

# **UNIT-6**

## **Device-Based Controls**

### **Device-Based Controls**

Device-based controls, often called input devices, are the mechanisms through which people communicate their desires to the system.

#### **Characteristics of Device-Based Controls**

Several specific tasks are performed using graphical systems.

- To point at an object on the screen.
- To select the object or identify it as the focus of attention.
- To drag an object across the screen.
- To draw something free form on the screen.
- To track or follow a moving object.
- To orient or position an object.
- To enter or manipulate data or information.

#### **Direct and Indirect Devices**

*Direct* devices are operated on the screen itself. Examples include the light pen, the finger, and voice.

*Indirect* devices are operated in a location other than the screen, most often on the desktop.

#### **Trackball**

##### **Description:**

A spherical object (ball) that rotates freely in all directions in its socket.

Direction and speed is tracked and translated into cursor movement.

##### **Advantages:**

Direct relationship between hand and pointer movement in terms of direction and speed.

Does not obscure vision of screen.

Does not require additional desk space (if mounted on keyboard).

**Disadvantages:**

Movement is indirect, in a plane different from the screen.

No direct relationship exists between hand and pointer movement in terms of distance.

Requires a degree of eye-hand coordination.

Requires hand to be removed from keyboard keys.

Requires different hand movements.

Requires hand to be removed from keyboard (if not mounted on keyboard).

Requires additional desk space (if not mounted on keyboard).

May be difficult to control.

May be fatiguing to use over extended time.

**Joystick**

**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.

Requires hand to be removed from keyboard keys.

Requires different hand movements to use.

Requires hand to be removed from keyboard (if not mounted on keyboard).

Requires additional desk space (if not mounted on keyboard).

May be fatiguing to use over extended time.

May be slow and inaccurate.

## **Graphic Tablet**

### **Description:**

Pressure-, heat-, light-, or light-blockage-sensitive horizontal surfaces that lie on the desktop or keyboard.

May be operated with fingers, light pen, or objects like a stylus or pencil.

Pointer imitates movements on tablet.

### **Advantages:**

Direct relationship between touch movements and pointer movements in terms of direction, distance, and speed.

More comfortable horizontal operating plane.

Does not obscure vision of screen.

### **Disadvantages:**

Movement is indirect, in a plane different from screen.

Requires hand to be removed from keyboard.

Requires hand to be removed from keyboard keys.

Requires different hand movements to use.

Requires additional desk space.

Finger may be too large for accuracy with small objects

## **Touch Screen**

### **Description:**

A special surface on the screen sensitive to finger or stylus touch.

### **Advantages:**

Direct relationship between hand and pointer location in terms of direction, distance, and speed.

Movement is direct, in the same plane as screen.

Requires no additional desk space.

Stands up well in high-use environments.

### **Disadvantages:**

Finger may obscure part of screen.

Finger may be too large for accuracy with small objects.

Requires moving the hand far from the keyboard to use.

Very fatiguing to use for extended period of time.

May soil or damage the screen.

### **Design Guidelines:**

Screen objects should be at least 3/4

Object separation should be at least 1/8".

Provide visual feedback in response to activation. Auditory feedback may also be appropriate.

When the consequences are destructive, require confirmation after selection to eliminate inadvertent selection.

Provide an instructional invitation to begin using.

## **Light Pen**

### **Description:**

A special surface on a screen sensitive to the touch of a special stylus or pen.

### **Advantages:**

Direct relationship between hand and pointer movement in terms of direction, distance, and speed.

Movement is direct, in the same plane as screen.

Requires minimal additional desk space.

Stands up well in high-use environments.

More accurate than finger touching.

**Disadvantages:**

Hand may obscure part of screen.

Requires picking it up to use.

Requires moving the hand far from the keyboard to use.

Very fatiguing to use for extended period of time.

**Voice**

**Description:**

Automatic speech recognition by the computer.

**Advantages:**

Simple and direct.

Useful for people who cannot use a keyboard.

Useful when the user's hands are occupied.

**Disadvantages:**

High error rates due to difficulties in:

Recognizing boundaries between spoken words.

Blurred word boundaries due to normal speech patterns.

Slower throughput than with typing.

