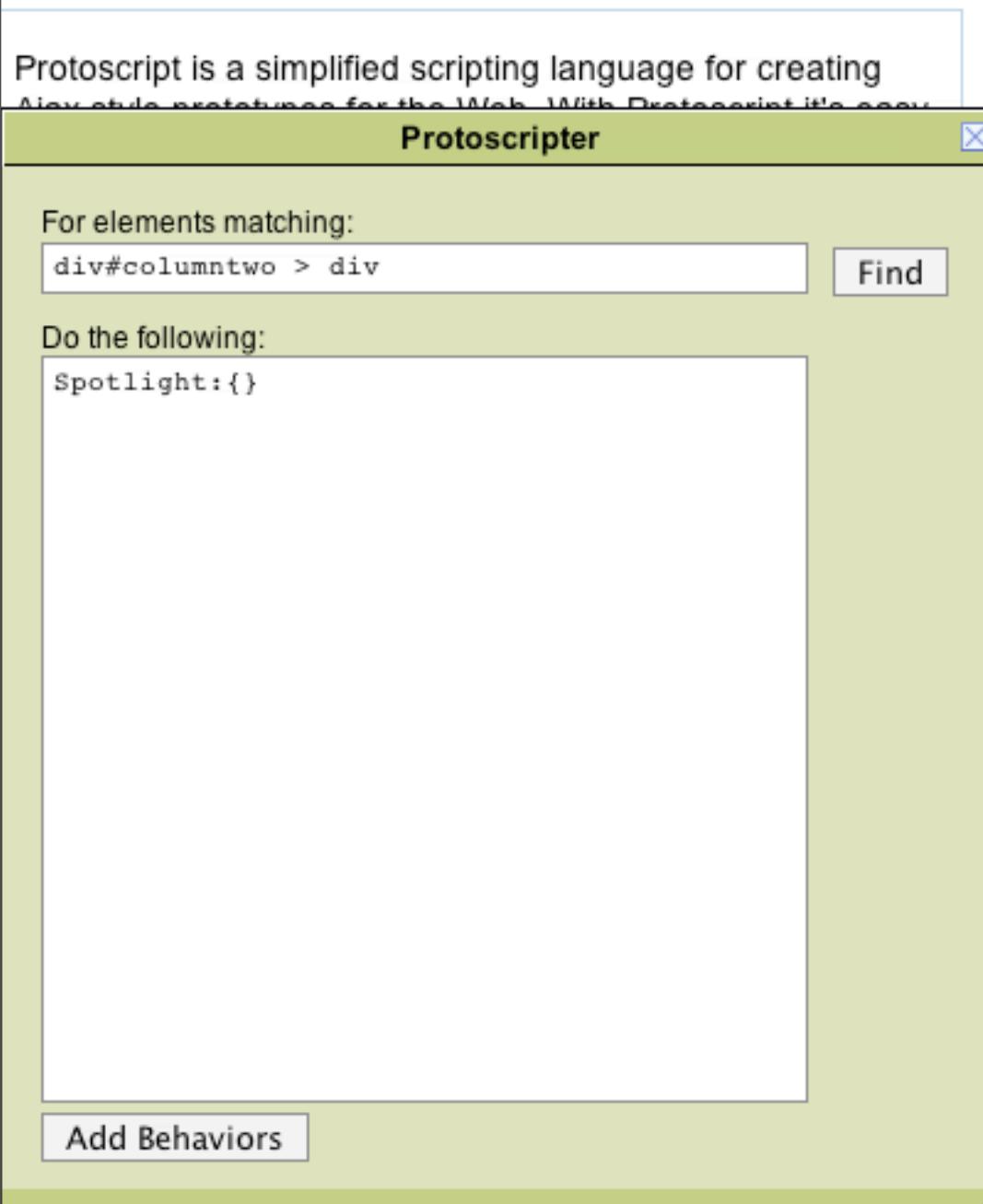
```
div#columntwo > div
```

**Find**

Do the following:

```
Spotlight:{}
```

Add Behaviors



Protoscript is for prototyping. It's simple syntax makes it easy to sprinkle behaviors onto any web page.

#### Easy to query for interface elements

Uses jQuery. Plug-in architecture allows different selector plugins.

#### Simple to express complex dependent behaviors

Just nest behaviors within behaviors or callbacks.

#### Add new behaviors & events with plug-in architecture

Uses YUI library. Can be extended to use other Ajax frameworks.

You can play with the current version of protoscript with the ProtoScripter Bookmarklet.

For Firefox, drag this link [ProtoScripter](#) to your bookmarks toolbar. On IE right-click it and choose Add Favorite...

# adding protoscript to your page

## Download

- The protoscript library: [proto.js](#)
- The default behavior set (jQuery + YUI): [yui\\_proto.js](#)
- jQuery library: [jquery-1.1.3.1.js](#)

## Default YUI + jQuery Behavior Set

Include the following in your page:

```
<!-- YUI Library -->
<script type="text/javascript" src="http://yui.yahooapis.com/2.3.0/build/utilities/utilities.js"></script>
<script type="text/javascript" src="http://yui.yahooapis.com/2.3.0/build/container/container-min.js"></script>

<!-- jQuery Library -->
<script type="text/javascript" src="scripts/jquery-1.1.3.1.js"></script>

<!-- Default Behavior Set - YUI -->
<script type="text/javascript" src="scripts/yui_proto.js"></script>

<!-- YUI CSS -->
<link rel="stylesheet" type="text/css" href="http://yui.yahooapis.com/2.3.0/build/reset-fonts-grids/reset-fonts-grids.css">
<link rel="stylesheet" type="text/css" href="http://yui.yahooapis.com/2.3.0/build/base/base-min.css">
<link rel="stylesheet" type="text/css" href="http://yui.yahooapis.com/2.3.0/build/container/assets/container.css">
```

## Protoscript library

Include the following in your page:

```
<script type="text/javascript" src="scripts/proto.js"></script>
```

## Code Repository - Subversion

The code repository for protoscript is located at [googlecode](#)

## Protoscripter Bookmarklet

You can play with the current version of protoscript with the ProtoScripter Bookmarklet.

For Firefox, drag this link [ProtoScripter](#) to your bookmarks toolbar. On IE right-click it and choose Add Favorite...

<http://protoscript.com/downloads.php>

# syntax

**\$proto(selector, interaction)**

where:

selector is the jQuery selector syntax

interaction is a configuration object (JSON) describing the interaction

```
$proto('span:contains([X])', {  
  SetStyle: {cursor: 'pointer'},  
  Click: {  
    onClick: {  
      Fade: {  
        target: '#multiple li',  
        opacity: {to: 0},  
        onComplete: {Close : {} }  
      }  
    }  
  }  
});
```

# syntax

## \$proto(config)

single config object defines an interaction  
convenient for passing interactions around or saving to config files

```
$proto(  
{  
  'span[contains(X)]': {  
    SetStyle: {cursor:'pointer'},  
    Click: {  
      onClick: {  
        Fade: {  
          target: '#multiple li',  
          opacity: {to: 0},  
          onComplete: {Close : {} }  
        }  
      }  
    }  
  }  
});
```

# syntax

## \$proto(config)

single config object defines an interaction  
convenient for passing interactions around or saving to config files

```
var cfg = {'span[contains([X])]': {
  SetStyle: {cursor:'pointer'},
  Click: {
    onClick: {
      Fade: {
        target: '#multiple li',
        opacity: {to: 0},
        onComplete: {Close : {} }
      }
    }
  }
};
$proto(cfg);
```

# 0.1 beta

- Live at <http://protoscript.com>
  - Started it last month
  - reference implementation YUI + jQuery
  - 31 behaviors (including events)
  - 40+ live examples
  - full wiki site with all behaviors documented ([docs.protoscript.com](http://docs.protoscript.com))
- Open source
  - Code is at Google Code. Send me email if you want to participate will get you acces to SVN trunk
  - BSD license
- Bookmarklet
  - Just hack to start experimenting with GUI
  - Combined with firebug, works ok
  - Right now best on Firefox

