The User Interface Design Process

Step 7: Select the Proper Screen-Based Controls

Controls

Definition: A graphic object that represents the properties or operations of other objects.

- A control may:
 - Permit the entry or selection of a particular value.
 - Permit the changing or editing of a particular value.
 - Display only a particular piece of text, value, or graphic.
 - Cause a command to be performed.
 - Possess a contextual pop-up window.



Controls (Continued)

- A control must:
 - Look the way it works.
 - Work the way it looks,
 - A control must be used exactly as its design intended.
 - A control must be presented in a standard manner.
- Design Characteristics should signal "enterablilty" or "clickability."
 - Raised elements can be pressed.
 - Recessed elements cannot be pressed.
 - Elements on a flat white background can be opened, edited, or moved.

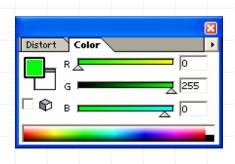


Operable Controls

- Controls 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.







Buttons

Description: A square or rectangular-shaped control with a label inside that indicates action to be accomplished. The label may consist of text, graphics, or both.

Purpose: To start actions, change properties, or

display a pop-up menu.



Buttons (Continued)

Advantages:

- 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.
- May permit use of keyboard equivalents and accelerators.
- Faster than using a two-step menu bar/pull-down sequence.



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Buttons (Continued)

- Disadvantages:
 - 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.
- Proper Usage:
 - Use for frequently used actions that are specific to a window.
 - To cause something to happen immediately.
 - To display another window.
 - To display a menu of options.
 - To set a mode or property value.

Command Buttons

Usage:

- Windows with a menu bar = use for fast access to frequently used or critical commands.
- Windows without a menu bar: use to access all necessary commands.

Structure:

- Restrict the number of buttons on a window to six or fewer.
- 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 mixed-case letters with the first letter of each significant label word capitalized.
- Display labels in the regular system font in the same size.
- Do not number labels.
- Center the label within the button borders, leaving at least two pixels between the text and the button border.
- Provide consistency in button labeling across all screens

- Size:
 - Provide as large a button as feasible.
 - Maintain consistent button heights and widths.
 - Exception: Buttons containing excessively long labels may be wider.
- Number:
 - Restrict the number of buttons on a window to six or fewer.

- Location and Layout:
 - Maintain consistency in button location between windows.
 - Never simply "fit" buttons in available space.
 - If buttons are for exiting the dialog, position them centered and aligned horizontally at the bottom.
 - If buttons are used for invoking a dialog feature or expanding the dialog, position them centered and aligned vertically on the right side.
 - If a button has a contingent relationship to another control, position it adjacent to the related control.
 - If a button has a contingent relationship to a group of controls, position it at the bottom or to the right of the related controls.

- If, exiting and expanding/invoking feature buttons must be paced together:
 - If at the bottom, place exiting buttons to the right, separating the groupings by one button's width.
 - If along the right side, place exiting buttons at the bottom, separating the groupings by one button's height.
- For exiting and expanding/invoking feature buttons, do not:
 - align with the other screen controls.
 - Present displayed within a line border.
- Provide equal and adequate spacing between adjacent buttons.
- Provide adequate spacing between buttons and the screen body controls.

Organization:

- Organize standard buttons in the manner recommended by the platform being used.
- For other buttons, organize them in common and customary grouping schemes.
 - For buttons ordered left to right, place those for most frequent actions to the left.
 - For buttons ordered top to bottom, place those for most frequent actions at the top.
- Keep related buttons grouped together.
- Separate potentially destructive buttons from frequently chosen selections.

- Buttons found on more than one window should be consistently positioned.
- The order should never change.
- For mutually exclusive actions, use two buttons; do not dynamically change the text.

Intent Indicators:

- When a button causes an action to be immediately performed, no intent indicator is necessary.
- When a button leads to a cascading dialog, include an ellipsis(...) after the label.
- When a button leads to a menu, include a triangle pointing in the direction the menu will appear after the label.
- When a button leads to an expanding dialog, include a double arrow (>>) with the label.
- When a button has a contingent relationship to another control that must be indicated, include a single arrow (->) pointing at the control.

- Expansion Buttons:
 - Gray them out after expansion.
 - Provide a contraction button, if necessary located beneath or to the right of the expansion button. Gray it out when not applicable.

Defaults:

- Intent: When a window is first displayed, provide a default action.
- Selection: A default should be the most likely action. If a destructive action id performed, the default should be Cancel.
- Presentation: Indicate the default action by displaying the button with a bold or double border.

Procedures:

- Use the Enter key to activate a default button.
- If another control requires use of the Enter key, temporarily disable the default while the focus is on the other control.
- Permit double-clicking on a single selection control in a window to also carry out the default command

- Unavailable Choices: should be dimmed or grayed out.
- Keyboard Equivalents and Accelerators:
 - Equivalents:
 - assign a keyboard equivalent mnemonic to each button to facilitate keyboard selection.
 - The mnemonic should be the first character of the gbutton's label.
 - Designate the mnemonic character by underlining it.
 - Maintain the same mnemonic on all identical buttons on other screens.
 - Accelerators: Assign a keyboard accelerator to each button to facilitate keyboard selection.

Scrolling:

- If a window can be scrolled, do not scroll the command buttons.
- Use buttons to move between multipage forms, not scroll bars.

Button Activation:

- Pointing: Highlight the button is some visually distinctive manner when the pointer is resting on it and the button is available for selection.
- Activation: Call attention to the button in another visually distinctive manner when it has been activated or pressed. Permit the user to hold the mouse button down continuously for a continuous action.

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Toolbars

- Usage:
 - To provide easy and fast access to most frequently used cammands or options across multiple screens.
 - To invoke a subapplication within an application.
 - To use in place of certain menu items.
- Structure:



- Images:
 - Provide buttons of equal size
 - Create a meaningful and unique icon
 - Center the image within the button.
 - Give the button a raised appearance.
 - Ensure that toolbar images are discernible from Web page graphical images.

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- Text:
 - Create a meaningful label, adhering to label guidelines for command buttons.

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Create toolbar buttons of equal size.

Times New Roman

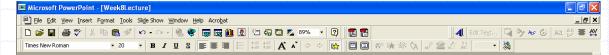
- Consistency:
 - Use the same icon throughout an application and between applications.
- Size:
 - Button: 24(w) by 22(h) pixels or 32(w) by 30(h) pixels (including border).
 - Label: Io(w) by Io(n) pixeis or I4(w) by Z4(n) pixeis.

▼ 20

- Default: Provide the smaller size as the default size with a user option to change it.
- Image: Center the image in the button.