Difficult to use in noisy environments.

Impractical to use in quiet environments.

## **Mouse**

### **Description:**

A rectangular or dome-shaped, movable, desktop control containing from one to three buttons used to manipulate objects and information on the screen.

Movement of screen pointer mimics the mouse movement.

### **Advantages:**

Direct relationship between hand and pointer movement in terms of direction, distance, and speed.

Permits a comfortable hand resting position

Selection mechanisms are included on mouse.

Does not obscure vision of the screen.

### **Disadvantages:**

Movement is indirect, in a plane different from screen.

Requires hand to be removed from keyboard.

Requires additional desk space.

May require long movement distances.

Requires a degree of eye-hand coordination.

### ***Mouse Usage Guidelines***

Provide a “hot zone” around small or thin objects that mouse positioning. ○ Never use double-clicks or double-drags as the only means operations.

Do not use mouse plus keystroke combinations.

Do not require a person to point at a moving target.

## **Keyboard**

### **Description:**

Standard typewriter keyboard and cursor movement keys.

### **Advantages:**

Familiar.

Accurate.

Does not take up additional desk space.

Very useful for:

Entering text and alphanumeric data.

Inserting in text and alphanumeric data.

Keyed shortcuts—accelerators.

Keyboard mnemonics—equivalents.

**Advantageous for:**

Performing actions when less than three mouse buttons exist.

Use with very large screens.

Touch typists.

**Disadvantages:**

Slow for non-touch-typists.

Slower than other devices in pointing.

Requires discrete actions to operate.

No direct relationship between finger or hand movement on the keys and cursor movement on screen in terms of speed and distance.

**Keyboard Guidelines**

Provide keyboard accelerators.

Assign single keys for frequently performed, small-scale tasks.

Use standard platform accelerators.

Assign Shift-*key* combinations for actions that extend or are complementary to the actions of the key or key combination used without the Shift-*key*.

Assign Ctrl-*key* combinations for:

- Infrequent actions.
- Tasks that represent larger-scale versions of the task assigned to the unmodified key.

Provide keyboard equivalents.

Use standard platform equivalents.

Use the first letter of the item description.

If first letter conflicts exist, use:

- Another distinctive consonant in the item description.
- A vowel in the item description.

Provide window navigation through use of keyboard keys.

### **Selecting the Proper Device-Based Controls**

Consider the characteristics of the task.

- Provide keyboards for tasks involving:
  - Heavy text entry and manipulation.
  - Movement through structured arrays consisting of a few discrete objects.
- Provide an alternative pointing device for graphical or drawing tasks.
- The following are some suggested best uses:
  - Mouse—pointing, selecting, drawing, and dragging.
  - Joystick—selecting and tracking.
  - Trackball—pointing, selecting and tracking.
  - Touch screen—pointing and selecting.
  - Graphic tablet—pointing, selecting, drawing, and dragging.
- Provide touch screens under the following conditions:
  - The opportunity for training is minimal.
  - Targets are large, discrete, and spread out.
  - Frequency of use is low.
  - Desk space is at a premium.
  - Little or no text input requirement exists.

Consider user characteristics and preferences.

- Provide keyboards for touch typists.



Consider the characteristics of the environment.

Consider the characteristics of the hardware.

Consider the characteristics of the device in relation to the application.

Provide flexibility.

Minimize eye and hand movements between devices.

## **Keyboard versus Mouse**

Speed is obviously one reason. An experienced typist, through kinesthetic memory, has memorized the location of keyboard keys. The keying process becomes exceptionally fast and well learned. The mouse is slower,

## **Pointer Guidelines**

The pointer:

- Should be visible at all times.
- Should contrast well with its background.
- Should maintain its size across all screen locations and during movement.
- The hotspot should be easy to locate and see.
- Location should not warp (change position).

The user should always position the pointer.

The shape of a pointer:

- Should clearly indicate its purpose and meaning.
- Should be constructed of already defined shapes.
- Should not be used for any other purpose other than its already defined meaning.
- Do not create new shapes for already defined standard functions.

Use only as many shapes as necessary to inform the user about current location and status. Too many shapes can confuse a person.

Be conservative in making changes as the pointer moves across the screen.

