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Homework 01

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- I. [Ben Shneiderman](#), a computer scientist, created a list of guidelines known as the "eight golden rules of interface design" to assist designers in producing efficient and user-friendly interfaces. These guidelines, which are based on human-computer interaction (HCI) principles, are frequently applied when creating user interfaces for websites, mobile apps, and other digital platforms. The eight golden rules are listed below, along with brief descriptions of each:
 1. [Strive for consistency](#):
Consistency is key to creating an intuitive and user-friendly interface. The design of interface elements such as buttons, menus, and icons should be consistent throughout the application or website to make it easier for users to understand and use.
 2. [Enable frequent users to use shortcuts](#):
Experienced users should be able to navigate the interface quickly and efficiently. Designers should provide shortcuts such as keyboard commands, toolbars, and menu options to help users accomplish tasks more quickly.
 3. [Provide informative feedback](#):
Users should receive feedback when they interact with an interface element. Feedback can be visual (such as changes in color or shape) or auditory (such as a sound effect). Feedback should be informative and timely, providing users with a clear indication of what action they have taken.
 4. [Design dialogues to yield closure](#):
Dialogues should be designed in a way that helps users understand the task at hand and what steps they need to take to complete it. Clear and concise instructions, progress indicators, and confirmation messages can help users feel confident that they have successfully completed a task.
 5. [Offer simple error handling](#):
Errors are inevitable in any interface, and designers should anticipate them and provide users with clear and concise error messages. Error messages should explain what went wrong and provide guidance on how to correct the error.
 6. [Permit easy reversal of actions](#):
Users should be able to undo or reverse actions if they make a mistake. Designers should provide a clear and easy-to-use "undo" feature to allow users to correct mistakes without having to start over.
 7. [Support internal locus of control](#):
Users should feel in control of the interface and the tasks they are performing. Designers should provide clear and consistent interface elements and avoid surprises or unexpected actions that can make users feel disoriented or frustrated.

8. **Reduce short-term memory load:**
Users should not be required to remember a lot of information to complete a task. Designers should organize information in a way that is easy to understand and provide prompts and reminders as necessary to help users complete tasks more easily.

II. **Nielsen's 10 rules** of interface design are a set of guidelines developed by usability expert Jakob Nielsen to help designers create interfaces that are efficient, effective, and user-friendly. These rules are based on Nielsen's extensive research in the field of usability and user experience (UX). Here are the 10 rules and a brief explanation of each:

1. **Visibility of system status:**
Users should always be able to tell what the system is doing and what state it is in. Designers should provide feedback in real-time, such as progress bars or animations, to let users know that their actions are being processed.
2. **Match between system and the real world:**
The interface should use language and concepts that are familiar to users. Designers should use language and metaphors that match users' mental models, rather than technical jargon or unfamiliar terms.
3. **User control and freedom:**
Users should be able to undo or redo actions, and to navigate freely within the system. Designers should provide clear and easy-to-use navigation, as well as features such as "back" and "cancel" buttons.
4. **Consistency and standards:**
The interface should be consistent in terms of layout, terminology, and design elements. Designers should follow established conventions and standards to make the interface more intuitive and familiar to users.
5. **Error prevention:**
The interface should be designed to prevent errors before they occur. Designers should use constraints, defaults, and validation to prevent users from making mistakes.
6. **Recognition rather than recall:**
The interface should be designed to reduce the user's cognitive load. Designers should provide information and options in a way that makes them easy to recognize, rather than requiring users to remember information from earlier screens or dialogs.
7. **Flexibility and efficiency of use:**
The interface should allow both novice and experienced users to use it efficiently. Designers should provide shortcuts and power-user features to allow experienced users to work quickly, while also providing guidance and help for novice users.

8. **Aesthetic and minimalist design:**
The interface should be visually appealing and use a minimalist design to reduce visual clutter. Designers should use simple, clear design elements that support the user's goals and make the interface easier to use.
9. **Help users recognize, diagnose, and recover from errors:**
If errors do occur, the interface should provide clear and helpful error messages. Designers should use plain language and provide guidance on how to correct errors.
10. **Help and documentation:**
The interface should be designed to be intuitive and easy to use without requiring documentation. However, if documentation is necessary, designers should provide clear and concise help materials that are easy to find and use.

III. **Norman's rules** from the design of Everyday Things are a set of guidelines developed by usability expert Don Norman to help designers create products that are intuitive and easy to use. These rules are based on Norman's research into the psychology of human perception and cognition. Here are the rules and a brief explanation of each:

1. **Visibility:**
The user should be able to see what actions are possible and what state the system is in. Designers should use clear and simple visual cues, such as color and shape, to make it easy for users to understand the state of the system.
2. **Feedback:**
The user should receive feedback when they perform an action. Designers should provide immediate feedback, such as visual or auditory cues, to let the user know that their action has been registered and what the result of the action was.
3. **Constraints:**
The design should prevent the user from making errors by limiting the possible actions. Designers should use physical or logical constraints to prevent the user from taking actions that could lead to errors or undesired outcomes.
4. **Mapping:**
The controls should be in a place that makes sense and have a logical relationship to the actions they control. Designers should place controls in a location that corresponds to the function they perform and use visual cues, such as proximity or grouping, to indicate the relationship between controls and actions.
5. **Consistency:**
The design should follow established conventions and be consistent across similar products or systems. Designers should use familiar concepts, terminology, and design elements to make the product or system more intuitive and easier to use.

6. Affordance:

The design should make it clear what actions are possible and how to perform them. Designers should use visual cues, such as the shape or texture of a control, to suggest the actions that can be performed and how they can be performed.

7. Signifiers:

The design should use clear and understandable symbols or signs to convey information to the user. Designers should use recognizable symbols, such as icons or labels, to indicate the function of controls or the state of the system.

8. Discoverability:

The user should be able to easily discover what actions are possible and how to perform them. Designers should make it easy for users to explore and learn the system by providing clear and concise instructions or prompts.