- Organization:
 - Order the buttons based on common and customary grouping schemes.
 - For buttons ordered left to right, place those for the most frequently used actions to the left.
 - For buttons ordered top to bottom, place those for the most frequently used actions at the top.
 - Keep related buttons grouped together.
 - Separate potentially destructive buttons from frequently chosen selections.
 - Permit user reconfiguration of button organization

Location:



- Position main features and functions bar horizontally across top of window just below menu bar.
- Position subtask and subfeatures bars along sides of window.
- Permit the location of the bar to be changed by the user.
- Permit display of the bar to be turned on or off by the user.

Active Items:

- Make only currently available toolbar items available.
- Temporarily not available items may be displayed grayed out.

Customization:

- Permit toolbars to be turned off by the user.
- Allow the customizing of toolbars (but provide a default).

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- Keyboard Equivalents and Accelerators:
 - Equivalents: Assign keyboard equivalents to facilitate keyboard selection and maintain the same mnemonic on all identical buttons on all screens.
 - Accelerators: Assign a keyboard accelerator to facilitate keyboard selection.
- Button Activation:
 - Pointing: Highlight the button in some visually distinctive manner when the pointer is resting on it and the button is available for selection.
 - Activation: Call attention to the button in another visually distinctive manner when it has been activated or pressed.



Text Entry/Read-Only Controls

- Text Boxes
 - Description:
 - A control, usually rectangular in shape, in which text may be entered or edited
 - Text may be displayed for read-only purposes
 - Usually possesses a caption describing the kind of information contained within it.
 - An outline field border is included for enterable/editable text boxes and not included for read-only text boxes.
 - Two types exist: single line and multiple line.

Purpose: To permit the display, entering or editing of textual information.

Advantages

- Very flexible.
- Familiar.
- Consumes little screen space.

Disadvantages:

- Requires use of typewriter keyboard.
- Requires user to remember what must be keyed.

Proper usage:

- Most useful for data that is unlimited in scope, difficult to categorize, or of a variety of lengths.
- When using a selection list is not possible.



- Single-line and Multiple-Line Text Boxes
 - Single line:

Enter Your Name:

- Description: A control consisting of no more than one line of text.
- Purpose: To make textual entries when the information can be contained within one line of the screen.
- Typical uses: Typing the name of a file to save, the path of a file to copy, variable data on a form, or typing a command.
- Multiple line:
 - Description: A control consisting of a multiline rectangular box for multiple lines of text.
 - Purpose: To type, edit, and read passages of text.
 - Typical uses: Creating or reading an electronic mail message, or displaying and editing text files.

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Describe Results:

The results were encouraging. The experiment was declared a success and we all went out for a drink!

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Elitel	Tour	Name.

Captions

- Structure and size:
 - Provide a descriptive caption to identify the kind of information to be typed, or contained within, the text box.
 - Use a mixed-case font.
 - Display the caption in normal intensity or in a color of moderate brightness.

Formatting

- Single fields:
 - Position the field caption to the left of the text box. Place a colon (:) at the end and separate the colon from the text box by one space.
 - Alternately, the caption may be placed above the text box. Place a colon

 (:) at the end and position above the left corner of the box, flush with
 the left edge.
- Multiple occurrence fields:
 - Position the caption left-justified above the column of entry fields
 - For display/read-only boxes: Center the caption above the displayed text box data if it is fixed length, left-justified if it is alphanumeric, short or quite variable in length. Right justify if it is numeric data

Describe Results:

The results were encouraging. The experiment was declared a success and we all went out for a drink!

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Enter Your Name:

Fields

Structure:

- Identify entry/modification text boxes with a line border or reverse polarity rectangular box. To visually indicate that it is an enterable field, present the box in a recessed manner and present display/read-only text boxes on the window background.
- Break up long text boxes through incorporation of slashes(/), dashes (-), spaces, or other common delimiters.

• Size:

- Size to indicate the approximate length of the field.
- Text boxes for fixed-length data must be large enough to contain the majority of the entries.
- Where entries may be larger than the entry field, scrolling must be provided to permit keying into, or viewing, the entire field.
- Employ word wrapping for continuous text in multiple-line text boxes.
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- Highlighting:
 - Call attention to text box data through a highlighting technique: Higher intensity, or a color that both complements the screen background and contrasts well with it.
- Unavailable fields: Gray-out temporarily unavailable text boxes.
- Fonts: Use a Rich-Text Box to support multiple fonts.

Enter Your Name:

The results were encouraging. The experiment was declared a success and we all went out for a drink!

Describe Results:

Selection Controls

- Radio Buttons
- Check Boxes
- Palettes
- List Boxes
- List View Controls
- Drop-down/Pop-up List Boxes

Radio Buttons

Description:

- A two-part control consisting of a small circle, diamond, or rectangle with choice descriptions.
- When a choice is selected: the option is highlighted and any existing choice is automatically unhighlighted and deselected.

Purpose:

To set one item from a small set of mutually exclusive options (2 to 8).

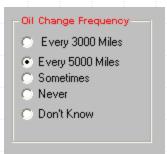
Advantages:

- Easy-to-access choices
- Easy-to-compare choices.
- Preferred by users.

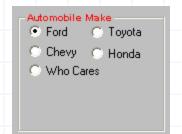




- Disadvantages:
 - Consume screen space.
 - Limited number of choices.
- Proper Usage:
 - For setting attributes, properties, or values.
 - For mutually exclusive choices.
 - Where adequate screen space is available.



- Proper Usage (Continued):
 - Most useful for data and choices that are:
 - Discrete.
 - Small and fixed in number.
 - Not easily remembered.
 - In need of textual description to meaningfully describe the alternatives.
 - Most easily understood when the alternatives can be seen together and compared to one another.
 - Never changed in content.
 - Do not use:
 - For commands.
 - Singly to indicate the presence or absence of a state.



Automobile Make
Ford Toyota
Chevy Honda
Who Cares

- Choice Descriptions:
 - Provide meaningful, fully spelled-out choice descriptions clearly describing the values or effects set by the radio buttons.
 - Display in a single line of text.
 - Display using mixed-case letters, using the sentence style.
 - Position descriptions to the right of the button. Separate them by at least one space from the button.
 - When a choice is conditionally unavailable for selection, display the choice description grayed out or dimmed.
 - Include a None choice if it adds clarity.
- Size: Show a minimum of two choices, a maximum of eight.

Defaults:

- When the control possesses a state or affect that has been predetermined to have a higher probability of selection than the others, designate it as the default and display its button filled in.
- When the control includes choices whose states cannot be predetermined, display all the buttons without setting a dot, or in the *indeterminate* state.
- When a multiple selection includes choices whose states vary, display the buttons in another unique manner, or in the *mixed value* state.

Every 3000 Miles

Every 5000 Miles

Sometimes:

Don't Know

Never



Structure:

- A columnar orientation is preferred.
- Left-align the buttons and choice descriptions.
- If vertical space on the screen is limited, orient the buttons horizontally.
- Provide adequate separation between choices so that the buttons are associated with the proper description. (A distance equal to 3 spaces is usually sufficient.)

