

UNIT- IV :

Interface Components: The WIMP Interface, Other Components

Icons: Human Issues Concerning Icons, Using Icons in Interaction Design, Technical Issues Concerning Icons

Colour: The Human Perceptual System, Using Colour in Interaction Design, Colour Concerns for Interaction Design, Technical Issues Concerning Colour.

Interface Components:

The WIMP Interface:

Graphical user interfaces (GUI) were introduced in 1984 by Apple when introducing the Macintosh. However, it is because Microsoft Windows is available on the popular IBM PC and compatible machines that the use of the GUI has spread around the world to the point that this has become the standard for desktop computing.

The popularity of Windows resides on the fact that users don't need to type commands but instead use the mouse to click on icons and menus. The mouse is used in Windows by the user to launch programs and manipulate objects on the screen. These objects were categorized in four areas that together formed the acronym WIMP: window, icon, menu, and pointing device.

Window

Windows are areas of the screen that behave as if they were independent terminals and can contain text or graphics. They can be moved, resized or overlap. Windows can obscure each other, or can be laid out next to one another. Windows have scrollbars that allow the user to move the contents of the window up and down or from side to side and title bars that describe the name of the window

The WIMP interface standard includes a set behaviours that the designer needs to follow when building interfaces. In any Windows interface, the user can open a window in one of four ways (Buttow 2007):

☐ Click on an icon on the desktop that links to the program. If the icon is a document, the program that is associated with the document opens automatically.

☐ Double-click on an icon or link within a window.

☐ Click a menu option in a program. For example, click New from the File menu in Microsoft Word.

☐ Click on a button or icon in the taskbar or Dock.

Users can move more than one window open at one time and one window might keep information for different tasks. One way that GUIs keep different tasks within one window is the multiple-document interface, or MDI. MDI uses tabs to keep track of separate documents within a window. In one type of MDI interface, you can click on the tab to go directly to that document without moving to a different window.

One example of a tabbed MDI interface is Internet Explorer 7, which keeps different Web pages in different tabs. If the window only keeps information of one task in one document, this window can be classified as a single-document interface or SDI.

A window can also open a dialog box, which is a smaller window designed to have the user set settings and make decisions. One example of this window is found Microsoft Word when the user wants to print a document since a print dialog box appears for the user to determine what printer to use, how many copies to print and other different settings required to print the document.

Windows can be maximized so they fill the user's entire screen in order to increase the working space area or to get full attention of a particular task. The Maximize, Minimize, and Close buttons appear in the title bar. In Windows, these buttons are on the right side of the title bar.

Icon

Windows uses metaphors to represent information like a desktop where files are located in folders and programs and other information can be organized on the screen. These metaphors are small pictures or images that represent some object in the interface often a window or action and are known as icons. Icons can represent if windows can be closed down (iconised). Icons can have various highly stylized or realistic representations and normally represent many accessible windows and applications available to be launched. Few popular icons found in the Windows operating systems are shown in figure 3:



Figure 3 Popular Windows icons

Menu

The menu displays a set of choices of operations or services available on the application and requires option selected with a pointer. However, they require a lot of screen space but they might be set so they only appear when they needed. Pull-down menus display a menu bar at top of the screen while pop-up menus appear at a desired location. An example of a pulldown menu is shown in figure 4 below:

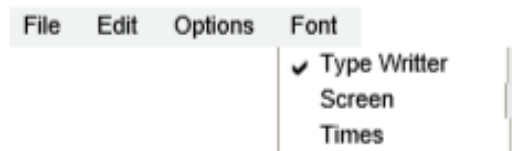


Figure 4 Pull-down menu

In order to save space, cascading menus can be used to organize the menu in a hierarchical structure where a menu selection opens a new menu and this might open another one and so on till the design structure is satisfied. In addition, keyboard accelerators can be used to use a key combination to have the same effect as menu items. These accelerators are usually the first letter of the menu item or Ctrl + a letter,

When designing menus, the interaction designer needs to deal with issues such as the type of menu to use, menu items, how to group items and choice of keyboard accelerators.

Pointer

Windows relies on the mouse, a hardware device used to move a pointer on the screen in order to perform an action such as dragging or selecting an object. Other pointers include joystick, trackball, cursor keys or keyboard shortcuts. Pointers can have a great variety of images in order to represent different states such as normal select, help select, running on the background, busy and precision select like the ones in figure 4.



Figure 4. Pointer images

ADVANTAGES OF WIMP INTERFACE

- ✧ Easy to use, especially for a beginner
- ✧ You do not have to learn complicated commands
- ✧ You get the benefits of WYSIWYG
- ✧ User friendly
- ✧ Increased speed of learning.
- ✧ Provide greater productivity and efficiency in a wide variety of applications.

DISADVANTAGES OF WIMP INTERFACE

- ✧ They use more processing power than other types of interface
- ✧ They can be slow for experienced programmers to use.
These people often find CLI interfaces faster to use
- ✧ difficult to handle simultaneous input, even two mice
- ✧ pure WIMP doesn't use other senses: hearing, touch, ...
- ✧ It takes more RAM and storage space on the disc.

Other Components :

Lists

Controls

Display Components

Text Entry Components

Tool Containers.