# next steps

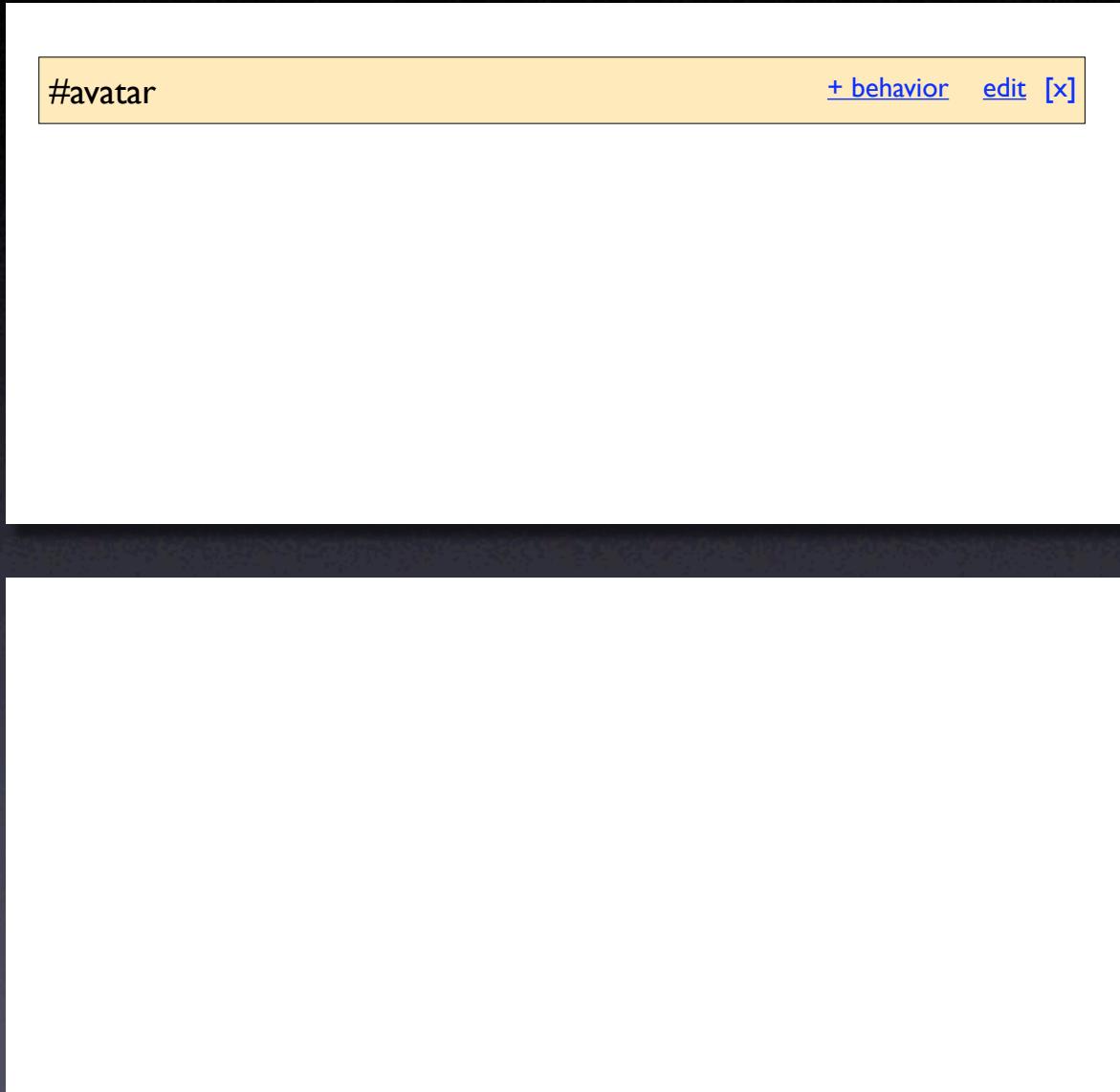
- 'You' write lots of behaviors
  - Wiki for docs
  - Google code for new behaviors & behavior sets
- New GUI tool
  - Most likely extend Firebug
  - Combine 'inspector' with behavior wizard to inject behaviors
  - Persist configurations for pages; allow re-load
- Flesh out behavior self-publishing
  - Will add spec on how to make behavior publish itself to a GUI tool

# lego-style interaction builder



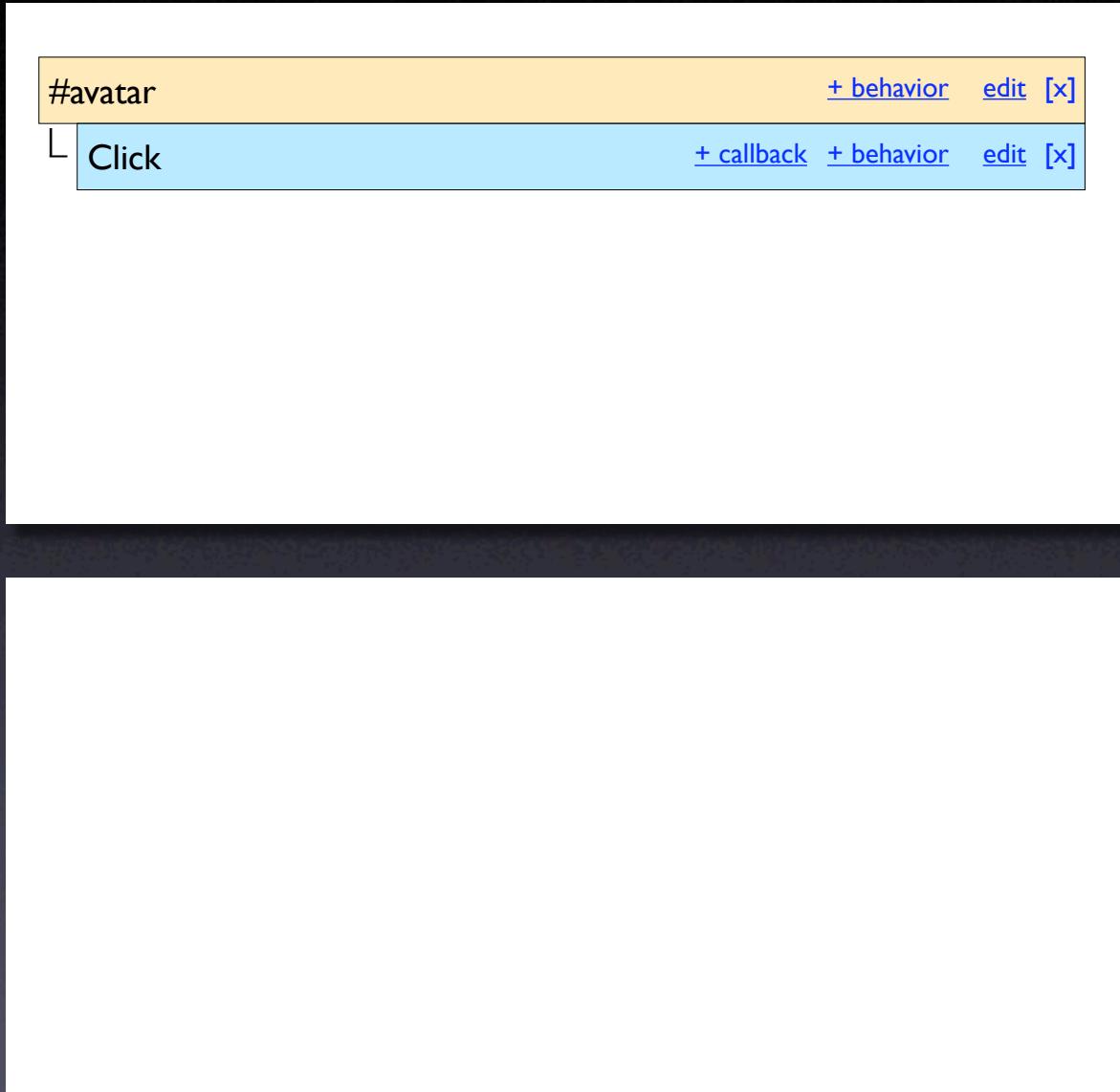
Animate  
ColorAnimate  
Fade  
Move  
Spotlight  
Close  
DragDrop  
Hide  
Open  
Popup  
ReplaceClass  
Script  
SetClass  
SetStyle  
Show  
ToggleClass  
ToggleOpenClose  
ToggleShowHide  
FetchHtml  
SetHtml  
Blur  
Click  
DblClick  
Focus  
Keypress  
Mousedown  
Mousemove  
Mouseout  
Mouseover  
Mouseup  
Timer