Enclose the buttons in a border to visually strengthen the relationship they possess.

Automobile Make

Who Cares

Chevy C Honda

Toyota

Ford.

Oil Change Frequency

Every 3000 Miles

Every 5000 Miles

Sometimes

Never

Don't Know

Automatic Transmission

Note: This is a control array.

Power Steering

Power Breaks

Cruise Control

Oil Change Frequency

Every 3000 Miles

Every 5000 Miles

Sometimes

Never

Don't Know

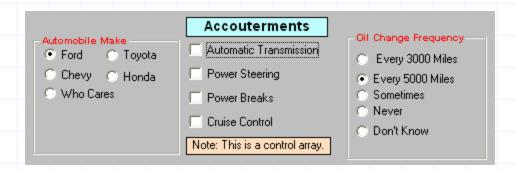
- Organization:
 - Arrange selections in expected order or follow other patterns such as frequency of occurrence, sequence of use, or importance.
 - For selections arrayed top to bottom, begin ordering at the top.
 - For selections arrayed left to right, begin ordering at the left.
 - If a choice is not available, display it subdued or less brightly than the available choices.

Related Control:

 Position any control related to a radio button immediately to the right of the choice description

Automobile Make Ford Toyota If the radio button choice description also acts as the label Chevy C Hondafor the control that follows it, end the label with an arrow (Continued on Next Page)

- Captions:
 - Structure:
 - Provide a caption for each radio button control except if there is only one radio button.
 - Display:
 - Fully spelled out.
 - In mixed-case letters, capitalizing the first letter of all significant words.



- Captions (Continued):
 - Columnar orientation:
 - With a control border, position the caption:
 - Upper-left-justified within the border.
 - Alternatively, the caption may be located to the left of the topmost choice description
 - Without an enclosing control border, position the caption:
 - Left-justified above the choice descriptions, separated by one space line.
 - Alternatively, the caption may be located to the left of the topmost choice description.
 - Horizontal orientation:
 - Position the caption to the left of the choice descriptions.
 - Alternatively, with an enclosing control border, left-justified within the border.
 - Be consistent in caption style and orientation within a screen.

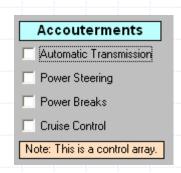


- Keyboard Equivalents:
 - Assign a keyboard mnemonic to each choice description.
 - Designate the mnemonic by underlining the applicable letter in the choice description.
- Selection Method and Indication:
 - Pointing:
 - The selection target area should be as large as possible.
 - Highlight the selection choice in some visually distinctive way when the cursor's resting on it and the choice is available for selection.
 - Activation:
 - When a choice is selected, distinguish it visually from the unselected choices. (A solid dark dot in the radio button.)
 - When a choice is selected, any other selected choice must be deselected.

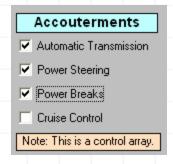
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Check Boxes

- 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.



- Proper usage:
 - For setting attributes, properties, or values.
 - For nonexclusive choices.
 - Where adequate screen space is available.
 - Most useful for data and choices that are:
 - Discrete.
 - Small and fixed in number.
 - Not easily remembered.
 - In need of textual description to describe meaningfully.
 - Most easily understood when the alternatives can be seen together and compared to one another.
 - Never changed in content.
 - Can be used to affect other controls.
 - Use only when both states of a choice are clearly opposite and unambiguous.
 (Continued on Next Page)



Accouterments Automatic Transmission Power Steering Power Breaks Cruise Control Note: This is a control array.

Choice Descriptions

- Provide meaningful, fully spelled-out choice descriptions clearly describing the values or effects set by the check boxes.
- Display them in a single line of text.
- Display them using mixed-case letters in sentence style.
- Position descriptions to the right of the check box. Separate by at least one space from the box.
- When a choice is unavailable for selection under a certain condition, display the choice description visually dimmed.

Size

Show a minimum of one choice, a maximum of eight.

Defaults

 When a control possess a state or affect that has been preset, designate it as the default and display its check box marked. (Continued on Next Page)

- Accouterments

 Automatic Transmission

 Power Steering

 Power Breaks
 - Cruise Control

Note: This is a control array.

- Defaults (Continued)
 - When a multiple selection includes choices whose states vary, display the buttons in another unique manner.

Structure

- Provide groupings of related check boxes.
- A columnar orientation is the preferred manner of presentation for multiple related check boxes.
- Left-align the check boxes and choice descriptions.
- If vertical space on the screen is limited, orient the boxes horizontally.
- Provide adequate separation between boxes so that the buttons are associated with the proper description. (A distance of 3 spaces is usually sufficient.)
- Enclose the boxes in a border to visually strengthen the relationship they possess.

Organization

- Arrange selections in logical order or follow other patterns such as frequency of occurrence, sequence of use, or importance.
 - For selections arrayed top to bottom, begin ordering at the top.
 - For selections arrayed left to right, begin ordering at the left.
- If, under certain conditions, a choice is not available, display it subdued or less brightly than the available choices.

Related Control

- Position any control related to a check box immediately to the right of the choice description.
 - If a check box choice description also acts as the label for the control that follows it, end the label with an arrow (>).

Accouterments Automatic Transmission Power Steering Power Breaks Cruise Control Note: This is a control array.

Captions

Structure:

- Provide a caption for each grouping of related check boxes except where there is only one check box.
- Display fully spelled out and in mixed-case letters capitalizing the first letter of all significant words.

Columnar orientation:

- With a control border, position the caption:
 - Upper-left-justified within the border.
 - Alternatively, the caption may be located to the left of the topmost choice description.
- Without an enclosing control border, position the caption:
 - Left-justified above the choice descriptions separated by one space line.
 - Alternatively, the caption may be located to the left of the topmost choice description.

- Captions (Continued)
 - Horizontal orientation:
 - Position the caption to the left of the choice descriptions.
 - Alternatively, with an enclosing control border, it should be leftjustified within the border
 - Be consistent in caption style and orientation within a screen.
- Keyboard Equivalents
 - Assign a keyboard mnemonic to each check box.
 - Designate the mnemonic by underlining the applicable letter in the choice description.

- Selection Method and Indication
 - Pointing:
 - The selection target area should be as large as possible.
 - Highlight the selection choice in some visually distinctive way when the cursor's resting on it and the choice is available for selection.
 - Activation:
 - When a choice is selected, distinguish it visually from the nonselected choices. (Fill in the check box.)
 - Defaults:
 - If a check box is displayed that contains a choice previously selected or default choice, display the selected choice as set in the control.
 - Select/deselect all:
 - Do not use Select All and Deselect All check boxes.

