DESIGN RULES

SHNEIDERMAN'S 8 GOLDEN RULES

Shneiderman's 8 Golden Rules

1. *Strive for consistency*
2. *Cater to Universal Usability (Enable frequent users to use shortcuts)*
3. *Offer informative feedback*
4. *Design dialogs to yield closure*
5. *Offer error prevention and simple error handling*
6. *Permit easy reversal of actions*
7. *Support internal locus of control*
8. *Reduce short-term memory load*

Explanations & Examples

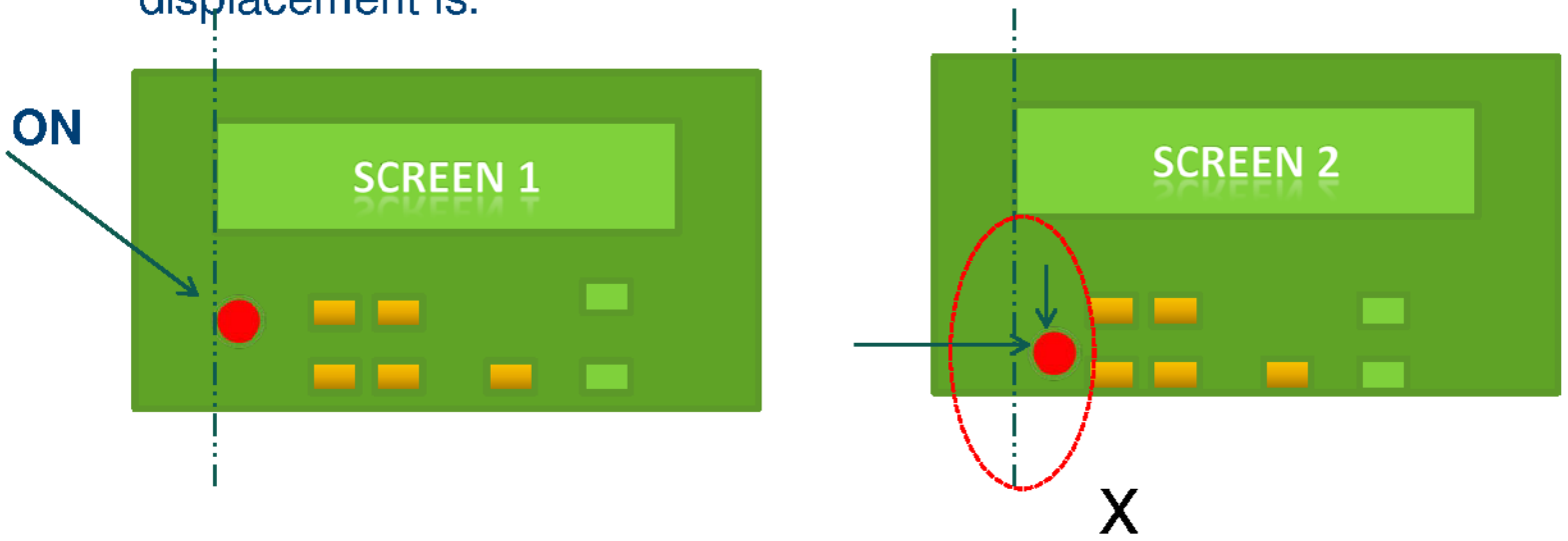
1. Strive for Consistency

- Users need to be able to do the same thing the same way that they have been doing.- every time.
- Interfaces need to exhibit ‘consistent’ quality across screens/ applications both visually as well as behaviorally.
- Consistency leads to a pattern which is easier to handle cognitively.
- Consistency such as ‘similar sequence of actions in similar situations’ makes it easy to learn.

Continued……..

Consistency can be achieved through graphical elements such as fonts, colour, shape, position being consistently same in all menus & screens, across, categories for a particular software.

