



# Human-Computer Interaction IS4300

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## Quiz

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Closed book / Closed notes  
10 minutes



## Norman Ch 5 Design for Errors

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- Slips
- Mistakes
- Modes
- Preventing Errors
- Error Recovery



## Slips

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- Capture errors
    - start of task sequence same, e.g., drive to store, but end up going to work
  - Description errors
    - two tasks are very similar, e.g., throwing laundry in toilet
  - Data-driven errors
    - need a number, but confronted with another and get confused
  - Associative activation errors
    - internal associations between tasks, e.g., freudian slips
  - Loss-of-activation errors
    - forgetting why you started a task
  - Mode errors
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- *All caused by inattention*
  - *Do confirmation dialogs help?*



## Mistakes

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- “Wide” vs. “Deep” tasks
- Explaining away errors



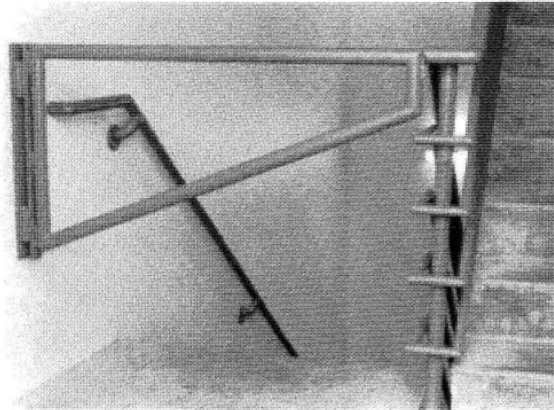
## Design for Error

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- Design to minimize error
- Undo
- Error Feedback
- Attitude: assume errors will be made as part of problem solving

## Forcing Functions

- Lockouts



## Norman Ch 6 User-centered Design

- What works against usability in new product design?
- error of putting aesthetics first
- I am not my user
- complexity of design
- Feature creep vs. simplicity

## The Problem with Computers

- Invisible
- Abstract
- Complex
- Software designed by Programmers
- New applications, tasks (no standards)
- Easy to perform irreversible actions






