MODULE 4 QB

-PP

1) Explain the characteristics of window.

Ans) A window possesses the following characteristics:

- A name or title that allows to identify the window.
- A size in height and width (which can vary).
- The contents of active windows can be altered.
- It highlights, that is, the part that is selected.
- Visibility - the portion of the window that can be seen. A window may be partially or fully hidden behind another window.
- Windows may be tiled, overlapping or cascading.
- There are methods to manage and manipulate the windows on the screen.
- It is dedicated to the function, task or application it does.

The Attraction of Windows:

- In single-screen technology, only one screen of information can be viewed at one time.
- To support memory, a person is often forced to write notes or obtain printed copies of screens.
- Windows act as external memories that are an extension of one's internal memory.
- Windows are valuable in terms of tasks or jobs.
- A person is asked to monitor and manipulate data from various sources, synthesize information, summarize information and reorganize information.
- Windows makes it much easier to switch between tasks.
- Windows provide access to a lot of information.

Windows are useful in different ways:

• Presentation of Different Levels of Information.

• Presentation of Multiple Kinds of Information.

• Sequential Presentation of Levels or Kinds of Information.

• Access to Different Sources of Information.

• Combining Multiple Sources of Information.

• Performing More Than One Task.

2) Explain the components of window.

Ans)

1. **Frame:**
   - It is usually rectangular in shape, to define its boundaries and distinguish it from other windows.
   - A border need not be rectangular but this shape is a most preferred shape.

2. **Title Bar:**
   - The title bar is the top edge of the window, inside its border and extending its entire width.
   - Title bars are included on all primary and secondary windows.

3. **Title Bar Icon:**
   - Located at the left corner of the title bar in a primary window.
   - Consists of menu of commands that apply to the object in the window.

4. **Window Sizing Buttons:**
   - Buttons located at the right corner of the title bar.
   - They are used to manipulate the size of a window.

5. **What's This? Button:**
   - To provide contextual Help about objects displayed within a secondary window.
   - It is inscribed with a question mark.

6. **Menu Bar:**
   - Used to organize and provide access to actions.
   - Located horizontally at the top of the window, just below the title bar.

7. **Status Bar:**
   - Information of use to the user can be displayed in a designated screen area or areas.
   - They may be located at the top of the screen in some platforms and called a status area, or at the screen's bottom.

8. **Scroll Bars:**
   - A scroll bar is an elongated rectangular container consisting of a scroll area, with arrows or anchors at each end.
   - Vertical scrolling is positioned at the far right side.
   - Horizontal scrolling is positioned at the bottom of the work area.

9. **Split Box:**
   - Also referred to as a split bar.
   - Splitting a window permits multiple views of an object.

10. **Toolbar:**
    - Also called command bars.
    - Designed to provide quick access to specific commands or options.

11. **Command Area:**
    - Command area can be provided for a command to be typed into a screen.
    - Located at the bottom of the window.

12. **Size Grip:**
    - A size grip is a Microsoft Windows special handle included in a window to permit it to be resized.
    - When the grip is dragged the window resizes.

13. **Work Area:**
    - Portion of the screen where the user performs tasks.
    - Also referred to as the client area.

3) Write the advantages and disadvantages of tiled window.

Ans)

- Tiled windows derive their name from common floor or wall tile.
- Tiled windows appear in one plane on the screen.

Advantages:

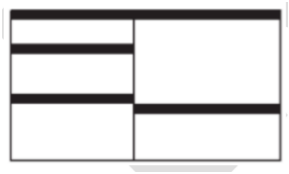
- They are always visible.
- Every window is always completely visible, eliminating the possibility of information being hidden.
- They are easier for inexperienced people to learn and use.
- Better user performance for completing tasks.

Disadvantages:

- Only a limited number can be displayed in the screen area.
- As windows change in size or position, the movement can be confusing.
- They are crowded and more visually complex.
- As the number of displayed windows increases, each window can get very tiny.

