Prototyping
Monday, February 20, 2012
Instructor: Jon Froehlich
TA: Kotaro Hara
Today

1. Hall of Fame/Shame
2. Team Project Proposals (A Review)
3. The Blomberg and Burrell Reading (A Discussion)
4. Prototyping
5. Peer Review Team Project Proposals (Assigned)
6. Team Project Proposal Presentations (Assigned)
A series of mixes intended for listening while programming to aid concentration and increase productivity (also compatible with other activities).

Episodes

01: Compiled by Datassette
02: Compiled by Sunjammer
03: Compiled by Datassette
04: Compiled by Com Truise

04: Compiled by Com Truise

music_for_programming_4-com_truise.mp3 (116mb)

Joel Vandroogenbroeck — Banjomatic Amazon | iTunes
Joel Vandroogenbroeck — Silicon Siren Amazon | iTunes
Martin Walker — Armalyte 1 (Edit)
Caravelli & Patrick Vasori — Morse à L’infini
Harry Forbes — Scanner 2
M. Cannone — Sylphides
Boards of Canada — Whitewater
VHS Head — Motions June Download | Amazon | iTunes
Oneohtrix Point Never — Grief and Repetition
Amazon | iTunes
Syn — 13
Lahti & Nocow — Sirenas (Part 1)
Sarin Sunday — Luh
New Dreams Ltd — Upper Spheres of Consciousness
Vektroid — Walk with me Saturn
Syn — Hoarfrost
Robert Viger — Seasons

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HallOfFame/Shame
THINGS ON THE FRONT PAGE OF A UNIVERSITY WEBSITE

- Campus Photo Slideshow
- Alumni in the News
- Promotions for Campus Events
- Press Releases
- Statement of the School's Philosophy
- Virtual Tour

THINGS PEOPLE GO TO THE SITE LOOKING FOR

- List of Faculty Phone Numbers and Emails
- Campus Address
- Application Forms
- Academic Calendar
- Campus Police Phone Number
- Department/Course Lists
- Usable Campus Map

FULL NAME OF SCHOOL

[http://xkcd.com/773/]
Gov. O'Malley Joins the Future of Information Alliance

The Future of Information Alliance (FiA), launched at the University of Maryland in 2011 to address the rapidly evolving role of information in our lives, has a new founding partner: Governor Martin O'Malley and the State of Maryland.

Mid-Atlantic Region Is Nation's Most "Tech-Centric"

A new ranking from the Atlantic magazine says our region is the nation's most "tech-centric." Silicon Valley, Rocky Mountains and the Mid-Atlantic do not have what the mid-Atlantic does.

Maryland Commission Recommends "Common Sense" Immigration Policy

Immigrants to Maryland contribute significantly to the state's economy, and were vital to workforce expansion in both technical and high-skilled occupations from 2000 to 2010, concludes a new report by a Maryland commission.

$4.1M in Technology Projects Approved by Maryland Industrial Partnerships Program at UMD

The Maryland Industrial Partnership (MIP) Program, a high-impact, economic development initiative fostering innovation and new jobs in the state of Maryland, has approved 10 new technology product development projects worth $4.1 million.

UMD and Supercomputing Technologies Announce New Cybersecurity Partnership

The University of Maryland and Supercomputing Technologies Inc. (SuperTK) have announced a new partnership to establish collaborative activities in cybersecurity.

Actor Kevin Bacon Coming to UMD with Student Challenge

Do Good Challenge names American Idol and the Pure Joy of Giving.

UMD Community

MyUMD LOGIN

UMD Facebook

UMD Twitter

UMD YouTube

UMD iTunes U

UMD social media

UMD radio

UMD TV

UMD digital media

UMD print media

Contact us with comments, questions and feedback.
If I have a question related to the class, my first step is to...
Protected Filespace for Our Super Secret Stuff

We now have a password protected filesystem for all of our super secret stuff in this class. Try it out: http://www.cs.umd.edu/class/spring2012/cmsc434d/protected/

Login: cmsc434
Password: HumanValues

Please let me know if this doesn't work for you. I will be posting copyrighted content (e.g., videos and readings).

