ICS 105: Project in Human-Computer Interaction
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Class web page: http://www.ics.uci.edu/~jpd/classes/ics105s05

ICS 105 follows on from ICS 104, and is designed to give you experience in applying the principles you learned there. In ICS 104, you were introduced to the problems of human-computer interaction and design principles and approaches to help you tackle them. In ICS 105, you will work in groups to create interactive systems that demonstrate and apply these principles.

There are two important things to be concerned with in ICS 105 (at least when you take it from me.) The first is that HCI is not simply about principles, but about processes. Good HCI work doesn't come from internalizing a set of rules about what interfaces are meant to look like. Instead, it comes from taking a user-centered approach to the design process, and continually testing what you have against user experiences, in whatever form you can get them. So, process is going to be important in this class. The second important issue is that good HCI is not so much about interfaces as it is about interaction. "Interfaces" might mean what colors you choose, how you choose between menus, radio-buttons and other selection mechanisms, and how you lay out controls on the screen. Those are important, but it's quite possible to get them all right and still create a system that sucks. Instead, I care about "interaction," that is, the sequence of operations that people to through to get things done. The questions here are, is it obvious to people what to do next? Do they need to go through unnecessary steps? Are simple functions simple and complex functions possible? Does the interaction flow smoothly? Can people ignore the interface and focus on their work?

Unlike some other project classes, especially perhaps 125, we don't have external customers for ICS 105, since we can't get enough of people's time to be test users. So, I don't assign or suggest particular projects. However, I do like the projects to have a common theme, since that allows teams to learn from each other's experience, and sometimes even to build systems that work well together. Two years ago, the theme was Instant Messaging; last year, it was social software. This year, it's location. I will give every team a Garmin GPS18 USB GPS receiver. This is a device that connects to the USB port on a PC and allows you to determine your location through satellite triangulation, so your computer can know where it is. Your task is to build an interactive application that relies on location. There are lots of possibilities – electronic treasure hunts, chat systems based on locality, tour guides, "geo-caching", virtual graffiti, real-world Pacman, and more. There is a list of URLs on the class web page with detail on some of these ideas, but I'm sure you can come up with even better ones; these aren't meant to be suggestions, but rather inspiration to get your own creative juices flowing.

In the course of this class, you will design, build, and evaluate a prototype system. In fact, you'll do this more than once, since the key to the HCI design process is iteration. We will evaluate the system at least twice, once on paper and once on-line; hopefully, we'll be able to do an intermediate evaluation too.

One of the things we learn from research into how people do design is that the more ideas you have, the better your eventual design. Good design teams don't come up with the right idea first

time; they come up with lots of ideas, and then winnow those down to the best ones. So, at every stage, I'm going to want you to come up not just with designs but with design alternatives.

Here's the plan for the first couple of weeks.

In Week 1, you need to form teams and come up with application plans. This means reading and becoming familiar with the background material, brainstorming with team members, thinking about capabilities and opportunities, and getting familiar with the basic technology. By the end of the week, you will need to provide FOUR ideas for projects.

In Week 2, we will discuss these ideas and select specific projects, and you will begin your actual design planning.

Depending on how things go, we will do our initial prototyping at the end of week 2 or the start of week 3. This will be a paper prototyping exercise, so you won't need to write code, but you will need to know in detail how your application will respond to every mouse click.

After that, we will begin implementation. The goal is to have some basic technology ready for informal evaluation by week 6. At this point, I don't expect the entire application to be running, but you should be able to show some ideas working, and to be able to test them with potential users.

Our final evaluations will be held during week 10. At this point, we will run informal user trials – putting your system into the hands of potential users and evaluating how well it supports what they do.

There is no midterm or final for this exam. You will be graded partly for your participation in class discussions, but mostly for your project. The project grading will be based on reports that you write about the various stages of the design and the evaluation experiences. There will be three or four of these due as the class goes on, marking the major progress stages.

Caveat: I will not be around for the first week of class. I don't like to miss it, but it was unavoidable; I need to be in Portland for the major annual HCI conference, at which I am involved in a number of activities. However, class is not cancelled during this week, because we need to get started. The TA, Judy Chen, will take the class for the first couple of sessions, and you absolutely need to attend for this material, because we will be running from day 1.