- Provide a short “time-out” before making noncritical changes on the screen.

## Screen-Based Controls

Screen-based controls, often simply called *controls* and sometimes called *widgets*, are the elements of a screen that constitute its body.

By definition, they are graphic objects that represent 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.

Three extremely important principles regarding controls should be noted:

- 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.

The look of a control should make it obvious that it is a control. Its design characteristics should signal “enterability” or “clickability.” Microsoft Windows, for example, presents the following simple rules:

- Raised elements can be pressed.
- Recessed elements cannot be pressed.
- Elements on a flat white background can be opened, edited, or moved.

# Operate Controls

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.

## 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.

To change properties.

To display a pop-up menu.

### 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:

- Adds an aesthetically pleasing style to the screen.
- Provides visual feedback through button movement when activated.

May permit use of keyboard equivalents and accelerators.

Faster than using a two-step menu bar/pull-down sequence.

## **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.

A button comes in three styles.



Command buttons.



Toolbar buttons without labels.



*Symbol button*

## ***Command Buttons***

Command button guidelines include the following.

## 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.

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.

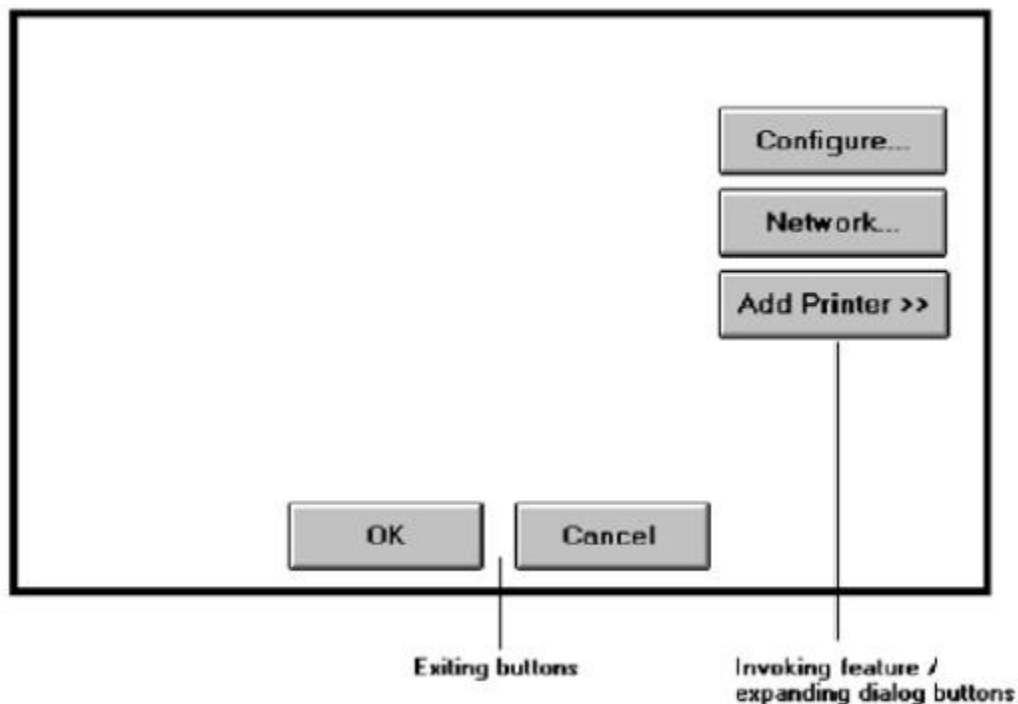
If a button has a contingent relationship to a group of controls:

Position it at the bottom or to right of related controls.

- If, due to space constraints, exiting and expanding/invoking feature buttons must be placed together:
- If at the bottom, place exiting buttons to the right, separating the groupings by one button's width.
- 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.

Windows recommends the following:

- An affirmative action to the left (or above).
- The default first.
- OK and Cancel next to each other.
- Help last, if supported.

## 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.

- Locate it beneath, or to right of, the expansion button.
- Gray it out when not applicable.

## Defaults

### Intent:

When a window is first displayed, provide a default action, if practical.

### Selection:

A default should be the most likely action:

A confirmation.

