# CS449/649:
# Human-Computer Interaction

Spring 2017

Lecture XIX

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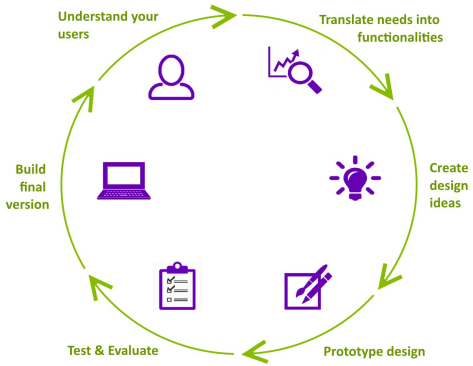
## User Centered Design Process
May 1 - June 14




## 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

## Special topics

Accessibility in HCI

Gamification

## Accessibility in HCI

**Accessibility = "ability to access"**

**“Design of products, devices, services, or environments for people who experience disabilities”**

Henry, S. L., Abou-Zahra, S., Brewer, J. (2014). "The Role of Accessibility in a Universal Web"

# Accessibility in HCI

Accessibility = "ability to access"

Disabilities:

- Cognitive
- Visual
- Hearing
- Motor

# Accessibility in HCI

**Basics:**

- “Alt” tags
- Settings for text size and fonts
- Settings for screens
- Transcriptions / different modalities
- Basic formats
- Keyboard access

Slip-On Typing/Keyboard Aid

Adapted keyboard

BIGTrack

Slide to unlock: Making touch-screen devices accessible to all

# Accessibility in HCI

MouthStick stylus

# Accessibility in HCI

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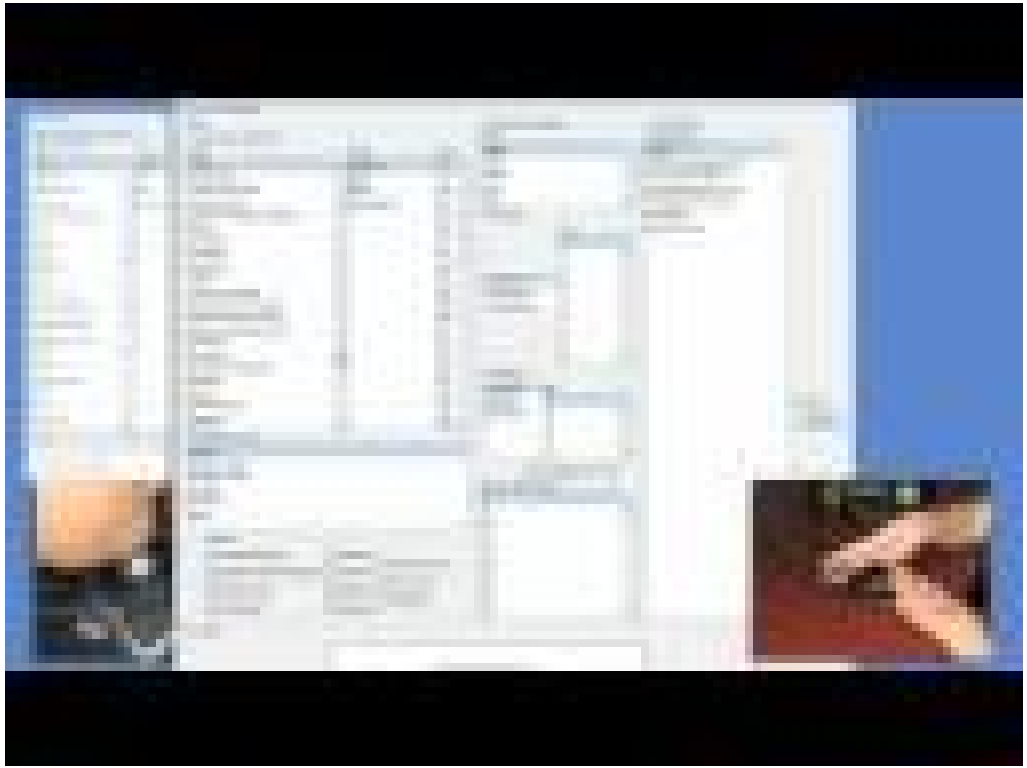
Strategies:

- Automatic adaptation
- User made configuration
- Production customization
- Universal design



Supple system, K.Z. Gajos et al.

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# Accessibility in HCI

**Duration spectrum**
(short-term to long-term)

**Source spectrum**
(inside itself to outside itself)

**Disabilities:**

- Cognitive
- Visual
- Hearing
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## Accessibility in HCI

### Seven Principles of Ability-Based Design

| | | | |
|---|---|---|---|
| STANCE | **1. Ability.** | Designers will focus on ability not *dis*-ability, striving to leverage all that users *can* do. | *Required* |
| | **2. Accountability.** | Designers will respond to poor performance by changing systems, not users, leaving users as they are. | *Required* |
| INTERFACE | **3. Adaptation.** | Interfaces may be self-adaptive or user-adaptable to provide the best possible match to users' abilities. | *Recommended* |
| | **4. Transparency.** | Interfaces may give users awareness of adaptations and the means to inspect, override, discard, revert, store, retrieve, preview, and test those adaptations. | *Recommended* |
| SYSTEM | **5. Performance.** | Systems may regard users' performance, and may monitor, measure, model, or predict that performance. | *Recommended* |
| | **6. Context.** | Systems may proactively sense context and anticipate its effects on users' abilities. | *Recommended* |
| | **7. Commodity.** | Systems may comprise low-cost, inexpensive, readily available commodity hardware and software. | *Encouraged* |

Wobbrock, Jacob O., et al. "Ability-based design: Concept, principles and examples." *ACM Transactions on Accessible Computing (TACCESS)* 3.3 (2011): 9.

Jacob O. Wobbrock SIGCHI Social Impact Award 2017