18CS734

Seventh Semester B.E. Degree Examination, Jan./Feb. 2023

User **Interface Design**

Module-1

1 a. Define User Interface. Discuss the benefit of good design. 10 Marks

- User interface design is a subset of a field of study called human-computer interaction (HCI). Human-computer interaction is the study, planning, and design of how people and computers work together so that a person's needs are satisfied in the most effective way.
- The user interface is the part of a computer and its software that people can see, hear, touch, talk to, or otherwise understand or direct. The user interface has essentially two components: input and output.
- Input is how people communicate his needs to the system using keyboard or any pointing device and output is how the system returns processing result to user through screen or sound.
- The best interface is one which has proper design with combination of effective input and output mechanisms.

Benefit of good design

- Inspite of today's rich technologies and tools we are unable to provide effective and usable screen because lack of time and care.
- A well-designed interface and screen is terribly important to our users. It is their window to view the capabilities of the system and it is also the vehicle trough which complex tasks can be performed.
- A screen's layout and appearance affect a person in a variety of ways. If they are confusing and inefficient, people will have greater difficulty in doing their jobs and will make more mistakes.
- Poor design may even chase some people away from a system permanently. It can also lead to aggravation, frustration, and increased stress.

b. Discuss **the** characteristics of **the** Graphical User Interface. 10 Marks

Sophisticated Visual Presentation

- Visual presentation is the visual aspect of the interface. It is what people see on the screen. The sophistication of a graphical system permits displaying lines, including drawings and icons. It also permits the displaying of a variety of character fonts, including different sizes and styles.
- The meaningful interface elements visually presented to the user in a graphical system include windows (primary, secondary, or dialog boxes),menus (menu bar, pulldown, pop-up, cascading), icons to represent objects such as programs or files, assorted screen-based controls (text boxes, list boxes, combination boxes, settings, scroll bars, and buttons), and a mouse pointer and cursor. The objective is to reflect visually on the screen the real world of the user as realistically, meaningfully, simply, and clearly as possible.

Pick-and-Click Interaction

- To identify a proposed action is commonly referred to as pick, the signal to perform an action as click.
- The primary mechanism for performing this pick-and-click is most often the mouse and its buttons and the secondary mechanism for performing these selection actions is the keyboard.

Restricted Set of Interface Options

- The array of alternatives available to the user is what is presented on the screen or what may be retrieved through what is presented on the screen, nothing less, and nothing more. This concept fostered the acronym WYSIWYG.

Visualization

- Visualization is a cognitive process that allows people to understand information that is difficult to perceive, because it is either too voluminous or too abstract.
- The goal is not necessarily to reproduce a realistic graphical image, but to produce one that conveys the most relevant information. Effective visualizations can facilitate mental insights, increase productivity, and foster faster and more accurate use of data.

Object Orientation

-
  - A graphical system consists of objects and actions. Objects are what people see on the screen as a single unit.
  - Objects can be composed of subobjects .For example, an object may be a document and its subobjects may be a paragraph, sentence, word, and letter.
  - Objects are divided into three meaningful classes as Data objects, which present information, container objects to hold other objects and Device objects, represent physical objects in the real world.
  - Objects can exist within the context of other objects, and one object may affect the way another object appears or behaves. These relationships are called collections, constraints, composites, and containers.
  - **Properties or Attributes of Objects :** Properties are the unique characteristics of an object. Properties help to describe an object and can be changed by users.
  - **Actions :** People take actions on objects. They manipulate objects in specific ways (commands) or modify the properties of objects (property or attribute specification).
  - The following is a typical property/attribute specification sequence*:*
  - The user selects an object—for example, several words of text.
  - The user then selects an action to apply to that object, such as the action BOLD.
  - The selected words are made bold and will remain bold until selected and changed again.

OR

2 a. Compare GUI versus Web Page Design with respect Page Design with respect to Devices, Data, Presentation Elements, **Navigation**, User tasks. 10 Marks

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evices	ser hardware variations nited. ser ardware characteristics well efined Screens appear xactly as specified.	ser hardware variations normous. creen appearance influence y hardware being used.
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b. Discuss the following general principles of user interface 10 Marks

i) Aesthetically pleasing

Aesthetically Pleasing

— Provide visual appeal by following these presentation and graphic design principles:

- Provide meaningful contrast between screen elements.
- Create groupings.

