Heuristic Evaluation

Developed by Jakob Nielsen
- Helps find usability problems in a UI design
- Small set (3-5) of evaluators examine UI independently check for compliance with usability principles ("heuristics")
- Evaluators only communicate afterwards
  - Findings are then aggregated
  - Use violations to redesign/fix problems
- Can perform on working UI or on sketches

Why Multiple Evaluators?
- Every evaluator doesn’t find every problem
- Good evaluators find both easy & hard ones

Heuristics

H1: Visibility of system status
H2: Match between system & real world
H3: User control & freedom
H4: Consistency & standards
H5: Error prevention
H6: Recognition rather than recall
H7: Flexibility and efficiency of use

Outline

- Heuristic Evaluation Overview
- The Heuristics
- How well HE works?
Heuristics (cont.)

H8: Aesthetic & minimalist design

bad

From https://icons8.com/articles/redesigning-boarding-pass-again/

good

Heuristics (cont.)

bad

H9: Help users recognize, diagnose, & recover from errors

Good Error Messages

• Clearly indicate what has gone wrong
• Human readable
• Polite
• Describe the problem
• Explain how to fix it
• Highly noticeable

H10 – Help & Documentation

• Better if the system can be used without documentation, but it may be necessary
• How
  – easy to search
  – focused on task
  – list concrete steps

Heuristic Violation Examples

1. [H6 Recognition Rather Than Recall]
   Can’t copy info from one window to another
   – user needs to memorize the data & retype
   – fix: allow copying

2. [H4 Consistency and Standards]
   Typography uses different fonts in 3 dialog boxes
   – slows users down
   – probably wouldn’t be found by user testing
   – fix: pick a single format for entire interface
Severity Ratings

0 - don’t agree that this is a usability problem
1 - cosmetic problem
2 - minor usability problem
3 - major usability problem; important to fix
4 - usability catastrophe; imperative to fix

Severity Ratings Example

1. [H4 Consistency & Standards] [Severity 3]

The interface used the string “Save” on the first screen for saving the user’s settings, but used the string “Store” on the second screen. Users may be confused by this different terminology for the same function.

Fix: Use “Save” everywhere in the application.

Problems Found Last Year

1. H3 – no purchase button [100]
2. H4 – remove column has check boxes and then one entry w/ yes/no [100]
3. H5 – illegal input (text) allowed in quantity field [90]
4. H1 – not clear who is logged in [10]
5. H2 – “what fits my car” is not a good term that people would know [20]
6. H5 – user can add “out of stock” items [80]

Decreasing Returns

- Problems found vs. Number of Evaluators
- Benefits / Cost vs. Number of Evaluators

Heuristic Evaluation Summary

- Have evaluators go through the UI twice
- Ask them to see if it complies with heuristics – note where it doesn’t & say why
- Have evaluators independently rate severity
- Combine the findings from 3 to 5 evaluators – come to agreement on problems, fixes & severity
- Alternate with user testing

* Caveat: graphs for a specific example
Further Reading

Heuristic Evaluation

- Longer lecture
  - [drive.google.com/file/d/0BwiiB6wu4sBaN2tfZGxKb2tU49/view](https://drive.google.com/file/d/0BwiiB6wu4sBaN2tfZGxKb2tU49/view)

- Books
  - Usability Engineering, by Nielsen, 1994

- Web site
  - [http://www.nngroup.com/articles/](http://www.nngroup.com/articles/)

Next Time

- Lecture
  - Human Abilities

- Readings
  - Listen to [99% Invisible Podcast on Progress / Waiting](http://99percentinvisible.org/episodes/)

- Next assignments
  - Individual Heuristic Evaluation
  - Group Heuristic Evaluation (in class Monday)