

## Screen-Based Controls (Widgets)

### **In order to interact with a Web site, users**

usually require the use of screen-based controls (sometimes known as 'widgets'). Besides the pervasive link, commonly used screen-based controls include pushbuttons, radio buttons, check boxes, drop-down lists and entry fields. Designers should ensure that they use familiar widgets in a conventional or commonly-used manner.

When pushbuttons are used, ensure that they look like pushbuttons and that they are clearly labeled. In some cases, the pushbuttons will need to be prioritized to facilitate their proper use.

Radio buttons are used to select from among two or more mutually-exclusive selections. Check boxes should be used to make binary choices, e.g., 'yes' or 'no.' Drop-down lists are generally used to select one item from among many. To speed user performance, show default values when appropriate, and do not limit the number of viewable list box options.

Entry fields are used when completing forms and entering text into search boxes. Designers should try to minimize the amount of information entered by users. Each entry field should be clearly and consistently labeled, with the labels placed close to the entry fields. Designers should also clearly distinguish between 'required' and 'optional' data entry fields, and attempt to minimize the use of the Shift key.

To facilitate fast entry of information, designers should automatically place the cursor in the first data entry field, provide labels for each field (e.g., pounds, miles, etc.), and provide auto-tabbing functionality. In order to increase accuracy of data entry, partition long data items into smaller units, enable the software to automatically detect errors, and do not require case-sensitive data entries. Showing users their data entries can increase accuracy. For experienced users, the fastest possible entry of information will come from allowing users to use entry fields instead of selecting from list boxes.

**Guideline:** Distinguish clearly and consistently between required and optional data entry fields.

**Relative Importance:**

12345

**Strength of Evidence:**

12300

**Comments:** Users should be able to easily determine which data entry fields are required and which are optional. Many Web sites are currently using an asterisk in front of the label for required fields. Other sites are adding the word 'required' near the label. One study found that bolded text is preferred when compared to the use of chevrons (>>>), checkmarks, or color to indicate required fields.

**Sources:** Bailey, 1996; Fowler, 1998; Morrell, et al., 2002; Tullis and Pons, 1997.

**Example:**

(required) First name:

(required) Last name:

Company/Organization:

(required) Mailing Address:

(required) City:  State:

Zip Code

(required) Country:

(required) Phone(area code+number):

FAX (area code+number):

(required) E-mail:

Comments:

Asterisks (\*) and labeling data entry field names with 'required' are two popular and effective methods of distinguishing between optional and required data entry fields.

*A field with an asterisk (\*) before it is a required field.*

Prefix:

\* First Name:

\* Last Name:

\* Address:

\*City:

\*State:

\*Zip:

\*Email Address:

\*Phone Number:

## 13:2 Label Pushbuttons Clearly

Relative Importance:

**12345**

Strength of Evidence:

**12000**

**Guideline:** Ensure that a pushbutton's label clearly indicates its action.

**Comments:** The label of a pushbutton should clearly indicate the action that will be applied when the pushbutton is clicked. Common pushbutton labels include 'Update,' 'Go,' 'Submit,' 'Cancel,' 'Enter,' 'Home,' 'Next,' and 'Previous.'

**Sources:** Bailey, 1996; Fowler, 1998; Marcus, Smilonich and Thompson, 1995.

**Example:**

Effective use of short phrases leaves no doubt in the user's mind as to what will happen when the pushbutton is clicked.

Web
  Directory
  Photos

Yellow Pages
 White Pages
 Classifieds

Enter your search information:

Company name:

or CIK:  (Central Index Key)

or File Number:

or State:  (two-letter abbreviation)

and/or SIC:  (Standard Industrial Classification Code)

My Horoscope edit — ×

Get your daily horoscope!  
Enter Your Birthday  
(MM DD YYYY)

Search by Business Entity Name:

OR -

Search by Registered Agent Name:

## 13:3 Label Data Entry Fields Consistently

**Guideline:** Ensure that data entry labels are worded consistently, so that the same data item is given the same label if it appears on different pages.

**Relative Importance:**

1234○

**Strength of Evidence:**

123○○

**Comments:** If possible, employ consistent labeling conventions. For example, do not use single words or phrases for some labels and short sentences for others, or use verbs for some and nouns for others.

**Sources:** Evans, 1998; Mahajan and Shneiderman, 1997; Smith and Mosier, 1986.

## 13:4 Do Not Make User-Entered Codes Case Sensitive

**Guideline:** Treat upper- and lowercase letters as equivalent when users are entering codes.

**Relative Importance:**

1234○

**Strength of Evidence:**

12○○○○

**Comments:** Do not make user-entered codes case sensitive unless there is a valid reason for doing so (such as increased security of passwords). If required, clearly inform users if they must enter codes in a case specific manner. When retaining data entered by users, show the data as it was entered by the user.

