Usability and user interfaces

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Usability motivations

Why is ease-of-use/ usability an issue?

- Life-critical systems
  - Control of power plants, nuclear power plants especially
  - Air traffic control
  - Airplanes and other vehicles
  - Hospital and medical systems
- Requirements
  - Speed and accuracy of action
  - Good retention of learning

Usability motivations

- **Frequently used systems**
  - Banking
  - Corporate databases and intranets
  - Transportation tickets
  - Points-of-sales terminals
  - Mobile phones and other gadgets

Usability goals

- ISO 9241 standard:
  - Effectiveness, efficiency & satisfaction

Measured by:

- Time to learn
- Speed of performance
- Rate of errors by users
- Retention over time
- Subjective satisfaction

Universal usability, needs

- Variations in physical abilities, disabilities
- Variations in use environment
- Diverse cognitive abilities
- Diverse perceptual abilities (vision, hearing)
- Personality differences
- Cultural and international diversity
- Special user groups: children and the elderly

Eight golden rules of interface design

1. Strive for consistency
2. Cater to universal usability
3. Offer informative feedback
4. Prevent errors
5. Design dialogs to yield closure
6. Permit easy reversal of actions
7. Support internal locus of control
8. Reduce short-term memory load