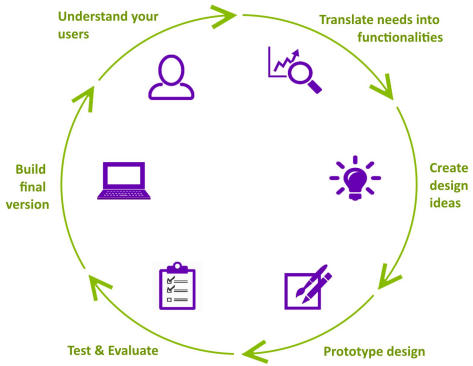
CS449/649:
Human-Computer Interaction

Spring 2019

Lecture XXIX

Anastasia Kuzminykh and Edward Lank

User Centered Design Process
May 6 - June 28



History of user centered design in HCI
July 2 - July 5

Academic HCI
July 8 - July 12

Special topics in HCI
July 15 - July 17

Course Review
July 22

Presentation 2
July 24 - July 26

Last class
July 29

Accessibility in HCI

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

Accessibility = "ability to access"

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- Cognitive
- Visual
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- Motor

Accessibility in HCI

Accessibility = "ability to access"

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
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- Motor

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*
STANCE	**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*
INTERFACE	**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*
SYSTEM	**6. Context.**	Systems may proactively sense context and anticipate its effects on users' abilities.	*Recommended*
SYSTEM	**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.