**Sources:** Ahlstrom and Longo, 2001; Smith and Mosier, 1986.

**Example:**

The screenshot shows a web browser window with the address bar containing `http://www.firstgov.gov/help.shtml`. The page title is "404 Not Found". The main content area displays "Not Found" and "The requested URL /help.shtml was not found on this server." Below this, it says "Apache/1.3.33 Server at www.firstgov.gov Port 80".

On the left side of the browser window, there is a navigation menu for "FIRSTGOV.gov" with links for "Home", "About Us", "Site Index", "Frequent Questions", "Help", "Español", and "Other Languages". Below this, there are sections for "By Organization" (listing A-Z Agency Index, Federal Government, State Government, Local Government, Tribal Government) and "Contact Your Government" (listing E-mail, Phone, In-Person, Frequently Asked Questions).

The main content area has a "Help" section with the text: "FirstGov.gov is the official U.S. portal to all online government information and services—federal, state, local, tribal and international. Be sure to bookmark FirstGov.gov for future use. We offer several features to help you find what you want quickly and easily." Below this is a "Search Engine" section with the text: "Search millions of federal and state web pages using our popular search".

A capital "H" is all that keeps a user from finding this Help page.

## 13:5 Label Data Entry Fields Clearly

Relative Importance:

1 2 3 4 0

Strength of Evidence:

1 2 3 0 0

**Guideline:** Display an associated label for each data entry field to help users understand what entries are desired.

**Comments:** Employ descriptive labels that clearly, concisely, and unambiguously define the required entry. Make labels distinct enough so that readers do not confuse them with the data entries themselves. This can be done by bolding the labels or providing other visual cues, such as an asterisk.

Do not create new jargon when labeling data entry fields. Use common terms (e.g., male, female) rather than arbitrary labels (e.g., Group 1, Group 2). If the meaning of a proposed label is in doubt, conduct usability testing with an appropriate sample of qualified users.

**Sources:** Pew and Rollins, 1975; Smith and Mosier, 1986.

### Example:

Date Flag Needed by:

Prefix:

Firstname:

Lastname:

Flag flown for:

Address:

City:

State:

Zipcode:

Home Phone:

Business Phone:

Fax:

E-mail Address:

A good design:  
Each data entry field  
has an associated  
descriptive label.

### Enter your account information

First name:

Last name:

Gender:  Male  Female

Birth date: Month  Day

State:

ZIP code:

Time zone:

I own or work with a small business

# 13:6 Minimize User Data Entry

Relative Importance:



Strength of Evidence:



**Guideline:** Do not require users to enter the same information more than once.

**Comments:** Requiring re-entry of data imposes an additional task on users, and increases the possibility of entry errors. When entries made by users on one page are required on another page, the computer should retrieve the original entries, rather than requiring re-entry of the same information. In general, require users to make as few entries as possible.

**Sources:** Czaja and Sharit, 1997; Smith and Mosier, 1986; Zimmerman, et al., 2002.

**Example:** Clicking this button will prompt the server to copy information from the 'Billing Address' column to the 'Shipping Address' column, thus eliminating the need for users to re-input the data (if it is the same).

Step 1 of 4

BILLING ADDRESS	SHIPPING ADDRESS
* E-mail: <input type="text"/>	<b>Copy from Billing</b> <b>Clear</b>
* First Name: <input type="text"/>	* First Name: <input type="text"/>
* Last Name: <input type="text"/>	* Last Name: <input type="text"/>
Company: <input type="text"/>	Company: <input type="text"/>
* Address: <input type="text"/>	* Address: <input type="text"/>
Address2: <input type="text"/>	Address2: <input type="text"/>
* City: <input type="text"/>	* City: <input type="text"/>
* State & Zip: <input type="text"/>	* State & Zip: <input type="text"/>
USA only	USA only
* Phone: <input type="text"/>	* Phone: <input type="text"/>
* Country: Including US territories <input type="text"/>	* Country: Including US territories <input type="text"/>
USA	USA
Foreign Postal Code: <input type="text"/>	Foreign Postal Code: <input type="text"/>
Foreign Province/Territory: <input type="text"/>	Foreign Province/Territory: <input type="text"/>

Enter your ID and password to sign in

ID:

Password:

Remember my ID on this computer

**Sign In**

Mode: Standard | [Secure](#)

[Sign-in help](#) [Password lookup](#)

This Web site minimizes user data entry by remembering IDs.

