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Sub:	USER INTERFACE DESIGN					Sub Code:	18CS734	Branch:CSE
Date:	03/1/2024	Duration:	90 mins	Max Marks:	50	Sem/Sec:	VII A,B,C	

Answer any FIVE FULL Questionns

1.A	**What are operable controls? Explain the usage of buttons along with advantages and disadvantages.**	[6]
	Operable controls are those that permit the entry, selection, changing, or editing of a particular value, or cause a command to be performed. Classes include buttons, text entry/read-only, selection, combination entry/selection, and other specialized controls. **(1)**	
	Buttons:	
	Purpose: (2)	
	To start actions.	
	To change properties	
	To display a pop-up menu.	
	Advantages: (2)	
	Always visible, reminding one of the choices available	
	Convenient	
	Can be logically organized in the work area	
	Can provide meaningful descriptions of the actions that will be performed.	
	Larger size generally provides faster selection target.	
	Can possess 3-D appearance:	
	• Adds an aesthetically pleasing style to the screen.	
	• Provides visual feedback through button movement when activated	
	May permit use of keyboard equivalents and accelerators	
	Disadvantages: (1)	
	Consumes screen space.	
	Size limits the number that may be displayed.	
	Requires looking away from main working area to activate	
	Requires moving the pointer to select.	
1.B	**What is the flaw in the below button design?**	[4]
		
	i) Instead of “Send me your name”, submit can be given to avoid more space	
	ii) Text box and the commands buttons should be in consistency size.	
	iii) No need of Reset	

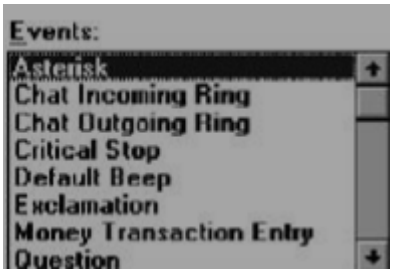
2. A **Explain the following controls with example for each.** [7]

a)Radio buttons (2)

A radio button is used to present a list of mutually exclusive options to the user, where only one option can be selected at a time. It is s two-part control consisting of the following small circles, diamonds, or rectangles.

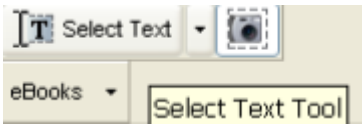
b)List boxes (2)

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).



c)Tool tips (1)

A small pop-up window containing descriptive text that appears when a pointer is moved over a control or element.



d) Progress indicators (2)

A rectangular bar that fills as a process is being performed, indicating the percentage of the process that has been completed.

2. B **Give 3 advantages of radio buttons over drop down menus.** [3]

i) Visibility and Accessibility
ii) Ease of use for short lists
iii) Immediate Feedback

3.	**Write a note on Think aloud evaluations and usability test.** **Think Aloud Evaluations (5)** • 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. **Usability test (5)** • An interface evaluation under real-world or controlled conditions • Measures of performance are derived for specific tasks • Problems are identified. Advantages • Utilizes an actual work environment. • Identifies serious or recurring problems. Disadvantages: • High cost for establishing facility. • Requires a test conductor with user interface expertise. • Emphasizes first-time system usage. • Poorly suited for detecting inconsistency problems	[10]
4.	**Explain any two types of testing prototypes used in UID.** The two types of testing prototypes used in UID are **Low fidelity** and **High fidelity prototype**. Any two types from below: (5) + (5) **(i)Hand Sketches and Scenarios** • Screen sketches created by hand. • Focus is on the design, not the interface mechanics • A low-fidelity prototype. **Advantages** • Can be used very early in the development process. • Suited for use by entire design team • No large investment of time and cost • No programming skill needed • Easily portable • Fast to modify and iterate. **Disadvantages** • Only a rough approximation. • Limited in providing an understanding of navigation and flow • A demonstration, not an exercise • Driven by a facilitator, not the user. • Limited usefulness for a usability test **Sketch Creation Process** • Sketch (storyboard) the screens while determining source of the screen's information. • The content and structure of individual screens • The overall order of screens and windows • Sketch the screens needed to complete each workflow task • Try out selected metaphors and change them as necessary • Don't get too detailed; exact control positioning is not important, just overall order and flow.	[10]

(ii) Interactive Paper Prototypes

- Interface components (menus, windows, and screens) constructed of common paper technologies (Post-It notes, transparencies, and so on).
- The components are manually manipulated to reflect the dynamics of the software
- A low-fidelity prototype.

Advantages

- More illustrative of program dynamics than sketches.
- Can be used to demonstrate the interaction.
- Otherwise, generally the same as for hand-drawn sketches and scenarios

Disadvantages

- Only a rough approximation
- A demonstration, not an exercise
- Driven by a facilitator, not the user
- Limited usefulness for usability testing.

(iii) Programmed Facades

- Examples of finished dialogs and screens for some important aspects of the system
- Created by prototyping tools
- Medium-fidelity to high-fidelity prototypes.

