



The Eight Golden Rules of Interface Design

I have often been asked to distill the vast corpus of user interface design into a few key principles. While I was reluctant to do this, it turned out to be a good exercise to write “Golden Rules,” that are applicable in most interactive systems. These principles, derived from experience and refined over three decades, require validation and tuning for specific design domains. No list such as this can be complete, but even the original list from 1985, has been well received as a useful guide to students and designers. Jakob Nielsen, Jeff Johnson, and others have expanded these rules and included their variations, which enriches the discussion. Each edition of the book produces some changes. This version is from Section 3.3.4 of the Sixth edition:

Shneiderman, B., Plaisant, C., Cohen, M., Jacobs, S., and Elmqvist, N., Designing the User Interface: Strategies for Effective Human-Computer Interaction: Sixth Edition, Pearson (May 2016) <http://www.cs.umd.edu/hcil/DTUI6>

1. Strive for consistency.

Consistent sequences of actions should be required in similar situations; identical terminology should be used in prompts, menus, and help screens; and consistent color, layout, capitalization, fonts, and so on, should be employed throughout. Exceptions, such as required confirmation of the delete command or no echoing of passwords, should be comprehensible and limited in number

2. Seek universal usability.

Recognize the needs of diverse users and design for plasticity, facilitating transformation of content. Novice to expert differences, age ranges, disabilities, international variations, and technological diversity each enrich the spectrum of requirements that guides design. Adding features for novices, such as explanations, and features for experts, such as shortcuts and faster pacing, enriches the interface design and improves perceived quality.

3. Offer informative feedback.

For every user action, there should be an interface feedback. For frequent and minor actions, the response can be modest, whereas for infrequent and major actions, the response should be more substantial. Visual presentation of the objects of interest provides a convenient environment for showing changes explicitly (see the discussion of direct manipulation in Chapter 7).

4. Design dialogs to yield closure.

Sequences of actions should be organized into groups with a beginning, middle, and end. Informative feedback at the completion of a group of actions gives users the satisfaction of accomplishment, a sense of relief, a signal to drop contingency plans from their minds, and an indicator to prepare for the next group of actions. For example, e-commerce websites move users from selecting products to the checkout, ending with a clear confirmation page that completes the transaction.

5. Prevent errors.

As much as possible, design the interface so that users cannot make serious errors; for example, gray out menu items that are not appropriate and do not allow alphabetic characters in numeric entry fields (Section 3.3.5). If users make an error, the interface

should offer simple, constructive, and specific instructions for recovery. For example, users should not have to retype an entire name-address form if they enter an invalid zip code but rather should be guided to repair only the faulty part. Erroneous actions should leave the interface state unchanged, or the interface should give instructions about restoring the state.

6. Permit easy reversal of actions.

As much as possible, actions should be reversible. This feature relieves anxiety, since users know that errors can be undone, and encourages exploration of unfamiliar options. The units of reversibility may be a single action, a data-entry task, or a complete group of actions, such as entry of a name-address block.

7. Keep users in control.

Experienced users strongly desire the sense that they are in charge of the interface and that the interface responds to their actions. They don't want surprises or changes in familiar behavior, and they are annoyed by tedious data-entry sequences, difficulty in obtaining necessary information, and inability to produce their desired result.

8. Reduce short-term memory load.

Humans' limited capacity for information processing in short-term memory (the rule of thumb is that people can remember "seven plus or minus two chunks" of information) requires that designers avoid interfaces in which users must remember information from one display and then use that information on another display. It means that cellphones should not require reentry of phone numbers, website locations should remain visible, and lengthy forms should be compacted to fit a single display.

These underlying principles must be interpreted, refined, and extended for each environment. They have their limitations, but they provide a good starting point for mobile, desktop, and web designers. The principles presented in the ensuing sections focus on increasing users' productivity by providing simplified data-entry procedures, comprehensible displays, and rapid informative feedback to increase feelings of competence, mastery, and control over the system.

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