- Align screen elements and groups.
- Provide three-dimensional representation.
- Use color and graphics effectively and simply.

ii) Compatibility

☐ Provide compatibility with the following:

- The user
- The task and job
- The product

☐ Adopt the user's perspective

iii**)** Consistency

A system should look, act, and operate the same throughout. Similar components should:

- Have a similar look.
- Have similar uses.
- Operate similarly.

— The same action should always yield the same result.

— The function of elements should not change.

— The position of standard elements should not change.

— In addition to increased learning requirements, inconsistency in design has a number of other prerequisites and by-products, including:

— More specialization by system users.

— Greater demand for higher skills.

— More preparation time and less production time.

— More frequent changes in procedures.

— More error-tolerant systems (because errors are more likely).

— More kinds of documentation.

iv) Control

— The user must control the interaction.

- Actions should result from explicit user requests.
- Actions should be performed quickly.
- Actions should be capable of interruption or termination.
- The user should never be interrupted for errors.

— The context maintained must be from the perspective of the user.
— The means to achieve goals should be flexible and compatible with the user's skills, experiences, habits, and preferences.
— Avoid modes since they constrain the actions available to the user.
— Permit the user to customize aspects of the interface, while always providing a proper set of defaults.

v) Simplicity.

— Provide as simple an interface as possible.

— Five ways to provide simplicity:

- Use progressive disclosure, hiding things until they are needed.

— Present common and necessary functions first.

— Prominently feature important functions.

— Hide more sophisticated and less frequently used functions.

- Provide defaults.
- Minimize screen alignment points.
- Make common actions simple at the expense of uncommon actions being made harder.
- Provide uniformity and consistency.

Module-2

3a. List and **explain** common usability problems in graphical systems. 10 Marks

The Design Team

Provide a balanced design team, including specialists in:

Development

Human factors

Visual design

Usability assessment

Documentation

Training

Know your user or client

- To create a truly usable system, the designer must always do the following:

- Understand how people interact with computers.
- Understand the human characteristics important in design.
- Identify the user's level of knowledge and experience.
- Identify the characteristics of the user's needs, tasks, and jobs.
- Identify the user's psychological characteristics.
- Identify the user's physical characteristics.
- Employ recommended methods for gaining understanding of users.

Why People Have Trouble with Computers

· What makes a system difficult to use in the eyes of its user? Listed below are several contributing factors that apply to traditional business systems.

- Use of jargon.
- Non-obvious design.
- Non-obvious design.
- Disparity in problem-solving strategies.
- Design inconsistency.

Responses to Poor Design

Errors are a symptom of problems. The magnitude of errors in a computer-based system has been found to be as high as 46 percent for commands, tasks, or transactions. Errors, and other problems that befuddle one, lead to a variety of psychological and physical user responses.
Psychological Confusion. Annoyance. Frustration. Panic or stress. Boredom.

Physical

Abandonment of the system. Partial use of the system. Indirect use of the system.
Modification of the task. Compensatory activity. Misuse of the system.

Direct programming.

b. Discuss any five Human characteristics in interface design. 10 Marks

Perception

Perception is our awareness and understanding of the elements and objects of our environment through the physical sensation of our various senses, including sight, sound, smell, and so forth. Perception is influenced, in part, by experience.

Other perceptual characteristics include the following:

emory

Memory is viewed as consisting of two components, long-term and short-term (or working) memory.

Short-term, or working, memory receives information from either the senses or long-term memory, but usually cannot receive both at once, the senses being processed separately.
Long-term memory contains the knowledge we possess. Information received in short-term memory is transferred to it and encoded within it, a process we call learning.

Sensory Storage

Sensory storage is the buffer where the automatic processing of information collected from our senses takes place. It is an unconscious process, large, attentive to the environment, quick to detect changes, and constantly being replaced by newly gathered stimuli. In a sense, it acts like radar, constantly scanning the environment for things that are important to pass on to higher memory.

