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
User Centered Design Process
May 1 - June 14
Create Design Ideas

- Create Ideas
- Design
Create Design Ideas

Create Ideas

Creativity - process of producing a new idea which has value to someone

Nature vs Nurture

Generating ideas: memories ➔ ordinary ➔ extraordinary
Create Design Ideas

Create Ideas

Creative process

1. Preparation
2. Provocation
3. Incubation
4. Eureka moment
5. Verification
6. Realization
Create Ideas

1. Preparation
2. Provocation
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Creative process

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Create Design Ideas
Create Ideas

1. Preparation
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6. Realization

Creative process
Create Design Ideas

**Sketches**
- illustration of how the basic concept works

**User stories**
- description of a feature from an end-user perspective

**Wireframes**
- static representation of the UI layout and user flow

As a user / <persona>, I want / need <action> so that I can <user goal>.


Image: https://www.behance.net/gallery/13421913/Wireframes-Restaurant-App
Create Design Ideas

Design

Interface - a surface/place where two independent systems, bodies or spaces meet / form a common boundary, and communicate with each other

Interface - a communication channel

Communication - exchanging of information
Create Design Ideas

Design

Semiotics - the study of signs and symbols

Sign - anything that communicates a meaning

Representamen (signifier) - the form of the sign

Interpretant - what people make of the sign

Object (signified) - the actual reference of the sign
Create Design Ideas

Design

- Signifier
- Affordance
- Constraints

- Feedback
- Discoverability
- Mapping

Conceptual Model
Create Design Ideas

Design

**Signifier** - indicators of any type that communicate the action needed so the affordance can take place

**Affordance** - the possible use for an object when interacting with it

**Constraints** - restrictions that limit the possible actions available with an object

**Feedback** - conveys effects of user’s actions

**Discoverability** - whether it’s possible to figure out how to use an object by interacting with it

**Mapping** - indication of the relationship between objects

**Conceptual Model** - user’s understanding of how the system works
Create Design Ideas

Design

Signifier - indicators of any type that communicate the action needed so the affordance can take place

Affordance - the possible use for an object when interacting with it

Constraints - restrictions that limit the possible actions available with an object

Physical - caused by physical features

Cultural - based on what is culturally accepted

Semantic - based on the meaning of the situation

Logical - use reasoning to determine the alternatives
Create Design Ideas

Design

Signifier - indicators of any type that communicate the action needed so the affordance can take place

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Feedback - conveys effects of user’s actions

Discoverability - whether it’s possible to figure out how to use an object by interacting with it

Mapping - indication of the relationship between objects

Conceptual Model - user’s understanding of how the system works
Information Architecture - structural design of shared information environments

Richard Saul Wurman

Users flow through your product
Catalog user’s information
Presentation of the information
Decision driving function
Create Design Ideas → Prototype Design

Knowledge Organisation

- **Taxonomy**: Practice of classification based on hierarchical relationship. Parent-child hierarchies
- **Folksonomy**: Practice of classification based on non-hierarchical relationship. Public tags and their frequencies
- **Domain Analytics Approach**: Practice of classification based on sociological-epistemological view. Indexing is suited to fulfill a task by specific group
Prototype Design

Prototypes - interactive design model of the product

Low-fidelity VS High-fidelity

Breadth - number of covered features
Depth - degree of functionality
Appearance - building means
Input methods - device mediation
Create Design Ideas

- Sketches
- Wireframes
- Mockups

Static representations of the product

Prototype Design

- Prototypes
  - Low-fidelity
  - High-fidelity

- Interactive design model of the product

Testing and Evaluation

Visualization
Course Review

Value Proposition

Understand your users

Translate needs into functionalities

Create design ideas

Prototype design
Course Review

Value Proposition

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Prototype design

Test & Evaluate
Prototype Design

Paper Prototyping Evaluation

1. Identify testing goals
2. Identify items to test
3. Choose testers
4. Prepare materials
5. Assign team roles
6. Run evaluation
Prototype Design

High Fidelity Prototyping Tools

- Interactive
- Realistic system response
- Content and workflow details
- (Almost) Full fidelities
- Less human errors
- Allows usability testing
Prototype Design

Designing User Interface

- Elements & characteristics
- Elements composition
- Spatial organisation
- Information processing
- Interaction

Visual Design

“Cognitive” Design
Prototype Design

Designing User Interface

Elements & characteristics
- Color Perception
- Shape Perception
- Visceral Reaction Triggers

Elements composition
- The Von Restorff effect
- Gestalt Principles
- Fitt’s Law

Spatial organisation
- Rule of Thirds
- Types of vision
- Free space

Information processing
- Dual-coding theory
- Patterns matching
- Social & Emotional info

Interaction
- Manipulation
- Locomotion
- Conversation

Manipulation
- Conversation

Social & Emotional info
- Patterns matching

Information processing
- Dual-coding theory

Rule of Thirds
- Types of vision

Free space
- Social & Emotional info

Social & Emotional info
- Patterns matching

Dual-coding theory
- Patterns matching

Fitt’s Law
- Types of vision