# lego-style interaction builder



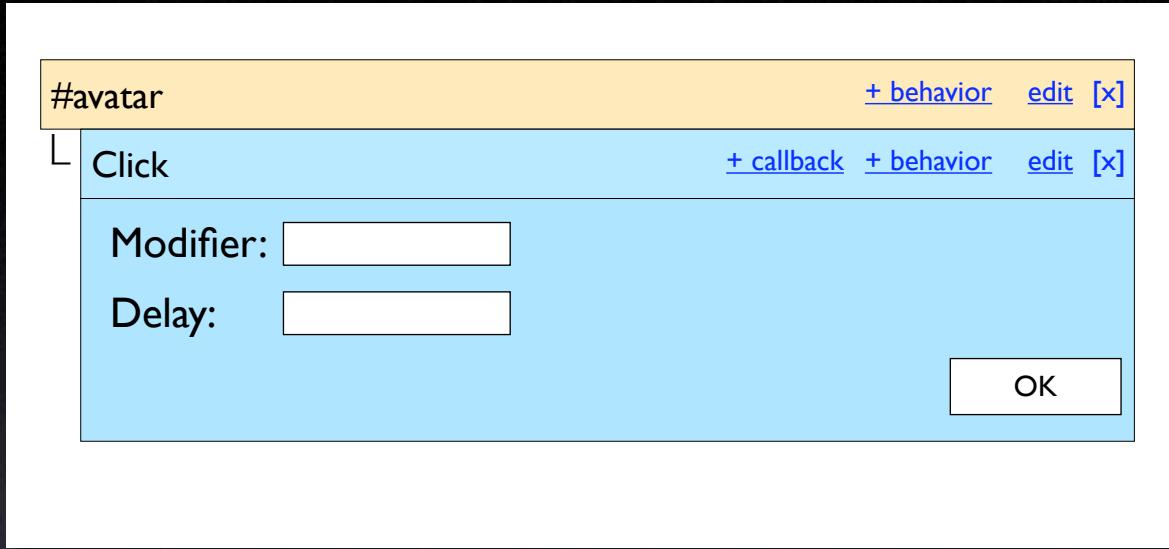
Animate  
ColorAnimate  
Fade  
Move  
Spotlight  
Close  
DragDrop  
Hide  
Open  
Popup  
ReplaceClass  
Script  
SetClass  
SetStyle  
Show  
ToggleClass  
ToggleOpenClose  
ToggleShowHide  
FetchHtml  
SetHtml  
Blur  
Click  
DblClick  
Focus  
Keypress  
Mousedown  
Mousemove  
Mouseout  
Mouseover  
Mouseup  
Timer

# lego-style interaction builder



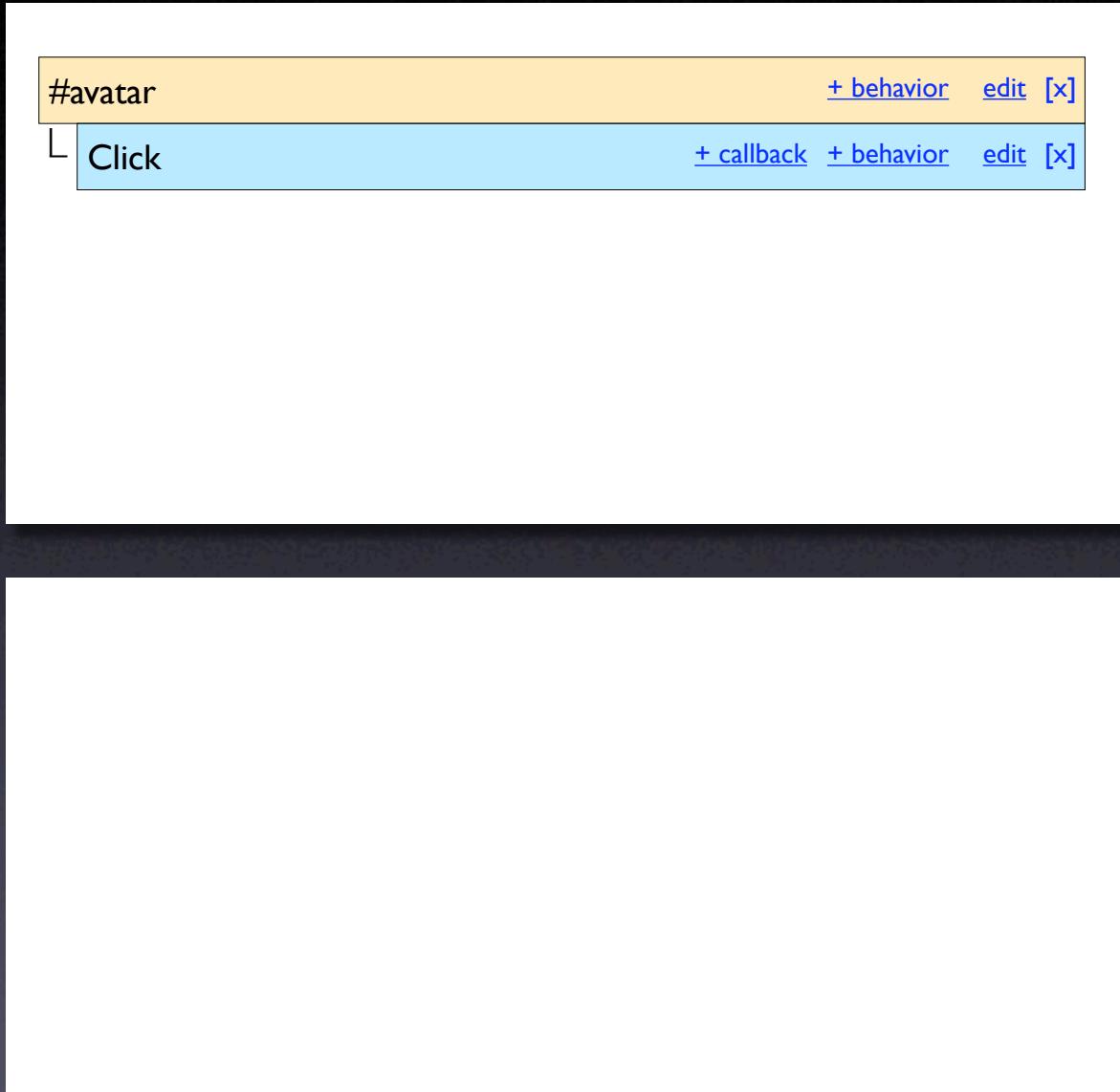
Animate  
ColorAnimate  
Fade  
Move  
Spotlight  
Close  
DragDrop  
Hide  
Open  
Popup  
ReplaceClass  
Script  
SetClass  
SetStyle  
Show  
ToggleClass  
ToggleOpenClose  
ToggleShowHide  
FetchHtml  
SetHtml  
Blur  
Click  
DblClick  
Focus  
Keypress  
Mousedown  
Mousemove  
Mouseout  
Mouseover  
Mouseup  
Timer