An application of the activity being performed.

A positive action such as OK, unless the result is catastrophic.

### Presentation:

Indicate the default action by displaying the button with a bold or double border.

### Procedures:

The default can be changed as the user interacts with the window.

When the user navigates to a button, it can temporarily become the default.

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

Temporarily 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 button's label.

If duplication exists in first characters, for duplicate items, use another character in the label.

Preferably, choose the first succeeding consonant.

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.

Exception: if the screen cannot scroll independently of the buttons.

Use buttons to move between multipage forms, not scroll bars.

Label buttons Next and Previous.

## 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.

If a button can be pressed continuously, permit the user to hold the mouse button down and repeat the action.

## **Toolbars**

*Toolbars* are compilations of commands, actions, or functions, usually graphical in structure but sometimes textual, grouped together for speedy access.

Toolbars may also be called *button bars*, *control bars*, or *access bars*. Specialized toolbars may also be referred to as *ribbons*, *toolboxes*, or *palettes*. Toolbars may also appear in palette windows.

## **Usage**

To provide easy and fast access to most frequently used commands or options across multiple screens.

To invoke a sub application within an application.

To use in place of certain menu items.

## **Structure**

### **Images:**

Provide buttons of equal size.

Create a meaningful and unique icon.

- Design them using icon design guidelines.

Center the image within the button.

Give the button a raised appearance.

Ensure that toolbar images are discernible from Web page graphical images.

### **Text:**

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

Create toolbar buttons of equal size, following the size guidelines recently described.

**Consistency:**

Use the same icon throughout an application and between applications

**Size****Button:**

24 (w) by 22 (h) pixels, including border.

32 (w) by 30 (h) pixels, including border.

Larger buttons can be used on high-resolution displays.

**Label:**

16 (w) by 16 (h) pixels.

14 (w) by 24 (h) pixels.

**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 sub features 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.

Also provide access through standard menus.

## **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.

- Provide a default, however.

## **Keyboard Equivalents and Accelerators**

### **Equivalents:**

Assign keyboard equivalents to facilitate keyboard selection.

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**

A Text Entry/Read-Only control contains text that is exclusively entered or modified through the keyboard.

It may also contain entered text being presented for reading or display purposes only.

# 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.
- Is not included for read-only text boxes.

Two types exist:

- Single line.
- Multiple line.

When first displayed, the box may be blank or contain an initial value.

## Purpose:

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

To display read-only 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.

- Of a variety of different lengths.

When using a selection list is not possible.

## Types of text box

Two types of *text boxes* exist. One consists of a rectangular box into which information is typed. It may also be referred to as an *edit* control.

The second is also rectangular in shape but contains text displayed purely for read-only purposes. The former type has historically been referred to as an *entry field*, the latter as an *inquiry* or *display field*.

Entry/Modification:

Display/Read Only: Information

## Two forms of Text Box

### Single-Line and Multiple-Line Text Boxes

#### Single line:

##### 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.

Typing the path of a file to copy.

Typing variable data on a form.

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.

Displaying and editing text files

***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 (:) immediately following the caption.
- Separate the colon from the text box by one space.

**Composition:**

Alternately, the caption may be placed above the text box.

- Place a colon (:) immediately following the caption.
- Position above the upper-left corner of the box, flush with the left edge.
- Multiple occurrence fields:



**Composition:**

For entry/modification text boxes:

- Position the caption left-justified one line above the column of entry fields.

**Offices:**


For display/read-only boxes:

- If the data field is long and fixed-length, or the displayed data is about the same length, center the caption above the displayed text box data.

**Date:**

07/17/94
07/21/94
01/26/95
08/21/95
11/18/96

- If the data displayed is alphanumeric, short, or quite variable in length, left-justify the caption above the displayed text box data.

**Location:**

Alice Springs
Kakadu National Park
Traralgon
Wagga Wagga
Whyalla

- If the data field is numeric and variable in length, right-justify the caption above the displayed text box data.

<b>Balances:</b>
12,642,123.05
53.98
355,125.44
199.13
612.01

## 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.

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.

Date:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Telephone:	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date:	<input style="width: 150px;" type="text" value=" /  "/>		
Telephone:	<input style="width: 200px;" type="text" value="( ) - "/>		

### Size:

Size to indicate the approximate length of the field.