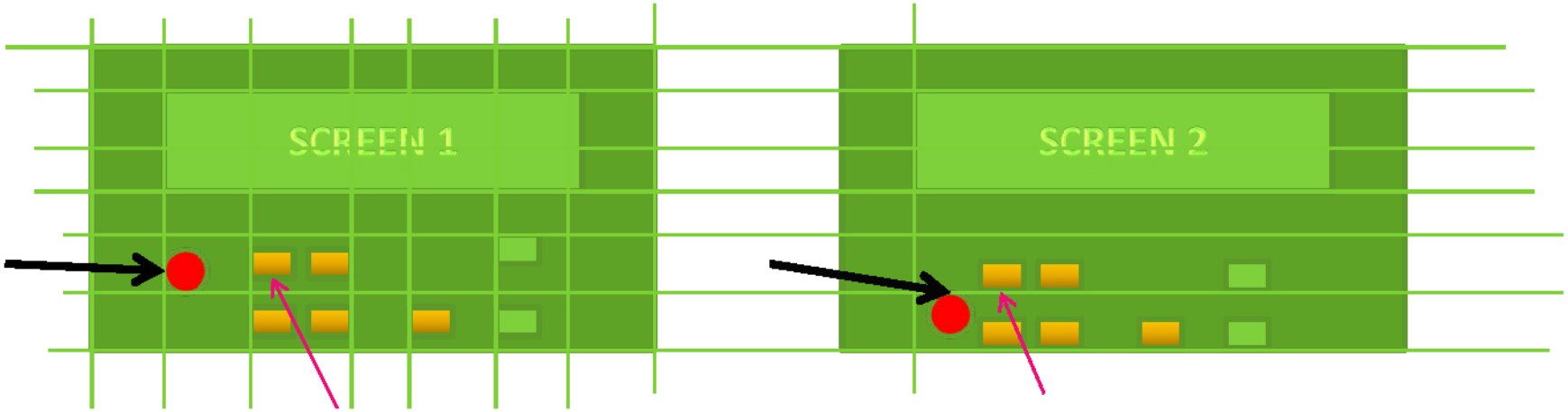
For example: If the **ON** button is on the right in the first screen and moves towards middle in the second screen then positional inconsistency is said to have occurred - however small the displacement is.



GUI designers use a simple technique to maintain consistency of control elements in successive screen.

Consistency….. continued

GUI designers use a background grid to place interactive elements in a consistent and orderly way so as to make them appear both physically as well a visually at the same place across the entire software package.

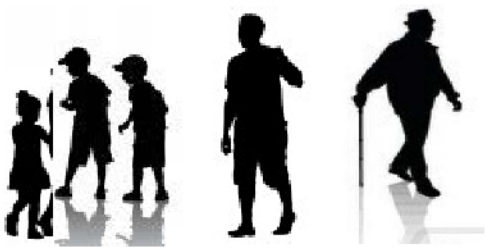


Inconsistent positioning of GUI elements is evident when observed against a grid. Grids are used as background reference to place the elements consistently

In case certain exceptions in maintaining consistency are required to be made in a subsequent screen, they should be such that they are comprehensible, distinct and limited in number.

2. Cater to wide range & type of Users

1. Strive for Consistency
2. **Cater to Universal Usability**
3. Offer Informative feedback
4. Design Dialogs to yield closure
5. Prevent Errors
6. Permit easy reversal of actions
7. Support internal locus of control
8. Reduce short term memory load



Universal design strives to cater to as wide a range of human users of different characteristics (age, culture, educational level, disability) with a single design.

While this may not be feasible or possible in all contexts, Shniderman's rule none the less needs to be followed so as not to leave out taking into consideration a section of users, other wise competent, who cannot use the interface due to no fault of theirs.

Users are classified as **Novice**, **Intermediate** and **Experts**. Experts tend to use lesser actions at a faster pace. Abbreviations short cuts keys etc are some of the techniques used.

Interfaces need to cater to all levels & classification of users: novice to experts.

3. Offer Informative feedback

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- Interfaces need to not just to be communicative but also need to inform the ‘user‘ in terms of learning & feed back which tells them that they are proceeding in the right direction.
- For every action of the user there needs to be a feedback – only then ‘interaction’ (in HCI) is said to take place. Specific error messages composed in a appositive tone give affirmative feedback without having to feel punitive.
- Unless the user gets a feed back he/she cannot proceed or becomes unsure of the correctness of the action.

4 Design Dialogs to yield closure

- In an interaction - dialogue needs to have a closure which is recognized by the user as end of an action.

- Sequence of actions need to proceed in a dialogue by engaging the user in a step by step manner.

- Like in a mathematical expression, every enclosing bracket needs a corresponding closing bracket. So also subsequence of actions needs to be grouped with intermittent closing of each sub group followed finally by a closer action of the group.

Ex: A message at the end of a sequence of events gives a feed back & closure of sending a SMS.

Continued…….

5. Prevent Errors

1. Strive for Consistency
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5. **Prevent Errors**
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Interfaces need to minimize errors. Human Computer dialogue can be designed to minimize and prevent errors made by users.

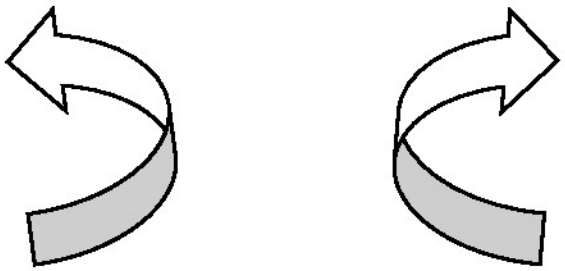
There cloud be many reasons for users errors but the user himself or herself is not one of them ! Users can make errors while interacting with computers as well as while inputting / interpreting information.

