

Heuristic Evaluation (Individual)

Due: At the start of your studio (Thurs/Fri **Feb. 17-18**)

Overview

You have been hired as a consultant to another group in your studio. They are building a new user interface for their course project, but they would like some outside assistance in finding any problems with their prototype interface. Your TA will send you links to your assigned team's medium-fidelity presentation slides and medium-fidelity prototype.

Evaluation

You will perform a heuristic evaluation (*individually*) of your assigned team's user interface using only the materials they turned in for their last project assignment ("Medium-fi Prototype" slides, prototype README & working demo of their prototype). Using their tasks, task flows, interface design, screenshots, and medium-fi prototype, you will apply [Nielsen's heuristics](#) (*as well as three new heuristics we've added*) to the user interface. You should be able to get all of this information from their Assignment 6. Read their slides first and then run their prototype. Your evaluation will use both the information in the presentation and the prototype. Try to **focus your evaluation more on giving helpful feedback on what you see rather than on missing features**. If you are evaluating a team that is designing a speech based interface, you may find it useful to instead use [heuristics](#) from this [paper](#).

Please use the heuristics and numbering scheme from our lecture slides on heuristic evaluation – see the end of this document (also linked to in [Nielsen's chapter](#)). You will produce a report showing the problems in the interface.

Report

Your report (Google Doc) will **list each of the problems found** in the following format:

problem#. **heuristic violated**

description of problem, rationale for why you think it violates the heuristic & suggestion to fix

For example:

1. **H4 Consistency & Standards**

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

Fix: Use "Save" on all screens.

2. **H3 User Control & Freedom**

The interface brings the user into a set of preference screens when they select "New User", but doesn't allow the user out of the dialog until they fill out all four screens. There is no way to cancel from any of the screens if a user came into the first screen by accident.

Fix: Add a "Cancel" function to each screen in the sequence.

Your report will also **summarize the number of violations found in each of the thirteen heuristic categories** (make a table – see below) and give the total number of violations in the entire interface. Finally, your report should close with some **overall recommendations** you have for improving the user interface given what you read in their presentation slides and what you experienced in testing their prototype (1-2 paragraphs).

Example Table for Summary of Violations

Category	# Violations
H1: Visibility of System Status	
H2: Match b/w System & World	
H3: User Control & Freedom	
H4: Consistency & Standards	
H5: Error Prevention	
H6: Recognition not Recall	
H7: Flexibility & Efficiency of Use	
H8: Aesthetic & Minimalist Design	
H9: Help Users with Errors	
H10: Help & Documentation	
H11: Accessible	
H12. Fairness & Inclusion	
H13. Value Alignment	
Total Violations	

Deliverables

You will write up your report as a **Google Doc** and **share** it with your TA (Google Doc) by the due date.

Please give your file a name that identifies you (e.g., JohnDoe-ProjectYouEvaluated-HE). **Your**

write-up should follow this outline with separate sections for the top-level items:

1. Prototype Description (one sentence description of the UI you are evaluating)
2. Violations Found (i.e., the list)
3. Summary of Violations (the above table)
4. General Recommendations (1-2 paragraphs)

Examples of strong prior reports: [Example 1](#), [Example 2](#)

Grading Criteria

You will be graded on how complete your HE report is in terms of **coverage** of the issues present in the user interface design, **clarity** of your violation descriptions, and **quality** of your recommendations. You should concentrate on the interface the group has *designed*, not only on what has been *implemented*. Reports that continually focus on features that are missing, but will clearly be added will be marked down (e.g., “there should be help on this screen... and this screen...” – if it is a globally missing feature like “help”, you can report it once). **Please focus on evaluating what they have designed so far.**

Prototype Description (5 points)

- Did you accurately and succinctly describe the prototype you are evaluating?

Violations (60 pts)

- Did you find a **large percentage of the violations**? (20 points)
- Are you finding violations across **all three tasks**? (10 points)
- Are you finding **different kinds of violations** on the interface the group has designed, not just similar violations in many places or on missing features? Make a note if something is frequent, but don't worry about citing every example. (10 points)
- Do you have some **less obvious violations** (if they exist) in addition to the more obvious ones? Don't worry if it's hard to pick a category for a violation. It's more important that you spotted a difficult part of the interface. Many violations, even if they are small, will be helpful to the team. (5 points)
- Are your **descriptions of violations clear**, easy to understand, and organized in the correct format? (15 points)

Summary (15 pts)

- Have you summarized your results in a table? This should be a helpful and easy to read summary that gives the number of violations by category, as well as overall.

Recommendations (20 pts)

- Is there any feedback you have that doesn't fit neatly into the violations?
- What are your general impressions when using the prototype? Do you have any additional feedback that you think would be helpful to the other team?
- Is there a larger trend or way of thinking that is spread across many of the violations you found?

Thirteen Usability Heuristics, adopted from [Nielsen \(2nd version\)](#)

These are thirteen general principles for user interface design. They are called “heuristics” because they are more in the nature of rules of thumb than specific usability guidelines.

H1. Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

H2. Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

H3. User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

H4. Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

H5. Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

H6. Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable when appropriate.

H7. Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

H8. Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

H9. Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

H10. Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

H11. Accessible

Users can interact with the system using alternative input methods. Content is legible with distinguishable contrast and text size. Key information is upfront and not nested for screen readers. Purely visual or auditory content has text-based alternatives for users with low vision and low hearing.

H12. Fairness and inclusion

Users shouldn't feel that the design is not made for them. The design should meet all users' needs equally and prevent the reproduction of pre-existing inequities. It should not create additional burdens for members of disadvantaged populations.

H13. Value alignment

The design should encode values that users can understand and relate to. Conflicting collateral values should not emerge when the user interacts with the product. Encoded values should match users' values in a broad set of use-contexts.