

USER INTERFACE

Communication is the key for overall development. Living things can communicate with language, symbols and gestures but what about non-living things like computers. Here comes the concept of interface

Interface is a way of communication between computers and humans.

Interface is a point of human-computer interaction and communication with or without a physical device or net based contents like websites.

User Interface focuses on

1. anticipating what users might need to do
2. ensuring that the interface has elements that are easy to access, understand, and use to understand and facilitate those actions
3. by computers.

FEATURES OF A GOOD USER INTERFACE

1. Simplicity
2. Intuitiveness
3. Clarity about topic or content oriented
4. Easy to identify or proper labeling
5. Interactive design
6. Information architecture

Example: for Navigation icons and buttons

7. Visual focus

Example: Color scheme, theme based, screen size optimization

8. Multiple choice options
9. Effective for long time period

TYPES OF USER INTERFACE

1. Graphical User Interface (GUI)
2. Command Line Interface (CLI)
3. Menu-driven User Interface
4. Touch User Interface
5. Voice User Interface (VUI)
6. Form-based User Interface
7. Natural Language User Interface

GRAPHICAL USER INTERFACE

1. Graphical symbols or icon
2. A mouse, track pad or touch pad

Advantages

1. Self-explanatory
2. Easy to use
3. Memorizing command lists is not necessary
4. Allows for running multiple applications, programs, and tasks simultaneously
5. The similar format among different programs adds familiarity

Disadvantages

1. Uses large amounts of memory
2. Multiple symbols for one entity create confusion

COMMAND LINE INTERFACE

1. Type appropriate instructions into the command line
2. Like run box, DOS, command prompt

Advantages

1. Simple structure
2. Minimal memory usage
3. Great for slow-running computers

Disadvantages

1. Complex and lengthy commands
2. Need to learn or store
3. Need to follow the syntax
4. Minimal error message information

MENU-DRIVEN INTERFACE

Range of commands or options in the form of a list or menu displayed in full-screen, pop-up, pull-down, or drop-down

Advantages

1. Need to remember a long list of manual commands
2. Simple interface for beginners or new users
3. Self-explanatory menu options

Disadvantages

1. Slower
2. Limited menu options
3. Ladder concept means access multiple menu or sub menu to perform simple or desired functions

TOUCH USER INTERFACE

Similar GUI

Advantages

1. Due to touch screen, we can use fingers
2. offers a more attractive and user loving method of interaction
3. Smooth experience
4. Combination of two, three and four fingers make multiple commands
5. No need to carry multiple peripherals devices
6. Touchscreen GUIs are commonly found on tablets, smartphones, and medical devices

Disadvantages

1. Sophisticated devices

2. Costly maintains
3. Costly replacement

VOICE USER INTERFACE (VUI)

1. User's voice is used
2. Natural language and commands
3. Like Alexa

Advantages:

1. Very easy way
2. No need to carry device
3. Can be easily attached with any computer
4. Interesting
5. Works as virtual assistant

Disadvantage

1. Need clear error free language
2. Limited range

FORM-BASED USER INTERFACE

1. Its like a complete form or webpage
2. It's a electronic form
3. Consists of text-boxes, drop- down menus, text areas, check boxes, radio boxes and buttons
4. Example : online document applications or exam applications

Advantages

1. All information is centralized
2. Easy to use

Disadvantages

1. Slow speed
2. Hectic

3. Single error can erase or undo all work done

NATURAL LANGUAGE USER INTERFACE

1. Its based on VUI
2. natural (human) language is used
3. input via speech
4. system give responses in the form of utterances delivered by speech, text or another available option
5. Example: Alexa, Goggle assistance, SIRI

Advantages

1. Very easy to use and faster then other methods
2. No need to remember any commands
3. Flexible and reliable
4. Artificial intelligence enabled

Disadvantages

1. Need some training
2. Limited criteria for answer
3. Voice should be clear and error free