# lego-style interaction builder



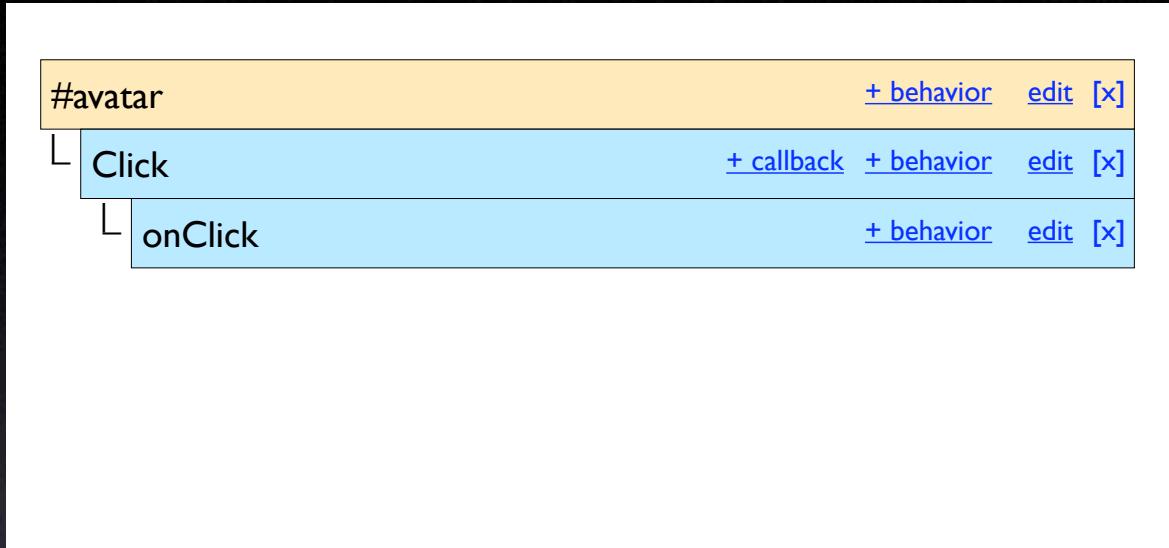
Animate  
ColorAnimate  
Fade  
Move  
Spotlight  
Close  
DragDrop  
Hide  
Open  
Popup  
ReplaceClass  
Script  
SetClass  
SetStyle  
Show  
ToggleClass  
ToggleOpenClose  
ToggleShowHide  
FetchHtml  
SetHtml  
Blur  
Click  
DblClick  
Focus  
Keypress  
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Mousemove  
Mouseout  
Mouseover  
Mouseup  
Timer

# lego-style interaction builder



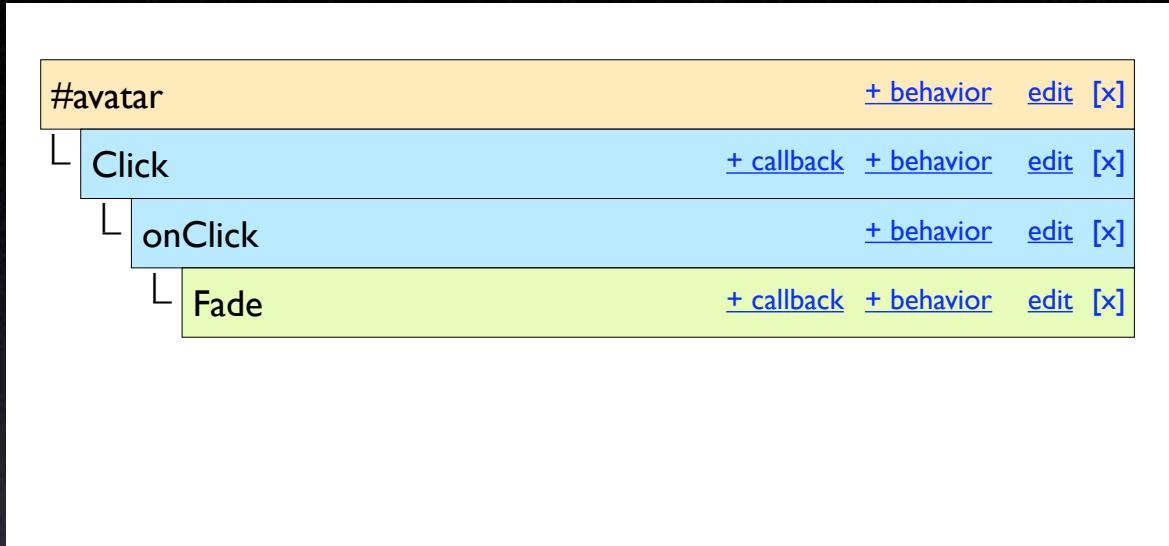
Animate  
ColorAnimate  
Fade  
Move  
Spotlight  
Close  
DragDrop  
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ReplaceClass  
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SetClass  
SetStyle  
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ToggleClass  
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ToggleShowHide  
FetchHtml  
SetHtml  
Blur  
Click  
DblClick  
Focus  
Keypress  
Mousedown  
Mousemove  
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Mouseover  
Mouseup  
Timer

# lego-style interaction builder



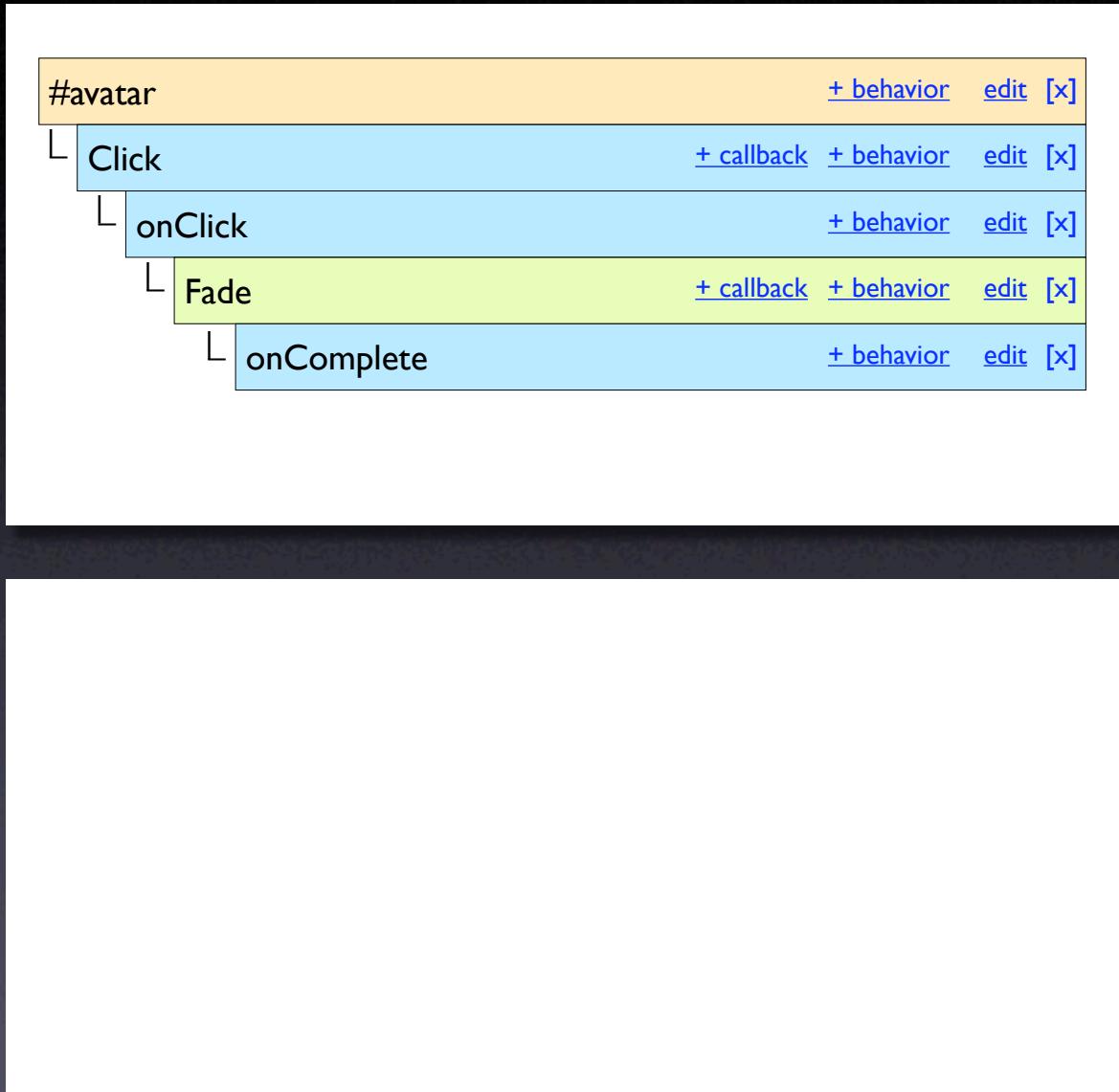
Animate  
ColorAnimate  
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Blur  
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DblClick  
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Keypress  
Mousedown  
Mousemove  
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Mouseup  
Timer

