Questions?

- Project #4
- HW #6
- Reading for next class is online
Qualitative evaluation

• Methods
  – Introspection
    • *Walkthrough*
  – Direct observation
    • *Simple observation*
    • *Think-aloud*
    • *Constructive interaction*
  – Query via interviews and questionnaires
Be prepared!

- **Hardware**
  - Computer, video equipment…

- **Software**
  - Up and running, properly debugged…

- **Tasks**
  - Realistic
  - Informative

- **Facilitator**
  - Using a checklist might be useful
  - Practice!
Walkthrough

• Designer tries the system (or prototype) out
  – Does the system “feel right”?
  – What if?

• Problems
  – Completely subjective
  – Designer is a non-typical user

From “The inmates are running the Asylum (A Cooper)
Direct observation

• Observing (and recording) users interacting with the system
  – In lab or in the field
  – For a set of pre-determined tasks or through normal duties

• Excellent at identifying gross design/interface problems

• Three general approaches:
  – simple observation
  – think-aloud
  – constructive interaction
Recording observations

- **Need a record**
  - Further analysis
  - Proofs during discussion

- **Techniques**
  - Paper and pencil
    - *Simple to set up*
      - Free form
      - Coding scheme
    - *Might be biased*
  - Audio/Video recording
    - *More accurate*
    - *Time consuming to analysis*
      - Encoding is a time consuming process

From “Observing the user experience” (Kuniavsky)
# Coding scheme example

- Tracking activity in the office

<table>
<thead>
<tr>
<th>Time</th>
<th>Desktop activities</th>
<th>Absences</th>
<th>Interruptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Computer</td>
<td>Desk</td>
<td>Telephone</td>
</tr>
<tr>
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<td>s</td>
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<td>9:13</td>
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</tbody>
</table>
Simple observation method

• Evaluator observes users interacting
  – Sometime behind a half-silvered mirror

• Drawback
  – No insight into the user decision process or attitude
The think aloud method

• Subjects are asked to say what they are thinking/doing
  – What they believe is happening
  – What they are trying to do
  – Why they took an action

• Widely used in industry

• Drawbacks
  – Awkward/uncomfortable for subject (thinking aloud is not normal!)
  – “Thinking” about it may alter the way people perform their task
  – Hard to talk when they are concentrating on problem
The constructive interaction method

• Two people work together on a task
  – Normal conversation between the two users is monitored
    • removes awkwardness of think-aloud
  – Variant: Co-discovery learning
    • Use semi-knowledgeable “coach” and naive subject together
    • Make naive subject use the interface

• Drawback
  – Need a good team
Interviews

• Method
  – Pick the right population
    • *Individual or group discussion*
  – Be prepared
    • *Plan a set of central questions*
  – Probe more deeply on interesting issues as they arise
    • *Focus on goals not technology*
    • *Find the root of the problem*

• Pros and cons
  – Very good at directing next design phase
    • *Provide many constructive suggestions*
  – Subjective
    • *Do not ask leading questions*
  – Time consuming
Debriefing

• Post-observation interviews
  – Questions from users diary
  – Questions from your notes
  – Questions from a video footage

• Pros and Cons
  – Avoids erroneous reconstruction
    • Provide many constructive suggestions
  – Time consuming
    • But extremely valuable
Questionnaires and surveys I

• Method
  – Pick the population
    • *Demographics and sample size*
      – Between 10 and 1000 subjects
  – Establish the purpose of the questionnaire
    • *What information is sought?*
    • *How would you analyze the results?*
  – Establish the means of deliver/collection
    • *On-line*
    • *Direct interaction with users*
      – Walking in the street
      – Post-user testing
    • *Surface mail*
      – including a pre-addressed reply envelope gives far better response
Questionnaires and surveys II

• Method
  – Design the questionnaire
    • Don’t forget to debug it!
  – Deliver
  – Collect and analyze the data
  – Establish the main findings

• Example
  – Brainstorming tool
Closed questions

• Supply possible answers

Characters on the computer screen are:
  hard to read   easy to read
  1   2   3   4   5

  – Easy to analyze
  – More difficult for respondents
  – Be sure to be specific

Do you use computers at work:
  O often   O sometimes   O rarely

vs

Do you use computers at work:
  O more than 4 hrs   O between 1 and 4 hrs   O less than 1 hrs
Style of closed question: Scalar

Characters on the computer screen are:

<table>
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<th>easy to read</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

- Be sure to pick odd numbers of choice
  - *Often between 5 and 7*
Style of closed question: Multi-choice

Which types of software have you used? (tick all that apply)
  O word processor
  O database
  O spreadsheet
  O compiler

– Can be exclusive or inclusive
Style of closed question: Ranked choice

Rank the usefulness of these methods of issuing a command (1 most useful, 2 next most useful..., 0 if not used)

__2__ command line
__1__ menu selection
__3__ control key accelerator

– Helpful to understand users preference
Open ended questions

• The user answers in his/her own words
  Can you suggest any improvements to the interfaces?
  – Good for general information
  – Difficult to analyze
  – Can complement closed questions
Questionnaires and surveys

• Pros and cons
  – Preparation is expensive
    • Need to design and debug the questionnaire
  – Can reach a large population
    • But often a low return rate
  – As good as the questions asked
  – Data collection can be tedious
    • Use automatic forms for large volume