- Selection Method and Indication (Continued)
 - Mixed -value state:
 - When a check box represents a value, and a multiple selection encompasses multiple value occurrences set in both the on and off state, display the check box in a mixed value state. (fill the check box with another easily differentiable symbol or pattern.)
 - Toggle the check box as follows:
 - Selection 1: Set the associated value for all elements. Fill the check box with an "X" or "check."
 - Selection 2: Unset the value for all associated elements.
 Blank-out the check box.
 - Selection 3: Return all elements to their original state. Fill the check box with the mixed value symbol or pattern.

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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.

Purpose:

 To set one of a series of mutually exclusive options presented graphically or pictorially.

Advantages:

- Pictures aid comprehension.
- Easy-to-compare choices.
- Usually consume less screen space than textual equivalents.

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- Disadvantages:
 - A limited number of choices can be displayed.
 - Difficult to organize for scanning efficiency.
 - Requires skill and time to design meaningful and attractive graphical representations.
- Proper Usage:
 - For setting attributes, properties, or values.
 - For mutually exclusive choices.
 - Where adequate screen space is available.

- Proper Usage (Continued)
 - Most useful for data and choices that are:
 - Discrete.
 - Frequently selected.
 - Limited in number.
 - Variable in number.
 - Not easily remembered.
 - Most easily understood when the alternatives may be seen together and compared to one another.
 - Most meaningfully represented pictorially or by example.
 - Can be clearly represented pictorially.
 - Rarely changed in content.

- Proper Usage (Continued)
 - Do not use:
 - Where the alternatives cannot be meaningfully and clearly represented pictorially.
 - Where words are clearer than images.
 - Where the choices are going to change.
- Graphical Representations
 - Provide meaningful, accurate, and clear illustrations or representations of choices.
 - Create images large enough to:
 - Clearly illustrate the available alternatives.
 - Permit ease in pointing and selecting.
 - Create images of equal size.
 - Always test illustrations before implementing them. (Continued on Next Page)

- Size
 - Present all available alternatives within the limits imposed by:
 - The size of the graphical representations.
 - The screen display's capabilities.
- Layout
 - Create boxes large enough to:
 - Effectively illustrate the available alternatives.
 - Permit ease in pointing and selecting.
 - Create boxes of equal size.
 - Position the boxes adjacent to, or butted up against, one another.
 - A columnar orientation is the preferred manner.
 - If vertical space on the screen is limited, orient the choices horizontally.

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- Organization
 - Arrange palettes in expected or normal order.
 - For palettes arrayed top to bottom, begin ordering at the top.
 - For palettes arrayed left to right, begin ordering at the left.
 - If an expected or normal order does not exist, arrange choices by frequency of occurrence, sequence of use, importance, or alphabetically (if textual).
 - If, under certain conditions, a choice is not available, display its subdued or less brightly than the other choices.

Captions

- Provide a caption for each palette except on screens containing only one palette.
- Display the caption fully spelled out using mixed-case letters.
- Columnar orientation:
 - The field caption may be positioned left-aligned above the palette.
 - Alternatively the caption may be positioned to the left of the topmost alternative.

Horizontal orientation:

- The field caption may be positioned above the palette.
- Alternately, the caption may be positioned to the left of the alternatives.

Selection Method and Indication

Pointing:

 Highlight the choice in some visually distinctive way when the pointer or cursor is resting on it and the choice is available for selection.

Activation:

 When a choice is selected, distinguish it visually from the unselected choices by highlighting it in a manner different from when it is pointed at, or by placing a bold border around it.

Defaults:

• If a palette is displayed with a choice previously selected or a default choice, display the currently active choice in the manner used when it was selected.

List Boxes

- 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 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.
- Proper Usage:
 - For selecting values or setting attributes.
 - For choices that are:
 - Mutually exclusive.
 - Non-mutually-exclusive.

- Proper Usage (Continued)
 - Where screen space is available.
 - For data and choices that are:
 - Best represented textually.
 - Not frequently selected.
 - Not well known, easily learned, or remembered.
 - Ordered in an unpredictable fashion.
 - Frequently changed.
 - Large in number.
 - Fixed or Variable in list length.
 - When screen space or layout considerations make radio buttons or check boxes impractical.

- List Box General Guidelines
 - Selection Descriptions
 - Clearly and meaningfully describe the choices available.
 Spell them out as fully as possible.
 - Present in mixed case, using the sentence style structure.
 - Left-align into columns.
 - List Size
 - Not actual limit in size.
 - Present all available alternatives.
 - Require no more than 40 page-downs to search a list.

- List Box General Guidelines (Continued)
 - Box Size
 - Must be long enough to display 6 to 8 choices without requiring scrolling.
 - Exceptions:
 - If screen space constraints exist, the box may be reduced in size to display at least three items.
 - If it is the major control within a window, the box may be larger.
 - If more items are available than re visible in the box, provide vertical scrolling to display all items.
 - Must be wide enough to display the longest possible choice.
 - When box cannot be made wide enough to display the longest entry:
 - Make it wide enough to permit entries to be distinguishable, or,
 - Break the long entries with an ellipsis (...) in the middle, or,
 - Provide horizontal scrolling.

- List Box General Guidelines (Continued)
 - Organization
 - Order in a logical and meaningful way to permit easy browsing.
 - Consider using separate controls to enable the user to change the sort order of filter items displayed in the list.
 - If a particular choice is not available in the current context, omit it from the list.
 - Exception: If it is important that the existence and unavailability of a particular list item be communicated, display the choice dimmed or grayed out instead of deleting it.
 - Layout and Separation
 - Enclose the choices in a box with a solid border the same color as the choice descriptions.
 - Leave one blank character position between the choice descriptions and the left border.
 - Leave one blank character position between the longest choice description in the list and the right border, if possible.

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- List Box General Guidelines (Continued)
 - Captions
 - Use mixed-case letters.
 - The preferred position of the control caption is above the upper-let corner of the list box.
 - Alternately, the caption may be located to the left of the topmost choice description.
 - Be consistent in caption style and orientation within a screen, and related screens.
 - Disabling
 - When a list box is disabled, display its caption and show its entries as grayed out or dimmed.

- List Box General Guidelines (Continued)
 - Selection Method and Indication
 - Pointing:
 - Highlight the selection choice in some visually distinctive way when the pointer or cursor is resting on it and the choice is available for selection.
 - Selection:
 - Use a reverse video or reverse color bar to surround the choice description when it is selected.
 - The cursor should be as wide as the box itself.
 - Mark the selected choice in a distinguishing way.
 - Activation:
 - Require the pressing of a command button when an item, or items, is selected.