# lego-style interaction builder



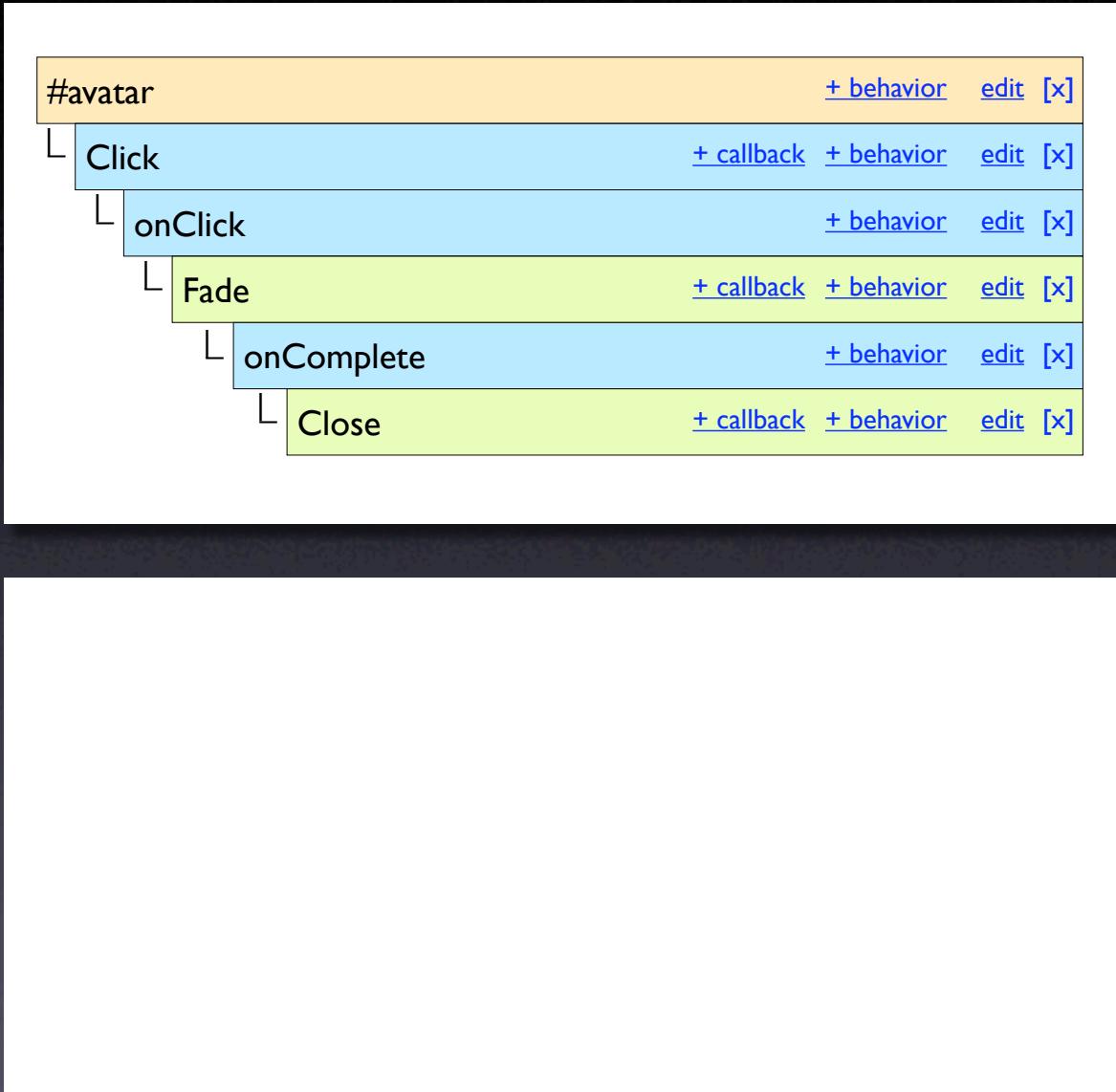
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ReplaceClass  
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# lego-style interaction builder



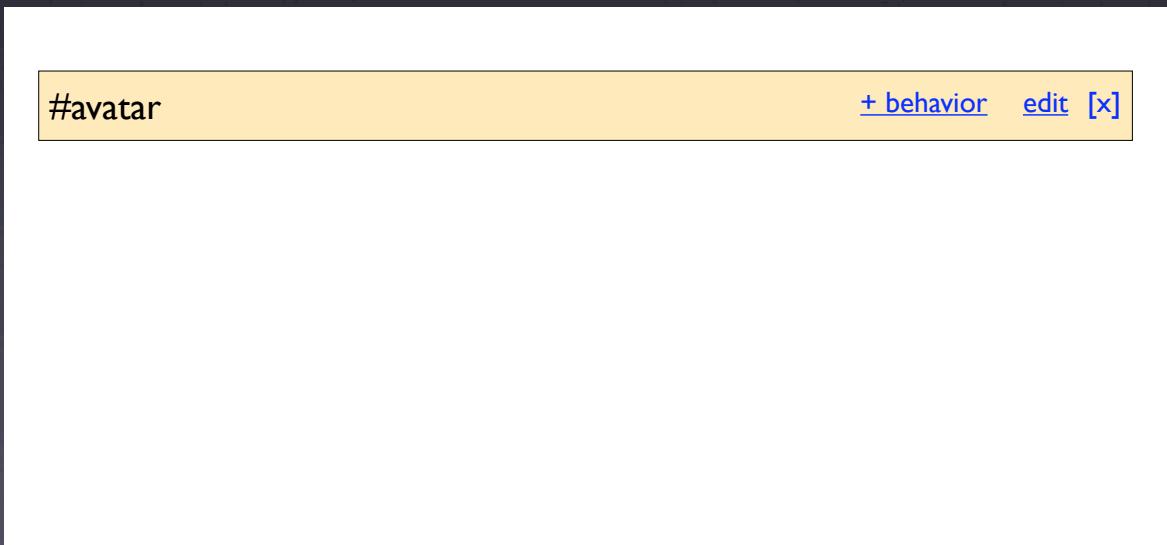
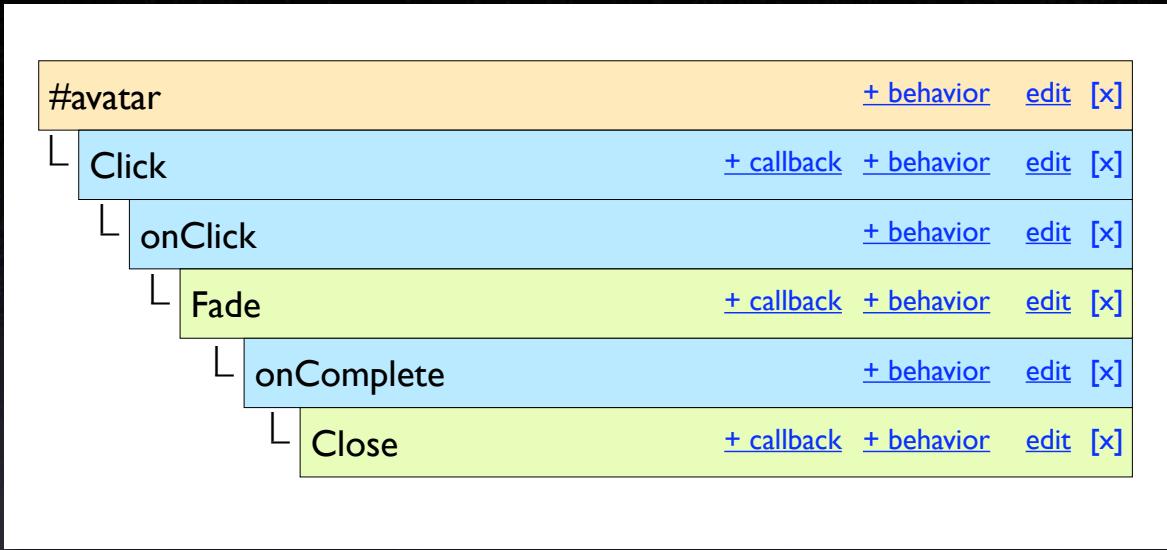
Animate  
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# lego-style interaction builder



