Critiquing a Vision Video

http://youtu.be/a6cNdhOKwi0
New Assignment

Demonstrate your Project Prototype in person on 11/18 in BiD.

Sign up for a slot now.
Model-Based UI Tools
The Platform Challenge
Today’s GUI Builders
Absolute Layouts

Label
(x=0, y=0, w=350, h=20)

Text Area
(x=0, y=20, w=350, h=150)

Buttons
(x=200, y=175, w=45, h=30)
(x=250, y=175, w=85, h=30)
Example Declarative Layout (WPF)

```xml
<StackPanel>
    <Label>Enter Text:</Label>
    <TextBox TextWrapping="Wrap">...</TextBox>
    <StackPanel Orientation="Horizontal"
                  HorizontalAlignment="Right">
        <Button>Ok</Button>
        <Button>Cancel</Button>
    </StackPanel>
</StackPanel>
```
Example Declarative Layout (WPF)

```xml
<StackPanel>
  <Label>Enter Text:</Label>
  <TextBox TextWrapping="Wrap">...</TextBox>
  <StackPanel Orientation="Horizontal"
                HorizontalAlignment="Right">
    <Button>Ok</Button>
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  </StackPanel>
</StackPanel>
```
Layout in Cocoa: Springs + Struts

Interface Builder Demo
Instead of creating a concrete UI, designers specify an abstract interface model that represents the domain and the tasks a user will perform with the interface.

A tool then synthesizes a concrete UI from the specification.
Example

Concrete

Abstract

Select one from the set {AL, AK, AZ, CA, ...}
Example: Pebbles

Nichols, Pebbles Project, UIST 2002
Model-Based Design Tools

Puerta, IEEE ’97
Model-Based Design Tools

Szekely, '96
Potential advantages

Retargeting to different form factors
Automatic application of design guidelines
Integrated help
Disadvantages

Generated UIs are inferior to hand-designed UIs

Designers think about abstract tasks through concrete design proposals
Recognizing UIs
Motivation: Application Silos

Automation:
Script tedious, repetitive tasks (e.g., UI testing)
Glue different applications together

Augmentation:
Add new functionality to user interfaces
Approaches to Automation:

Application Scripting:
Drive application through APIs

Apple Automator
Approaches to Automation

“Screen poking”: Inject regular input events into the application

Examples: AutoIt, java.awt.robots

```java
robot.mouseMove(640, 480);
robot.mouseClick(InputEvent.BUTTON1_MASK);
robot.delay(5000);
robot.keyPress(KeyEvent.VK_B);
```
Example: ChickenFoot/CoScripter

Insight: Use both the DOM and visual page layout to create labels for UI elements

* enter “cs260user” into the “Live ID” textbox
* click “Sign In”

http://coscripter.researchlabs.ibm.com/coscripter/browse/video
Example: Prefab

http://www.youtube.com/watch?v=lju6llteg9Q&feature=player_embedded