Text boxes for fixed-length data must be large enough to contain the entire entry.

Text boxes for variable-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.

**Highlighting:**

Call attention to text box data through a highlighting technique.

Higher intensity.

If color is used, choose one that both complements the screen background and contrasts well with it.

**Unavailable fields:**

Gray-out temporarily unavailable text boxes.

**Fonts:**

To support multiple fonts, use a *Rich-Text Box*.

## **Selection Controls**

A selection control presents on the screen all the possible alternatives, conditions, or choices that may exist for an entity, property, or value.

The relevant item or items are selected from those displayed.

Selection controls include radio buttons, check boxes, list boxes, drop-down/pop-up list boxes, and palettes.

### **Radio Buttons**

**Description:**

A two-part control consisting of the following:

- Small circles, diamonds, or rectangles.
- Choice descriptions.

When a choice is selected:

- The option is highlighted.
- 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 (that is, only one can be selected).

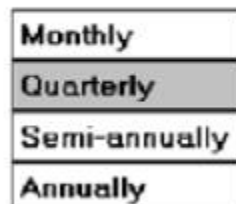
Where adequate screen space is available.

Most useful for data and choices that are:

- Discrete.
- Small and fixed in number.
- Not easily remembered.
- In need of a 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.



## 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.

### 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.

### Structure

A columnar orientation is the preferred manner of presentation.

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 three spaces is usually sufficient.

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

☐ Red
 ☐ Yellow
 ☐ Green
 ☐ Blue

☐ Green
 ☐ Blue
 ☐ Yellow
 ☐ Red

Plan Choice:
☐ Limited
 ☐ Basic
 ☐ Superior
 ☐ Premium

Plan Choice:
☐ Limited
 ☐ Basic
 ☐ Superior
 ☐ Premium

Plan Choice:
☐ Limited
 ☐ Basic
 ☐ Superior
 ☐ Premium

Still Better

Plan Choice:
☐ Limited
 ☐ Basic
 ☐ Superior
 ☐ Premium

Plan Choice:
☐ Limited
 ☐ Basic
 ☐ Superior
 ☐ Premium

Best

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.

## Combination Control

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

If the radio button choice description also acts as the label for the control that follows it, end the label with an arrow (>).

☒ Responsible Person >

☐ No Responsible Party

## Captions

### Structure:

Provide a caption for each radio button control.

Exception: In screens containing only one radio button control, the screen title may serve as the caption.

### Display:

Fully spelled out.

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.

**Color**

☐ Red

☐ Yellow

☒ Green

☐ Blue

Alternately, 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.

- ☒ Red
- ☐ Yellow
- ☐ Green
- ☐ Blue

Alternately, the caption may be located to the left of the topmost choice description.

- Color: ☐ Red
- ☐ Yellow
- ☒ Green
- ☐ Blue

### Horizontal orientation:

Position the caption to the left of the choice descriptions.

Color: ☐ Green ☐ Blue ☐ Yellow ☐ Red

- Alternately, with an enclosing control border, left-justified within the border.

Color
<input type="radio"/> Green <input type="radio"/> Blue <input type="radio"/> Yellow <input checked="" type="radio"/> Red

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.

Include the button and the choice description text.

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

This cursor should be as long as the longest choice description plus one

space at each end. Do not place the cursor over the small button.



### **Activation:**

When a choice is selected, distinguish it visually from the unselected choices.

A radio button should be filled in with a solid dark dot or made to look depressed or higher through use of a shadow.

When a choice is selected, any other selected choice must be deselected.

