

Guidelines in HCI

Shneidermans Eight Golden Rules

Ben Shneiderman, an American computer scientist consolidated some implicit facts about designing and came up with the following eight general guidelines –

- Strive for Consistency.
- Cater to Universal Usability.
- Offer Informative feedback.
- Design Dialogs to yield closure.
- Prevent Errors.
- Permit easy reversal of actions.
- Support internal locus of control.
- Reduce short term memory load.

These guidelines are beneficial for normal designers as well as interface designers. Using these eight guidelines, it is possible to differentiate a good interface design from a bad one. These are beneficial in experimental assessment of identifying better GUIs.

Norman's Seven Principles

To assess the interaction between human and computers, Donald Norman in 1988 proposed seven principles. He proposed the seven stages that can be used to transform difficult tasks. Following are the seven principles of Norman –

- Use both knowledge in world & knowledge in the head.
- Simplify task structures.
- Make things visible.
- Get the mapping right (User mental model = Conceptual model = Designed model).
- Convert constraints into advantages (Physical constraints, Cultural constraints, Technological constraints).
- Design for Error.
- When all else fails – Standardize.

Heuristic Evaluation

Heuristics evaluation is a methodical procedure to check user interface for usability problems. Once a usability problem is detected in design, they are attended as an integral part of constant design processes. Heuristic evaluation method includes some usability principles such as Nielsens ten Usability principles.

Nielsen's Ten Heuristic Principles

- Visibility of system status.
- Match between system and real world.
- User control and freedom.
- Consistency and standards.
- Error prevention.
- Recognition rather than Recall.

- Flexibility and efficiency of use.
- Aesthetic and minimalist design.
- Help, diagnosis and recovery from errors.
- Documentation and Help

The above mentioned ten principles of Nielsen serve as a checklist in evaluating and explaining problems for the heuristic evaluator while auditing an interface or a product.

Interface Design Guidelines

Some more important HCI design guidelines are presented in this section. General interaction, information display, and data entry are three categories of HCI design guidelines that are explained below.

General Interaction

Guidelines for general interaction are comprehensive advices that focus on general instructions such as –

- Be consistent.
- Offer significant feedback.
- Ask for authentication of any non-trivial critical action.
- Authorize easy reversal of most actions.
- Lessen the amount of information that must be remembered in between actions.
- Seek competence in dialogue, motion and thought.
- Excuse mistakes.
- Classify activities by function and establish screen geography accordingly.
- Deliver help services that are context sensitive.
- Use simple action verbs or short verb phrases to name commands.

Information Display

Information provided by the HCI should not be incomplete or unclear or else the application will not meet the requirements of the user. To provide better display, the following guidelines are prepared –

- Exhibit only that information that is applicable to the present context.
- Don't burden the user with data, use a presentation layout that allows rapid integration of information.
- Use standard labels, standard abbreviations and probable colors.
- Permit the user to maintain visual context.
- Generate meaningful error messages.
- Use upper and lower case, indentation and text grouping to aid in understanding.
- Use windows (if available) to classify different types of information.
- Use analog displays to characterize information that is more easily integrated with this form of representation.
- Consider the available geography of the display screen and use it efficiently.

Data Entry

The following guidelines focus on data entry that is another important aspect of HCI –

- Reduce the number of input actions required of the user.
- Uphold steadiness between information display and data input.
- Let the user customize the input.
- Interaction should be flexible but also tuned to the user's favored mode of input.
- Disable commands that are unsuitable in the context of current actions.
- Allow the user to control the interactive flow.
- Offer help to assist with all input actions.
- Remove "mickey mouse" input.