

Lecture 7:

Implementing a Prototype:

Overview of Using PowerPoint, Adobe Illustrator, Adobe Fireworks, Balsamiq, OmniGraffle, html, etc.



Brad Myers

05-863 / 08-763 / 46-863: Introduction to
Human Computer Interaction for
Technology Executives

Fall, 2011, Mini 2

Housekeeping

- Propose change to TA office hour:
 - No one shows up for Anthony's on Wed 1:30-2:30
 - Lots of people at Preethi's on Sunday 3:00pm-4:00pm
 - Move both to Sunday?
 - Have one on Saturday?
- Third TA
 - Brian Yee byee@cmu.edu
 - Office hours on Friday 3-4 in NSH 2507?



From my Email

- Homeworks on the wall outside my office, NSH 3517, in the black folders.
- The average of the grades on HW #1 was 86%.
The main reason people lost points was because of not following the directions.
- Reminder of late policy: 10 points per class period.
- Option for revised HW #2.
- Note updated HW #3 description.

Implementing your Prototype

- How “complete” an implementation for HW4?
 - Screen transitions must work
 - All buttons should do something, even if go to a “not implemented yet” page
 - Search, other computation does *not* have to work
 - “Click-through” level of behaviors
- Level of complexity required:
 - (Same as listed on homework0 page)
 - At least 30 “controls” (widgets: buttons, text fields)
 - About 10 different screens/pages/windows/modes
 - Must be done in one (1) week – no extensions!

“Wireframe” Level Prototype

- Outlines of the buttons and controls
- No need for final graphics
- Our requirement: sufficient functionality to support your tasks
- Labels should be the real ones
 - So can test that users understand what they do



The wireframe shows a web browser window titled "music store". The navigation bar includes links: [Home](#) -> [Music](#) -> [Genre](#) -> Artist, [Log out](#), [Your Cart](#), and [Your account](#). The main content area is divided into three columns. The left column (labeled 1) contains a search box with "music" entered, a "Go" button, and a "Related Artists" section with links for "Artist 1" and "Artist 2". Below that is a "Popular Tracks" section with "Track 1" and "Track 2", each with a "Listen" link. The middle column (labeled 2) displays the "ARTIST NAME" and a description: "This is a description about the artist. This will talk about their bio and short listing of their discography". The right column (labeled 3) features a large dashed box for "Album Art", a "Choose an album:" section with a list of "Album Title 1", "Album Title 2", and "Album Title 3", and a "Price: \$16.99" label. At the bottom right is an "Add to Cart" button. A checkbox labeled "send me updates on this artist" is located at the bottom left of the main content area.

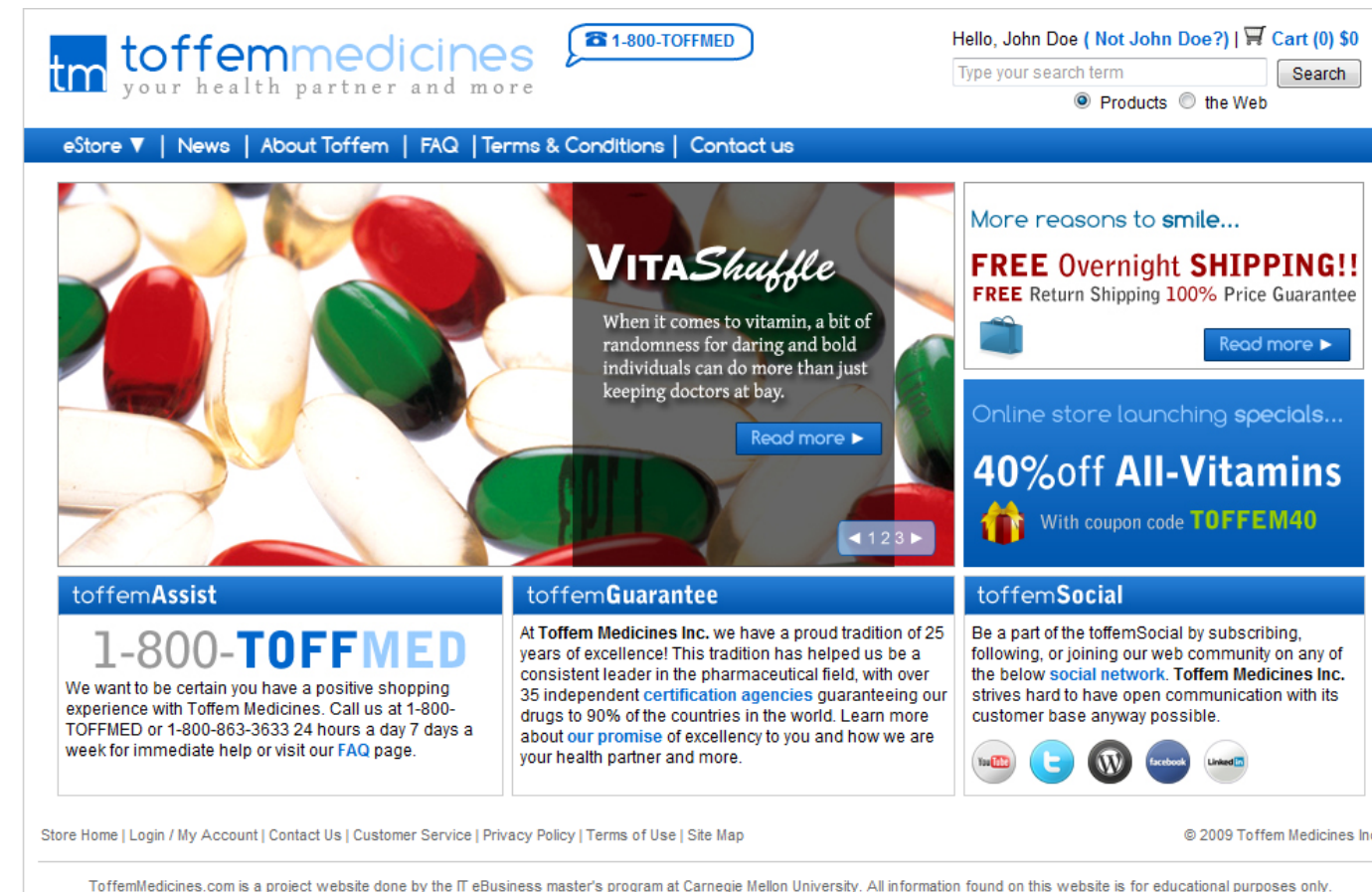
1 For Q1 release, music search only

2 Related artists determined by user purchasing data mining

3 Album art to be approved by legal

Or, Produce Final-Looking Graphics

- Alternatively, could use Photoshop, Illustrator, etc. and produce final graphics
 - Designers want to show what real UI will look like
 - Details of the “look”
- Web pages often use final graphics
 - E.g., Toffem Medicines
- Add “click-through” behaviors
 - Usually limited mostly to screen transitions