**Defaults:**

If a radio button control is displayed that contains a choice previously selected or a default choice, display the selected choice as set in the control

**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 (that is, more than one can be selected).

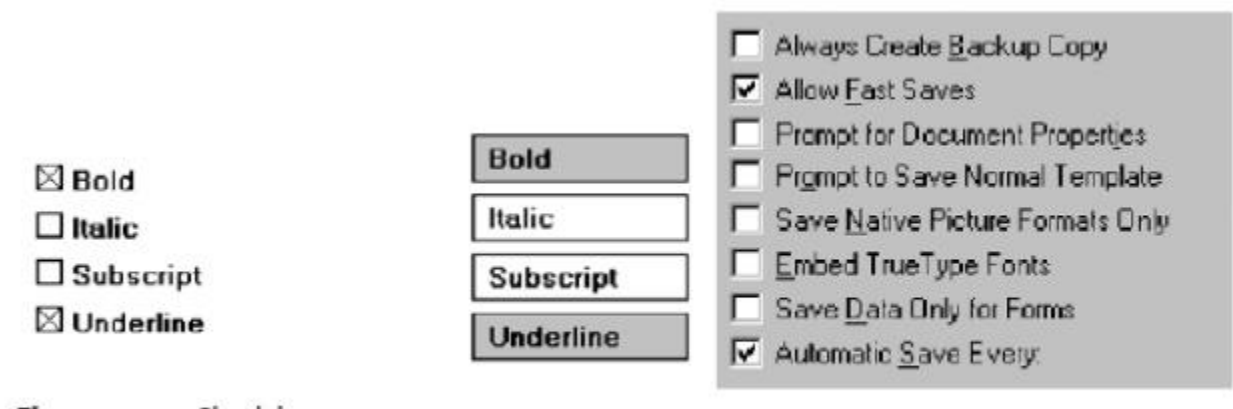
Where adequate screen space is available.

Most useful for data and choices that are:

- Discrete.
- Small and fixed in number.
- Not easily remembered.
- In need of a 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.



## 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 the control possesses a state or affect that has been preset, designate it as the default and display its check box marked.

When a multiple selection includes choices whose states vary, display the buttons in another unique manner, or the *mixed value* state.

## **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.

- A distance equal to three 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 the check box choice description also acts as the label for the control that follows it , end the label with an arrow (>).

## Captions and Keyboard Equivalents

Same as Radio Button

## Selection Method and Indication

### Pointing:

The selection target area should be as large as possible.

Include the check box and the choice description text.

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

This cursor should be as long as the longest choice description plus one space at each end. Do not place the cursor over the check box.

### Activation:

When a choice is selected, distinguish it visually from the non-selected choices.

A check box should be filled in or made to look depressed or higher through use of a shadow.

### 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.

### 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.

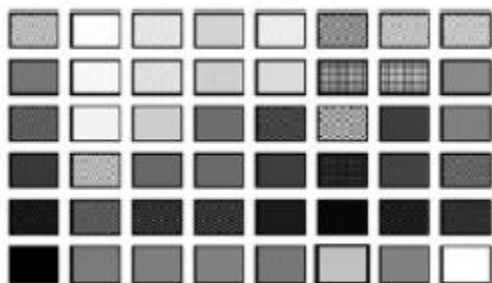
Selection 3: Return all elements to their original state. Fill the check box with the mixed value symbol or pattern.

## 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.

### **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 (that is, only one can be selected).

Where adequate screen space is available.

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

## ***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.

### ***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.

### ***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.

### ***Captions***

Provide a caption for each palette.

- On screens containing only one palette, the screen title may serve as the caption.

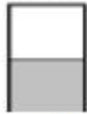
Display the caption fully spelled out using mixed-case letters.

Columnar orientation:

- The field caption may be positioned left-aligned above the palette.

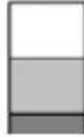


**Shade:**



— Alternately, the caption may be positioned to the left of the topmost alternative.

**Shade:**



- Horizontal orientation:
  - The field caption may be positioned above the palette.

**Shade:**



— Alternately, the caption may be positioned to the left of the alternatives.

**Shade:**



## 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.

**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:

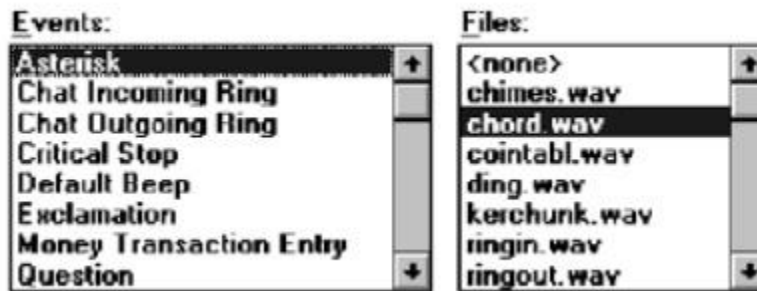
- Mutually exclusive (only one can be selected).
- Non-mutually-exclusive (one or more may be selected).

