Terna Engineering College
Computer Engineering Department

Program: SEM VIII

Course: **Human Machine Interaction (HMI)**

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Assignment No. 2

Roll No. 43	**Question**: Explain in detail various human aspects that are important and must be considered in designing a good interface.

ANS: Various Human aspects that are important in designing a good interface are General interaction, information display, and data entry.

1. **General Interaction -** 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.

2. **Information Display**

Information provided 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 colours.
- 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.

3. **Data Entry**

The following guidelines focus on data entry −

- 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 favoured 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.

There are three factors that must be considered in designing a good interface:

1. **Development factors -** Development factors help by improving visual communication. These include: platform constraints, tool kits and component libraries, support for rapid prototyping, and customizability.
2. **Visibility Factors -** Visibility factors take into account human factors and express a strong visual identity. These include: human abilities, product identity, clear conceptual model, and multiple representations.

3. **Acceptances Factors** - Acceptance factors are an installed base, corporate politics, international markets, and documentation and training.

References:

1. https://web.cs.wpi.edu/~matt/courses/cs563/talks/smartin/int_design.html
2. https://www.tutorialspoint.com/human_computer_interface/quick_guide.htm
3. https://www.relevance.com/8-factors-to-consider-in-user-interface-design/

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