Lecture 4
Conceptual Design

Brainstorming
Card sort
Semantic networks
Personas
Scenarios, flowcharts and cognitive walkthroughs

Heim, Chapters 5.1-5.2

Technology Myopia

- Interaction designs must be sensitive to:
  – Human-human communication
  – Implicit Knowledge
  – Non-technical aspects of work

MAXIM

Integrate technology and human activities carefully

Conceptual Design

- Conceptual design involves
  – Structuring the information space
  – Creating of alternative solutions
  – Determining which design concept to pursue

Conceptual Design

- The tools involved in conceptual design:
  – Brainstorming
  – Card sort
  – Semantic networks
  – Personas
  – Scenarios
  – Flowcharts
  – Cognitive walkthroughs
  – Use cases

Conceptual Design - *Brainstorming*

- Team activity
  - Stream-of-consciousness
  - Semantic networks
  - Storyboarding
- Brainstorming sessions generate a lot of material that must be filtered and organized

Google example
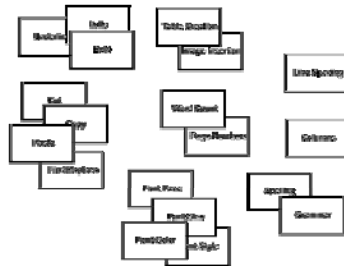
1-5

Conceptual Design – *Card Sort*

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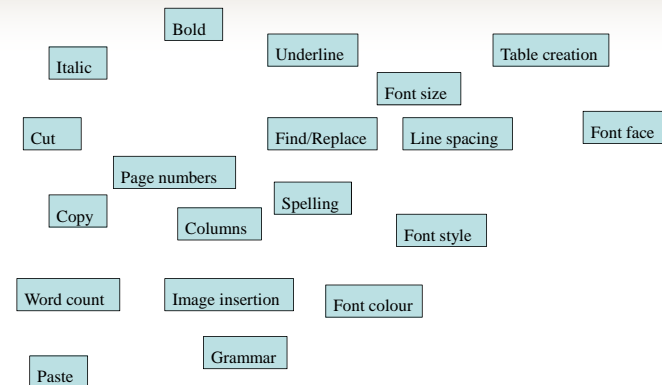Card Sorting can be used to discover user-centered groupings

- Card sorting can be used to organize the information collected in the discovery phase
- Used to define groupings for menus, controls and Web page content
- Used to generate labels for menus, buttons and navigation links

1-6

Conceptual Design – *Card Sort*

- Result of a card sort

1-7

My card sort…

Bold
Underline
Table creation
Italic
Font size
Cut
Find/Replace
Line spacing
Font face
Page numbers
Copy
Spelling
Columns
Font style
Word count
Image insertion
Font colour
Grammar
Paste

1-8

2

Conceptual Design – *Card Sort*

- Advantages of card sorting sessions:
  - They are quick and easy to perform.
  - They can be done before any preliminary designs have been made.
  - They will let you know how people organize information.
  - They will expose underlying structures.

Conceptual Design – *Card Sort*

- Disadvantages of card sorting sessions:
  - They only involve the elements that you have written on the cards.
  - They suggest solutions that imply structures.
  - They become difficult to navigate with more categories.

Conceptual Design – *Semantic Network*

- A semantic network is a web of concepts that are linked through association.
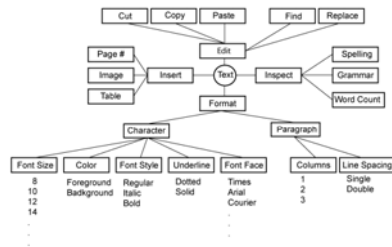
Conceptual Design – *Semantic Network*

- Advantages of semantic networks:
  - They allow an easy way to explore the problem space.
  - They provide a way to create clusters of related elements.
  - They provide a graphical view of the problem space.
  - They resonate with the ways in which people process information.

Conceptual Design – *Semantic Network*

- Disadvantages of semantic networks:
  - They require knowledge of the problem space.
  - They can lead beyond the problem space.
  - There is no formal semantics for defining symbol meaning.

Conceptual Design – *Personas*

- Personas are archetypes of actual users, defined by the user's goals and attributes.

"Personas are derived from patterns observed during interviews with and observations of users and potential user (and sometimes customers) of a product"

(Cooper & Reimann, 2003, 67)

Conceptual Design – *Personas*

- A persona is created by identifying the primary stakeholder and creating an identity based on the stakeholder profiles and other collection activities such as interviews and surveys.

- Expected to have:
  - A name
  - Goals and motivating forces
  - Behaviours and a personality

Conceptual Design – *Personas*

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Personas should be a strict reflection of the information derived from the collection activities.

- If you cannot point to a direct one-to-one relation with an observed user behavior, then that particular persona characteristic is either unnecessary or, more important, erroneous and will lead to incorrect design decisions.

Conceptual Design – *Personas*

- Advantages of personas:
  - They are quick and easy to create.
  - They provide a consistent model for all team members.
  - They are easy to use with other design methods.
  - They make the user real in the mind of the designer.

- Disadvantages of personas:
  - They can be difficult to create if the target audience is international.
  - Having too many personas will make the work difficult.
  - There is a risk of incorporating unsupported designer assumptions.

1-17

Persona example

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Persona example

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Conceptual Design – Scenarios, Flowcharts, and Cognitive Walkthroughs

- Scenarios
  - A description of a typical task
  - It describes
    - The basic goal
    - The conditions that exist at the beginning of the task
    - The activities in which the persona will engage
    - The outcomes of those activities

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Scenarios afford a rich picture of the user's tasks

1-20

Scenario example

Accessing Design Files from a remote server

PACT Analysis

People: Design engineer on a project

Activities: Using the DMS to identify released document set for a design part

Context: Remote site work environment, independently managed work activity

Technology: Mobile interface to previous PC-based DMS

Scenario

Engineer is on site discussing construction of 'Bridge D' 'Deck' with contractors. Doesn't believe that they have all the documentation and needs to check their set of documents against the master set. Uses mobile device to access DMS and authenticates with the system. Selects project 'Bridge D' and design part 'Deck'. Requests the set of released documents to be identified. Works through the identified set of documents checking document codes, release date, and versions with the contractor. Identifies no anomalies with the contractor's set and completes programme task.

Conceptual Design – Scenarios, Flowcharts, and Cognitive Walkthroughs

- Flowcharts can be:
  - Simple network diagrams that identify the pages of a Web site and the navigational links between them
  - Sophisticated diagrams that capture conditional junctures and computational processes
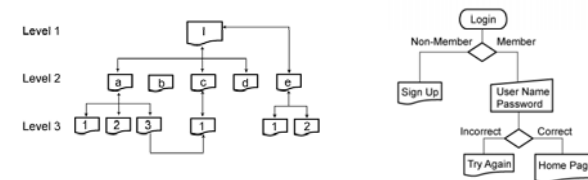
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Conceptual Design – Scenarios, Flowcharts, and Cognitive Walkthroughs

- Cognitive walkthrough - the evaluator follows the various scenarios using the flowcharts or the low-fidelity prototypes

- The evaluator takes the part of the primary stakeholder and tries to accomplish that stakeholder's various tasks

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Summary

- User centered design approach helps identify real user requirements at conceptual design stage and beyond

- Personas and scenarios are important approaches to support conceptual design