

# Process

## ASSIGNMENT SHEET 26 JAN. 2012

**Introduction** We interact with a variety of machines in the course of a day. Some of them are simple, like drinking fountains with one button to activate water flow. Some, like Metro's farecard vending machines, are far more complex, with designs shaped by historical engineering requirements and layers of unplanned growth.

Identify one of these kinds of machines – choose something complex, and something that lets a user perform some kind of transaction. Last year's class worked with Metro farecard machines. This year, you might also consider machines for pay-to-park systems; Amtrak or airline self-ticketing; electronic voting; Bikeshare vending; or supermarket self-checkout. (Other systems might work well, but propose your idea to the instructor first; ATMs probably will not work well because of the challenges in observing users.)

Imagine that we now have the chance to create new machines. Study the way that people use the existing machines and report on their strengths, their failings, and any unmet needs or ideas you have for improvement. Plan a flow for the user, then create three paper prototype interfaces, each examining a different approach, and test these prototypes with people from outside of the class. On the basis of your findings and in-class critiques, create a final paper prototype and repeat the user testing.

**Brief** Design for today's world, with today's mix of users and requirements. Machines should occupy the same footprint as the current machines, and should work with existing tickets, credit cards, and currency. Use real-world technology. Your redesign is not, however, constrained by budgetary concerns.

**Topics** *empathy, user behavior, interaction design, prototyping, user testing*

**Phases of Work** OBSERVATION/RESEARCH. In this phase, try to answer four questions: *who* uses these machines? *how* do people use the machines? *what* do different people need and expect? and *how well* do the machines serve those needs and expectations?

Start by using one of these machines yourself. Then observe people at the machines, watching for any differences between different users. Interview friends and colleagues, asking not only what they think about the current machines, but what they expect from a farecard machine. Think about the farecard purchasing process, asking what people need. Reflect on your observations and summarize them in list, table or diagrammatic form. *Deliverables: sheets that explain your findings. (Do not worry about designing these sheets: we are more concerned about the information they present and the thinking that they embody.)*

DESIGN RECOMMENDATIONS. Based on your findings about expectations/needs, propose improvements to the machines. You are trying to determine *what* you should do to improve the machines, not *how* you should accomplish that goal. *Deliverable: a one-page table or a diagram that explains your recommendations.*

CONCEPTUAL DESIGN. Think about how you would redesign the machines. Make two to four paper prototypes that explore different approaches. *Deliverable: three rough paper prototypes, each consisting of a flowchart that maps out a user's experience with the system; a drawing of the front of the machine; and any other details or screens that you need to explain your draft idea. Your drawings do not need to be well resolved – they just need to explain how the machine should work.*

USER TESTING. Find friends, relatives, or colleagues – two to four people will do fine. Test the paper prototypes against these people, and observe the results. *Deliverable: a one-page table or diagram summarizing your findings.*

DESIGN DEVELOPMENT. Create one final proposed redesign, drawing on what you have learned from user testing and critiques. *Deliverable: one rough paper prototypes, each consisting of a flowchart that maps out a user's experience with the system; a drawing of the front of the machine; and any other details or screens that you need to explain your draft idea. These drawings should be more polished; pay attention to type, layout, and the rendering of shapes and images.*

FINAL USER TESTING. Test the final prototype against one or two people. *Deliverable: a one-page table or diagram summarizing your findings.*

<b>Schedule</b>	26 Jan.	Start project
	2 Feb.	Present observation/research and design recommendations
	9 Feb.	Present conceptual design
	16 Feb.	Present work to date
	23 Feb.	Present final