## 13:7 Put Labels Close to Data Entry Fields

**Guideline:** Ensure that labels are close enough to their associated data entry fields so that users will recognize the label as describing the data entry field.

**Comments:** All labels and related information should be close to the data entry field to enable users to easily relate the label and entries required.

**Sources:** Engel and Granda, 1975; Evans, 1998; Galitz, 2002; Smith and Mosier, 1986.

### Example:

Placing labels very close to the data entry fields

Contact Information

\* First Name  
Enter First Name

\*Last Name  
Enter Last Name

\*Address:  
Enter Street

\*City                      \*State                      \*Zip Code  
Enter City                      IL                      Enter Zip

Phone Number  
Enter Phone

\*Email Address  
Enter your Email

**Email Format:**

allows users to rapidly relate the label and the required entries.

Placing labels away from the data entry field slows users' entry rates.

Please answer the questions and select [Next](#) at the bottom of the page.

**What is your Social Security Number?**  
Please enter this number without the dashes. For example, 123456789.

**What is your last name?**

**What is your first name?**

**What is your middle initial?**

**What is your date of birth?**  
Please enter this date in "mmddyyyy" format. For example, 08171975 for August 17, 1975.

## 13:8 Allow Users to See Their Entered Data

**Guideline:** Create data entry fields that are large enough to show all of the entered data without scrolling.

**Relative Importance:**

12300

**Strength of Evidence:**

12300

**Comments:** Users should be able to see their entire entry at one time. There always will be some users who will enter more data than can be seen without scrolling; however, try to minimize the need to scroll or move the cursor to see all the data for that field. If there is a character limit for a particular field, state that near the entry field.

Designers should be particularly aware of the length of data entry fields used for entering search terms. One study found that this entry field should be at least 35-40 characters long to accommodate ninety-five percent of search terms being used.

**Sources:** Bailey, 1996; Bailey and Wolfson, 2005; Czaja and Sharit, 1997; Fowler, 1998.

### Example:

The text expands vertically so that a user can see even very long entries without having to scroll horizontally.

Data entry fields should be wide enough so that the user can see their entire entry without scrolling.

Please select one of the following feedback categories: (required)

FirstGov website comments

E-mail Address: (required only if you would like a response)  
usabilityguy@scrolling\_is\_ok.com

Feedback Message: (required)  
I find the new layout much improved ...  
However, there are still some problems that you might want to address. First off, your use of fonts (and an apparent need to

Submit Feedback

\* 1. Establishment Name: tute's Communication Technologies Branch

Search the Internet

UK Search Only

Search News Sites

See page xxii for detailed descriptions of the rating scales  
12340



## 13:9 Use Radio Buttons for Mutually Exclusive Selections

**Guideline:** Provide radio buttons when users need to choose one response from a list of mutually exclusive options.

**Relative Importance:**

1 2 3 4 5

**Strength of Evidence:**

1 2 3 4 5

**Comments:** Radio buttons should be used when there is a need to select from among mutually exclusive items. Users should be able to click on the button or its text label to make their selection. Assign one of the radio button choices as the default when appropriate. One study reported that for making mutually exclusive selections, radio buttons elicit reliably better performance than drop-down lists. Radio buttons are also preferred over both open lists and drop-down lists.

**Sources:** Bailey, 1983; Bailey, 1996; Fowler, 1998; Galitz, 2002; Johnsgard, et al., 1995; Marcus, Smilonich and Thompson, 1995; Tullis and Kodimer, 1992.

### Example:

If a user must be constrained to selecting one item in a list, employ radio buttons rather than check boxes.

**When you use the U.S. Department of Education's (ED) I**  
(Please check only one)

- Student
- Teacher
- Education administrator or manager
- Parent or family member
- Researcher or analyst
- Policy maker or legislator
- Librarian
- Writer or reporter
- Other (please specify)

Only one option is clickable for each individual task below.

Task	Not Started	In Progress	Completed
<ul style="list-style-type: none"> <li>Find up-to-date, reliable pandemic information and other public health advisories from state and local health departments, emergency management agencies, and CDC. Make this information available to your organization and others.</li> </ul>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> <li>Distribute materials with basic information about pandemic influenza: signs and symptoms, how it is spread, ways to protect yourself and your family (e.g., respiratory hygiene and cough etiquette), family preparedness plans, and how to care for ill persons at home.</li> </ul>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
<ul style="list-style-type: none"> <li>When appropriate, include basic information about pandemic influenza in public meetings (e.g. sermons, classes, trainings, small group meetings and announcements).</li> </ul>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

# 13:10 Use Familiar Widgets

Relative Importance:

12300

Strength of Evidence:

12300

**Guideline:** Use widgets that are familiar to your users, and employ them in their commonly used manner.

**Comments:** Do not assume that all users are familiar with all available widgets. Unfamiliar widgets will slow some users, and cause others not to use the widget because they do not know how to make it work properly. For instance, one study showed that some users, particularly older users, do not know how to use a drop-down list.