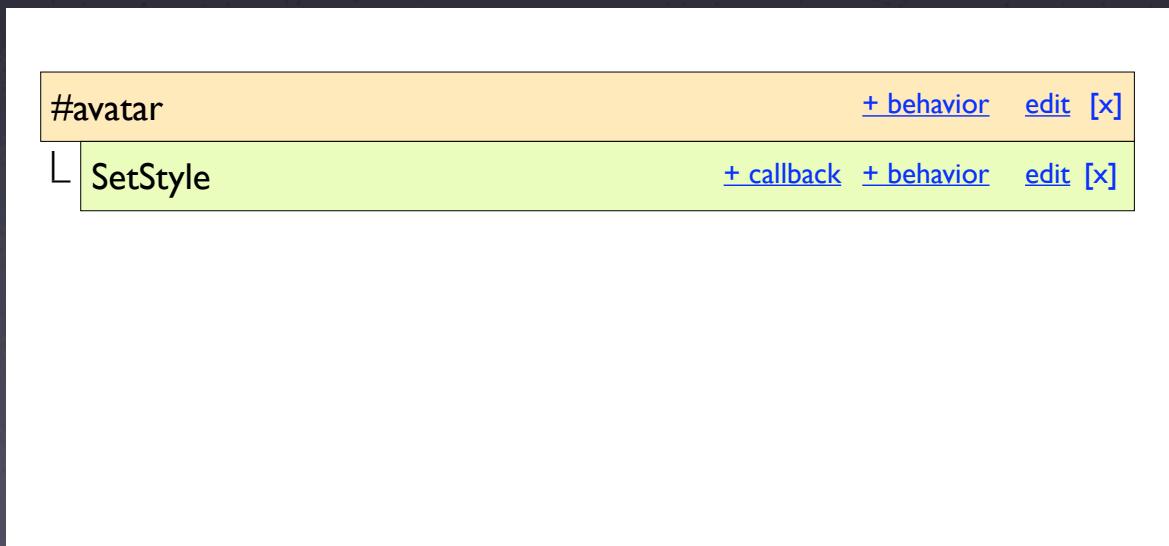
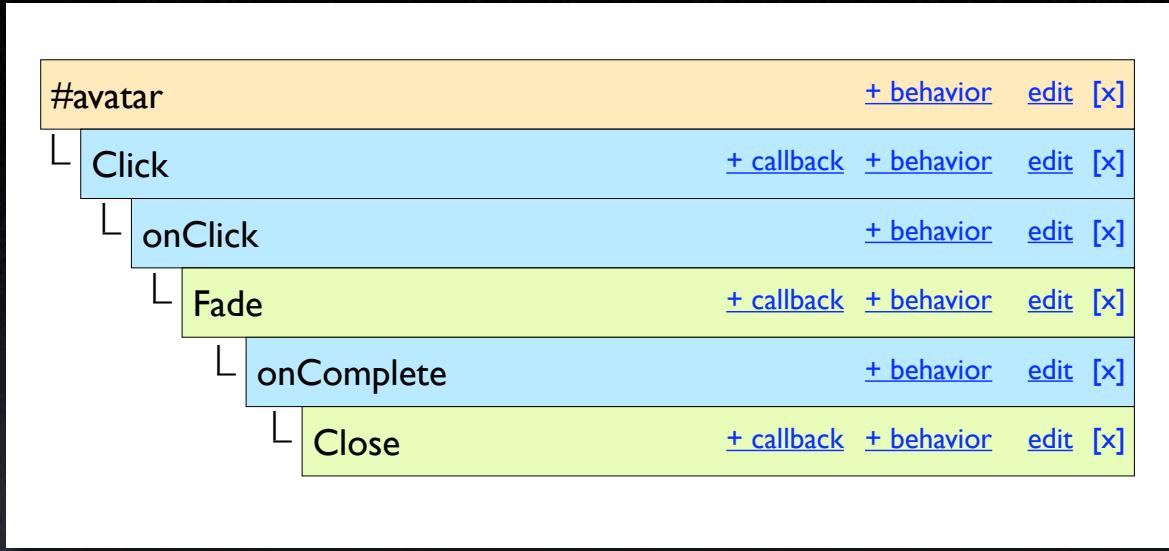
Animate  
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# lego-style interaction builder



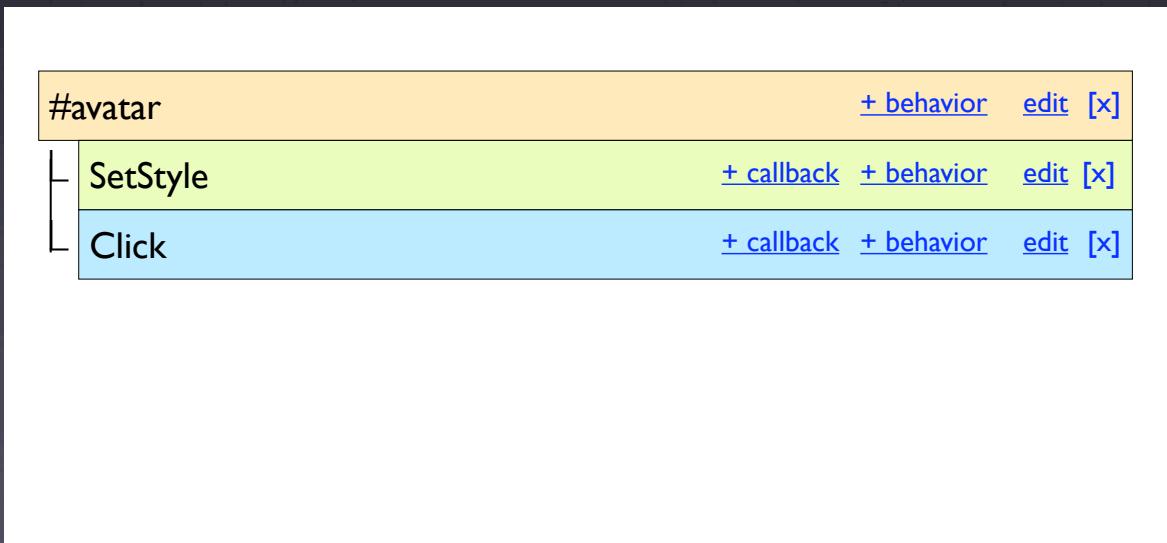
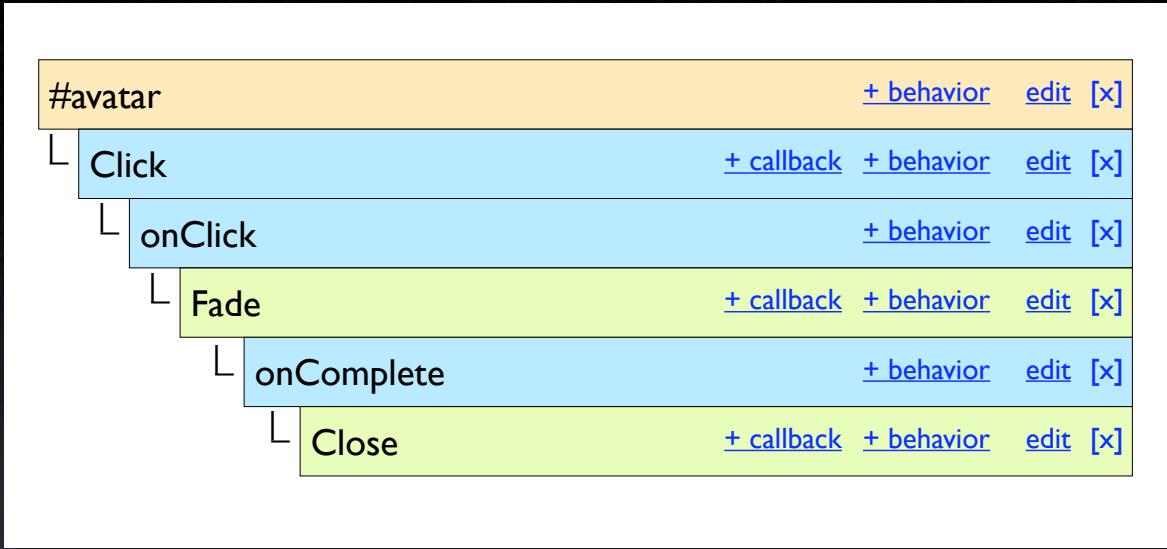
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# lego-style interaction builder