Visual Acuity

The capacity of the eye to resolve details is called visual acuity. It is the phenomenon that results in an object becoming more distinct as we turn our eyes toward it and rapidly losing distinctness as we turn our eyes away—that is, as the visual angle from the point of fixation increases

Foveal and Peripheral Vision

Information Processing

Mental Models

Movement Control

Learning

OR

4. a. Explain Indirect methods of requirement determination in Business Function. 10 Marks

An indirect method of requirements determination is one that places an intermediary between the developer and the user. This intermediary may be electronic or another person

Problems of Indirect Method

· First, there may be a filtering or distortion of the message, either intentional or unintentional.

· Next, the intermediary may not possess a complete, or current, understanding of user's needs, passing on an incomplete or incorrect message.

· Finally, the intermediary may be a mechanism that discourages direct user- developer contact for political reasons.

MIS Intermediary

· A company representative defines the user's goals and needs to designers and developers.

· This representative may come from the Information Services department itself, or he or she may be from the using department.

Paper Survey or Questionnaire

A survey or questionnaire is administered to a sample of users using traditional mail methods to obtain their needs.

Advantage

- Questionnaires have the potential to be used for a large target audience located most anywhere, and are much cheaper than customer visits.
- They generally, however, have a low return rate

Disadvantage

- They may take a long time to collect and may be difficult to analyze.

Questionnaires should be composed mostly of closed questions

Questionnaires should be relatively short and created by someone experienced in their design.

Electronic Survey or Questionnaire

A survey or questionnaire is administered to a sample of users using e-mail or the

Web to obtain their needs.

In creating an electronic survey:

- Determine the survey objectives.
- Determine where you will find the people to complete the survey.

- Create a mix of multiple choice and open-ended questions requiring short answers addressing the survey objectives.
- Keep it short, about 10 items or less is preferable.
- Keep it simple, requiring no more than 5–10 minutes to complete

Iterative survey

- Consider a follow-up more detailed survey, or surveys, called *iterative surveys*. Ask people who complete and return the initial survey if they are willing to answer more detailed

questions. If so, create and send the more
detailed survey.

- A third follow-up survey can also be designed to gather additional information about the most important requirements and tasks

- Iterative surveys, of course, take a longer time to complete.

Electronic Focus Group

A small group of users and a moderator discuss the requirements online using workstations.

advantages

- advantages of electronic focus groups over traditional focus groups are that the discussion is less influenced by group dynamics; has a smaller chance of being dominated by one or a few participants; can be anonymous, leading to more honest comments and less caution in proposing new ideas

Disadvantages

- The depth and richness of verbal discussions does not exist and the communication enhancement aspects of seeing participant's body language are missing.

b. Discuss briefly the guidelines for designing conceptual models. 10 Marks

Module-3

5 a.List and explain different structures of Menus with suitable diagrams. 12 Marks

b. Discuss Functions and content of Menus. 8 Marks

6 a. Explain the purpose, advantages, disadvantages, guidelines to be followed in designing following menu choices. i) Mark Toggles ii) Toggled Menu Items. 8 Marks

b. Discuss **in** detail the following Graphical menus

i) Pull-Down Menu

Pull-Down Menu

Proper usage:

— To initiate frequently used application actions that take place on a wide variety of different windows.

— A small number of items.

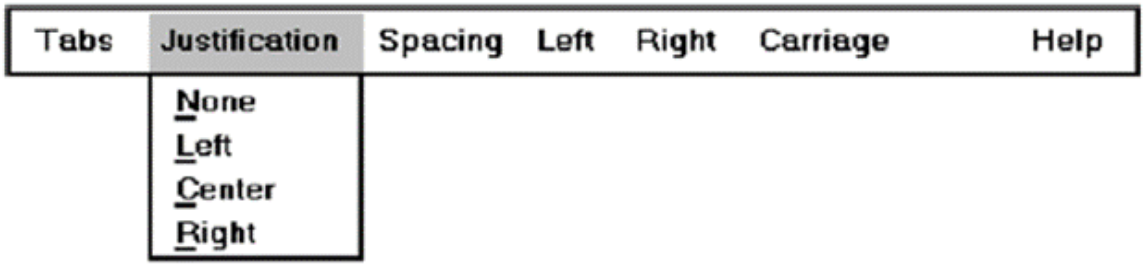
— Items best represented textually.