In choosing widgets, designers typically consider such issues as the amount of available screen 'real estate,' reducing the number of user clicks, and whether the user will be choosing one from among many items, or several items at once. Usability test the performance and acceptability of widgets to ensure they do not confuse or slow users.


**Sources:** Bailey, Koyani and Nall, 2000; Nall, Koyani and Lafond, 2001.



**Example:** The circled widget is used in an unconventional manner. Users might expect this widget to be a text entry box. However, when a user

places their cursor in the entry area, it invokes the linked text in the box at left from which the user must select the car type. A drop-down box would be a more suitable widget.

**Select Car Class**  
Please choose a car type, details will display.


- [Economy 2/4 Door Car Auto A/c](#)
- [Compact 2/4 Door Car Auto A/c](#)
- [Intermediate 2/4 Door Car Auto A/c](#)
- [Standard 2/4 Door Car Auto A/c](#)
- [Full Size 2/4 Door Car Auto A/c](#)
- [Premium 2/4 Door Car Auto A/c](#)
- [Luxury 2/4 Door Car Auto A/c](#)
- [Mini Van Auto A/c](#)
- [Standard Convertible Auto A/c](#)
- [Standard Size Sport/Utility 4x4](#)
- [Special 4-wheel Drive Auto A/c](#)



5x  3x 

Buick Regal or Similar

**Step 1 2 3**



**Country of Residence:** United States

**Pick-up Location:** SEATTLE ARPT

**Airport/Station Code:** SEAT01

Leave Return Location blank if Pick-up and Return stations are the same.

**Return Location:** SEATTLE ARPT

**Airport/Station Code:** SEAT01

**Pick-up Date:** 17 February 2003

**Time:** 9:00 AM PM

**Return Date:** 24 February 2003

**Time:** 9:00 AM PM

To change the car time, please click in the box below.

**Car Type:** Full Size 2/4 Door Car Auto A/c

**Product Rate Code:** Optional

**Contract ID #:** Optional

**Coupon ID:** Optional

	<b>Polysyllabic Words / 100 Words:</b> 22.63	
	<b>Sentences / 100 Words:</b> 5.11	
<b>Sentences: 7</b>	<b>Words / Sentence:</b> 19.58	
<input type="radio"/> <b>Print this now ...</b>		
Refer to User Guide (and/or ReadMe File) for how to print this data at a later time.		
<input type="radio"/> <b>Continue ...</b>		
Blank entries reflect counts calculations and formulas not Applied or chosen for Display		

Users do not expect radio buttons to be used in this manner.

## 13:11 Anticipate Typical User Errors

Relative Importance:

12300

Strength of Evidence:

12000

**Guideline:** Use the computer to detect errors made by users.

**Comments:** Do not expect that users always will make correct entries. Anticipate possible user errors, and when possible, allocate responsibility to the computer to identify these mistakes and suggest corrections. For example, if a date is entered as 'February 31,' the computer should generate an error message asking for a revised entry.

Design the site's search engine (and other places where users enter data) to accommodate common misspellings and certain other errors.

**Sources:** Bailey and Koyani, 2004; Bailey, 1983; Pew and Rollins, 1975; Smith and Mosier, 1986.

**Example:**

Departing:

**2 We didn't recognize the date you entered. Please re-enter the date using the Month/Day/Year format.**

Returning:

NATIONAL INSTITUTES OF HEALTH U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
**National Institutes of Health**  
[Home](#) [Health](#) [Grants](#) [News](#) [Research](#) [Institutes](#) [About NIH](#)

**NIH Search Results**  
 Hint: Use "Cached" link to see search terms highlighted.

[Advanced Search](#)

New Search:   Narrow Your Search:

Searched for **Health and Human Services**. Results 1

Did you mean: **Health and Human Services**

[PDF] [Review of the Policies and Procedures for Medical Personnel ...](#)  
 Page 1. \*- , S .\* DEPARTMENT OF HEALTH & HUMAN SERVICES Office Of Inspector General ...  
 Page 2. | Department of Health and Human Services OFFICE OF ...  
[oig.hhs.gov/oas/reports/phs/c9400006.pdf](http://oig.hhs.gov/oas/reports/phs/c9400006.pdf) - 02-12-2002 - [Text Version](#)

## 13:12 Partition Long Data Items

Relative Importance:

12300

Strength of Evidence:

12000

**Guideline:** Partition long data items into shorter sections for both data entry and data display.

**Comments:** Partitioning long data items can aid users in detecting entry errors, and can reduce erroneous entries. For example, it is easier to enter and verify a ten digit telephone number when entered as three groups, NNN-NNN-NNNN. Similarly, ZIP+4 codes and Social Security numbers are best partitioned.