Advantages:

- Provide a good detailed specification for writing code
- A vehicle for data collection

Disadvantages

- May solidify the design too soon
- May create the false expectation that the real thing is only a short time away
- More expensive to develop.
- More time-consuming to create
- Not effective for requirements gathering.
- Not all of the functions demonstrated may be used because of cost, schedule limitations, or lack of user interest

5. **Explain Sliders and tree view operable controls.** [10]

Sliders (6)

A scale exhibiting degrees of a quality on a continuum. It includes a shaft or bar, a range of values with appropriate labels, an arm indicating relative setting through its location on the shaft. Optionally, a pair of buttons to permit incremental movement of the slider arm and a text box for typing or displaying an exact value and also an detent position for special values.

Major purpose is to make a setting when a continuous qualitative adjustment is acceptable; it is useful to see the current value relative to the range of possible values.

Proper usage:

- To set an attribute
- For mutually exclusive choices
- When an object has a limited range of possible settings
- When the range of values is continuous
- When graduations are relatively fine
- When the choices can increase or decrease in some well-known, predictable, and easily understood way
- When a spatial representation enhances comprehension and interpretation
- When using a slider provides sufficient accuracy.

Advantages

- Spatial representation of relative setting
- Visually distinctive.

Disadvantages

- Not as precise as an alphanumeric indication
- Consumes screen space.
- Usually more complex than other controls.

Tree View (4)

A tree view control is a special list box control that displays a set of objects as an indented outline, based on their logical hierarchical relationship.

The control is used to display the relationship between a set of containers or other hierarchical elements, and, optionally, includes buttons to expand or collapse the hierarchy. Icons can be included with the text label for each item in the tree.

Different icons can be displayed when the tree expands or collapses.

A graphic, such as a check box, can be used to reflect state information about the item.

The tree view control also supports an optional display of lines to illustrate the hierarchical relationship of the items in the list.

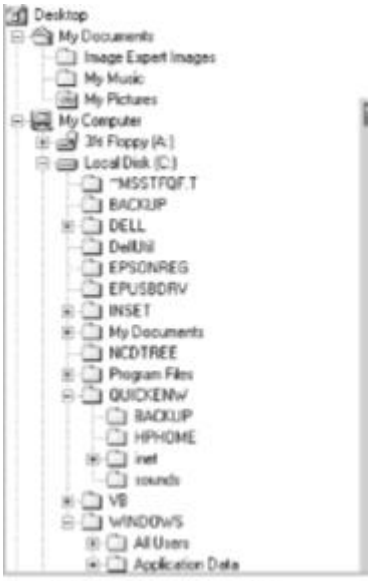


Figure 7.82 A tree view control.

6. **MusicWorld is the world's largest music and audio distribution platform, with over 175 million unique monthly listeners. In 2019, MusicWorld hired test IO, a Berlin-based usability testing agency, to conduct continuous usability testing for the MusicWorld mobile app. With MusicWorld's rigorous development schedule, the company needed regular human user testers to make sure that all new updates work across all devices and OS versions. The key research objectives for MusicWorld's regular usability studies were to: Provide a user-friendly listening experience for mobile app users; Can you give the features of the App before usability test and after usability test.** [10]

Features of the MusicWorld Mobile App Before Usability Test: (5)

User Interface (UI) Design:

- Initial assessment of the app's visual elements, including layout, color schemes, and overall design aesthetics.
- Evaluation of navigation menus, buttons, and other interactive elements for clarity and intuitiveness.

Navigation and Information Architecture:

- Testing the effectiveness of the app's navigation system to ensure users can easily find

and access features.

- Assessing the organization of content, such as playlists, genres, and artist pages.

Playback Controls:

Checking the functionality and placement of playback controls to ensure users can easily play, pause, skip, and adjust volume.

Search Functionality:

- Evaluating the search feature for efficiency and accuracy in finding songs, artists, or albums.
- Personalization and Recommendations:
- Assessing features related to user personalization, such as personalized playlists, recommendations, and user-specific content.

Device Compatibility:

- Verifying that the app works seamlessly across various devices and operating system versions.
- Performance and Responsiveness:
- Testing the app's speed, responsiveness, and overall performance to ensure a smooth user experience.

Features of the MusicWorld Mobile App After Usability Test:

Improved User Interface:

- Adjustments made to the UI design based on user feedback, addressing issues related to visual appeal and user-friendliness.

Enhanced Navigation:

- Changes in navigation structures or menus to improve user flow and make it easier for users to navigate through the app.

Optimized Playback Controls:

- Refinements to playback controls based on user suggestions, ensuring they are positioned intuitively and function seamlessly.

Enhanced Search Experience:

- Improvements to the search functionality, addressing any issues related to accuracy, speed, or ease of use.

Tailored Personalization:

- Updates to personalization features, incorporating user feedback to enhance the relevance and accuracy of recommendations.

Extended Device Compatibility:

- Resolving any compatibility issues reported by users, ensuring the app works smoothly across a wide range of devices and OS versions.

Performance Optimization:

- Implementing optimizations to improve the app's speed, responsiveness, and overall performance based on user testing results.