Where screen space is available.

For data and choices that are:

- Best represented textually.
- Not frequently selected.
- Not well known, easily learned, or remembered.

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.

- Graphical representations must clearly represent the options.

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.

- If more are required, provide a method for using search criteria or scoping the options.

### 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.



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.

## **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 or

filter items displayed in the list.

## **Layout and Separation**

Enclose the choices in a box with a solid border.

- The border should be the same color as the choice descriptions.

Leave one blank character position between the choice descriptions and the left border.

## **Captions**

Use mixed-case letters.

The preferred position of the control caption is above the upper-left 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.

### **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.

## **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.

Groceries:

<input checked="" type="checkbox"/>	Bread
<input type="checkbox"/>	Cereal
<input checked="" type="checkbox"/>	Dairy Foods
<input type="checkbox"/>	Desserts
<input type="checkbox"/>	Drinks
<input type="checkbox"/>	Fruit
<input checked="" type="checkbox"/>	Meat, Fish and Poultry
<input type="checkbox"/>	Vegetables

Groceries:

<input checked="" type="checkbox"/>	Bread
<input type="checkbox"/>	Cereal
<input checked="" type="checkbox"/>	Dairy Foods
<input type="checkbox"/>	Desserts
<input type="checkbox"/>	Drinks
<input type="checkbox"/>	Fruit
<input checked="" type="checkbox"/>	Meat, Fish and Poultry
<input type="checkbox"/>	Vegetables

Groceries Selected:

Bread
Dairy Foods
Meat, Fish and Poultry

- 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.





- 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.

Follow other relevant list box guidelines.

## 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.

## 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.

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:**

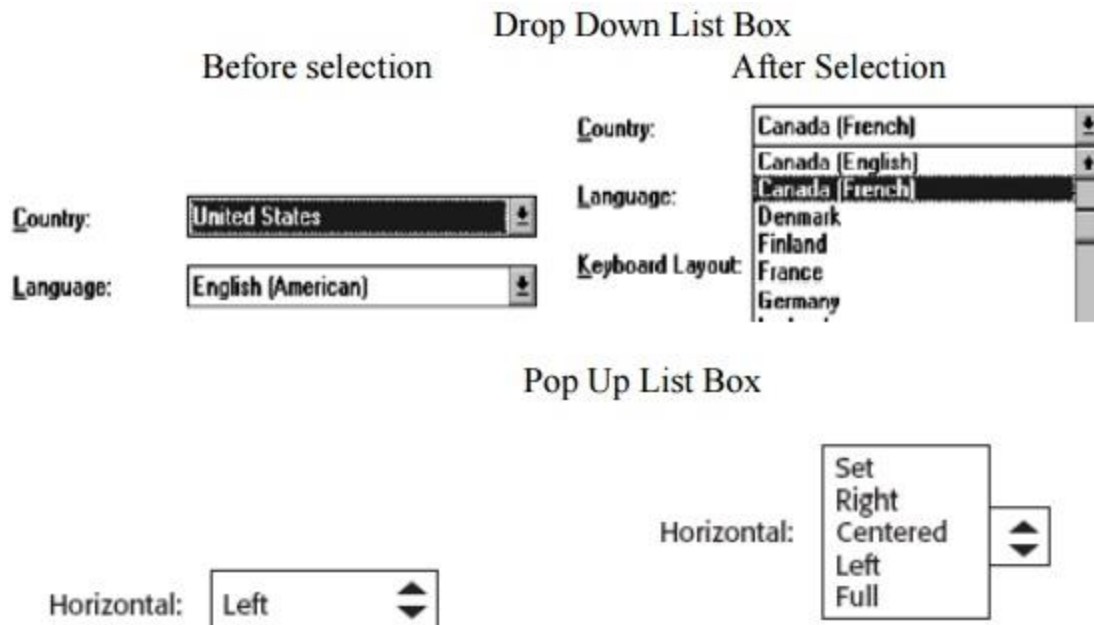
For selecting values or setting attributes.