Implementation Options for HW4

- Pretty much any way you want
 - Must “work” – not just paintings
 - “Click-through prototypes ”
 - Note: TAs and prof. will probably *not* be able to help you with your code
- We recommend you do not use Java, C++, Objective C (iPhone) or other “professional” language
- Note: you must be able to create software that is *easy* for others to *run*
 - Output a set of web pages, or a Windows .exe file

Recommended Options

- These are easiest to use:
 - PowerPoint – Brad demo
 - Mockingbird web app (gomockingbird.com) – Brad demo
 - [Adobe Illustrator](#) / [Adobe Fireworks](#) – Preethi demo
 - Free 30 day trials
 - [Balsamiq](#) – Anthony demo
 - [OmniGraffle](#) (Macintosh only) – Anthony demo
 - Html + Imagemaps
 - Using editor like Dreamweaver – Brad demo
 - Dreamweaver has a [free 30-day trial](#)
 - Html + Javascript (more programming)
 - Adobe Flash – [free trial](#)

Many other choices

- Axure is a popular commercial tool
 - www.axure.com
- Visio for wireframes
- Microsoft Expression Blend / Sketchflow
 - Free for students from www.dreamspark.com
- Microsoft Visual Basic
- Processing (www.processing.org)
- Python, tcl/tk, ... or other desktop programming tool
- Ruby on Rails, or any other web scripting system
- <http://mockupscreens.com/>

Lots of Lists of Tools

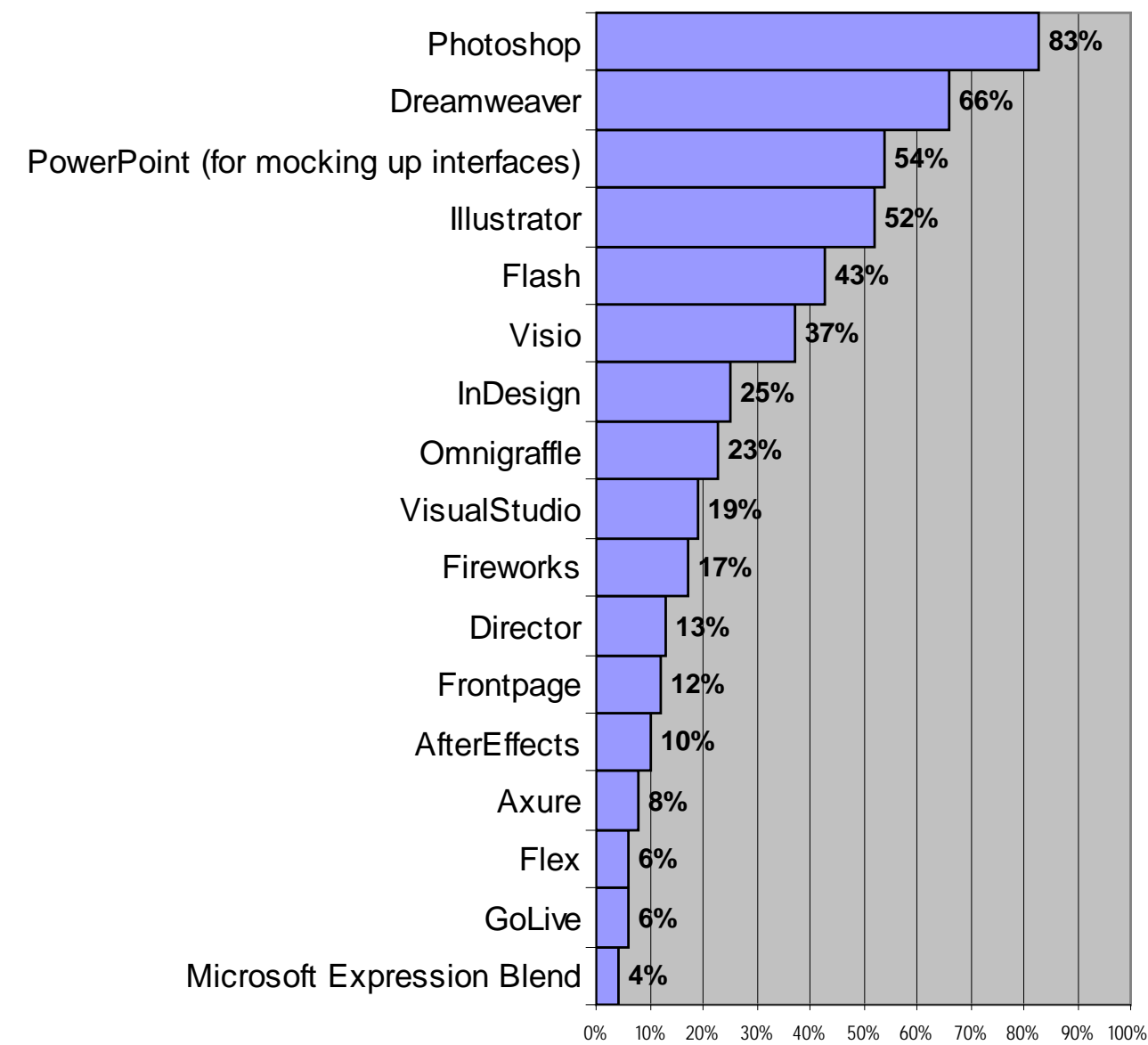
- Search for “Prototyping tools” or “Wireframing Tools”
 - <http://mashable.com/2010/07/15/wireframing-tools/> - “10 free wireframing tools”
 - <http://www.uxbooth.com/blog/15-desktop-online-wireframing-tools/>
 - <http://www.tripwiremagazine.com/2010/04/15-best-wireframing-tools-for-designers.html>
 - http://www.uie.com/articles/prototyping_tools/?link=tips100318_6
 - <http://c2.com/cgi/wiki?GuiPrototypingTools>

What Are People Using?



