

# Rapid prototyping for Tangible UIs

A 2AD Appliance Bazaar ‘micro-course’ proposal

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## ABSTRACT

While industrial designers are well-practiced at creating 3-D professional-looking mocks-ups for products, it is less common for tangible interface designers and developers to construct ‘quick and dirty’ prototypes. Rapid prototyping is accepted practice for 2D Graphical User Interfaces, because it allows fast, cheap idea visualization. 2D paper prototypes are created with markers, ‘Post-it notes,’ or colored paper. We believe it is equally important for designers of 3D interfaces to engage in rapid prototyping, using cheap and easily available art supplies. Only by holding an object in your hand can you get a sense of what it feels like to manipulate and operate the device. Understanding the physical affordances of an object is vital to understanding interactions between graphical and tangible components.



Figure 1. Prototyping Supplies

This micro-course aims to develop rudimentary 3-D prototyping skills, making them accessible to all project team members. Participants in our micro-course will learn the basics of prototyping tangible interfaces using clay, ribbons, string, pipe-cleaners and other art supplies which are found easily in local shops. We will give a 5-minute introduction to rapid prototyping for tangibles, and then allow participants a 10-minute opportunity to create their own tangibles.

In a recent day-long workshop we conducted at the University of Westminster, students used these methods to create prototypes. Pictures of prototypes follow:



Figure 2. A cube with a suspended ball which is shaken to navigate around a space allowing for fine control.



Figure 3. Right: an interface for selecting the cycle time for a washing machine—stretch the spring out for a longer cycle time, or compress it for a shorter one.



Figure 4. A three part mobile phone interface: a watch display, earpiece (prototyped with pipe-cleaners), and a hand held keyboard. The keyboard is voice activated, and has four keys which permit chording and a select button on the thumb.

## ACKNOWLEDGMENTS

Funded by the European Union, grant no. IST-2001-34171.