— Items whose content rarely changes.

The advantages of pull-down menus are:

- The menu bar cues a reminder of their existence.
- They may be located relatively consistently on the screen.
- No window space is consumed when they are not used.
- They are easy to browse through.
- Their vertical orientation is most efficient for scanning.
- Their vertical orientation is most efficient for grouping.
- Their vertical orientation permits more choices to be displayed.
- They allow for display of both keyboard equivalents and accelerators.

The disadvantages of pull-down menus are:



ii) Cascading Menus

Proper usage:

— To reduce the number of choices presented together for selection (reduce menu breadth).
— When a menu specifies many alternatives and the alternatives can be grouped in meaningful related sets on a lower-level menu.

— When a choice leads to a short, fixed list of single-choice properties.

— When there are several fixed sets of related options.

— To simplify a menu.

— Avoid using for frequent, repetitive commands.

The advantages of cascading menus are that:

- The top-level menus are simplified because some choices are hidden.
- More first-letter mnemonics are available because menus possess fewer alternatives.
- High-level command browsing is easier because subtopics are hidden.

The disadvantages of cascading menus are:

- Access to submenu items requires more steps.
- Access to submenu items requires a change in pointer movement direction.
- Exhaustive browsing is more difficult; some alternatives remain hidden as pull downs become visible.

iii)Popup Menus 12 Marks

Use to present alternatives or choices within the context of the task.

The advantages of pop-up menus are:

- They appear in the working area.
- They do not use window space when not displayed.
- No pointer movement is needed if selected by button.
- Their vertical orientation is most efficient scanning.
- Their vertical orientation most efficient for grouping.
- Their vertical orientation allows more choices to be displayed.
- They may be able to remain showing (“pinned”) when used frequently.
- They allow for display of both keyboard equivalents and accelerators.

The disadvantages of pop-up menus are:

- Their existence must be learned and remembered.
- Means for selecting them must be learned and remembered.
- They require a special action to see the menu (mouse click).
- Items are smaller than full-size buttons, slowing selection time.
- They may obscure the screen working area.
- Their display locations may not be consistent.

Module-4

7 a. List and discuss in different ways, windows **are** useful. 12 Marks

While all the advantages and disadvantages of windows are still not completely understood, windows do seem to be useful in the following ways.

· **Presentation of Different Levels of Information:** A document table of contents can be presented in a window. A chapter or topic selected from this window can be simultaneously displayed in more detail in an adjoining window.

· **Presentation of Multiple Kinds of Information:** Variable information needed to complete a task can be displayed simultaneously in adjacent windows. For example in one window billing can be done and in one window stock maintenance can be done at the same time using windows. Significant windows could remain displayed so that details may be modified as needed prior

· **Sequential Presentation of Levels or Kinds of Information**: Steps to accomplish a task can be sequentially presented through windows. Key windows may remain displayed, but others appear and disappear as necessary. This sequential preparation is especially useful if the information-collection process leads down various paths.

· **Access to Different Sources of Information**: Independent sources of information may have to be accessed at the same time. Independent sources of information may have to be accessed at the same time

· **Combining Multiple Sources of Information**: Text from several documents may have to be reviewed and combined into one. Pertinent information is selected from one window and copied into another.

· **Performing More Than One Task**: While waiting for a long, complex procedure to finish, another can be performed. Tasks of higher priority can interrupt less important ones

and then the interrupted tasks can be preceded.

· **Reminding**: It can be used to provide remainder through messages or popup or menus.

· **Monitoring**: Data in one window can be modified and its effect on data in another window can be studied.

Multiple Representations of the Same Task: the same task can be represented in two different ways in two windows. For example a report can be given as table in one window and as a chart in another window.

b. Explain filed windows, overlapping and cascading windows their advantages and window disadvantages. 8 Marks

·The presentation style of a window refers to its spatial relationship to other windows.

· There are two basic styles, commonly called tiled or overlapping.

Tiled Windows

·Tiled windows derive their name from common floor or wall tile. Tiled windows appear in one plane on the screen and expand or contract to fill up the display surface, as needed.

·Most systems provide two-dimensional tiled windows, adjustable in both height and width.