**Sources:** Mayhew, 1992; Smith and Mosier, 1986.

**Example:** The 'Phone Number' entry field is partitioned correctly. However, the 'ZIP+4' field should be broken out into two fields (one five digits long, and one four digits long, separated by a hyphen).

er copies of Labor Organization Reports (LM-1, LM-2, LM-3, LM-4, and Constitutions/Bylaws) via the Internet. Copies of reports are available to the  
er page, requests for 30 or fewer pages are provided free of charge. A bill listing any charges will be sent to you with the reports.

[Register of Reporting Labor Organizations](#)  
eded for ordering reports: [Affiliation's Short](#)  
etc.), 6-digit File Number, Designation Name  
2-46583-GG, etc.), and Unit Name (Chicago

First Name:	<input type="text"/>				
Last Name:	<input type="text"/>				
Title:	<input type="text"/>				
Your organization (if applicable):	<input type="text"/>				
Street Address:	<input type="text"/>				
City:	<input type="text"/>	State:	<input type="text"/>	Zip+4:	<input type="text"/>
Phone Number:	<input type="text"/>	-	<input type="text"/>	ext	<input type="text"/>

labor organizations using this form. If you want to order additional reports, please submit a new form.

For example: Jane Smith

For example: 123456789

Please enter your PERSONAL IDENTIFICATION NUMBER (PIN)

In this example, the first and last names, along with the social security number, should be partitioned.

## 13:13 Use a Single Data Entry Method

Relative Importance:

12300

Strength of Evidence:

12340

**Guideline:** Design data entry transactions so that users can stay with one entry method as long as possible.

**Comments:** Do not have users shift back and forth between data entry methods. Requiring users to make numerous shifts from keyboard to mouse to keyboard can substantially slow their entry speed.

**Sources:** Czaja and Sharit, 1997; Engel and Granda, 1975; Foley and Wallace, 1974; Smith and Mosier, 1986.

**Example:** In this example, data entry methods are used consistently so that users do not have to shift back and forth between mouse entry and keyboard entry.

**Quick Flight Search** [\(Click here for advanced search and booking\)](#)

This service is currently available from  in  only.

Departure Airport:

Arrival Airport:

Departure Date:

Return Date:

Number of Passengers:

**Check Availability**

This design forces users to switch between keyboard entry and mouse entry methods, and will slow the user's data entry task.

Title:

First Name:(required)  Middle Initial:

Last Name:(required)  Maiden Name:

Degree:  BS - GC  BS - InEd  Master - GC  Master - InEd GC Organization Member:

Year Graduated: (required)  Month: (required)

Home Address:  City:

State:  Zip Code:

Home Telephone Number:  Email address: (required)

Personal Website: (Optional)

For multi email addresses separate

## 13:14 Prioritize Pushbuttons

**Guideline:** Use location and highlighting to prioritize pushbuttons.

Relative Importance:

12300

Strength of Evidence:

12300

**Comments:** If one pushbutton in a group of pushbuttons is used more frequently than the others, put that button in the first position. Also make the most frequently used button the default action, i.e., that which is activated when users press the Enter key.

One study reported that designers should place the button most likely to be clicked on the left side of a two-button set of buttons. This button arrangement allows the user to read the first button label, and since it is the most likely selection, click on that button immediately. Some users look at the left and then right button before making a selection, preferring to be fully informed before submitting a response.

**Sources:** Bailey, 1996; Fowler, 1998; Marcus, Smilonich and Thompson, 1995; Walker and Stanley, 2004.

**Example:** The 'Search' button is placed in the first position.

The Library of Congress

**THOMAS**  
Legislative Information on the Internet

*In the Spirit of  
Thomas Jefferson,  
a service of  
The Library of Congress*

**Congress Now:** [House Floor This Week](#) | [House Floor Now](#) | [Senate Schedule](#)

**Search Bill Text 108th Congress (2003-2004):**

Bill Number  Word/Phrase

**Step 4** Add to order.

Quantity

[Add To Order](#) ➔

[Add To Order & Checkout](#) ➔

### Transfers

#### Verify Transfer

[Get Help](#)

Please review the information below. Select edit to make a change or submit to process the request.

