



Chapter 6

Menu Selection, Form Fillin, and Dialog Boxes

Outline

- Introduction
- Task-related menu organization
- Single menus
- Combinations of multiple menus
- Content organization
- Fast movement through menus
- Data entry with menus
- Audio menus and menus for small display
- Form fillin and Dialog Boxes

Introduction

- When designers cannot create appropriate direct-manipulation strategies, menu selection and form fillin are attractive alternatives.
- When the menu items are written with familiar technology and are organized in a convenient structure and sequence, users can select items easily.
- Early systems used full-screen menus with lists of numbered items
- Modern styles include pull-downs, pop-ups, checkboxes/radio buttons in dialog boxes, or embedded links on web pages.

Introduction

- Menus are effective because they support ... “recognition, rather than forcing users to recall the syntax of the command from memory”.
- Users indicate their choices with a pointing device or keystroke and get immediate feedback.
- Simple menus are effective for less-trained or intermittent users.
- With careful design of complex menus and high-speed interaction, menus can be made appealing even to expert frequent users.

Task-Related Menu Organization

- The primary goal for menu, form-fillin, and dialog-box designers is to create a sensible, comprehensible, memorable, and convenient organization relevant to the user's task.
- We can learn a few lessons by following the decomposition of a book into chapters and a program in to modules.
 - Hierarchical decompositions are natural and comprehensible to most people but difficult to use in some cases
- Consider a restaurant menu!
 - Categories should be comprehensible and distinctive so that users are confident in making their selections

► Task-Related Menu Organization

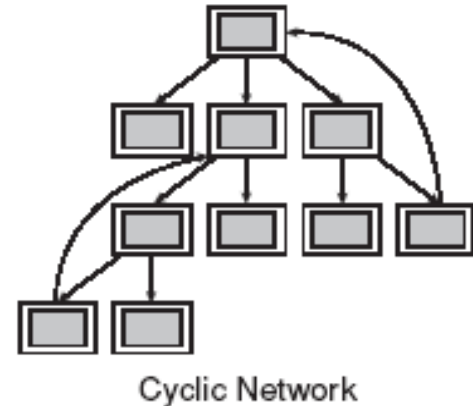
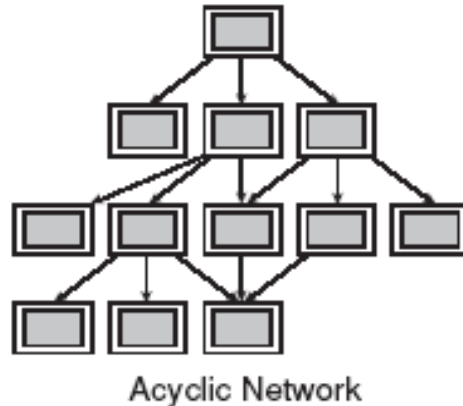
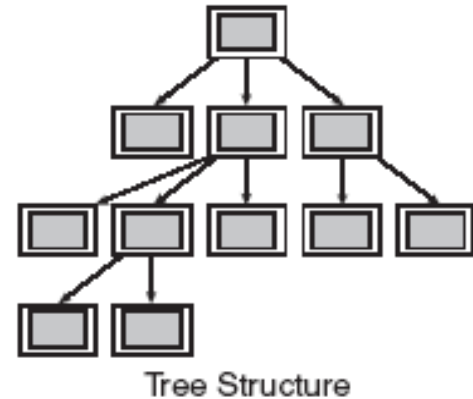
- Studies show that categorical menus (food, animals, cities) are more efficient than pure alphabetical
- The key to menu-structure design is first to consider task-related objects and actions.
 - For a soccer match ticketing system, the task objects might be location, teams, cost, date etc, while actions might include browsing list, searching and purchasing tickets.
- In some applications, frequency of use is a useful way of organizing menus.
 - E.g., in mobile phones
 - “Add contact” is more frequent than “Remove contact”

► Task-Related Menu Organization

- Menu selection applications range from trivial choices between two items to complex information systems that can lead through thousands of displays.
 - The simplest applications consist of a single menu with many variations
 - Second group of applications uses a linear sequence of menu selection. i.e. installation wizards
 - Third form is strict tree structure menu
 - Fourth is acyclic network (where menus are reachable by more than one path) and cyclic network (allow users to repeat menus), e.g. World Wide Web structure

► Task-Related Menu Organization

- Menus may range from single menus to linear sequences, to hierarchical and network menus.