Advantages:

· The system usually allocates and positions windows for the user, eliminating the

necessity to make positioning decisions.

· Open windows are always visible, eliminating the possibility of them being lost and forgotten.

· Every window is always completely visible, eliminating the possibility of information being hidden.

· They are perceived as fewer complexes than overlapping windows, possibly because there are fewer management operations or they seem less “magical.”

· They are easier, according to studies, for novice or inexperienced people to learn and use.

· They yield better user performance for tasks where the data requires little window manipulation to complete the task.

Disadvantages

· Only a limited number can be displayed in the screen area available.

· As windows are opened or closed, existing windows change in size. This can be annoying.

· As windows change in size or position, the movement can be disconcerting.

· As the number of displayed windows increases, each window can get very tiny.

· The changes in sizes and locations made by the system are difficult to predict.

· The configuration of windows provided by the system may not meet the user's needs.

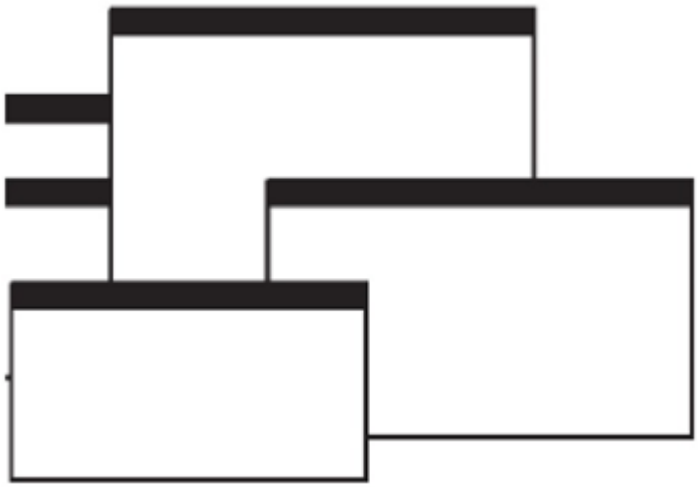
· They are perceived as crowded and more visually complex because window borders are flush against one another, and they fill up the whole screen. Crowding is accentuated if borders contain scroll bars or control icons. Viewer attention may be drawn to the border, not the data.

· They permit less user control because the system actively manages the windows.

Overlapping Windows

· Overlapping windows may be placed on top of one another like papers on a desk.

· They possess a three-dimensional quality, appearing to lie on different planes.



Advantages:

· Visually, their look is three-dimensional, resembling the desktop that is familiar to the user.

· Greater control allows the user to organize the windows to meet his or her needs.

· Windows can maintain larger sizes.

· Windows can maintain consistent sizes.

· Windows can maintain consistent positions.

· Screen space conservation is not a problem, because windows can be placed on top of one another.

· There is less pressure to close or delete windows no longer needed.

· The possibility exists for less visual crowding and complexity. Larger borders can be maintained around window information, and the window is more clearly set off against its background. Windows can also be expanded to fill the entire display.

· They yield better user performance for tasks where the data requires much window manipulation to complete the task.

Disadvantages

· They are operationally much more complex than tiled windows. More control functions require greater user attention and manipulation.

· Information in windows can be obscured behind other windows.

· Windows themselves can be lost behind other windows and be presumed not to exist.

· That overlapping windows represent a three-dimensional space is not always realized by the user.

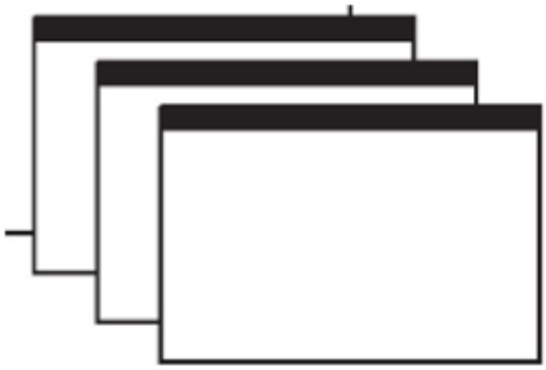
· Control freedom increases the possibility for greater visual complexity and crowding. Too many windows, or improper offsetting, can be visually overwhelming.