- Single-Selection List Boxes
 - Purpose:
 - To permit selection of only one item from a large listing.
 - Design Guidelines
 - Related text box
 - If presented with an associated text box control:
 - Position the list box below and as close as possible to the text box.
 - The list box caption should be worded similarly to the text box caption.
 - If the related text box and the list box are very close in proximity, the caption may be omitted from the list box.
 - Use the same background color for the text box as is used in the list box.
 - Defaults
 - When the list box is first displayed:
 - Present the currently active choice highlighted or marked with a circle or diamond to the left of the entry.
 - If a choice has not been previously selected, provide a default choice and display it in the same manner that is used in selecting it.
 - If the list represents mixed values for a multiple selection, do not highlight an entry.

- Extended and Multiple-Selection List Boxes
 - Purpose:
 - To permit selection of more than one item in a long listing.
 - Extended list box: Optimized for individual item or range selection.
 - Multiple-selection list box: Optimized for independent item selection.
 - Design Guidelines:
 - Selection indication:
 - Mark the selected choice with an X or check mark to the left of the entry.
 - Consider providing a summary list box.
 - Position it to the right of the list box.
 - Use the same colors for the summary list box as are used in the list box.
 - Provide command buttons to Add (one item) or Add All (items) to the summary list box, and Remove (one item) or Remove All (items) from the summary list box.
 - Consider providing a display-only text control indicating how many choices have been selected.
 - Position it justified upper-right above the list box.

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- Extended and Multiple-Selection List Boxes (Continued)
 - Select All and Deselect All buttons
 - Provide command buttons to accomplish fast Select All and Deselect All actions, when these actions must be frequently or quickly performed.
 - Defaults:
 - When the list box is first displayed:
 - Display the currently active choices highlighted.
 - Mark with an X or check mark to the left of the entry.
 - If the list represents mixed values for a multiple selection, do not highlight an entry.

List View Controls

- Description:
 - A special extended-selection list box that displays a collection of items, consisting of an icon and a label.
 - The contents can be displayed in four different views:
 - Large Icon: Items appear as a full-sized icon with a label below.
 - Small Icon: Items appear as a small icon with label to the right.
 - List: Items appear as a small icon with label to the right.
 - Arrayed in a columnar, sorted layout.
 - Report: Items appear as a line in a multicolumn format.
 - Leftmost column includes icon and its label.
 - Subsequent columns include application-specific information.
- Purpose and usage:
 - Where the representation of objects as icons is appropriate.
 - To represent items with multiple columns of information.

Drop-down/Pop-up List Boxes

- Description:
 - A single rectangular control that shows one item with a small button to the right side
 - The button provides a visual cue that an associated selection box is available but hidden
 - When the button is selected, a larger associated box appears, containing a list of choices from which one may be selected.
 - Selections are made by using the mouse to point and click.
 - Text may not be typed into the control.
- Purpose:
 - To select one item from a large list of mutually exclusive options when screen space is limited.

- Advantages:
 - Unlimited number of choices.
 - Reminds users of available options.
 - Conserves screen space.
- Disadvantages:
 - Requires an extra action to display the list of choices.
 - When displayed, all choices may not always be visible, requiring scrolling.
 - The list may be ordered in an unpredictable way, making it hard to find items.

- Proper usage:
 - For selecting values or setting attributes.
 - For choices that are mutually exclusive.
 - Where screen space is limited.
 - For data and choices that are:
 - Best represented textually.
 - Infrequently selected.
 - Not well known, easily learned, or remembered.
 - Ordered in an unpredictable fashion.
 - Large in number.
 - Variable or fixed in list length.

- Proper Usage (Continued):
 - Use drop-down/pop-up lists when:
 - Screen space or layout considerations make radio buttons or single-selection list boxes impractical.
 - The first, or displayed, item will be selected most of the time.
 - Do not use a drop-down list if it is important that all options be seen together.
- Prompt Button
 - Provide a visual cue that a box is hidden by including a downward pointing arrow, or other meaningful image, to the right side of the selection field.
 - Position the button directly against, or within, the selection field.

- Selection Descriptions
 - Clearly and meaningfully describe the choices available.
 Spell them out as fully as possible.
 - Graphical representations must clearly represent the options.
 - Left-align them in columns.
 - Display the descriptions using mixed-case letters.
- List Size
 - Not limited in size.
 - Present all available alternatives.

Box Size

- Long enough to display 6 to 8 choices without scrolling.
- Wide enough to display the longest possible choice.
- When a box cannot be made wide enough to display the longest entry:
 - Make it wide enough to permit entries to be distinguishable, or,
 - Break long entries with ellipses (...) in the middle, or,
 - Provide horizontal scrolling.

Organization

- Order in a logical and meaningful way to permit easy browsing.
- If a particular choice is not available in the current context, omit it from the list.
 - Exception: If it is important that the existence and unavailability of a particular list item be communicated, display the choice dimmed or grayed out instead of deleting it.

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- Layout and Separation
 - Enclose the choices in a box composed of a solid line border.
 - The border should be the same color as the choice descriptions.
 - Leave one blank character position between the choices and the left border.
 - Leave one blank character position between the longest choice description in the list and the right border, if possible.

Captions

- Display using mixed-case letters.
- Position the caption to the left of the box or left-justified above the box.

Defaults

- When the drop-down/pop-up listing is first presented, display the currently set value.
- If a choice has not been previously selected, provide a default choice.

Disabling

 When a drop-down/pop-up list box is disabled, display its caption and entries as disabled or dimmed.

Selection Method and Indication

- Pointing:
 - Highlight the selection choice in some visually distinctive way when the pointer or cursor is resting on it and the choice is available for selection.
- Activation:
 - Close the dorp-down/pop-up list box when an item is selected.

Combination Entry/Selection Controls

- Spin Boxes
- Combo Boxes
- Drop-down/Pop-up Combo Boxes

Spin Boxes

- Description:
 - A single-line field followed by two small, vertically arranged buttons.
 - The top button has an arrow pointing up.
 - The bottom button has an arrow pointing down.
 - Selection/entry is made by:
 - Using the mouse to point at one of the directional buttons and clicking. Items will change by one unit or step with each click.
 - Keying a value directly into the field itself.
- Purpose:
 - To make a selection by either scrolling through a small set of meaningful predefined choices or typing text.

- Advantages:
 - Consumes little screen space.
 - Flexible, permitting selection or typed entry.
- Disadvantages:
 - Difficult to compare choices.
 - Can be awkward to operate.
 - Useful only for certain kinds of data.
- Proper Usage
 - For setting attributes, properties, or values.
 - For mutually exclusive choices.
 - When the task requires the option of either key entry or selection from a list.
 - When the user prefers the option of either key entry or selection from a list.
 - Where screen space is limited.

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- Proper Usage (Continued)
 - Most useful for data and choices that are:
 - Discrete.
 - Infrequently selected.
 - Well known, easily learned or remembered, and meaningful.
 - Ordered in a predictable, customary, or consecutive fashion.
 - Infrequently changed.
 - Small in number.
 - Fixed or variable in list length.
- List Size
 - Keep the list of items relatively short.
 - To reduce the size of potentially long lists, break the listing into subcomponents, if possible.