 User-Centered Design

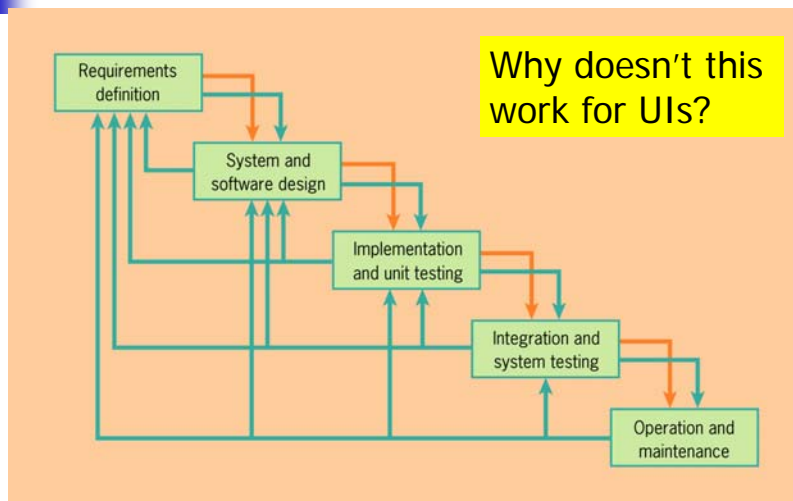
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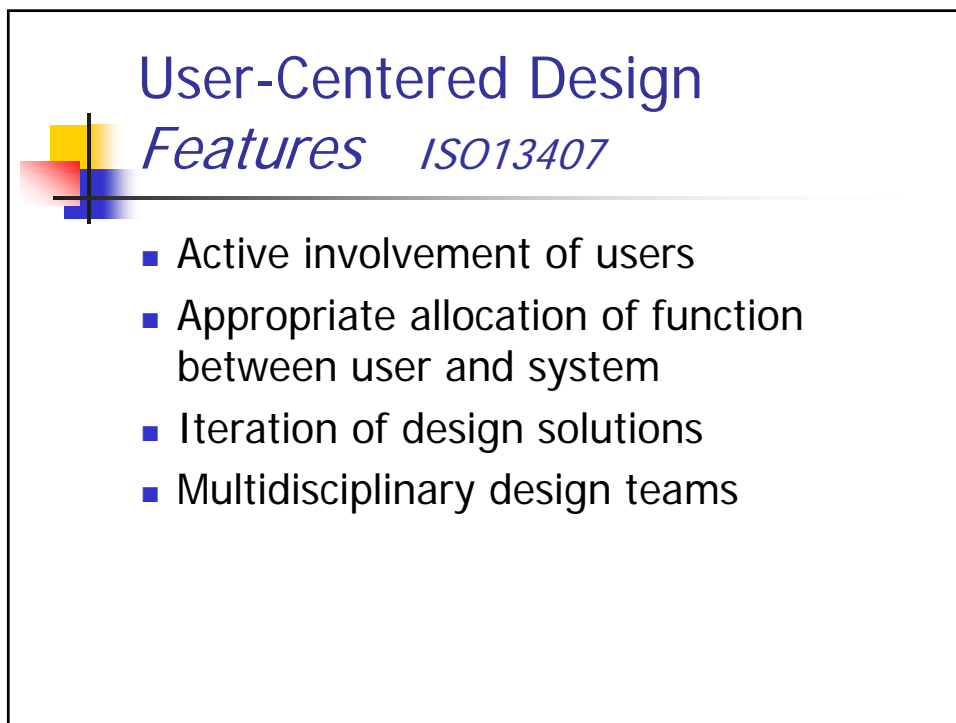
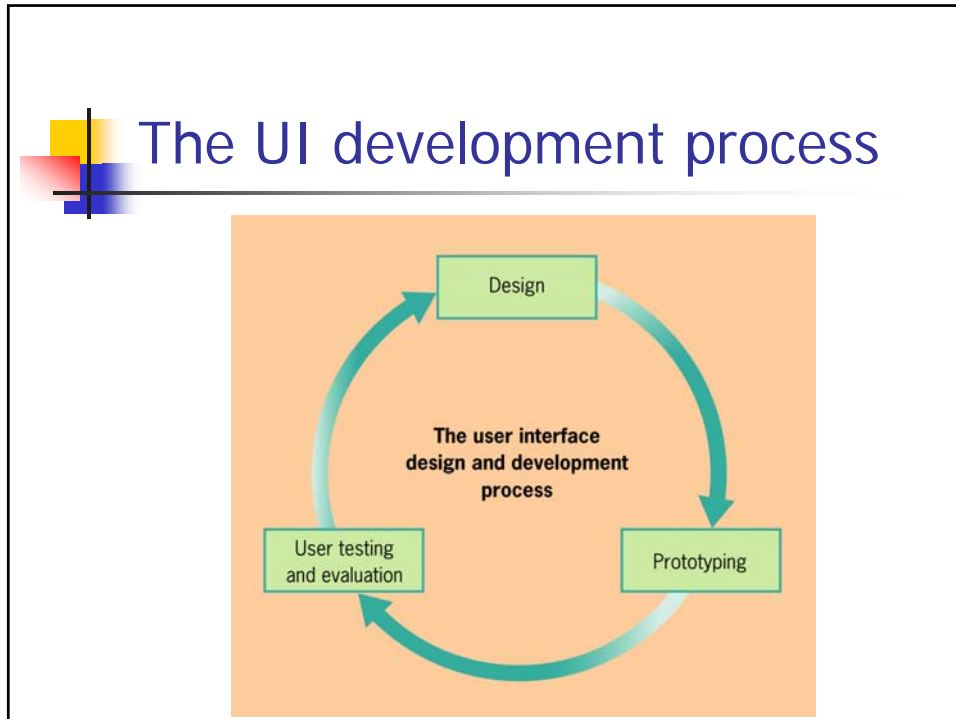
Stone Ch 1

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- **User-centered design (UCD)** is an approach to user interface design and development that involves users throughout the design and development process.
  - How can we involve users?



## Software Lifecycle







## User-Centered Design

### *Essential design activities* ISO13407

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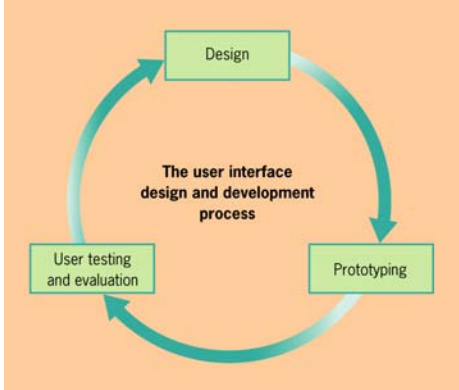
- Understand and specify the context of use
- Specify the user and organizational requirements
- Produce design solutions (prototypes)
- Evaluate designs with users against requirements



## User-Centered Design

- Try lots of stuff. See how it plays with the users.
  - Involve representative users in all stages of the development process.
  - Minimize the cost of and commitment to prototypes.
  - Users often can't tell you which alternative is "better" – you have to test and measure.

## Usability Engineering



The process by which we achieve “good enough” usability.

How do we know when we’re there?

## Usability Engineering

### *Nielsen*

- Must define usability attributes (multi-dimensional)
- Must define specific measures for each
- Must define “good enough” (goal) levels for each
  - If appropriate, current & ideal levels for each
- Example attributes (measures?)
  - Learnability
  - Efficiency
  - Memorability
  - Low error rate
  - Subjectively pleasing



## Exercise

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- Given the website you reviewed last week...
  
- Who are the target users?
- If you were redesigning the site, what usability metrics would you use?
- What kinds of evaluation (user feedback) would you use in your re-design process?



## To do...

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- Read
  - Users & Tasks (Stone Ch 3-4)
- Final Team Project Proposals
- Continue I3 ethnography homework