Cascading Windows

· A special type of overlapping window has the windows automatically arranged in a

regular progression.

· Each window is slightly offset from others, as illustrated in Figure



Advantages

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

Picking a Presentation Style

· Use tiled windows for:

- Single-task activities.
- Data that needs to be seen simultaneously.
- Tasks requiring little window manipulation.
- Novice or inexperienced users.

· Use overlapping windows for:

- Switching between tasks.

- Tasks necessitating a greater amount of window manipulation.
- Expert or experienced users.
- - Unpredictable display contents.

OR

8 a. Explain model and modeless and cascading and unfolding windows. **(08 Marks)**

Modal and Modeless

· **Modal:**

— **Use when interaction with any other window must not be permitted.**

— **Use 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 (sometimes called a question box).**

— **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.**

Cascading and Unfolding

· **Cascading:**

— **Purpose:**

• **To provide advanced options at a lower level in a complex dialog.**

— **Guidelines:**

• **Provide a command button leading to the next dialog box with a "To Window" indicator, an ellipsis (. . .).**

• **Present the additional dialog box in cascaded form.**

• **Provide no more than two cascades in a given path.**

• **Do not cover previous critical information.**

— **Title Bar.**

— **Relevant displayed information.**

• **If independent, close the secondary window from which it was opened.**

· **Unfolding:**

— **Purpose:**

• **To provide advanced options at the same level in a complex dialog.**

— **Guidelines:**

• **Provide a command button with an expanding dialog symbol (>>).**

• **Expand to right or downward.**

b. Explain the following with respect to windows **(08 Marks)**

i) frame

Frames

- Description:
  - Multiple Web screen panes that permit the displaying of multiple documents on a page.
  - These documents can be independently viewed, scrolled, and updated.
  - The documents are presented in a tiled format.
- Proper usage:
  - For content expected to change frequently.
  - To allow users to change partial screen content.
  - To permit users to compare multiple pieces of information.
- Guidelines:
  - Use only a few frames (three or less) at a given time.
  - Choose sizes based upon the type of information to be presented.
  - Never force viewers to resize frames to see information.
  - Never use more than one scrolling region on a page.

ii) Window sizing Buttons

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.

• But use less than the full size of the entire screen.

If a window is too large, determine:

— Is all the information needed?

— Is all the information related?

Otherwise, make the window as small as possible.

— Optimum window sizes:

• For text, about 12 lines.

• For alphanumeric information, about seven lines

iii) Scroll bars

Scroll Bar Design Guidelines

General:

— Provide a scroll bar when invisible information must be seen.

Scroll area or container:

— To indicate that scrolling is available, a scroll area or container should be provided.
• Construct it of a filled-in bar displayed in a technique that visually contrasts with the window and screen body background.

Scroll slider box or handle:

— To indicate the location and amount of information being viewed, provide a slider box or handle.

• Constructed of a movable and sizable open area of the scroll area,

displayed in a technique that contrasts with the scroll area.

• By its position, spatially indicate the relative location in the file of the

information being viewed.

• By its size, indicate, proportionately, the percentage of the available

information in the file being viewed.

iv) Split box.

Split Box

· A window can be split into two or more pieces or panes by manipulating a *split box* located above a vertical scroll bar or to the left of a horizontal scroll bar.

· A split box is sometimes referred to as a *split bar*.

· A window can be split into two or more separate viewing areas that are called *panes*

c. Describe Joystick **with** advantages and disadvantages. **(04 Marks)**

· **Description:**

— A stick or bat-shaped device anchored at the bottom.

— Variable in size, smaller ones being operated by fingers, larger ones requiring the whole hand.
— Variable in cursor direction movement method, force joysticks respond to pressure, movable ones respond to movement.
— Variable in degree of movement allowed, from horizontal-vertical only to continuous.

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.

Module-5

9 a. Explain different command button guide lines.

Usage

For windows with a menu bar:

— Use to provide fast access to frequently used or critical commands.

For windows without a menu bar:

— Use to provide access to all necessary commands.

Structure

Provide a rectangular shape with the label inscribed within it.

Give the button a raised appearance.

Maintain consistency in style throughout an application.

Labels

Use standard button labels when available.

Provide meaningful descriptions of the actions that will be performed.