- List Organization
 - Order the list in the customary, consecutive, or expected order of the information contained within it.
 - Ensure that the user can always anticipate the next (not-yet-visible) choice.
 - When first displayed, present a default choice in the box.
- Other Spin Box Guidelines
 - Box Size
 - The spin box should be wide enough to display the longest entry or choice.
 - Caption:
 - Display it using mixed-case letters.
 - Position the caption to the left of the box or left-justified above the box.

- Other Spin Box Guidelines (Continued)
 - Entry and Selection methods:
 - Permit completion by:
 - Typing directly into the box.
 - Scrolling and selecting with a mouse.
 - Scrolling and selecting with the up/down arrow keys.
 - For alphabetical values:
 - Move down the order using the down arrow.
 - Move up the order using the up arrow.
 - For numeric values:
 - Show a larger value using the up arrow.
 - Show a smaller value using the down arrows.

Combo Boxes

Description:

- A single rectangular text box entry field, beneath which is a larger rectangular list box (resembling a drop-down list box) displaying a list of options.
- The text box permits choice to be keyed within it.
- The larger box contains a list of mutually exclusive choices from which one may be selected for placement in the entry field.
 - Selections are made by using a mouse to point and click.
- As text it typed into the text box, the list scrolls to the nearest match.
- When an item in the list box is selected, it is placed into the text box, replacing the existing content.
- Information keyed may not necessarily have to match the list items.

Combo Boxes (Continued)

Purpose:

 To allow either typed entry in a text box r selection from a list of options in a permanently displayed list box attached to the text box.

Advantages:

- Unlimited number of entries and choices.
- Reminds users of available options.
- Flexible, permitting selection or typed entry.
- Entries not necessarily restricted to items selectable from list box.
- List box always visible.

Combo Boxes (Continued)

Disadvantages:

- Consumes some screen space.
- All list box choices not always visible, requiring scrolling.
- Users may have difficulty recalling sufficient information to type entry, making text box unusable.
- The list may be ordered in an unpredictable way, making it hard to find items.

Proper usage:

- For entering or selecting objects or values of setting attributes.
- For information that is mutually exclusive.
- When users may find it practical to, or prefer to, type information rather than selecting it from a list.
- When users can recall and type information faster than selecting it from a list.

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Combo Boxes (Continued)

- Proper Usage (Continued)
 - When it is useful to provide the users a reminder of the choices available.
 - Where data must be entered that is not contained in the selection list.
 - Where screen space is available.
 - For data and choices that are:
 - Best represented textually.
 - Somewhat familiar or known.
 - Ordered in an unpredictable fashion.
 - Frequently changed.
 - Large in number.
 - Variable or fixed in list length.
- Combo Box Guidelines
 - Same as the Text Box/Single Line and Drop-Down/Pop-Up List Box guidelines.

Drop-down/Pop-up Combo Boxes

Description:

- A single rectangular text box with a small button to the side and an associated hidden list of options.
 - The button provides a visual cue that an associated selection box is available but hidden.
- When requested, a larger associated rectangular box appears, containing a scrollable list of choices from which one is selected.
- Selections are made by using the mouse to point and click.
- Information may also be keyed into the field.
- As text is typed into the text box, the list scrolls to the nearest match.
- When an item in the list box is selected, it is placed into the text box, replacing the existing content.
- The information keyed does not necessarily have to match list items.
- Combines the capabilities of both a text box and a dropdown/pop-up list box.

Purpose:

 To allow either typed entry or selection from a list of options in a list box that may be closed and retrieved as needed.

Advantages:

- Unlimited number of entries and choices.
- Reminds users of afvfailable options.
- Flexible, permitting selection or typed entry.
- Entries not restricted to items selectable from list box.
- Conserves screen space.

Disadvantages:

- Requires an extra step to display the list of choices.
- When displayed all box choices may not always be visible, requiring scrolling.
- User may have difficulty in recalling what to type.
- The list content may change, making it hard to find items.
- The list may be ordered in a unpredictable way, making it hard to find items.

Proper Usage:

- For entering or selecting objects or values or setting attributes.
- For information that is mutually exclusive.
- When users may find it practical to, or prefer to, type information rather than selecting it from a list.

- Proper Usage (Continued)
 - When users can recall and type information faster than selecting from a list.
 - When it is useful to provide the users with an occasional reminder of the choices available.
 - Where data must be entered that is not contained in the selection list.
 - Where screen space is limited.
 - For data and choices that are:
 - Best represented textually.
 - Somewhat familiar or known.
 - Ordered in an unpredictable fashion.
 - Frequently changed.
 - Large in number.
 - Variable or fixed in list length.

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Prompt Button

- Provide a visual cue that a list box is hidden by including a downward-pointing arrow to the right of the test box.
- Separate the button from the text box by a small space.

Other Guidelines

 Same as for the "Text Box/Single Line" and "Dropdown/Pop-up List Box"

Other Operable Controls

- Slider
 - Tabs
 - Date-Picker
 - Tree View
 - Scroll Bars

Slider

- Description:
 - A scale exhibiting degrees of a quality on a continuum.
 - Includes the following:
 - 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.
 - Optionally, a text box for typing or displaying an exact value.
 - Optionally, a detent position for special values.
 - May be oriented vertically or horizontally.
 - Selected by using the mouse to:
 - Drag a slider across the scale until the desired value is reached.
 - Point a the buttons at one end of the scale and clicking to change the value.
 - Keying a value in the associated text box.

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- Purpose:
 - 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.
- 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.

- 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.

- General
 - Use standard sliders whenever available.
 - Caption and Labels
 - Caption:
 - Provide meaningful, clear, and consistent captions.
 - Display them using mixed-case letters.
 - Position the caption to the left of the box or left-justified above the slider.
 - Labels:
 - Provide meaningful and descriptive labels to aid in interpreting the scale.

- Scale
 - Show a complete range of choices.
 - Mark the low, intermediate, and high ends of the scale.
 - Provide scale interval markings, where possible.
 - Provide consistent increments.
 - Permit the user to change the units of measure.
 - If the precise value of a quantity represented is important, display the value set in an adjacent text box.
- Slider Arm
 - If the user cannot change the value shown in a slider, do not display a slider arm.

Slider Buttons

- Provide slider buttons to permit movement by the smallest increment.
- If the user cannot change the value shown in a slider, do not display slider buttons.

Detents

- Provide detents to set values that have special meaning.
- Permit the user to change the detent value.

Proportions

- To indicate the proportion of a value being displayed, fill the slider shaft in some visually distinctive way.
 - Fill horizontal sliders from left to right.
 - Fill vertical sliders from bottom to top.