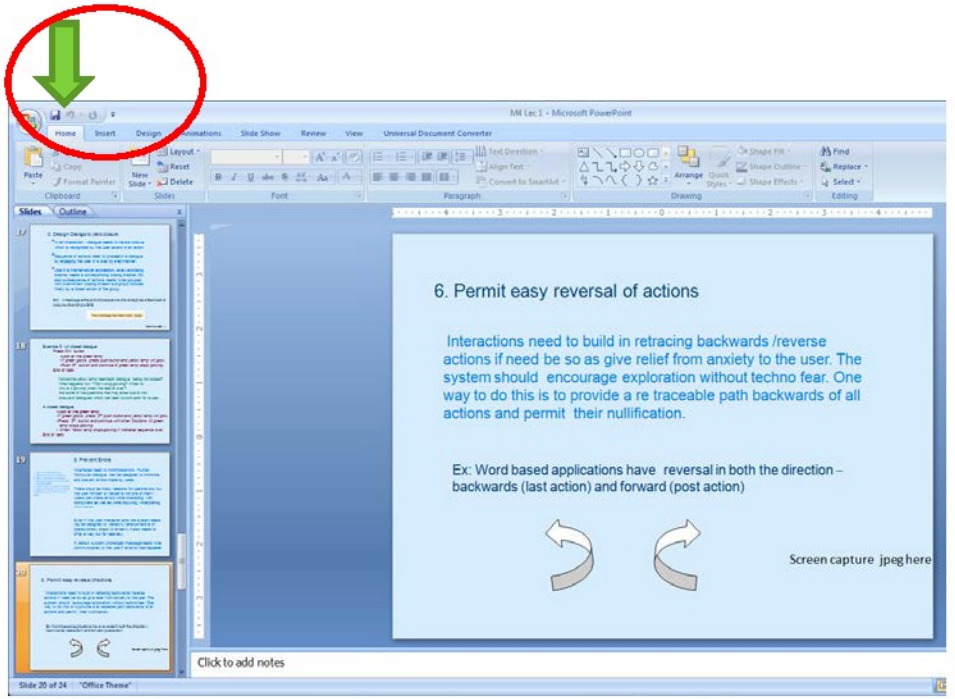
Even if the user makes an error the system needs top be designed to detect it, take corrective or precautionary steps to arrest it. It also needs to offer a way out for recovery from the error.

6. Permit easy reversal of actions

Interactions need to build in retracing backwards /reverse actions if need be so as give relief from anxiety to the user. The system should encourage exploration without techno fear. One way to do this is to provide a re traceable path backwards of all actions and permit their nullification.

Ex: This PPT application has reversal in both the direction – backwards (last action) and forward (post action)



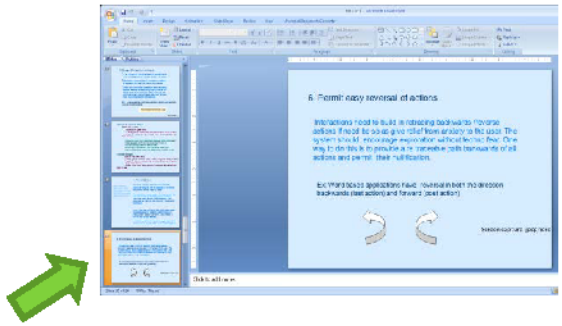


7. Support internal locus of control

Allow user to always feel ‘in control’ of the system and of the situation.

Make the user aware that he/she is in control. User should believe that they are controlling the system and not the other way around. This is achieved by more opportunities for ‘interactions’.

The bearing of where the user presently is helps the user to orient or reorient the interaction. The user should never be allowed to feel lost.



8. Reduce short term memory load

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7. Support internal locus of control
8. **Reduce short term memory load**

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Easier to remember if chunked into smaller setc

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Care not load the cognitive short term memory of the user by expecting user to remember several sequences , actions and their consequences at a time. Means loading their short term memory while interacting.

Millers* 7 chunks of information is often prescribed as a solution to limit short term memory. In psychological experiments it has been found that the short term memory can hold 7 +- 2 bits called chunks of information. Long sequential actins requiring more than 7 chunks need to be broken down into smaller chunks.

*G.A. Miller; The Magical number seven, plus or minus two: some limits on our capacity to process information. Psychplogical review, 63(2):81-97, 1956.

Each of these Shneiderman's rules were examined with the examples

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