**Transfer From:** Checking -

**Transfer To:** Savings -

**Amount:** \$200.00

**Date:** 5/18/2006

[<< edit](#) | [cancel](#)

[SUBMIT](#)

## 13:15 Use Check Boxes to Enable Multiple Selections

**Guideline:** Use a check box control to allow users to select one or more items from a list of possible choices.

**Comments:** Each check box should be able to be selected independently of all other check boxes. One study showed that for making multiple selections from a list of non-mutually exclusive items, check boxes elicit the fastest performance and are preferred over all other widgets. Users should be able to click on either the box or the text label.

**Sources:** Bailey, 1996; Fowler, 1998; Galitz, 2002; Johnsgard, et al., 1995; Marcus, Smilonich and Thompson, 1995.

**Example:** Check boxes are most appropriately used in these examples because users may wish to order more than one product or select more than one file format. Convention dictates that check boxes be used when more than one item in a list may be selected.

Relative Importance:

12300

Strength of Evidence:

12300

Media Type:  DVD  
 CD-ROM 1  
 CD-ROM 2  
 CD-ROM 3  
 CD-ROM 4  
 CD-ROM 5  
 8mm high density tar tape

-----  
 Total cost of selections: \$

We want to provide information in formats you can understand how you prefer to use information

### a. Short documents

How do you prefer to use short documents? (Please check all that apply)

- View/read online
- Download to view offline
- Download to print
- Download to edit or manipulate

What file format(s) do you prefer? (Please check all that apply)

- Hypertext markup language (.htm)
- Plain ASCII text (.txt)
- Adobe Acrobat (.pdf)
- Compressed file (.zip)
- Other (please specify)

### In my free time I'm interested in

- |  |  |
|--|--|
| <input type="checkbox"/> Arts                    | <input type="checkbox"/> Theater                         |
| <input type="checkbox"/> Community Service       | <input type="checkbox"/> Travel                          |
| <input type="checkbox"/> Dancing                 | <input type="checkbox"/> Cooking                         |
| <input type="checkbox"/> Dining                  | <input checked="" type="checkbox"/> Computers / Internet |
| <input type="checkbox"/> Family                  | <input type="checkbox"/> Gaming                          |
| <input type="checkbox"/> Movies                  | <input type="checkbox"/> Television                      |
| <input type="checkbox"/> Listening to Music      | <input type="checkbox"/> Gardening                       |
| <input type="checkbox"/> Outdoor Activities      | <input type="checkbox"/> Crafts                          |
| <input type="checkbox"/> Photography             | <input type="checkbox"/> Playing Music                   |
| <input type="checkbox"/> Reading                 | <input type="checkbox"/> Playing Sports                  |
| <input type="checkbox"/> Religion / Spirituality | <input type="checkbox"/> Health/Fitness                  |
| <input type="checkbox"/> Watching Sports         |  |

# 13:16 Label Units of Measurement

Relative Importance:

12300

Strength of Evidence:

12300

**Guideline:** When using data entry fields, specify the desired measurement units with the field labels rather than requiring users to enter them.

**Comments:** Designers should include units such as minutes, ounces, or centimeters, etc. as part of the data entry field label. This will reduce the number of keystrokes required of users (speeding the data entry process), and reduce the chance of errors.

**Sources:** Pew and Rollins, 1975; Smith and Mosier, 1986.

**Example:**

## International Calculator

1. To which country are you mailing?

**Tip:** Typing the first letter of the country you want will jump the list to the first country that starts with that letter.

2. How much does it weigh?

Pounds:  Ounces:

**BODY MASS INDEX**  
Weight  lbs.  
Height  feet  inches  
**Calculate** **Reset**

**U.S. Values Calculator**  
Female Required Data Entry  
Your Height In Feet  And Inches   
**Calculate** **Reset Values**  
**Calculated Female Results**  
Ideal Body Weight + or - 10%  Pounds  
Ideal Body Weight + or - 10%  Kilograms  
Calculated Height  Meters

See page xxii for detailed descriptions of the rating scales

12340



## 13:17 Do Not Limit Viewable List Box Options

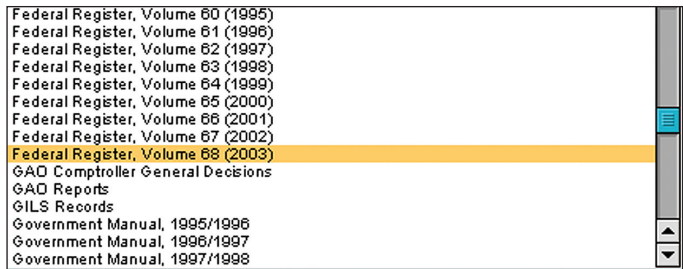
**Guideline:** When using open lists, show as many options as possible.