Tabs

- Description:
 - A window containing tabbed dividers that create pages or sections.
 - Navigation is permitted between the pages or sections.
- Purpose:
 - To present information that can be logically organized into pages or sections within the same window.
- Advantages:
 - Resembles their paper-based cousins.
 - Visually distinctive.
 - Effectively organize repetitive, related information.
- Disadvantages:
 - Visually complex.

Tabs (Continued)

- Proper usage:
 - To present discrete, logically structured, related, information.
 - To present the setting choices that can be applied to an object.
 - When a short tab label can meaningfully describe the tab's contents.
 - When the order of information use varies.
- Sections and Pages
 - Place related information within a page or section.
 - Order them meaningfully.
 - Arrange pages so they appear to go deeper, left to right and top to bottom.
 - Provide pages of equal size.

Tabs (Continued)

- Location, Size, and Labels
 - Place the tabs at the top of the page or section.
 - Provide fixed-width tabs for pages or sectios of related information.
 - Provide textual labels.
 - Use system fonts.
 - Keep information brief and the same general length.
 - Use mixed case, capitalizing each significant word.
 - Assign a keyboard equivalent for keyboard access.
 - Center the labels within the tabs.
 - Re3strict tabs to only one row.
 - Arrange tabs so that they appear to go deeper, left to right and top to bottom.

Tabs (Continued)

- Command Buttons
 - If they affect only a page or section, locate the buttons on the page or section.
 - If they affect the entire tabbed control, locate the buttons outside the tabbed pages.

Date Picker

- Description:
 - A drop-down list box that displays a 1-month calendar in the drop-down list box.
 - The displayed month can be changed through pressing command buttons with left- and right-pointing arrows.
 - The left arrow moves backward through the monthly calendars.
 - The right arrow moves forward through the monthly calendars.
 - A date for the list box can be selected from the drop-down calendar.
- Purpose:
 - To select a date for inscribing in a drop-down list box.

Date Picker (Continued)

- Advantages:
 - Provides a representation of a physical calendar, a meaningful entity.
 - The calendar listing is ordered in a predictable way.
 - Visually distinctive.
- Disadvantages:
 - Requires an extra step to display the calendar.
 - When displayed, all month choices are not visible, requiring a form of scrolling to access the desired choice.
- Proper usage:
 - To select and display a single date in close monthly proximity to the default month presented on the dorp-down list box.

Tree View

- Description:
 - A special list box control that displays a set of objects as an indented outline, based on the objects logical hierarchical relationship.
 - Includes, optionally, buttons that expand and collapse the outline.
 - A button inscribed with a plus (+) expands the outline.
 - A button inscribed with a minus (-) collapses the outline.
 - Elements that can optionally be displayed are:
 - Icons.
 - Graphics, such as a check box.
 - Lines to illustrate hierarchical relationships.
- Purpose and proper usage:
 - To display a set of objects as an indented outline to illustrate their logical hierarchical relationship.

Scroll Bars

- Description:
 - An elongated rectangular container consisting of:
 - A scroll area.
 - A slider box or elevator inside.
 - Arrows or anchors at either end.
 - Available, if needed, in primary and secondary widows, some controls, and Web pages.
 - May be oriented vertically or horizontally at the window or page edge.
- Purpose:
 - To find and view information that takes more space than the allotted display space.

- Advantages:
 - Permits viewing data of unlimited size.
 - Disadvantages:
 - Consumes screen space.
 - Can be cumbersome to operate.
 - Proper use:
 - When more information is available than the window space for displaying it.
 - Do not use to set values.

- 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 the 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.

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- Scroll Bar Design Guidelines (Continued)
 - Scroll Directional arrows:
 - To indicate the direction in which scrolling may be performed, directional arrows should be provided.
 - Construct them as arrows in small boxes, with backgrounds that contrast with the scroll area.
 - Selection:
 - When the slider box/handle has been selected, highlight it in some visually distinctive way.
 - Location
 - Position a vertical (top-to-bottom) scroll bar to the right of the window.
 - Position a horizontal (left-to-right) scroll bar at the bottom the the window.:

Scroll Bar Design Guidelines (Continued)

Size:

- A vertical scroll bar should be the height of the scrollable portion of the window body.
- A horizontal scroll bar should be at least one-half the width of the scrollable portion of the window body.

Current State Indication:

- Whenever the window's size or the position of the information changes, the scroll bar components must also change, reflecting the current state.
- Include scroll bars in all sizable windows
 - If no information is currently available by scrolling in a particular direction, the relevant directional arrow should be subdued or grayed out.

- Scroll Bar Usage Guidelines
 - Scroll Bar Style:
 - Stick with standard, proven design styles.
 - Directional preference:
 - Use vertical (top-to-bottom) scrolling.
 - Avoid horizontal (left-to-right) scrolling.

Custom Controls

- Implement custom controls with caution.
- If used, make the look and behavior of custom controls different from that of standard controls.

Presentation Controls

- Static Text Fields
- Group Boxes
- Column Headings
- Tool Tips
- Balloon Tips
- Progress Indicators
- Sample Box
- Scrolling Tickers

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 Fields (Continued)

- 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.

Group Boxes

- Description:
 - A rectangular frame that surrounds a control or group of controls.
 - An optional caption may be included in the frame's upper-left corner.
- Purpose:
 - To visually relate the elements of a control.
 - To visually relate a group of related controls
- Proper usage:
 - To provide a border around radio button or check box controls.
 - To provide border around two or more functionally related controls.

Static Text Fields (Continued)

- Guidelines:
 - Label or heading:
 - Typically, use a noun or noun phrase for the label or heading.
 - Provide a brief label or heading, preferably one or two words.
 - Relate label or heading's content to the group box's content.
 - Capitalize the first letter of each significant word.
 - Do not include an ending colon (:).
 - Follow all other guidelines presented for control and section borders.

Column Headings

- Description:
 - Read-only textual information that serves ad a heading above columns of text or numbers.
 - Can be divided into two or more parts.
- Purpose:
 - To identify a column of information contained in a table.
- Proper usage:
 - To display a heading above a column of information contained in a table.

Static Text Fields (Continued)

- Guidelines:
 - Heading:
 - Provide a brief heading.
 - Can include text and a graphic image.
 - Capitalize the first letter of each significant word.
 - Do not include and ending colon (:)
 - The width of the column should fit the average size of the column entries.
 - Does not support keyboard access.

ToolTips

- Description:
 - A small pop-up window containing descriptive text that appears when a pointer is moved over a control or element either:
 - Not possessing a label.
 - In need of additional descriptive or status information.
- Purpose:
 - To provide descriptive information about a control or screen element.
- Advantages:
 - Identifies and otherwise unidentified control.
 - Reduces possible screen clutter caused by control captions and descriptive information.
 - Enables control size to be reduced.

