EST/CSE 323 / CSE 590 : HCI

Term Projects – Introduction and Stage 1

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Grand Plan

Your project will have six stages:

- stage 1: identify something people need (should be software-based)
- stage 2: devise the overall ‘story’ of your solution
- stage 3: build a rough outline of your intended implementation
- stage 4: flesh out your implementation into a product
- stage 5: plan how you will test the fitness of your product
- stage 6: test it (with real humans) and evaluate results
- stage 7: presentation at the 2nd SUNY Korea HCI Talent Workshop

Each stage will take about 2 weeks

- stage 1 will start now

Evaluation

Several types of evaluation

- peer-to-peer
- yourself

Your evaluation score will be a composite of these two

- it will also be based on the evaluations YOU give your peers
- so do an honest and good job on your peer evaluations

Your grade will not be based on these peer scores

- but they will help you to create a competitive product
- your project grade will depend on the HCI workshop presentation

Procedures

All submissions and evaluations will use a web portal

- step 1: you will submit your work
- step 2: submission will be de-identified (your name removed)
- step 3: you will be assigned 4 peer submissions to evaluate
- step 4: you will submit your grades and then see yours

Very important

- to remain anonymous do not mention your name in the submitted material
- only mention it in the login screen

Why Peer Evaluations

Better learning

- students tend to learn better when asked to actively compare their answers with those of their peers
- it is actually superior to instructor or TA based grading
- students who self-graded outperformed instructor-graded students
- see Sadler and Good, Lawrence Erlbaum Associates, Inc., 2006

Evaluation Details

Fairness:

- we will scale each peer's given scores to his/her overall given scores
- we will assign the better grade if self-assessed grade is similar to peer-assigned grade average (use range of 5%)
- if peer average and self-assessment is very different we will use the peer-assigned grade-average
- TA and instructor will carefully check everything to sure make sure that all is fair

Logistics

- all will be web- and browser-based
- submissions, evaluations/grading, feedback
- projects themselves can be browser-based or app-based
- appropriate infrastructure will be created and made available soon

Phase 1: Need Finding (1)

Step 1: Choose a specific design goal

- will provide 3 directions next
- graduate students may go beyond these 3 directions
- similar to Scott Klemmer's Coursera HCI course

Step 2: Select an activity to observe

- observe users doing the task as they do it now (*in situ*)
- it may already be computer based or not
- eventually you will devise a web-based service or app

Step 3: Select 3 individuals to observe

- choose people who are not similar to yourself in some way
- observe the successes, breakdowns, and opportunities that occur when computers are used, not used, or could be used to support your chosen activity

Step 4…. next page

Phase 1: Need Finding (2)

Step 4: Observe!

- tell the participants to perform the task as realistically as possible
- take notes and possibly photos
- do not use a video camera → preserve your own on-site impression
- after the observations, spend 10 to 15 minutes interviewing your participants about the activity you observed

Step 5: Identify user needs

- survey findings and use them to brainstorm a list specific to user needs
- identify opportunities for design innovation that would enable a web- or mobile app to better support the activity you observed
- you should generate at least 15 opportunities
- focus on user needs and goals only (you do not need solutions yet)

Step 6: Be inspired

- list 5 existing designs that relate to your thinking (could be concrete or abstract)
- for each, give brief explanations (1-2 sentences) why you chose them

Example of a Need

Think about this example of a need:

Sometimes, when Scott takes the train home, there is no room for his bike and he has to wait for the next one. Scott needs a way to plan what train to take based on how much room is available in the bike car

- what can be designed to make Scott’s life easier
- what are needs to be considered
- what shortcomings might emerge and how can they be fixed
- think about all possibilities of real life situations
- you will then see that your app will need to become smarter
- it may also require more data, from where?

Design Goal #1: Change

Motivation

- change is hard
- sometimes we lack information
- other times, our routines and habits are really persistent, even if we wish they weren't

Mission:

- use the power of new technology to create an application or service that facilitates personal or social behavior change

Change: Some Inspirations

How might technology help people make better decisions?

- exercise more
- buy healthier food
- use less energy
- others?

What is an effective way to join people together for a common cause?

How do people kick undesired habits and build desired ones?

- could your mobile phone, tablet or computer incentivize healthy eating, exercise, doctor visits, a good night's sleep?

Can we help communities help coordinate better?