**Comments:** Scrolling to find an item in a list box can take extra time. In one study, an open list that showed only three (of five) options was used. To see the hidden two items, users had to scroll. The need to scroll was not obvious to users who were not familiar with list boxes, and slowed down those that did know to scroll.

**Sources:** Bailey, Koyani and Nall, 2000; Zimmerman, et al., 2002.

**Example:**

This open list shows as many options as possible given the amount of available screen real estate.



Despite plenty of screen real estate, only four of the six items in this list box are visible.



This site, even though the product is available in only four states, lists all 50, including the U.S. Virgin Islands. Only those four states provide counties, which are necessary before the "Submit" button can be chosen. This could be potentially confusing to users.



# 13:18 Display Default Values

Relative Importance:



Strength of Evidence:



**Guideline:** Display default values whenever a likely default choice can be defined.

**Comments:** When likely default values can be defined, offer those values to speed data entry. The initial or default item could be the most frequently selected item or the last item selected by that user. In general, do not use the default position to display a heading or label for that widget.

**Sources:** Ahlstrom and Longo, 2001; Bailey, 1996; Fowler, 1998; Marcus, Smilonich and Thompson, 1995; Smith and Mosier, 1986.

**Example:**

Title	Item	Quantity	Unit Price	Delete?
2002 IRS Tax CD-ROM.	IRS2002PUB1796A*CD	1	\$22.00	<input type="checkbox"/>
SubTotal:			\$22.00	
<a href="#">Continue Shopping</a>		<a href="#">Update Basket</a>	<a href="#">Clear Basket</a>	

The National Park Service  
*Reservation Center*

You may select a Park from the drop down list or simply click on the appropriate spot on the map.

Acadia National Park

Select Park

LOOP A (2003)  
ASSATEAGUE STATE PARK

Equipment Type: One Tent

Check In Date: 01-May-2003

Check Availability

Destination:  
Cleveland, OH (CLE-All Airports)

Check-in: 6/2/2006      Check-out: 6/5/2006

Rooms: 1      Adults (19+): 1      Children (0-18): 0

See page xxii for detailed descriptions of the rating scales



## 13:19 Place Cursor in First Data Entry Field

**Guideline:** Place (automatically) a blinking cursor at the beginning of the first data entry field when a data entry form is displayed on a page.

**Relative Importance:**

12○○○

**Strength of Evidence:**

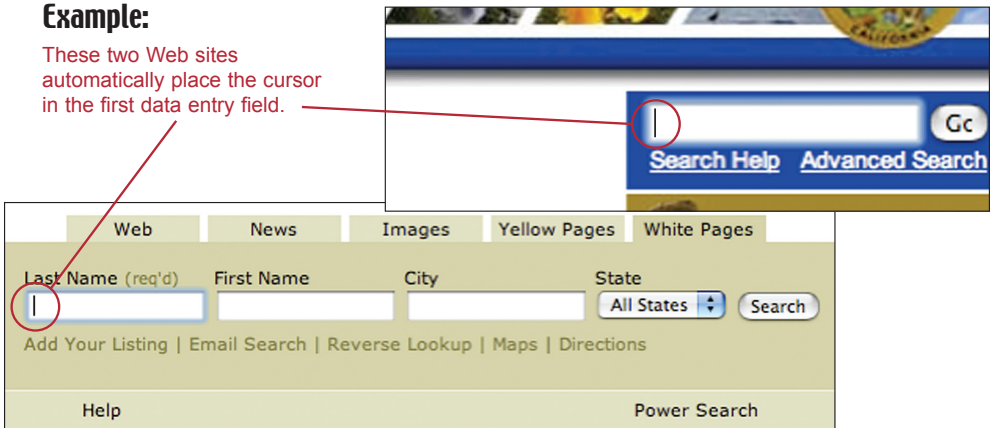
12○○○

**Comments:** Users should not be required to move the mouse pointer to the first data entry field and click on the mouse button to activate the field. Designers should consider, however, that programming this automatic cursor placement might negatively impact the performance of screen reader software.

**Sources:** Ahlstrom and Longo, 2001; Smith and Mosier, 1986.

### Example:

These two Web sites automatically place the cursor in the first data entry field.