- http://www.uie.com/articles/prototyping_tools/?link=tips100318_6
- Mar 18, 2010
- My survey results are similar (2007)

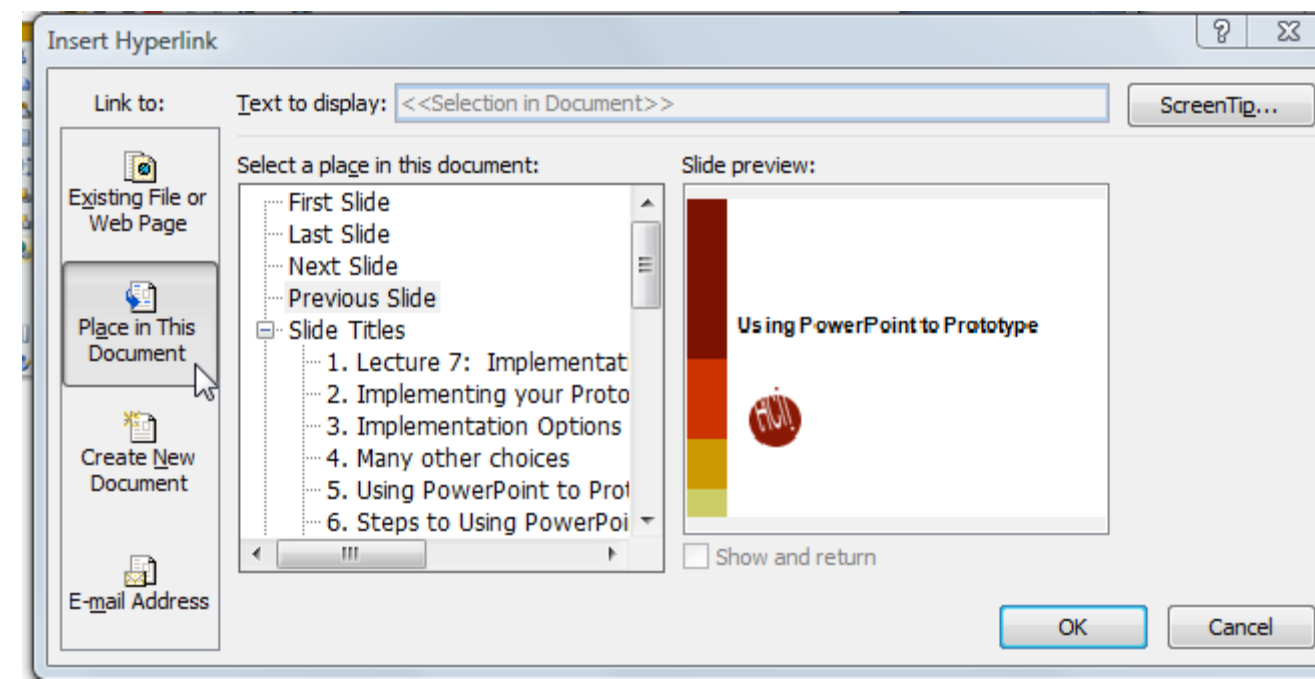
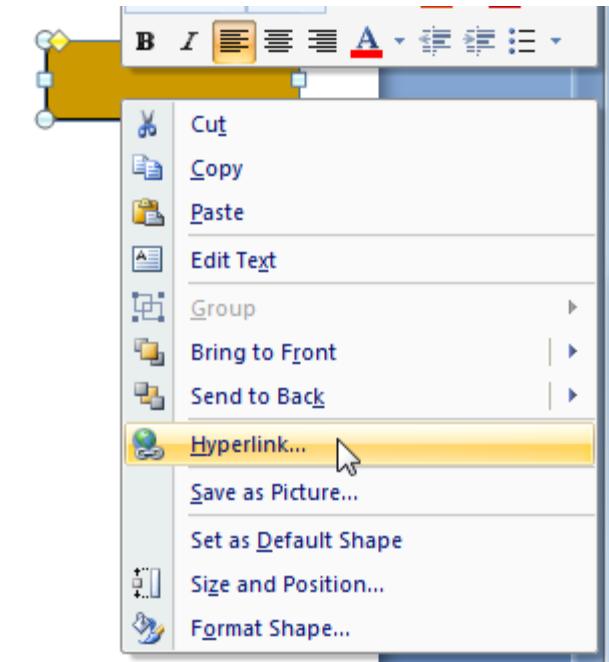
TABLE 5.1 SURVEY RESULTS OF COMMON PROTOTYPING TOOL USAGE

<i>Paper</i>	77.0%
<i>Visio</i>	59.0%
<i>PowerPoint</i>	43.0%
<i>Dreamweaver</i>	47.0%
<i>Axure</i>	30.0%
<i>OmniGraffle</i>	30.0%
<i>Illustrator</i>	23.0%
<i>Flash</i>	21.0%
<i>Acrobat</i>	19.0%
<i>Fireworks</i>	18.0%
<i>InDesign</i>	12.0%
<i>Photoshop</i>	10.0%
<i>Other HTML editor</i>	4.0%
<i>Keynote</i>	3.0%
<i>Flex</i>	2.0%
<i>Blend</i>	0.2%
<i>iRise</i>	0.1%
<i>Other (Excel, FileMaker)</i>	0.1%