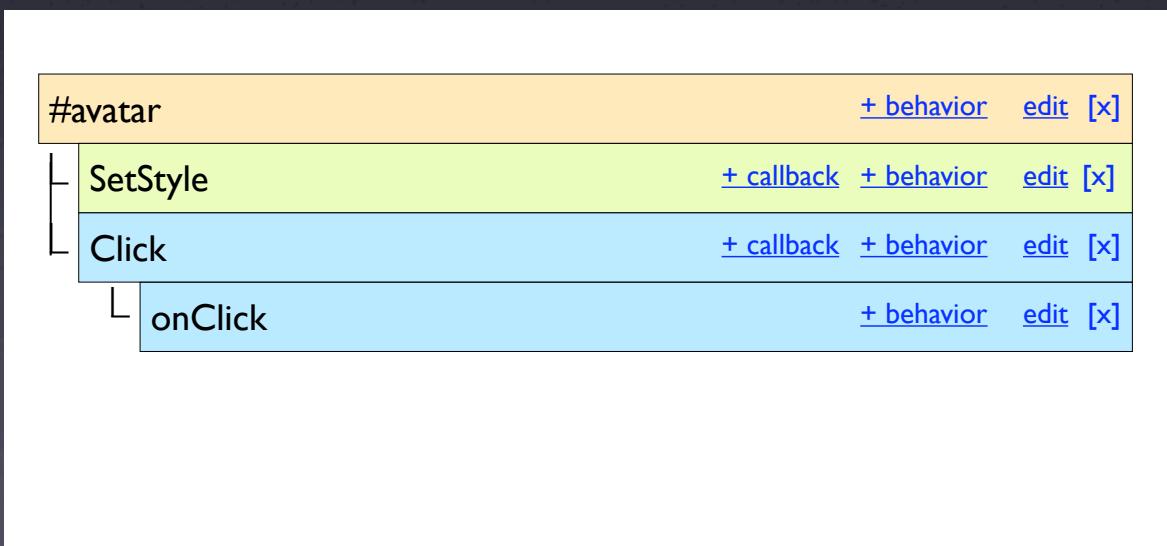
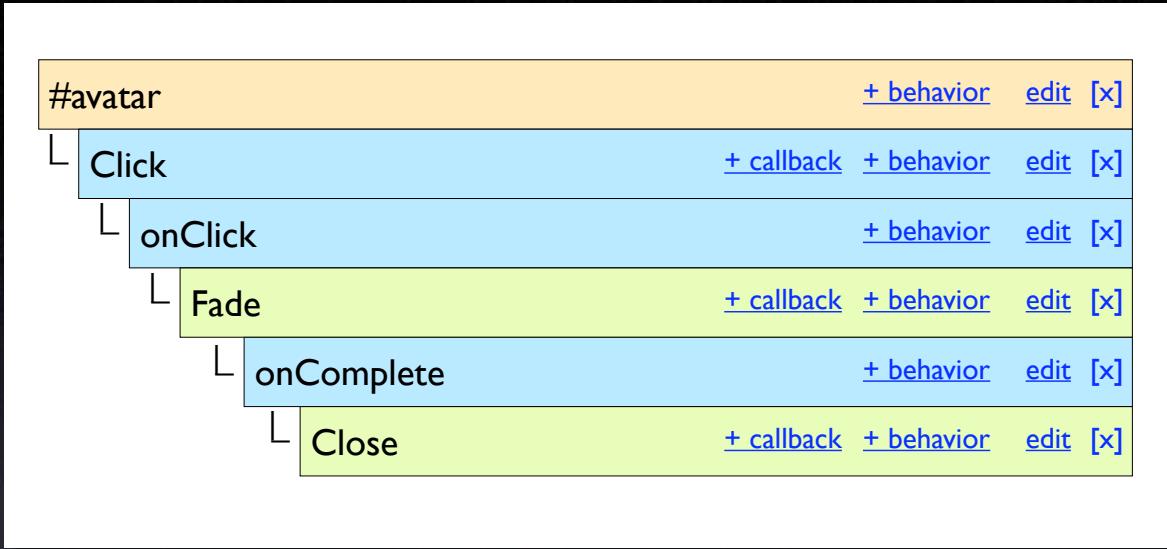
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# lego-style interaction builder



