

CS377E: DESIGNING SOLUTIONS TO GLOBAL GRAND CHALLENGES

Heuristic Evaluation

Prof. James A. Landay & Julie Stanford
 Computer Science Department
 Stanford University

CS 377E
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 May 4, 2016

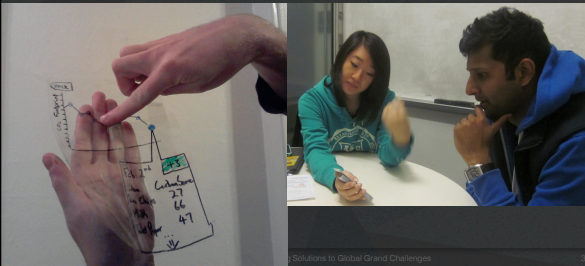
Outline

- Heuristic Evaluation Overview
- The Heuristics
- Exercise

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Evaluation

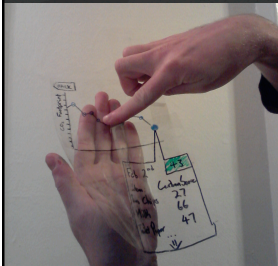
- About figuring out how to improve design
- Issues with lo-fi tests?



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Evaluation

- About figuring out how to improve design
- Issues with lo-fi tests?



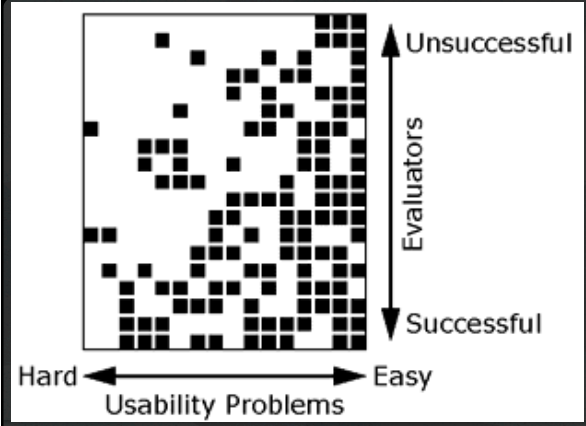
- Not realistic
 - visuals & performance
- Not on actual interface
 - can't test alone
- Need participants
 - can be hard to find repeatedly

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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

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Heuristics

H2-1: Visibility of system status
 H2-2: Match between system & real world
 H2-3: User control & freedom

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Heuristics (cont.)

H2-4: Consistency & standards
 H2-5: Error prevention
 H2-6: Recognition rather than recall

H2-7: Flexibility and efficiency of use
 H2-8: Aesthetic & minimalist design
 H2-9: Help users recognize, diagnose, & recover from errors

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Heuristics (cont.)

bad

Error: You have not specified a Web Browser, or Web Browser specified is incorrect!

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Heuristics (cont.)

good

the latest presentation

James A. Landay (cs.stanford.edu)

I've edited the presentation. See the attached file.

James A. Landay 刘哲明

The page at <https://mail.google.com> says: It seems like you forgot to attach a file. You wrote "See the attached" in your message, but there are no files attached. Send anyway?

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Good Error Messages

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

Need help with your quote? Call us at 1-800-950-7168

Your premium estimate

To continue, please:

1. Complete the missing information (highlighted in red)

2. Review the quote details

3. Check the quote details

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Heuristic Violation Examples

- [H1-3 Minimize the users' memory load]
 Can't copy info from one window to another
 – fix: allow copying
- [H2-4 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

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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

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Severity Ratings Example

1. [H1-4 Consistency] [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.

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Decreasing Returns

problems found

benefits / cost

* Caveat: graphs for a specific example

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Heuristic Evaluation Summary

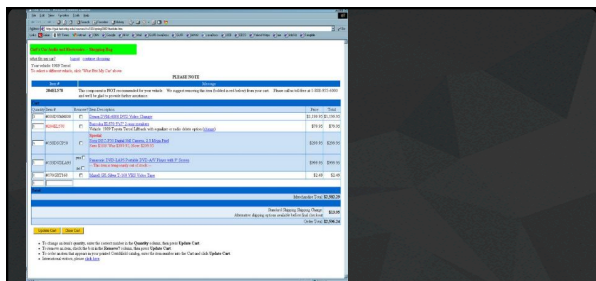
- Have evaluators go through the UI twice
- Ask them to see if it complies with heuristics
 - note where it doesn't & say why
- Combine the findings from 3 to 5 evaluators
- Have evaluators independently rate severity
- Alternate with user testing

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EXERCISE

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<http://hci.stanford.edu/courses/cs147/2015/au/assignments/simple-heuristic-evaluation.pdf>
 Find 12-15 Heuristic Violations

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16

Problems Found

1. H2-4 Consistency
remove column, 4th item is different w/ checkboxes. [150]
2. H2-9 Error prevention
non-numeric data in the quantity. Do not allow. [125]
3. H2-2 Match between system & real world
vehicle selection link not language I'd expect [100]
4. H2-1 Visibility of System Status
unclear which item to remove based on error message ("red/bold"). [150]

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20

Further Reading Heuristic Evaluation

- Longer lecture
– <https://drive.google.com/file/d/0BweiB6wu4sBaN2tfZGxKb2tuOTg/view>
- Books
– *Usability Engineering*, by Nielsen, 1994
- Web site
– <http://www.nngroup.com/articles/>

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18

Next Time

- Lecture
– TBD
- Read
– [How to Conduct a Heuristic Evaluation](#) by Jakob Nielsen
- Project
– Medium-fi Prototype & 3 Tasks due on Friday
– Next week Heuristic Evaluation of other teams

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20