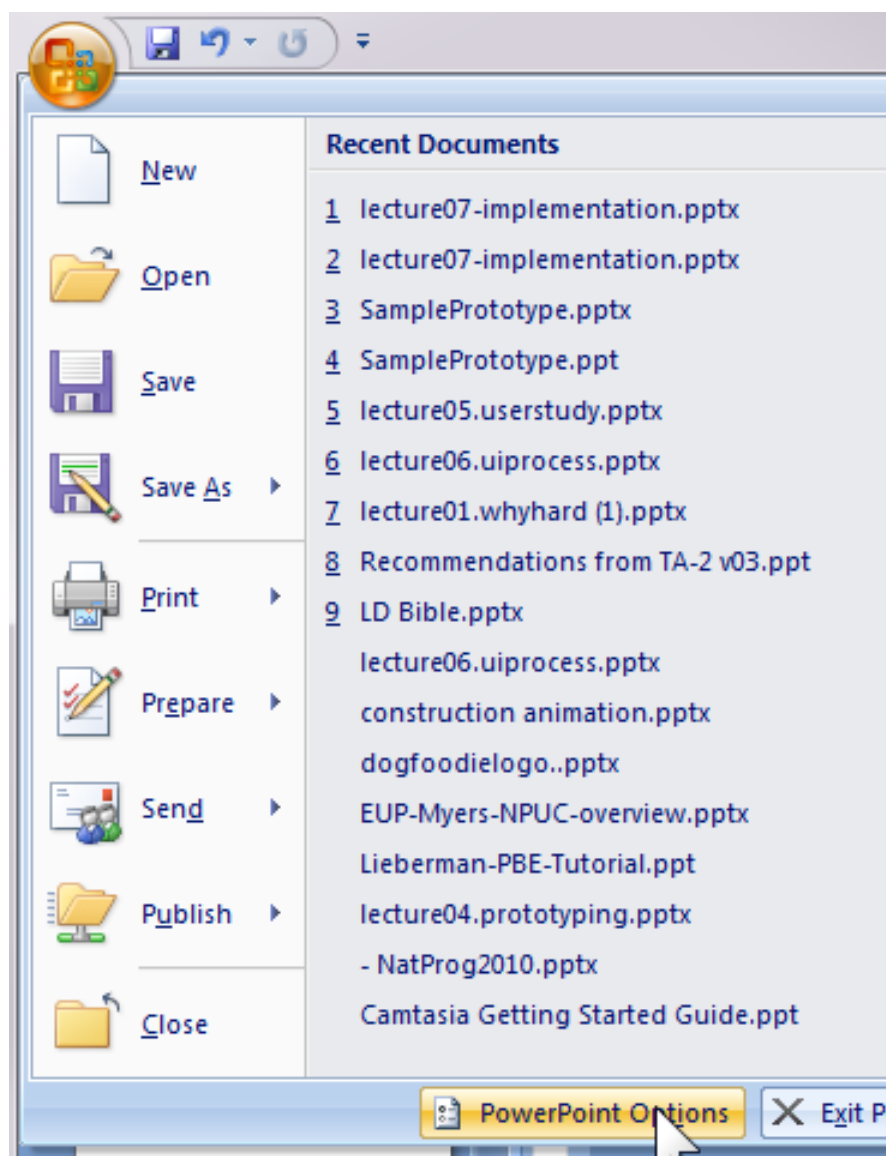
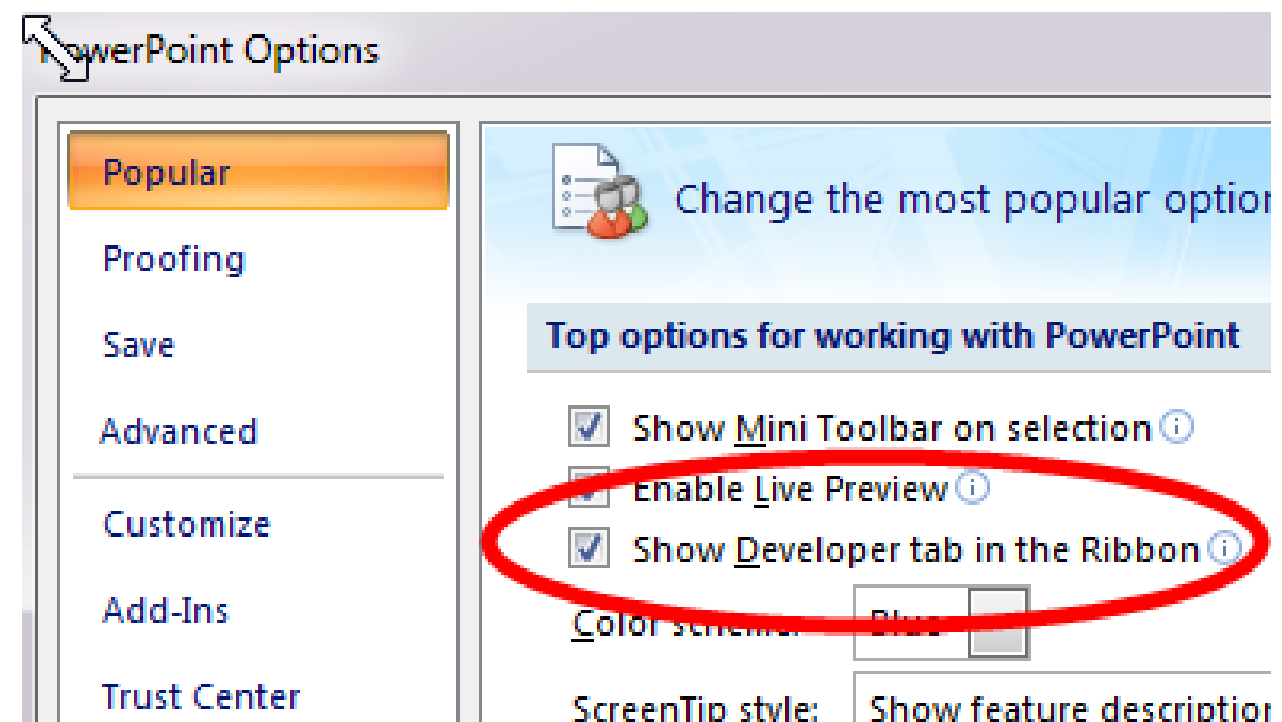
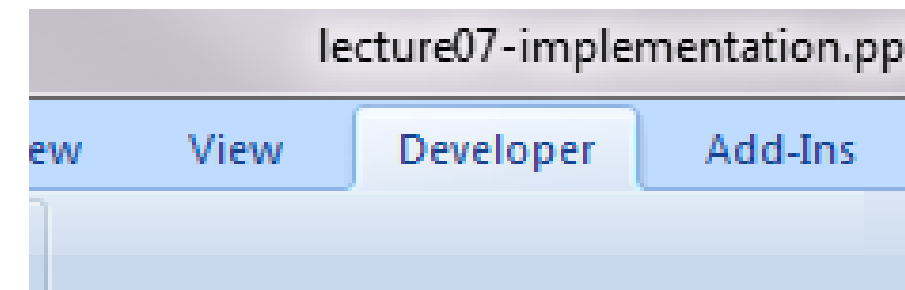
Using PowerPoint to Prototype

- Add a shape, with a label 
- Add a hyperlink: 
- Select “Place in this document”
- Create a slide for each mode of the application
- Can add nice animations