4) Explain the window presentation styles.

Ans)



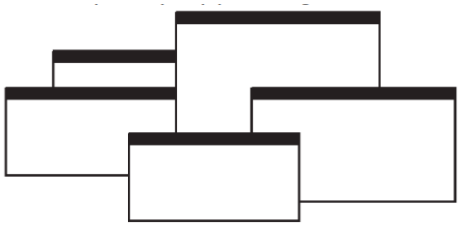
1. Tiled Windows:

(Refer 3rd Ans).

2. Overlapping Windows:

• May be placed on top of one another like papers on a desk.

• Sizes of some types of windows may also be changed.



Advantages:

• Windows can maintain larger sizes.
• Windows can maintain consistent sizes.
• Better user performance for completing tasks.

Disadvantages:

• Information in windows can be hidden behind other windows.
• Much more complex than tiled windows.

3. Cascading Windows:

• Special type of overlapping window.

• Each window is slightly offset from others.

Advantages:

- Bringing any window to the front is easier.
- It provides simplicity in visual presentation and cleanness.
- No window is ever completely hidden.
- It is easy to maintain.

5) Explain the different types of windows with examples.

Ans)

Primary Window:

- Use to present constantly used window components and controls.
- Used for presenting information that is continually updated.
- **Menu bar items**: that are used frequently, by primary or secondary windows.

Secondary Window:

Model:

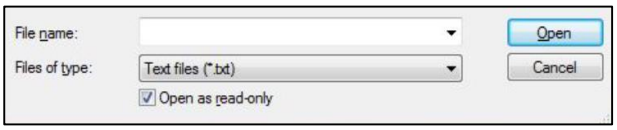
- Used when interaction with any other window must not be permitted.
- Used for:
  - Presenting information. For example, messages (sometimes called a message box).
  - Receiving user input. For example, data or information (sometimes called a prompt box).
  - Asking questions. For example, data, information, or directions.
- Use carefully because it constrains what the user can do.

Modeless:

- Use when interaction with other windows must be permitted.
- Use when interaction with other windows must be repeated.

Dialog Boxes:

- Use for presenting brief messages.
- Use for performing actions that take a short time to complete.
- Command buttons to include:
  - OK.
  - Cancel.
  - Others as necessary.

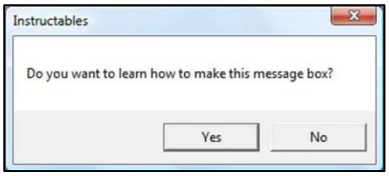


Property Sheets and Property Inspectors:

- Use for presenting the complete set of properties for an object.
- Make changes dynamically.
- Command buttons to include: OK, Cancel, Apply, Reset.

Message Boxes:

- Use for displaying a message about a particular situation or condition.
- Command buttons to include: OK, Cancel, Help, Yes and No, Stop Buttons.
- Designate the most frequent or least destructive option as the default command.



Pop-up Windows:

- It displays:
  - Additional information when an abbreviated form of the information is the main presentation.
  - Textual labels for graphical controls.
  - Context-sensitive Help information.
- Ex: Tool Tips and Balloon Tips
- Do not contain Title bar and Close button.

Palette Windows:

- Used to present a set of controls.
- It is fixed in size.
- They are distinguished by their visual appearance, a collection of images, colors or patterns.
- It has a Title bar and Close button.

6) What are the different window management schemes? Discuss any two schemes.

Ans)

The different window management schemes are:

1. Single-Document Interface
2. Multiple-Document Interface
3. Workbooks
4. Projects

(Learn any 2 schemas from below)

1. Single-Document Interface:

Description: A single primary window with a set of secondary windows.

Proper usage:
• Where object and window have a simple, one-to-one relationship.
• To support simultaneous views by splitting the window into panes.

Advantages:
• Most commonly used.
• Window manipulation is easier and less confusing.
• Data centered approach.