#classlogistics #instructor-note
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Thoughts about assignment?

How did it make you think?
What did you like?
Areas for improvement?
What was hard?

...
Proposals
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The Human–Computer Interaction Handbook
Fundamentals, Evolving Technologies, and Emerging Applications
Second Edition

Edited by
Andrew Sears
UMBC
and
Julie A. Jacko
George Institute of Technology

AN ETHNOGRAPHIC APPROACH TO DESIGN

Jeanette Blomberg
IBM Almaden Research Center
Mark Burrell
Microsoft Corporation

Introduction ........................................................................ 966
The Relevance of Ethnography for Design ......................... 966
The Roots of Ethnography .................................................. 967
Principles of Ethnography .................................................. 967
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Descriptive ......................................................................... 967
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Research Planning .............................................................. 969

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The Observer...................................................................... 970
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Structuring Field Observations .......................................... 971

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Interviewing Role of Thams ................................................. 972
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Qualitative and Quantitative Data ................................. 975

Ethnography in a Global Context .................................. 975

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Globally Distributed Interactions ..................................... 975
Making Ethnography Matter: Communicating and Applying Ethnographic Insights to Design .................. 975
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Products ........................................................................... 976
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Scenarios .......................................................................... 980
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Case Regarding Representations and Models .................... 982
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Case Study 1: Designing a Program and Website to Change Healthcare Behaviors ................................. 982
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Conclusions ...................................................................... 985
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Many of the techniques mentioned in the reading appear to be common sense, but I'm certain that they are not as widely practiced as I would like to think.

I thought that the techniques that would be most impactful in many situations was the use of diaries, in person observation, and weblogs. These techniques, in my opinion, allow a more "pure" transfer of experiences between participant and product developer.

Ciara B.
It was interesting to see the relationship between ethnography and HCI. At first glance, they are not necessarily fields, which you would expect to be related, but after reading this article the connection is definitely there.

Tim W.
What really **struck me as strange** was that ethnographical techniques as discussed in this article were not wildly practiced by designers and developers until the 1980's. This is understandable when the target user group is the developer or those with similar experience to the developer as it was in early use of computers where limits of technology made them complicated pieces of machinery that only the specially trained could use. However **by the 70's computers were being adopted into the American home**, and even before then they were being utilized in numerous varying industries to different degree...

Andrew L.
I did not find much in the article that really needs a response. It mainly consisted of just describing various methods of doing research from an ethnographic perspective, but most of the techniques are the same as what one would do if he wasn't intentionally following ethnography.

The main thing that seems to differentiate it was that at the end the **ethnographer tries to form a large picture of the whole process or target user**, and then from that decide what needs to be done specifically, rather than going straight after the specifics.

James H.
While much of this article seemed redundant from the IDEO flash cards and from common knowledge, I found the "Interviewing Rules of Thumb" section particularly interesting. The bullet points in this section play into aspects of human behaviors that are not inherently obvious. For example, the author notes, "Use lack of knowledge as a discovery tool." This approach empowers the interviewee and gives them the feeling that they have something significant or meaningful to contribute.

Vineet
A note about readings: **any content from the readings is fair game for the midterm**
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“Getting the design right and the right design”

Bill Buxton
Designer / Researcher / Writer / Thinker

[Buxton, Sketching User Experiences]
Formative methods help us understand the problem and our users to inform our design.

Evaluative methods can also help us detect mistakes and refine our design.

Evaluative methods help us understand how well our design works.

User Research Methods

Formative → Build → Evaluative
Next team homework assignment is to do just this

Data Gathering

Learning about the problem
Learning about potential users
Learning about past solutions
Brainstorming potential solutions
User Research Methods

Formative → Build → Evaluative

- Formative methods help us understand the problem and our users to inform our design.
- Evaluative methods can also help us detect mistakes and refine our design.
- Evaluative methods help us understand how well our design works.