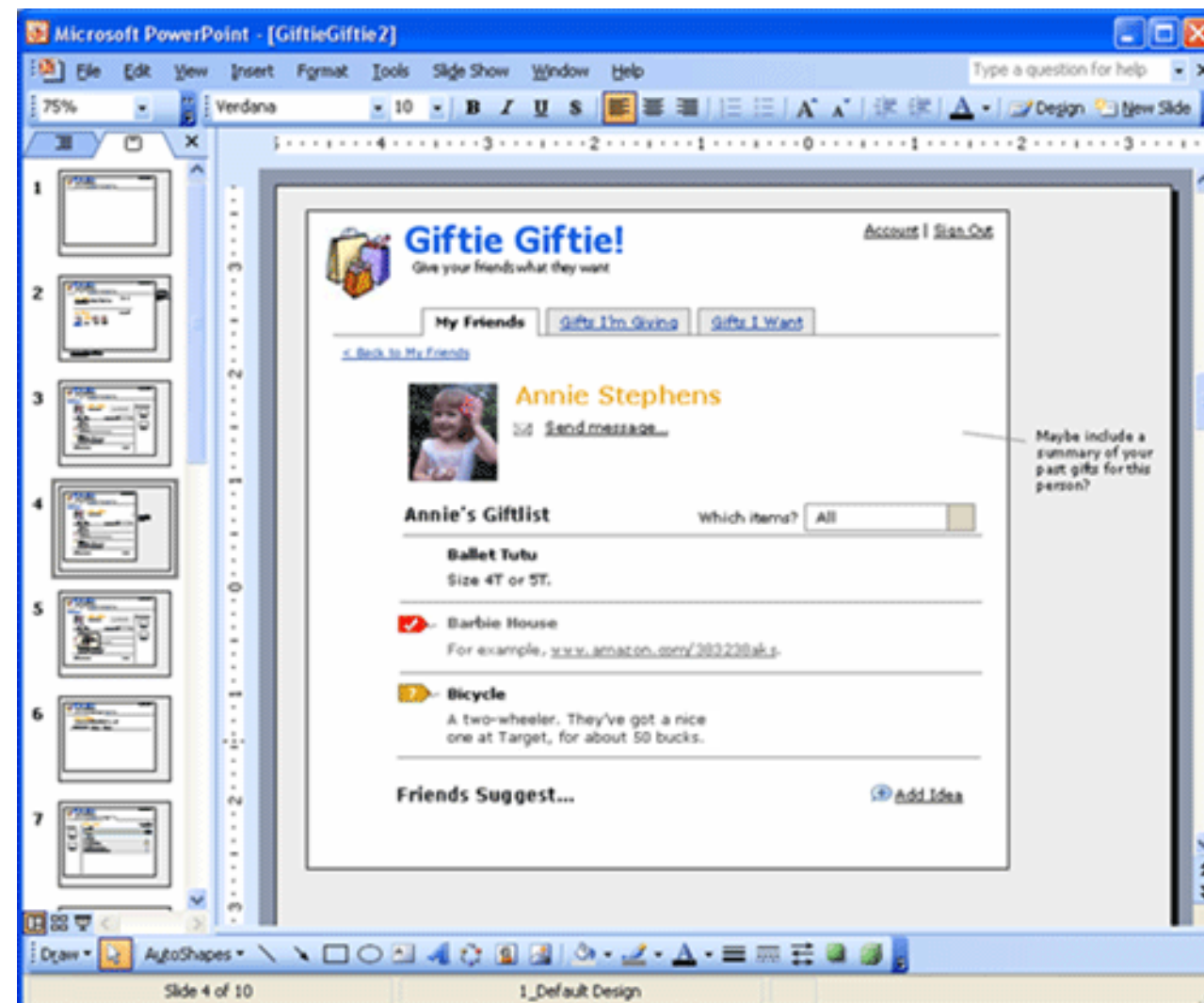
Adding Controls in PowerPoint

- Turn on “Developer Toolbar”
 - Can add buttons, text entry, etc.
 - Script with VB



PowerPoint examples

- Great training in using PowerPoint:
 - <http://www.boxesandarrows.com/view/interactive>
 - by Maureen Kelly on 2007/08/06

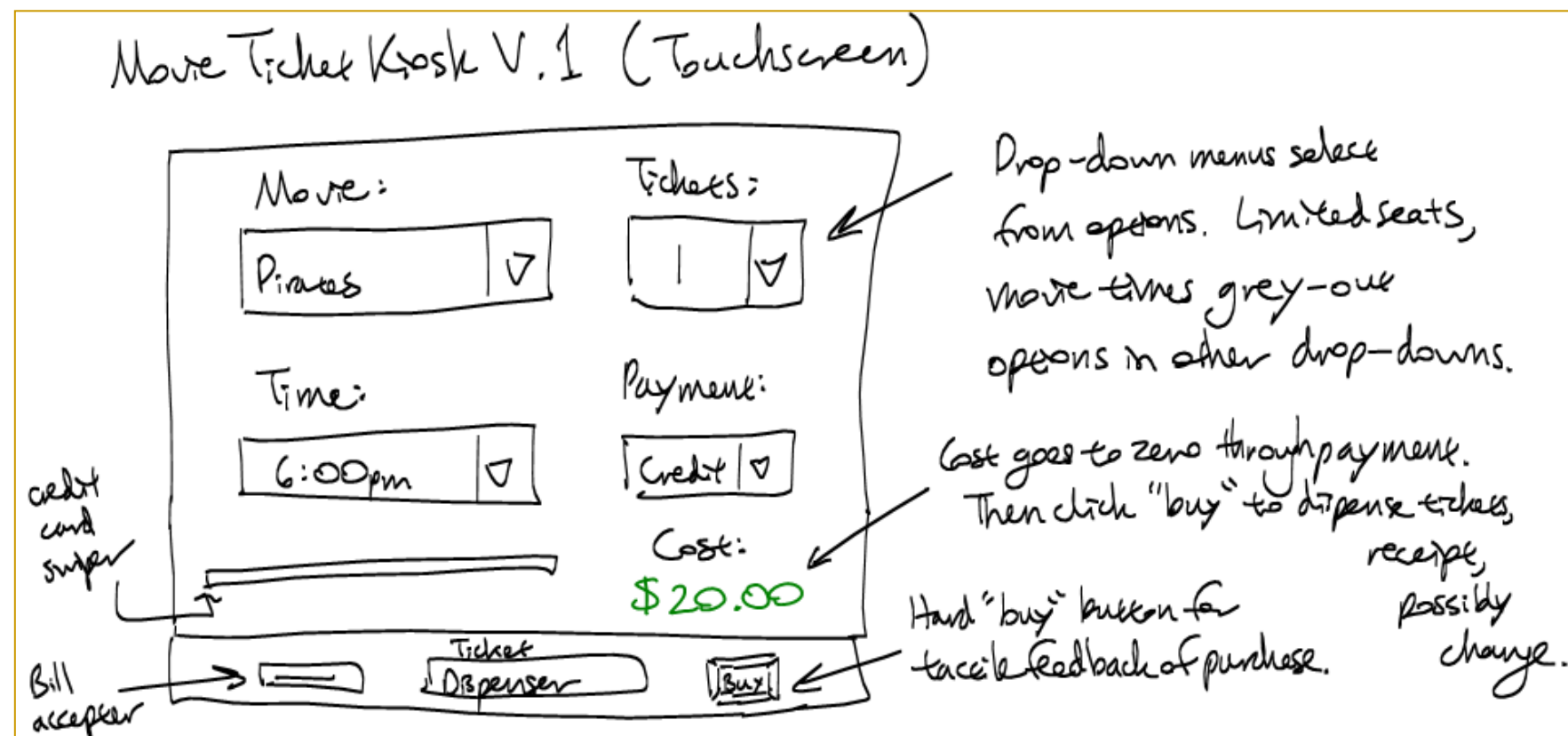


Html editing

- Can use web editors to prototype any kind of interface
 - Tricky for detailed layout
- Can edit html using
 - Microsoft Word (not recommended)
 - Microsoft Expression Web (Blend)
 - free for students: www.dreamspark.com
 - Adobe Dreamweaver
 - free trial: <https://www.adobe.com/cfusion/tdrc/index.cfm?product=dreamweaver>
 - Dreamweaver CS5 (Adobe) in Clusters
 - Many others