- plan a block party, advertise tag sales, or carpool for commuting and errands?

How can technology improve the experience of volunteering?

- via social networks?

Design Goal #2: Glance

Motivation

- we are surrounded by information → information overload
- how might technology show us the essential pieces at a glance, so we can quickly navigate through the noise to get to what we really want?
- we compulsively check email, Twitter, Facebook, and the news — just in case there's something there.

  right now we are doing the filtering and the finding ourselves

  why not let our devices do it for us?

  how can a screen summarize information and present just the most relevant parts (especially if it is tiny)?

Mission:

- find people and design a personal dashboard tailored to their needs

Glance: Some Inspirations

What should a dashboard display?

- Email, calendar, news, time, weather, reminders?
- Which ones? All of them? Or maybe a screen that just has a short note from a loved one?
- Which is better? It all depends on who you're designing for.

What might a context-aware dashboard look like?

- Could time, location, or who is nearby help to create a more effective glance?

What might a 10x10 pixel screen show?

- The mood of a friend? The state of the stock market?
- How much it snowed in Tahoe? Whether the coffee in this shop is fair trade?
- How might we use ambient alerts to convey information?

How might we “grab that moment”, catch the last five seconds said, or visually capture that which no one else saw?

How might we send a message with one gesture?

What might appropriate alerts look like?

- What if you were only interrupted when you should be?
- Or only some interruptions got through
- Or the interruption interaction was context-aware?

Design Goal #3: Time

Motivation

- The way people represent time changes how they think about it.
- Wall calendars remind us of years, seasons, and the dentist appointment 6 months in the future.
- Calendars codify weeks by wrapping every seven days, and it's easy to find the weekends – they are on the edges.
- Clocks help us coordinate with others – came with railroads.
- Daily schedules help us plan. They can encourage us to "fill" our days, or talk about being "free“.
- Most digital time representations — clocks, daily and monthly calendars, … — simply translate paper and gears into pixels and beeps.
- With the computation and sensing capabilities of mobile devices, can we find a more personal and joyful way to interact with time?

Mission

- Redesign the way we experience or interact with time.

Time: Some Inspirations (1)

The American Institute of Health estimates that 75-90% of all visits to primary care physicians are stress related

- Could an interactive time representation help us be effective and relaxed?

What if our mobiles were aware of our daily rhythm and helped us reschedule our activities to optimize for our well-being?

- How could we redesign the alarm clock? Do alarms need to be obnoxious?
- Maybe an alarm clock could wake us with the smell of delicious breakfast, or coffee?
- Or maybe its sensing could pay attention to our circadean rhythms, and wake us at an appropriate time? Could a time representation help us get a good night's sleep?

Time: Some Inspirations (2)

How might a design use multiple modalities – visual, auditory, vibration, etc. – selectively or in concert to create more effective reminders?

How might we help people feel happy and energetic – when they wake up and throughout the day?

- What if instead of a clock calendar we had an energy calendar? So that instead of scheduling for 2 in the afternoon, one schedules for “when I'm feeling energetic”, “when it's nice outside”, or “when it's quiet”.
- How might we leverage technology to feel more in touch with our temporal rhythms?

How might we create a new representation of time?

How can we create better social representations of time?

Your Stage 1 Assignment

What is expected

- a sufficiently long report that addresses all six steps presented earlier
- see example presented next

Submission procedures

- we will use a conference submission site to handle the submissions
- TA and instructor will be the conference chairs
- students will serve two roles: authors and program committee
- very similar to standard academic conference procedures

You will use the conference site to

- submit your work
- evaluate other students' work assigned
- obtain your scores
- possibly do a rebuttal (amendment to your work post-review)

More detail provided on Blackboard

Guidelines for Evaluations

The following categories will be evaluated for phase 1:

- your observations
- quality of the observations
- photos/sketches
- ideas for user needs
- quality of ideas for user needs

For each category evaluations will score as

- unsatisfactory (0 points)
- bare minimum (1 point)
- satisfactory effort and performance (3 points)
- above and beyond (5 points)

Maximum # points = 25

Phase 1 Deadlines

Submissions

- Friday September 19, 11:59 pm KST

Evaluations (after assignment)

- Friday, September 26, 11:59 pm KST

Late submissions and evaluations

- see course policy
- but really do not be late
- your peers depend on your timeliness
- and your own project progress depend on it too.