## 13:20 Ensure that Double-Clicking Will Not Cause Problems

**Guideline:** Ensure that double-clicking on a link will not cause undesirable or confusing results.

**Relative Importance:**

12○○○

**Strength of Evidence:**

12○○○

**Comments:** Many users double-click on a link when only one click is needed. Developers cannot stop users from double-clicking, but they should try to reduce the negative consequences of this behavior. Usability testing has indicated that if users start with quick double-clicks, they tend to continue to do this for most of the test. Sometimes, when both clicks are detected by the computer, the first click selects one link and the second click selects a second link, causing unexpected (i.e., puzzling) results.

**Sources:** Bailey, Koyani and Nall, 2000; Fakun and Greenough, 2002.

# 13:21 Use Open Lists to Select One from Many

**Guideline:** Use open lists rather than drop-down lists to select one from many.

**Relative Importance:**



**Strength of Evidence:**



**Comments:** Generally, the more items users can see in a list (without scrolling), the faster their responses will be, and the fewer omission errors they will make. Ideally, users should be able to see all available items without scrolling.

When compared with drop-down lists, open lists tend to elicit faster performance primarily because drop-down lists require an extra click to open. However, if a list is extremely long, a drop-down list may be better. The available research does not indicate the upper number limit of items that should be displayed in a list.

**Sources:** Bailey, 1996; Fowler, 1998; Marcus, Smilonich and Thompson, 1995.

**Example:** In this example, the designers opted to use a drop-down list to conserve screen real estate. This is a trade-off, however, as a drop-down list will slow users when compared with an open list.



See page xxii for detailed descriptions of the rating scales  
**12340**

## 13:22 Use Data Entry Fields to Speed Performance

**Guideline:** Require users to enter information using data entry fields (instead of selecting from list boxes) if you are designing to speed human performance.

**Comments:** At least two studies have compared the effectiveness of text entry versus selection (list boxes) for entering dates and making airline reservations.

Both studies found text entry methods were faster and preferred over all other methods. However, use of text entry fields tends to elicit more errors.

**Sources:** Bailey, 1996; Czaja and Sharit, 1997; Fowler, 1998; Gould, et al., 1988; Gould, et al., 1989; Greene, et al., 1988; Greene, et al., 1992; Marcus, Smilonich and Thompson, 1995; Tullis and Kodimer, 1992.

**Example:**

The screenshot shows a web form with various input fields. A search overlay titled 'Enter Field Name' is positioned over the top right, containing a search input field and a 'GoFind' button. The form fields include: M.I., \*Last Name, \*Address, \*City, \*State (highlighted with a red circle), \*Zip, Country (highlighted with a red circle, showing 'UNITED STATES OF AMERICA'), \*Phone 1, Phone 2, Fax, Beeper, and Email Address. A 'Submit' button is at the bottom right of the form.

If users' entries cannot be easily defined or constrained (for example, their street address or a particular search term), use entry fields. However, if entries can be defined and errors reduced (state or country of residence) use list boxes. Be aware that alternating between these two entry methods will slow the user.

**Relative Importance:**

1 2 3 4 5

**Strength of Evidence:**

1 2 3 4 5

## 13:23 Use a Minimum of Two Radio Buttons

**Guideline:** Never use one radio button alone.

**Comments:** Use at least two radio buttons together. If users can choose not to activate any of the radio button choices, provide a choice labeled 'None.'

**Sources:** Bailey, 1996; Fowler, 1998; Marcus, Smilonich and Thompson, 1995.

**Relative Importance:**

1 2 3 4 5

**Strength of Evidence:**

1 2 3 4 5

## 13:24 Provide Auto-Tabbing Functionality

**Guideline:** Provide auto-tabbing functionality for frequent users with advanced Web interaction skills.

**Relative Importance:**

1 2 0 0 0

**Comments:** Auto-tabbing can significantly reduce data entry times for frequent users by not requiring them to manually tab from field to field.

**Strength of Evidence:**

1 2 3 0 0

**Sources:** Ahlstrom and Longo, 2001; Pew and Rollins, 1975; Smith and Mosier, 1986.

## 13:25 Minimize Use of the Shift Key

**Guideline:** Design data entry transactions to minimize use of the Shift key.

**Relative Importance:**

1 0 0 0 0

**Comments:** If possible, designers should not require users to enter characters that require the use the Shift key. Using the Shift key imposes a demand for extra user attention and time. For example, the designer can include symbols such as the dollar or percent sign near data entry fields rather than requiring users to enter those characters. Designers also can treat upper- and lowercases as equivalent when entered by users.

**Strength of Evidence:**

1 2 3 4 0

**Sources:** Card, Moran and Newell, 1980b; John, 1996; Smith and Mosier, 1986.

See page xxii  
for detailed descriptions  
of the rating scales

1 2 3 4 0