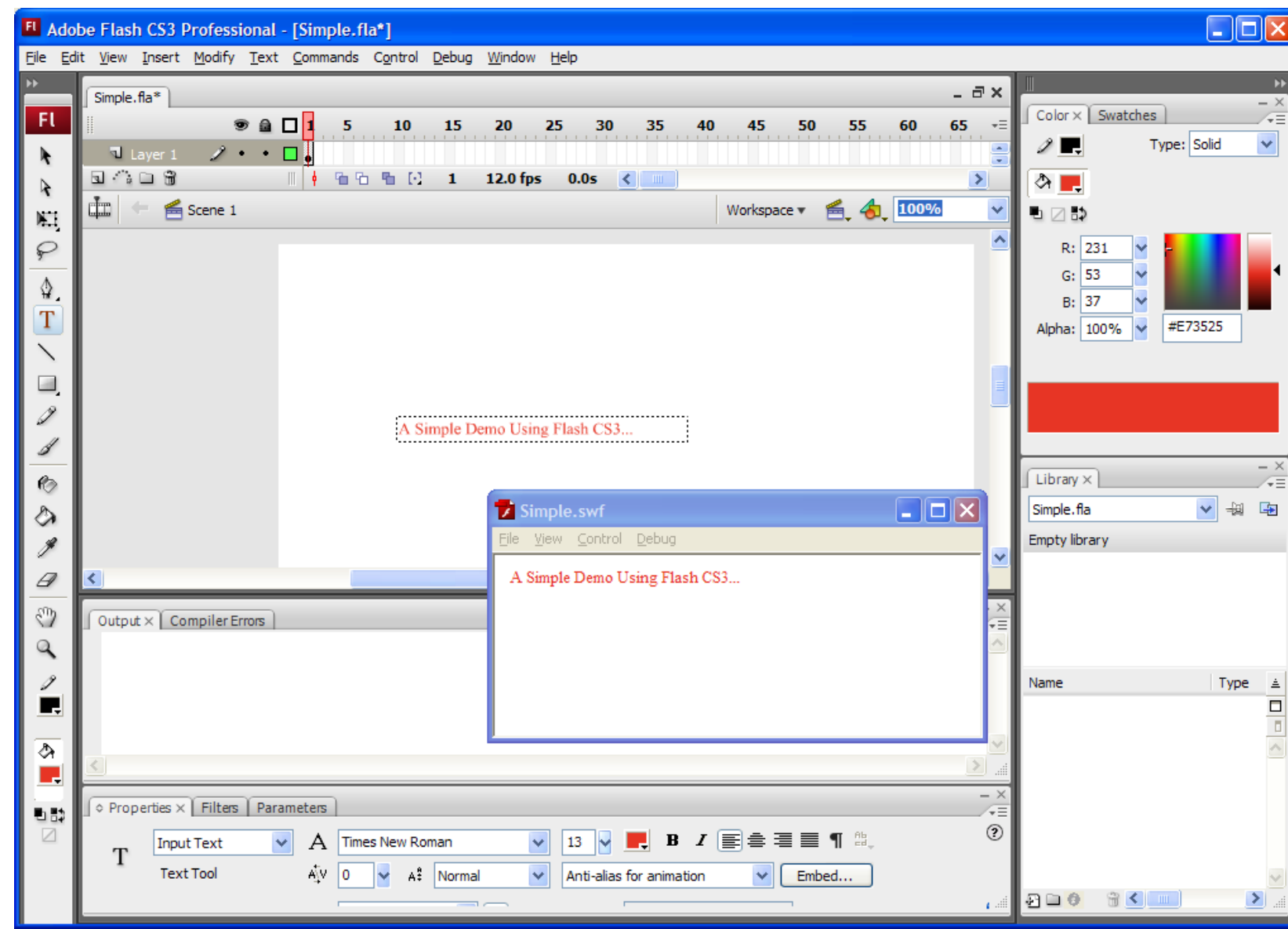
Example: Movie Kiosk

- Dreamweaver works a lot like Word
- Hint: use tables a lot for layout
- Hint: Controls are in “forms”
- Make use of the web for “how-to’s”
 - E.g., “html button link”