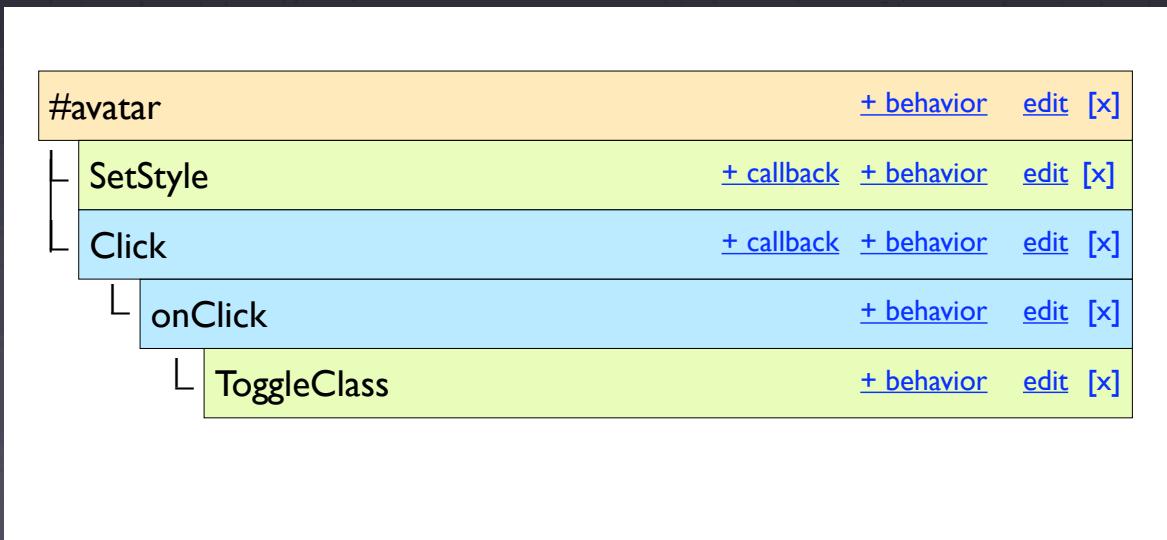
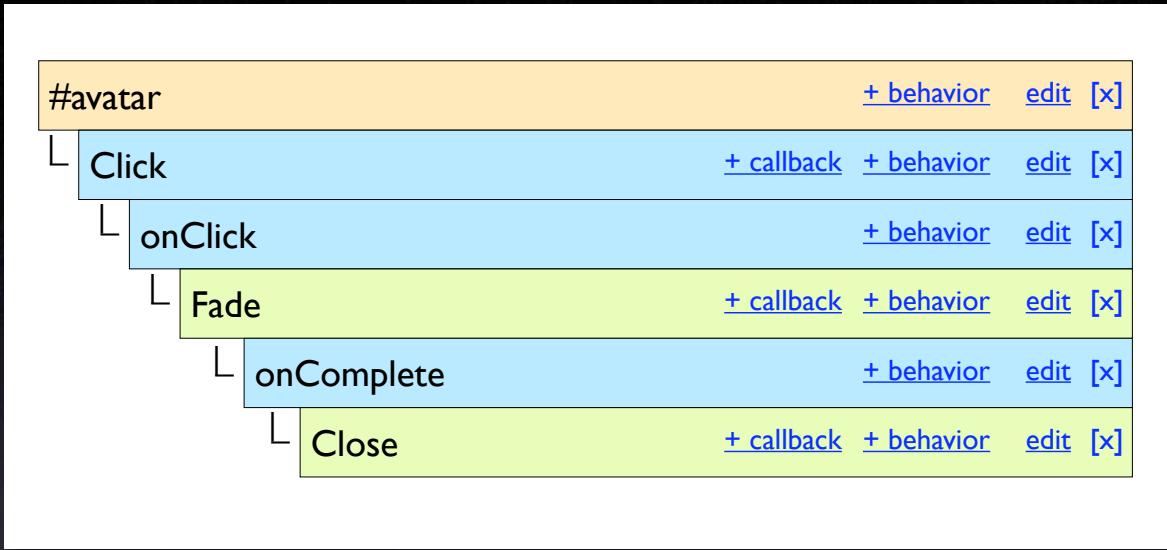
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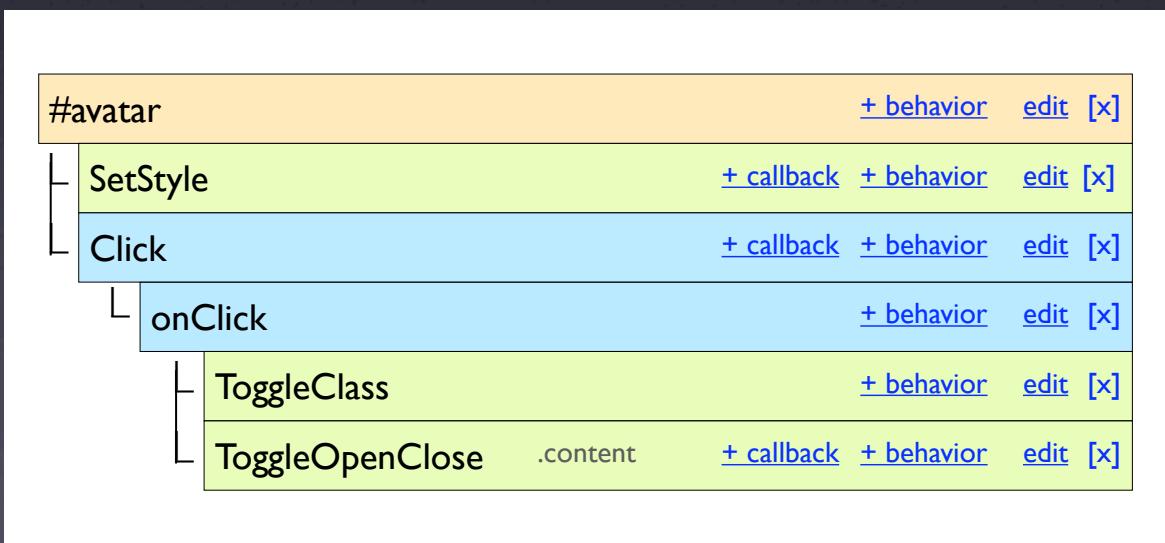
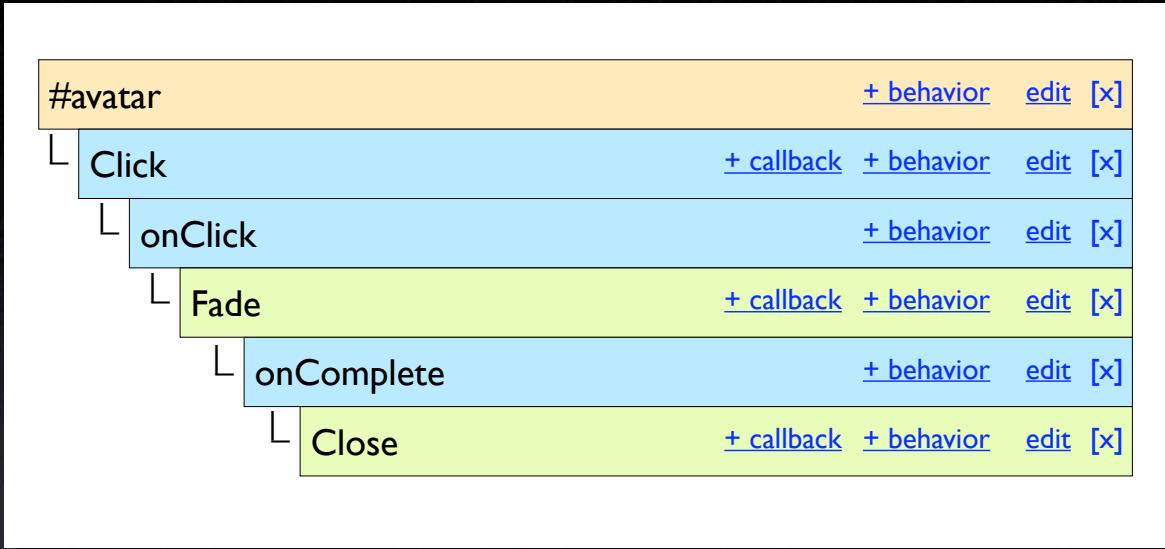
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# useful approaches (inspiration)

- Responder
  - <http://www.boxpop.net/responder>
  - given a style class name, associate behavior with those objects
- jQuery
- LivePipe's Event.Behavior
  - [http://livepipe.net/projects/event\\_behavior/](http://livepipe.net/projects/event_behavior/)
- Dustin Diaz, DED Chain
  - <http://dedchain.dustindiaz.com/>

# useful approaches (inspiration)

- Transclusions
  - including html from somewhere else on your page
  - <http://ajaxian.com/archives/purple-include-transclusions-you-know-you-want-them>
- DOMDom
  - nice way to express HTML for Dom insertion
  - <http://www.zachleat.com/web/2007/07/07/domdom-easy-dom-element-creation/>
  - (merge with protokit)
- Magic DOM
  - <http://amix.dk/blog/viewEntry/19199>
- Jester: JavaScriptian REST
  - <http://giantrobots.thoughtbot.com/2007/4/2/jester-javascriptian-rest>
- JavaScript Templating Library: MJT
  - <http://mjtemplate.org/>

# useful approaches (inspiration)

- moz-behaviors (dean.edwards.name)
  - <http://dean.edwards.name/moz-behaviors/intro/>
  - uses CSS Linking mechanisms
  - <http://www.w3.org/TR/becss>
- ClassAnim
  - <http://blog.mozmonkey.com/2007/classanim-hoverhijax-keeping-presentation-out-of-your-javascript/>
- JDA Emulator: Spring for JS
  - Adds properties to the HTML tags themselves
- Ben Nolan's Behavior Library
  - <http://www.ccs.neu.edu/home/dherman/javascript/behavior/>
  - <http://www.ccs.neu.edu/home/dherman/javascript/behavior/example.html>
  - Ben Nolan, Dave Herman, Simon Wilison
- Prototype Behavior Library (built on prototype.js)

# more resources

## Articles

- Web 3.0 article: [www.alistapart.com/articles/web3point0/](http://www.alistapart.com/articles/web3point0/)
- [looksgoodworkswell.blogspot.com/2005/11/visio-wireframe-toolkit-for-download.html](http://looksgoodworkswell.blogspot.com/2005/11/visio-wireframe-toolkit-for-download.html)
- [looksgoodworkswell.blogspot.com/2005/11/animating-interactions-with-photoshop.html](http://looksgoodworkswell.blogspot.com/2005/11/animating-interactions-with-photoshop.html)
- Prototyping with PowerPoint: [blogs.msdn.com/jensenh/archive/2006/02/20/535444.aspx](http://blogs.msdn.com/jensenh/archive/2006/02/20/535444.aspx)
- Visio - the interaction designer's nail gun: [http://www.guuui.com/issues/01\\_06.php](http://www.guuui.com/issues/01_06.php)
- PDF Prototyping: [http://www.gotomedia.com/gotoreport/may2005/news\\_0505\\_usable1.html](http://www.gotomedia.com/gotoreport/may2005/news_0505_usable1.html)

## Products

[www.axure.com/demo.aspx](http://www.axure.com/demo.aspx)

iRise Application Simulator: [irise.com](http://irise.com)

## Visio Stencils

[www.boxesandarrows.com/view/storyboarding\\_rich\\_internet\\_applications\\_with\\_visio](http://www.boxesandarrows.com/view/storyboarding_rich_internet_applications_with_visio)

Visio Stencil Library: [swipr.com](http://swipr.com)

Wireframe Stencils: <http://iainstitute.org/tools/>

Garrett Dimon's Stencils: <http://www.garrettdimon.com/resources/templates-stencils-for-visio-omnigraffle>

site - <http://protoscript.com>

blog - <http://looksgoodworkswell.com>

presentation - <http://billwscott.com/share/presentations/2007/rwe>