Use single-word labels whenever possible.

— Use two-three words for clarity, if necessary.

Use mixed-case letters with the first letter of each significant label word capitalized.

Display labels:

— In the regular system font.

— In the same size font.

b. Describe check boxes, list boxes, palettes with advantages **and** disadvantages.

Check Boxes

Description:

· A two-part control consisting of a square box and choice description.

· Each option acts as a switch and can be either “on” or “off.”

· When an option is selected (on), a mark such as an “X” or “check” appears within the square box, or the box is highlighted in some other manner.

· Otherwise the square box is unselected or empty (off).

· Each box can be:

· Switched on or off independently.

• Used alone or grouped in sets.

Purpose:

— To set one or more options as either on or off.

Advantages

— Easy-to-access choices.

— Easy-to-compare choices.

— Preferred by users.

Disadvantages:

— Consume screen space.

— Limited number of choices.

— Single check boxes difficult to align with other screen controls

· Description:

— A permanently displayed box-shaped control containing a list of attributes or objects from which:

- A single selection is made (mutually exclusive), or
- Multiple selections are made (non-mutually-exclusive).

— The choice may be text, pictorial representations, or graphics.

— Selections are made by using a mouse to point and click.

— Capable of being scrolled to view large lists of choices.

— No text entry field exists in which to type text.

— A list box may be may be associated with a *summary list box* control, which allows the selected choice to be displayed or an item added to the list.

Purpose:

— To display a collection of items containing:

• Mutually exclusive options.

• Non-mutually-exclusive options.

Advantages:

— Unlimited number of choices.

— Reminds users of available options.

— Box always visible.

Disadvantages:

— Consumes screen space.

— Often requires an action (scrolling) to see all list choices.

— The list content may change, making it hard to find items.

— The list may be ordered in an unpredictable way, making it hard to find items.

Palettes

Description:

— A control consisting of a series of graphical alternatives. The choices themselves are descriptive, being composed of colors, patterns, or images.
— In addition to being a standard screen control, a palette may also be presented on a pull-down or pop-up menu or a toolbar.

OR

10 a. List common presentation controls and discuss any four of them **(12 Marks)**
Common presentation controls are *static text fields, group boxes column headings, ToolTips, balloon tips,* and *progress indicators*.

Static Text Fields

Description:

— Read-only textual information.

Purpose:

— To identify a control by displaying a control caption.

— To clarify a screen by providing instructional or prompting information.

— To present descriptive information.

Proper usage:

— To display a control caption.

— To display instructional or prompting information.

— To display descriptive information.

Static Text Field Guidelines

Captions:

— Include a colon (:) as part of the caption.

— Include a mnemonic for keyboard access.

— When the associated control is disabled, display it dimmed.

— Follow all other presented guidelines for caption presentation and layout.

Instructional or prompting information:

— Display it in a unique and consistent font style for easy recognition and differentiation.

— Follow all other presented guidelines for prompting and instructional information.

Descriptive information:

— Follow all other guidelines for required screen or control descriptive information.

b. Explain **the** following **kinds** of **tests (08 Marks)**
i) Cognitive walk through

Description:

— Reviews of the interface in the context of tasks users perform.

Advantages:

— Allow a clear evaluation of the task flow early in the design process.

— Do not require a functioning prototype.

— Low cost.

— Can be used to evaluate alternate solutions.

— Can be performed by developers.

— More structured than a heuristic evaluation.

— Useful for assessing “exploratory learning.”

Disadvantages:

— Tedious to perform.

— May miss inconsistencies and general and recurring problems.

Guidelines:

— Needed to conduct the walkthrough are:

• A general description of proposed system users and what relevant knowledge they possess.

• A specific description of one or more core or representative tasks to be performed.

• A list of the correct actions required to complete each of the tasks.

ii) Think-Aloud Evaluations

Description:

— Users perform specific tasks while thinking out load.

— Comments are recorded and analyzed.

Advantages:

— Utilizes actual representative tasks.

— Provides insights into the user's reasoning.

Disadvantages:

— May be difficult to get users to think out loud.

Guidelines:

— Develop:

• Several core or representative tasks.

• Tasks of particular concern.

— Limit session to 60 to 90 minutes.