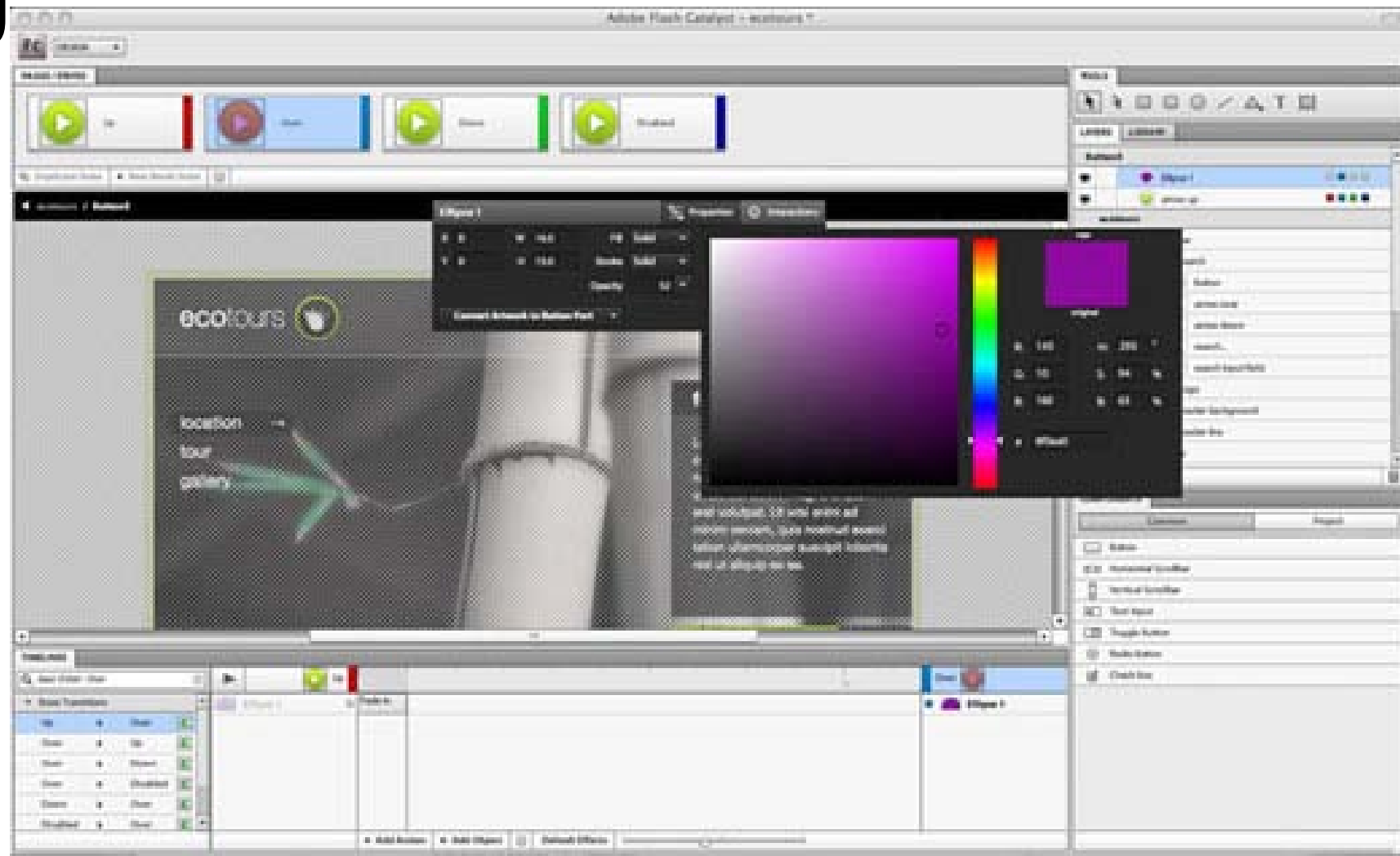
Adobe Flash

- Free trial: <http://www.adobe.com/products/flash/>
- Originally an animation tool
 - Interactive editor with timeline
- Also scripting in “ActionScript” (= JavaScript)
 - Hint: ActionScript v.2 much easier to use than v.3
- De-emphasized in future



Adobe Flash Catalyst

- Brand new tool in CS5
 - (I consulted a little during its early design)
 - De-emphasized ☹
- Allows some of the behavior to be specified without scripting
 - States & animations
- Currently, no “round tripping”



TA-Run Demos

- Adobe Illustrator / Adobe Fireworks – Preethi demo
 - Free 30 day trials
- Balsamiq – Anthony demo
- OmniGraffle (Macintosh only) – Anthony demo

OmniGraffle

- Generally used for diagramming and modeling
- Allows clickable prototypes by linking canvases and export *each page* to HTML
- Download:
 - <http://www.omnigroup.com/products/omnigraffle>
- Konigi Stencils:
 - <http://konigi.com/tools/omnigraffle-wireframe-stencils>
- Yahoo Design Stencil Kit:
 - <http://developer.yahoo.com/ypatterns/about/stencils/>

Adobe Fireworks

- Preferred by HCI professionals
- Allows clickable and interactive prototypes
 - Create pages and link pages via hot spots assigned to sections of the page.
 - Export *each page* to HTML for an interactive prototype.
- Download:
 - <http://www.adobe.com/cfusion/tdrc/index.cfm?product=fireworks>
- Download Stencils to Commons Library:
 - <http://developer.yahoo.com/ypatterns/about/stencils/fireworks.html>



PROTOTYPING TOOLS

Balsamiq & Adobe Illustrator

Balsamiq is a quick drag & drop prototyping tool.

- Many common UI components (input components, links, breadcrumbs, tables, grids, tabs, iOS, the list goes on!)

Paid Version (\$79)

- Importing images, work with multiple mockups simultaneously, linking mockups together, master pages / reusable components

Balsamiq : Basics

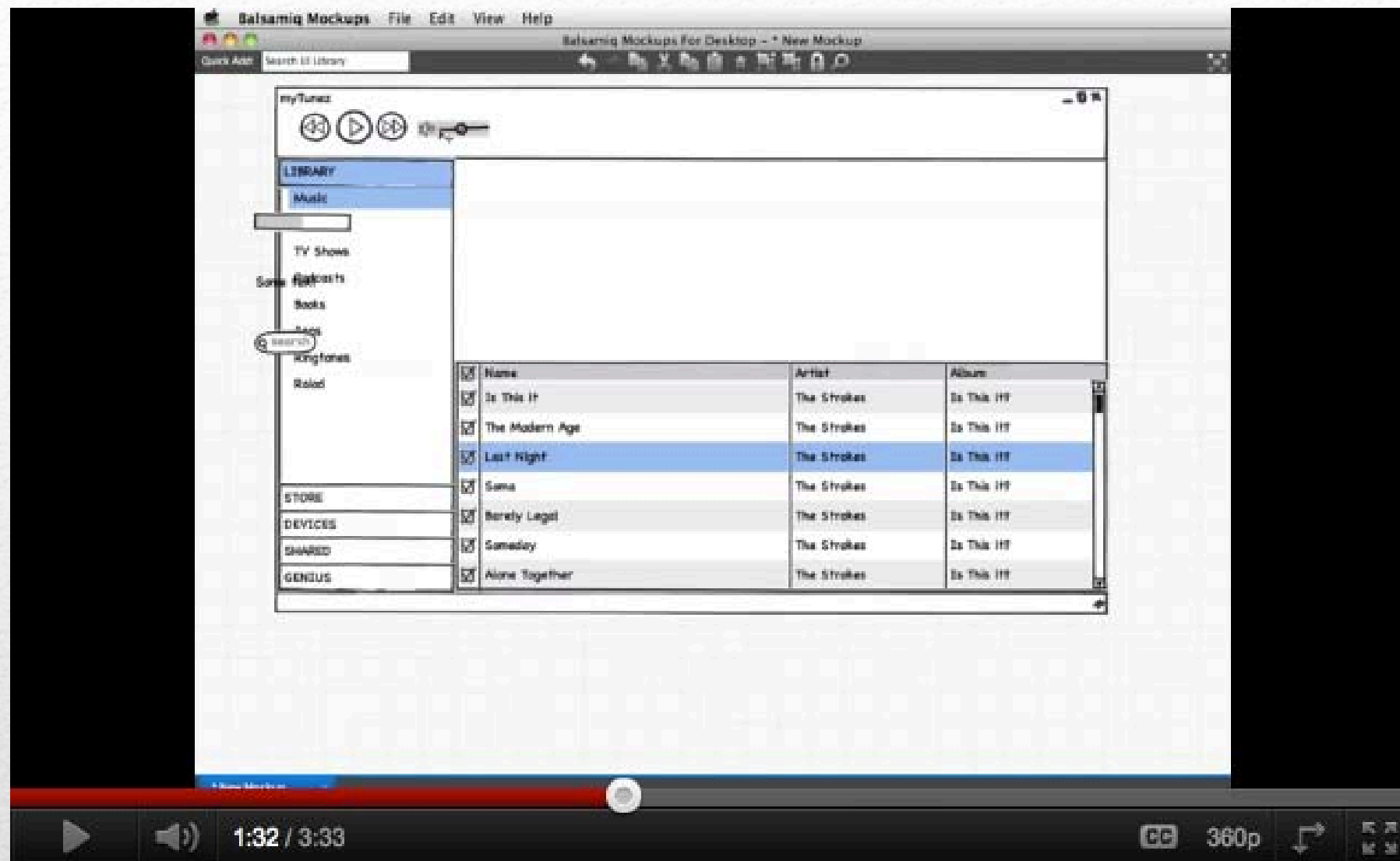
Pros:

