User Centered Design Process
May 1 - June 14

History of user centered design in HCI
June 19, June 21

Academic HCI
June 26, June 28

Special topics in HCI
July 5, July 10

Course Review
July 12, July 17

Presentation 2
July 19

Last class
July 24
The first mentioning:
Herbert D. Benington,
Symposium on advanced programming methods for digital computers, 1956

The first formal description:
Winston W. Royce,
"Managing the Development of Large Software Systems", 1970
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Winston W. Royce,
"Managing the Development of Large Software Systems", 1970
History

Waterfall Model

The first formal description:

Additional requirements:
1. Program design comes first
2. Document the Design
3. Do it twice
4. Plan, Control and Monitor Testing
5. Involve the Customer
User Centered Design in Computer Systems

History

- Waterfall Model
- GUI and WIMP
- Agile Development

HFE and Ergonomics
- Socio-Technical Systems Design
- Cognitive Psychology
- Cooperative Design
- Interaction Design
NLS - oN-Line System - developed by Douglas Engelbart and his colleagues at the Augmentation Research Center, SRI

First demonstrated December 19, 1968 at the Fall Joint Computer Conference, San Francisco. Was called “The mother of all demos”

“We were not just building a tool, we were designing an entire system for working with knowledge.” Douglas Engelbart
History

Doug Engelbart at an NLS workstation

Bill English with several ergonomic setups for the oNLine System (NLS); late 1960s
DATAR Trackball, 1952

Doug Engelbart’s mouse prototype, 1968

Hypertext Editing System (HES) console, 1969

PARC 5-key Chord Keyboard
Dynabook by Alan Kay, "A personal computer for children of all ages", 1972

Concept of a portable educational device. Target audience was children.

“If the computer is to be truly ‘personal’, adult and child users must be able to get it to perform useful activities without resorting to the services of an expert. Simple tasks must be simple, and complex ones must be possible.” Alan Kay

Model of the Dynabook
Developed at Xerox PARC, inspired by NLS and Dynabook

First computer to support operating system using GUI, used bitmap display, first to use an early version of the desktop metaphor

“If our theories about the utility of cheap, powerful personal computers are correct, we should be able to demonstrate them convincingly on Alto,” Butler Lampson

PARC’s Alto computer, 1973

Xerox Alto GUI
History

Bravo - the first WYSIWYG document preparation program, 1974

Gypsy - the first document preparation program to use mouse as a point-and-click interface tool, 1975

Tim Mott and Larry Tesler

Tim Mott’s sketch of a desktop on a bar napkin,
From: Bill Moggridge and Bill Atkinson. Designing interactions.
Texas Instruments Silent 700, 1973

Osborne 1 computer, 1981
History

GRiD Compass 1101, 1982

Designed by Bill Moggridge and John Ellenby

First laptop computer, clamshell design, easy-to-read screen, allowing full 80x24 text, used graphical GRID-OS, no mouse
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Interaction Design
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Agile Development

The Manifesto for Agile Software Development, 2001

Focus on Individuals and Interactions

Continues process of Customer Collaboration

Presenting Working Software

Responsiveness to Changes and Continuous Development
Agile Development Principles

- Customer satisfaction by early and continuous delivery of valuable software
- Welcome changing requirements, even in late development
- Working software is delivered frequently (weeks rather than months)
- Close, daily cooperation between business people and developers
- Projects are built around motivated individuals, who should be trusted
- Face-to-face conversation is the best form of communication (co-location)

- Working software is the principal measure of progress
- Sustainable development, able to maintain a constant pace
- Continuous attention to technical excellence and good design
- Simplicity—the art of maximizing the amount of work not done—is essential
- Best architectures, requirements, and designs emerge from self-organizing teams
- Regularly, the team reflects on how to become more effective, and adjusts accordingly
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HFE and Ergonomics

Socio-Technical Systems Design

Cognitive Psychology

Cooperative Design

Interaction Design
Week 8 take-away

- Stages of the development of a technology
- Concept of digital natives and immigrants
- Ergonomics: history and influence
- Socio-Technical Systems Design: history and principles
- Cognitive psychology influence
- Cooperative (participatory) design approach
- Interaction Design
- Waterfall model
- NLS and “The Mother of all demos”
- Dynabook
- Xerox Alto, Lisa, Mac
- Personal portable computers
- Agile development values and principles

Names:
- Douglas Engelbart
- Bill Moggridge
- Winston Royce
- Alan Kay
- Butler Lampson
- Tim Mott
- Larry Tesler