ToolTips (Continued)

- Disadvantages:
 - Not obvious, must be discovered.
 - Inadvertent appearance can be distracting.
- Proper usage:
 - To identify a control that has no caption.
 - To provide additional descriptive or status information about a screen element.
- ToolTip Guidelines
 - Display after a short time-out.
 - For toolbars, provide a brief word as a label.
 - Use mixed case in the headline style of presentation with no ending punctuation.

ToolTips (Continued)

- ToolTip Guidelines (Continued)
 - For other elements, provide a brief phrase presenting descriptive or status information.
 - Use mixed case in the sentence style of presentation.
 - Present ToolTips at the lower-right edge of the pointer.
 - Display them fully on the screen.
 - For text boxes, display ToolTips centered under the control.
 - Display them in the standard system ToolTip colors.
 - Remove the ToolTip when the control is activated or the pointer is moved away.
 - Don't substitute ToolTips for good design.

- Description:
 - A small pop-up window that contains information in a word balloon.
 - Components can include:
 - Title.
 - Body text.
 - Message Icons.
 - Appear adjacent to the item to which they apply, generally above or to the left.
 - Only one tip, the last posted, is visible at any time.
 - Tips are removed after a specified time period.

- Purpose:
 - To provide additional descriptive or status information about a screen element.
- Advantages:
 - Provides useful reminder and status information.
- Disadvantages:
 - If overused they lose their attention-getting value.
 - If overused in situations the user considers not very important, their continual appearance can be aggravating.

- Proper usage:
 - To display noncritical:
 - Reminder information.
 - Notification information.
 - Do not use tips to display critical information.
- Balloon Tip Guidelines
 - General:
 - Use a notification tip to inform the user about state changes.
 - Use a reminder tip for state changes that the user might not usually notice.
 - Point the tip of the balloon to the item it references.
 - Do not use them to replace ToolTips.
 - Do not overuse balloon tips.

(Continued on Next Page)

- Balloon Tip Guidelines
 - Content:
 - Restrict them to a length of 100 characters, including title and body text.
 - Title text should:
 - If the tip refers to an icon or other image representing a specific object, include:
 - The object's name, using its normal capitalization.
 - The object's status, using sentence-style presentation without ending punctuation.
 - Be presented in bold.
 - Body text should:
 - Include a description of the situation in one or two brief sentences.
 - Include a brief suggestion for correcting the situation.
 - Be presented using mixed-case in the sentence style.

Progress Indicators

- Description:
 - A rectangular bar that fills as a process is being performed, indicating the percentage of the process that has been completed.
- Purpose:
 - To provide feedback concerning the completion of a lengthy operation.
- Proper Usage:
 - To provide an indication of the proportion of a process completed.

Progress Indicators (Continued)

- Progress Indicator Guidelines
 - When filling the indicator:
 - If horizontally arrayed, fill it from left to right.
 - If vertically arrayed, fill it from bottom to top.
 - Fill it with a color or a shade of gray.
 - Include descriptive text for the process, as necessary.
 - Place text outside of the control.

Sample Box

- Description:
 - A box illustrating what will show up on the screen based upon the parameter or parameters selected.
 - May include text, graphics, or both.
- Purpose:
 - To provide a representation of actual screen content based upon the parameter or parameters selected.
- Guidelines:
 - Include a brief label.
 - Use mixed case in the headline style.
 - Locate it adjacent to the controls upon which it is dependent.

Scrolling Tickers

- Description:
 - Text that scrolls horizontally through a container window.
- Advantages:
 - Consume less screen space than full text.
- Disadvantages:
 - Hard to read.
 - Time-consuming to interpret.
 - Distracting.
- Guideline:
 - Do not use.

Selecting the Proper Controls

- Entry Versus Selection A comparison
 - Choosing a Type of Control
 - For familiar, meaningful data choose the technique that, in theory, requires the fewest number of keystrokes to complete.
 - If the data is unfamiliar or prone to typing errors, choose a selection technique.
 - Aided versus Unaided Entry
 - Provide aided entry whenever possible.
 - Absorb any extra and unnecessary keystrokes.
 - Provide an auditory signal that autocompletion has been performed.
- Comparison of GUI Controls
 - Mutually Exclusive Choice Controls
 - For a small set of options Radio buttons are fastest, most accurate, and most preferred by users.
 - For medium and large sets of options, Radio buttons are not recommended but may be used if sufficient screen space exists.
 - Scrolling controls seem to significantly impede selection speeds.

- Comparison of GUI Controls (Continued)
 - Nonexclusive Choice Controls
 - For a small set of options, check boxes were significantly faster than the other controls as well as the most preferred.
 - For medium and large set sizes, check boxes are not recommended but may be used if sufficient screen space exists.
 - Scrolling controls seem to significantly impede selection speeds.
 - Combination Selection and Entry Controls
 - Radio buttons with a text entry field are the fastest, most accurate, and preferred choice.
 - Controls for Selecting a Value within a Range
 - Making all options always visible will enhance performance.
 - Requiring additional actions to make further options visible slows performance.
 - For longer lists, scrolling tends to degrade performance more than the action associated with retrieving a hidden list.

- Control Selection Criteria
 - Data Considerations:
 - Is the property or data mutually exclusive or nonexclusive? Does entry/selection require single or multiple items?
 - Is the property or data discrete or continuous? Discrete data can be meaningfully specified and categorized, while continuous data cannot.
 - Is the property or data limited or unlimited in scope? If limited, how many items will the data normally not exceed?
 - Is the property or data fixed or variable in list length? Are there always a fixed number of items, or wil it vary?
 - Is the property of data ordered in a predictable or unpredictable fashion? If predictable, will the user be able to anticipate the next, unseen, item?
 - Can the property or data be represented pictorially? Will a picture or graphic be as meaningful as a textual description?

- Control Selection Criteria (Continued)
 - Task considerations:
 - How often is an item entered or selected?
 - How often is an item changed?
 - How precisely must the item the entered or selected?
 - User considerations:
 - How much training in control operation will be provided?
 - How meaningful or known is the property or data to the user?
 How easily remembered or learned by the user is the property or date?
 - How frequently used will the system be?
 Is the user an experienced typist?
 - Display considerations:
 - How much screen space is available to display the various controls?

- Choosing a Control Form
 - When to Permit Text Entry
 - Permit text entry if any of the following questions can be answered Yes:
 - Is the data unlimited in size and scope?
 - Is the data familiar?
 - I the data not conducive to typing errors?
 - Will typing be faster than choice selection?
 - Is the user an experienced typist?
 - What Kind of Control to Choose
 - See Table 7.2 and 7.3 (pages 503 and 504 in the text)

- Choosing a Control Form (Continued)
 - Choosing between Buttons and Menus for Commands
 - The following considerations are involved in choosing the correct command form:
 - Whether or not the command part of a standard tool set.
 - The total number of commands in the application.
 - The complexity of the commands.
 - The frequency with which commands are used.
 - Whether or not the command is used in association with another control.