- Really fast, intuitive to use
- Great for low fidelity prototypes that look better than paper sketches / if you're really bad at drawing
- Variety of helpful functions: aligning, grouping, locking

Cons:

- Very limited control over style (black & white)
- If it doesn't have the widget you want, or the aesthetic you need, you're out of luck
- Limitations of the free software

Balsamiq : Pros / Cons



Youtube:

http://www.youtube.com/watch?feature=player_embedded&v=70hfU7_95Gw

Real Deal: <http://www.balsamiq.com/>

Balsamiq : Demo

Adobe Illustrator is a vector-based drawing software part of the Adobe Creative Suite.

- Huge flexibility in the work you can do. Fantastic tool for creating things from scratch, but our focus will be on the publicly available UI templates online.

Illustrator : Basics

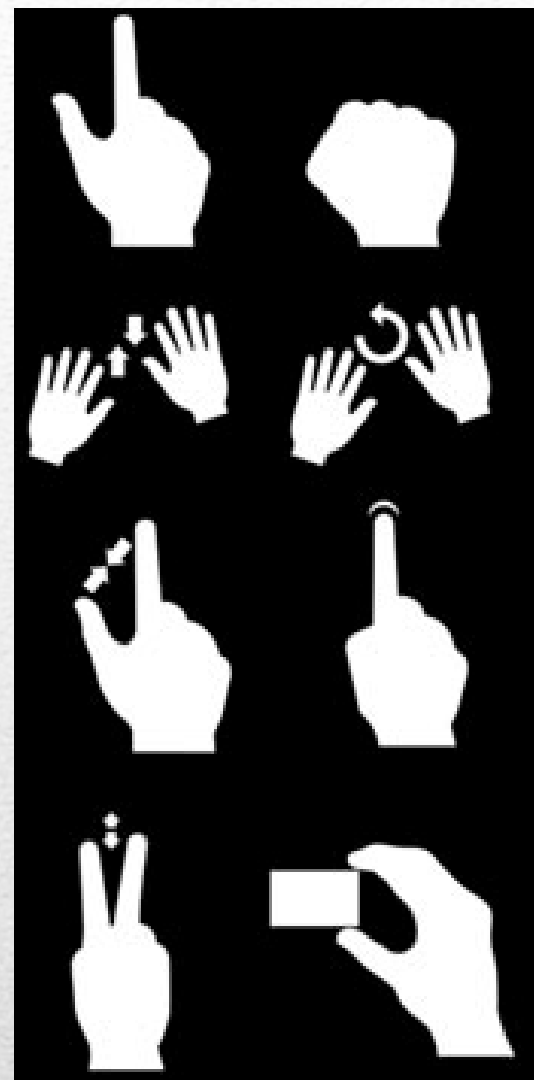
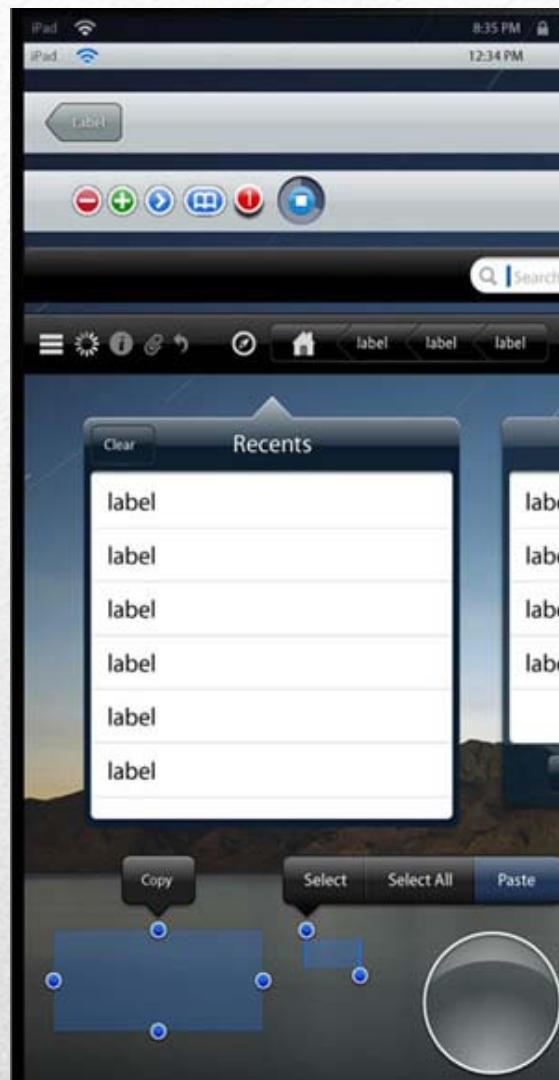
Pros:

- Infinite amount of resources, how-tos and many public libraries of UI components available online.
- It's vector drawing! So everything stretches and even public libraries can be edited.
- Great for all levels of fidelities, particularly useful for making high fidelity mockups.

Cons:

- Significant learning curve for some things.
- Takes a bit longer to get stuff done.
- Costs \$200 to buy / install.

Illustrator : Pros / Cons



<http://speckyboy.com/2010/09/01/illustrator-template-toolbox-for-web-mobile-and-app-developers/>

Illustrator : Demo