Disadvantage:
- Information is displayed or edited in separate windows.

2. Multiple-Document Interface

Description:
• A technique for managing a set of windows where documents are opened into windows.

Proper usage:
• To present multiple occurrences of an object.
• To present multiple parts of an application.

Advantages:
• Useful for managing a set of objects.
• Provides a grouping and focus for a set of activities within the larger environment of the desktop.

Disadvantages:
• Makes the application to have more importance as the primary focus.

3. Workbooks

Description:
• A window or task management technique that consists of a set of views organized like a tabbed notebook.

Proper Usage:
• To manage a set of views of an object.
• For content where the order of the sections is significant.

Advantages:
• Provides a grouping and focus for a set of activities within the larger environment of the desktop.
• Conserves screen real estate.
• Provides the greater simplicity of the single-document window interface.

Disadvantage:
• Cannot present simultaneous views.

4. Projects

Description:

A technique that consists of a container: a project window holding a set of objects.

Proper usage:
• To manage a set of objects that do not necessarily need to be contained.
• When child windows are not to be constrained.

Advantages:
• Provides a grouping and focus for a set of activities within the larger environment of the desktop.
• Preserves some management capabilities of the multiple document interface.
• Provides the greatest flexibility in the placement and arrangement of windows.

Disadvantage:
- Increased complexity due to difficulty in differentiating peer primary windows of the project from windows of other applications.

7) Explain the general guidelines to be followed while designing various windows operations.

Ans)

1) Active Window:

• A window should be made active with as few steps as possible.

• Visually differentiate the active window from other windows.

• Design easy to use and learn windowing operations.

• Make the setting up of windows particularly easy to remember.

• In overlapping systems, provide powerful commands for arranging windows on the screen.

2) Opening a Window:

• Provide an iconic representation or textual list of available windows.
• When opening a window: Position the opening window in the most forward plane of the screen.
• Adapt the window to the size and shape of the monitor on which it will be presented.
• Designate it as the active window.
• Ensure that its title bar is visible.
• When a primary window is opened or restored, position it on top.
• When a dependent secondary window is opened, position it on top of its associated primary window.
• If more than one object is selected and opened, display each object in a separate window.

3) Sizing Windows

• Provide large-enough windows to: Present all relevant and expected information for the task.
• Avoid hiding important information.
• Avoid crowding or visual confusion.
• Minimize the need for scrolling.
• Optimum window sizes: For text, about 12 lines. For alphanumeric information, about 7 lines.

4) Window Placement:

• Position the window so it is entirely visible.
• If the window is being restored, place the window where it last appeared.
• Do not let the user move a window to a position where it cannot be easily repositioned.

5) Window Separation:

• Provide a surrounding solid line border for the window.
• Provide a window background that differentiates it from screen background.
• Consider incorporating a drop shadow beneath the window.

6) Moving a Window:

• Permit the user to change the position of all windows.
• Change the pointer shape to indicate that the move selection is successful.
• Move the entire window as the pointer moves.
• Try to move the entire window along with the pointer.
• It may be necessary for a window to be moved if not active.

7) Resizing a Window:

- Permit the user to change the size of primary windows.
- Change the pointer shape to indicate that the resizing selection is successful.
- The simplest operation is to anchor the upper-left corner and resize from the lower right corner.
- Flexibility can be provided by permitting resizing to occur from any point on the border.
- Show the changing window as the pointer moves.
- Change image size proportionally as window size changes.
- Resize a window when it is not active, if necessary.

8) Other Operations:

- Maximizing a window increases to its largest optimum size.
- Minimizing a window reduces it to its smallest size.
- Restoring returns a window to its previous size and position.

9) Window Shuffling:

• Permit rapid window shuffling and the swapping of the front window and the second or back window.

10) Keyboard Control/Mouseless Operation:

• Keyboard alternatives should be designated through use of mnemonic codes as much as possible.
• Keyboard designations should be capable of being modified by the user.