For choices that are mutually exclusive (only one can be selected).

Where screen space is limited.

For data and choices that are:

Best represented textually.



### *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.

- If more than eight choices are available, provide vertical scrolling to display all items.

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.

### ***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.

### ***Captions***

Display using mixed-case letters.

Position the caption to the left of the box.

- Alternately, it may be positioned left-justified above the box.

### ***Defaults***

When the drop-down/pop-up listing is first presented, display the currently set value

### **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 drop-down/pop-up list box when an item is selected.

## **Combination Entry/Selection Controls**

It is possible for a control to possess the characteristics of both a text field and a selection field.

The types of combination entry/selection fields are spin boxes, attached combination boxes, and drop-down/pop-up combination 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.

### **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 (only one can be selected).

- 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.

***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.

- Alternately, it may be positioned left-justified above the box.

**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 or magnitudes:
  - Show a larger value using the up arrow.
  - Show a smaller value using the down arrow.

## **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 a choice to be keyed within it.

**Purpose:**

To allow either typed entry in a text box or 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.

**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 or setting attributes.

For information that is mutually exclusive (only one can be entered or selected).

When users may find it practical to, or prefer to, type information rather than selecting it from a list.

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***



For the text box entry field, see “Text Box/Single Line” guidelines. For the list box, see “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.

### **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 available options.

Flexible, permitting selection or typed entry.

### **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 an 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 (only one can be entered or selected).

When users may find it practical to, or prefer to, type information rather than selecting it from a list.

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.



## ***Prompt Button***

Provide a visual cue that a list box is hidden by including a downward-pointing arrow to the right of the text box.



Separate the button from the text box by a small space.



## ***Other Guidelines***

For the text box entry field, see the “Text Box/Single Line” guidelines. For the box and selection components, see the “Drop-down/Pop-up List Box” guidelines.

## **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.

### **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:**

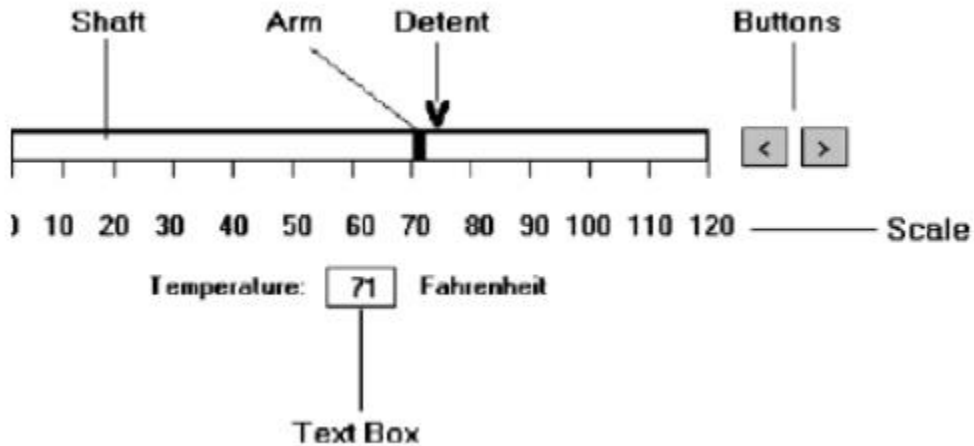
To set an attribute.

For mutually exclusive choices.

When an object has a limited range of possible settings.

When the range of values is continuous.

— When 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.

Alternately, it may be positioned 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.

## 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.

## **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.

### **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.

## ***Location, Size, and Labels***

Place the tabs at the top of the page or section.

Provide fixed-width tabs for pages or sections of related information.

Provide textual labels.

- Use system fonts.
- Keep information brief and the same general length.

## ***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.

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 drop-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



# 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 windows, 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 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.

**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 of the window.

**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.

***Scroll Bar Usage Guidelines***

**Scroll bar style:**

Stick with standard, proven design styles.

***Media Controls***

For all playable files provide the following controls.

- Play.
- Pause/Resume.
- Stop.
- Rewind.
- Fast Forward.