Data Gathering

- Learning about the problem
- Learning about potential users
- Learning about past solutions
- Brainstorming potential solutions
Team Homework #2

Identify 2-3 target user groups
Perform some sort of data gathering
   Analyze data
   Brainstorm & Ideate
   Sketch potential interfaces
   Turn-in Written Description
We’ve defined high level problems but...

- What specific problems exist to be solved here?
- How do we know that these problems exist?
- How do we know when we’ve solved the problem?
We’ve defined high level problems but...

- What specific problems exist to be solved here?
- How do we know that these problems exist?
- How do we know when we’ve solved the problem?
Data Gathering

- Learning about the problem
- Learning about potential users
- Learning about past solutions
- Brainstorming potential solutions

→ Analyze, Sketch, and Prototype
Experience Prototype

NOW: Quickly prototype a concept using available materials and use it in order to learn from a simulation of the experience using the product.

WHY: This is useful for revealing unanticipated issues or needs, as well as evaluating ideas.

The IDEO team built a working interactive model of a digital camera to understand the experience of different interaction design solutions.
Prototyping Process

- Paper Sketches
  - Wireframing
    - (Visio, Omnigraffle)
  - Interactive Prototyping
    - (Keynote, PowerPoint, Balsamiq)
- Interactive Prototyping 2
  - (Flash, MS Blend)
- Code

Reduce the amount of code rewrites needed (most expensive)
Prototyping Spectrum

Paper Sketches

Interactive Prototyping
(Keynote, PowerPoint, Balsamiq)

Interactive Prototyping 2
(Flash, MS Blend)
Interactive Prototyping
(Keynote, PowerPoint, Balsamiq)

Paper Sketches
Wireframing
(Visio, Omnigraffle)

Interactive Prototyping 2
(Flash, MS Blend)

Code

User Testing
User Testing
User Testing
User Testing
User Testing
User Testing

Reduce the amount of code rewrites needed (most expensive)
Choosing Fidelity

[http://www.smashingmagazine.com/2010/06/16/design-better-faster-with-rapid-prototyping/]
Look and feel are the most noticeable dimension of a prototype’s fidelity and, if not properly selected, can sidetrack prototype reviews. Go hi-fi too soon and users will focus on visual design, which is not appropriate in early stages.
**Functional Fidelity**

Does the prototype reveal how the solution will work (static) or does it appear to be fully functional and respond to user input (interactive)?

[http://www.smashingmagazine.com/2010/06/16/design-better-faster-with-rapid-prototyping/]
Content Fidelity

Displaying content? Early on, just squiggly lines, then maybe dummy text (though this can distract), then actual content.

[http://www.smashingmagazine.com/2010/06/16/design-better-faster-with-rapid-prototyping/]
Paper Prototypes

Paper Prototypes

Materials and Simple Tricks

Paper Prototyping Materials

Paper Prototypes Evaluating Mobile Devices

Paper Prototypes Evaluating Other Systems

Testing Hardware-Based Interactions

Prototyping Palm

Jeff Hawkins
Palm Founder / Inventor

[Moggridge, Designing Interactions, 2006]
Prototyping Apple Lisa

Larry Tesler
Former Apple Chief Scientist

[Moggridge, Designing Interactions, 2006]
Prototyping Apple Lisa

Bill Atkinson
Apple Engineer (1978 – 1990)

[Moggridge, Designing Interactions, 2006]
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What did I do?
Who did what?
Who didn’t do what?
What can the professor do better?
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Proposal Presentations

- 75 minute class
- 11 teams
- 4 minute presentations + 2 minutes Q/A

Each presentation must include:
1) A title with tagline
2) Problem motivation
3) Problem description
4) A short review of past solutions to problem
5) Your proposed solution and what makes it unique
6) Your target users and how they will benefit from your specific solution
7) A proposed method (or methods) of learning more about your users