11) Closing a Window:

• Close a window when:
  - The user requests that it be closed.
  - The window has no further relevance.

• If a primary window is closed, also close all of its secondary windows.

• When a window is closed, save its current state, including size and position, for use when the window is opened again.

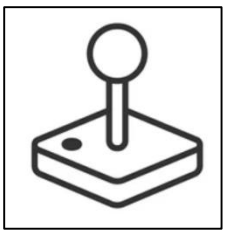
8) Explain the characteristics of Joystick and trackball.

Ans)

Joystick:

Description:

• A stick or bat-shaped device anchored at the bottom.
• Variable in size, smaller ones being operated by fingers, larger ones require the whole hand.
• Variable in cursor direction movement method.



Advantages:

• Direct relationship between hand and pointer movement in terms of direction.
• Does not obscure vision of screen.
• Does not require additional desk space (if mounted on keyboard).

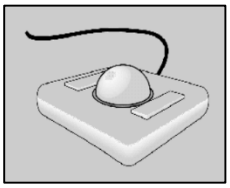
Disadvantages:

• Movement indirect, in plane different from screen.
• Indirect relationship between hand and pointer in terms of speed and distance.
• Requires a degree of eye-hand coordination.

• Requires hand to be removed from keyboard keys.
• Requires different hand movements to use.
• Requires hand to be removed from keyboard (if not mounted on keyboard).
• Requires additional desk space (if not mounted on keyboard).
• May be fatiguing to use over extended time.

Trackball:

Description:



• A spherical object (ball) that rotates freely in all directions in its socket.
• Direction and speed is tracked and translated into cursor movement.

Advantages:
• Direct relationship between hand and pointer movement in terms of direction and speed.
• Does not obscure vision of screen.
• Does not require additional desk space (if mounted on keyboard).

Disadvantages:
• Movement is indirect, in a plane different from the screen.
• No direct relationship exists between hand and pointer movement in terms of distance.
• Requires a degree of eye-hand coordination.
• Requires hand to be removed from keyboard keys.
• Requires different hand movements.
• Requires hand to be removed from keyboard (if not mounted on keyboard).
• Requires additional desk space (if not mounted on keyboard).
• May be difficult to control.

9) Describe the guidelines for selecting proper device based controls.

Ans) The guidelines for selecting proper device based controls are:

- Screen objects should be at least 3/4″ × 3/4″ in size.
- Object separation should be at least 1/8″.
- Provide visual feedback in response to activation.
- Auditory feedback may also be appropriate.
- When the consequences are destructive, it requires confirmation after selection to eliminate the unintentionally done selection.
- Provide an instructional invitation to begin using.

10) Explain the characteristics of Touch Screen and Keyboard.
Ans)

Touch Screen:

- A touch screen is a screen that consists of a special surface sensitive to finger touch.
- In touch screens, selection is accomplished by lifting the finger off the screen.
- This may allow more accurate item selection.

Advantages:

- Direct relationship between hand and pointer movement interms of direction, distance and speed.
- This relationship is direct because the control is on the same plane as the pointer.
- It does not require any additional desk space.

Disadvantages:

- They are fatiguing to use over an extended period of time.
- Fingers may soil the screen and damage it.

Keyboard:

- Commonly called the QWERTY layout.
- There are a number of keys on the keyboard that perform specific functions.
- Some of the functions of the mouse can be performed by using a keyboard.

Advantages:

- The standard keyboard is familiar, accurate and does not consume additional desk space.
- It is useful and efficient for entering or inserting text or alphanumeric data.
- A mouse with a limited number of buttons will require use of the keyboard to accomplish some functions.
- The keyboard is flexible enough to accept keyed shortcuts, either keyboard accelerators or mnemonic equivalents.

Disadvantages:

- No direct relationship between finger or hand movement on the keys and cursor movement on the screen in terms of speed and distance.
- Keyboards will be slower for non-touch typists and slower than other controls in pointing task.