Usefulness and Usability Evaluation

CSC 318 Tutorial
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Evaluating Usability

- How do we ensure usefulness and usability?
  - Usability Goals (PRS p19)
    - E.g. Efficient, effective, safe, learnable, etc.
  - User Experience Goals (PRS p19)
    - E.g. Rewarding, enjoyable, aesthetically pleasing, etc.
  - Design Principles (PRS p21)
    - Norman: Visibility, feedback, constraints, mappings, affordances
  - Usability Principles (PRS p27)
    - Nielson: Top Ten Usability Principles
  - Rules and Standardized Guidelines
    - E.g. ISO13407 Human-centered Design Processes (RS p268)

Usefulness and Usability

- What is usefulness?
  - How much functionality meets users' needs
- What is usability?
  - Effective
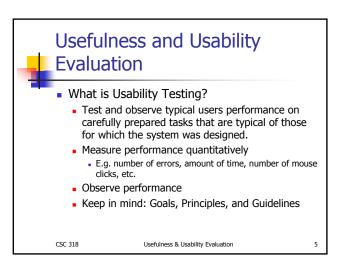 - Efficient
  - Learnable
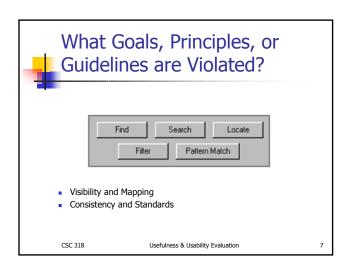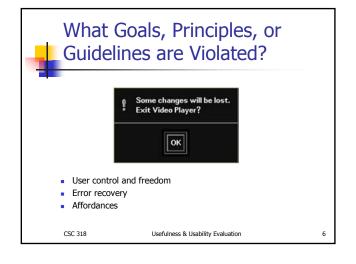 - Safe, etc.

Evaluating Usability

- How do we ensure usefulness and usability?
  - Field Studies (PRS p341)
    - E.g. questionnaires, survey, ethnography, etc.
  - Usability Testing (PRS p323)
    - E.g. naturalistic observations, scientific experiments, etc.
    - More Today on Usability testing

Usefulness and Usability Evaluation

- What is Usability Testing?
  - Test and observe typical users performance on carefully prepared tasks that are typical of those for which the system was designed.
  - Measure performance quantitatively
    - E.g. number of errors, amount of time, number of mouse clicks, etc.
  - Observe performance
  - Keep in mind: Goals, Principles, and Guidelines

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What Goals, Principles, or Guidelines are Violated?

- Visibility and Mapping
- Consistency and Standards

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What Goals, Principles, or Guidelines are Violated?

- User control and freedom
- Error recovery
- Affordances
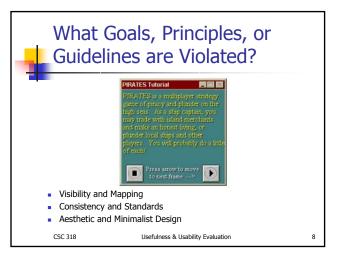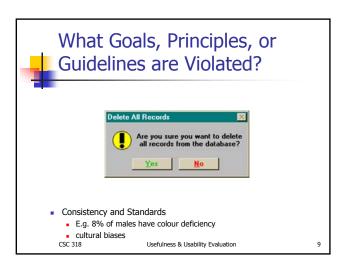
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What Goals, Principles, or Guidelines are Violated?

- Visibility and Mapping
- Consistency and Standards
- Aesthetic and Minimalist Design

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What Goals, Principles, or Guidelines are Violated?

Delete All Records

⚠ Are you sure you want to delete all records from the database?

[Yes]   [No]

- Consistency and Standards
  - E.g. 8% of males have colour deficiency
  - cultural biases

DECIDE Framework (PRS 438)

- <u>D</u>etermine goals
  - Identify usability problems with the UofT library website
- <u>E</u>xplore questions
  - Can users find what they're looking for without running into any problems?
- <u>C</u>hoose paradigms & techniques
  - Usability testing where subjects will use the 'think-aloud' technique

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Usability Testing Example

- Test the usablility of the UofT Library Website:
  - A volunteer will complete a short task
  - The class will observe and/or take measurements

DECIDE Framework (PRS 438)

- <u>I</u>dentify the practical issues
  - Design a typical task: Find the "The Design of Everyday Things" by Don Norman
    - First, check if it's available as an electronic book to view on the web.
    - If it's not, find out where it's available.
    - Add it to my.library for future reference.
  - What can be measured? What can be observed?
  - Select typical users
  - Prepare the testing conditions
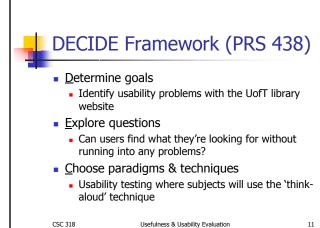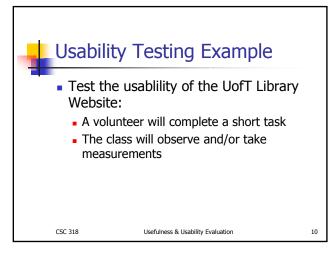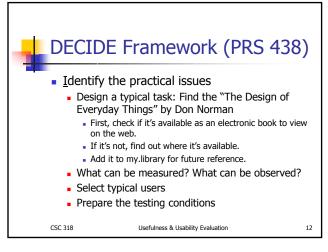
DECIDE Framework (PRS 438)

- <u>D</u>eal with ethical issues
  - Consent forms, use of intrusive observational methods, etc.
- <u>E</u>valuate, analyze, & present data
  - Determine salient data and work with it to make conclusions

Conclusions

- What did you measure?
  - E.g. Time, no. of pages visited, no. of errors, etc.
- What did you observe?
  - Any problems finding information?
  - What were the best and worst parts of the system?
  - Can these findings be described in terms or goals, principles, or rules?
  - Can administer post-task questionnaire or survey
- What conclusions can be made?

Usability Testing Example

- Task:
  - Find the "The Design of Everyday Things" by Don Norman
    - First, check if it's available as an electronic book to view on the web.
    - If it's not, find out where it's available.
    - Add it to my.library for future reference.
  - Use think-aloud techniques
  - Volunteer?
  - Everyone else is an observer/notetaker

Conclusions

- What are some experimental considerations from this example?
  - Environment
  - Only one subject, may not be typical user
  - Task only exemplifies subset of potential problems (this is especially important when testing with prototypes)

Conclusions

- Read PRS Ch 14
- Questions about Assignment 4