► Single Menus

- Single menus require users to choose between two or more items or may allow multiple selections.
 - Binary Menus (e.g. yes/no, true/false or male/female)
 - Radio Buttons
 - Multiple-item Menus (allow user to choose one option from multiple items)
 - Radio Buttons
 - Multiple-selection menus or check boxes
 - They are a convenient selection method for handling multiple choices

Single Menus

- Binary Menus
- Multiple-item Menus



3. What is your marital status?
- o Single
 - o Married
 - o Widowed/divorced/separated

Single Menus (cont.)

- **Multiple-selection menus or check boxes**

- ☒ **Adjust Layout to show Path to Root**
- ☒ **Draw Node Borders**
- ☐ Code depth by height
- ☐ Code size by color
- ☒ **Wrap Layout of Focus Node's Children**

► Single Menus

■ Pull-down, pop-up, and toolbar menus

□ Pull-down menus

- Always available to the user on a top menu bar
- Unavailable-for-selection item should be grayed out rather than removed.
- Key board shortcuts (e.g., Ctrl-C)
 - Should be consistent, and be indicated next to the items

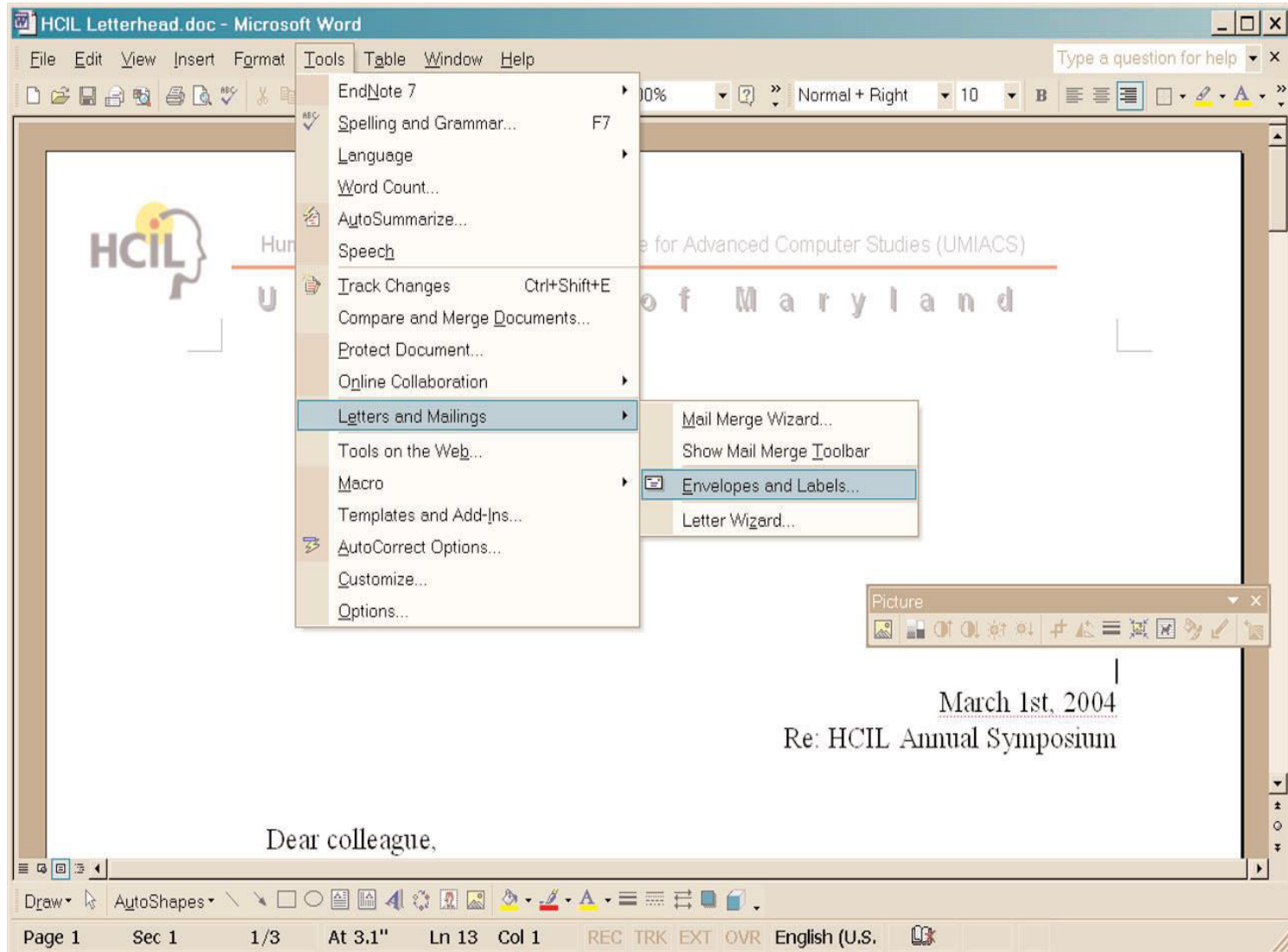
□ Toolbars, iconic menus

- Offers actions on a displayed object
- Should be customizable (because they take space)

□ Pop-up menus appear on the display in response to a click, i.e. right mouse click

- Should be small
- Pie menus

► Single Menus



► Single Menus

Pie Menu



► Single Menus

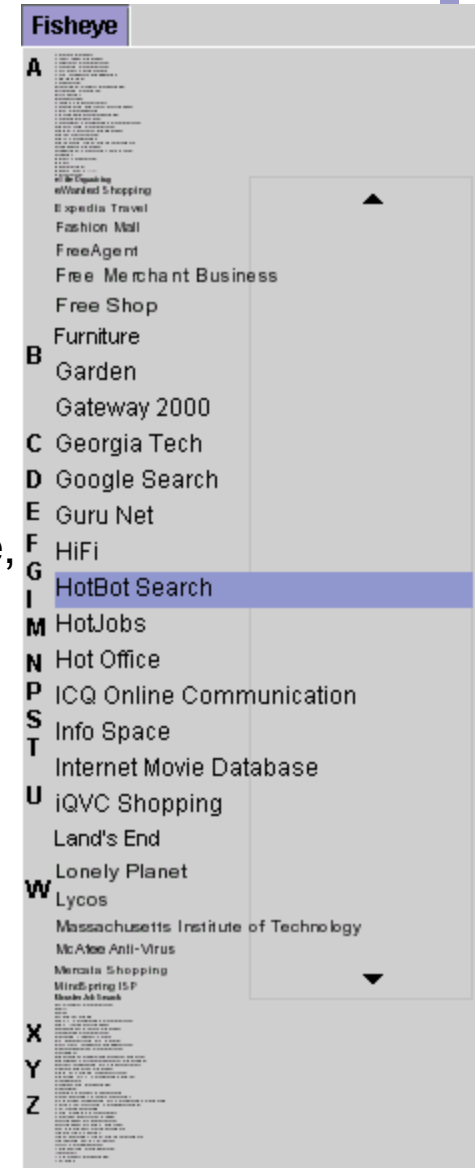
■ Menus for long lists

□ Scrolling menus:

- display the first portion of the menu and an additional menu item, typically an arrow that leads to the next set of items in the menu sequence.

□ Fisheye menus:

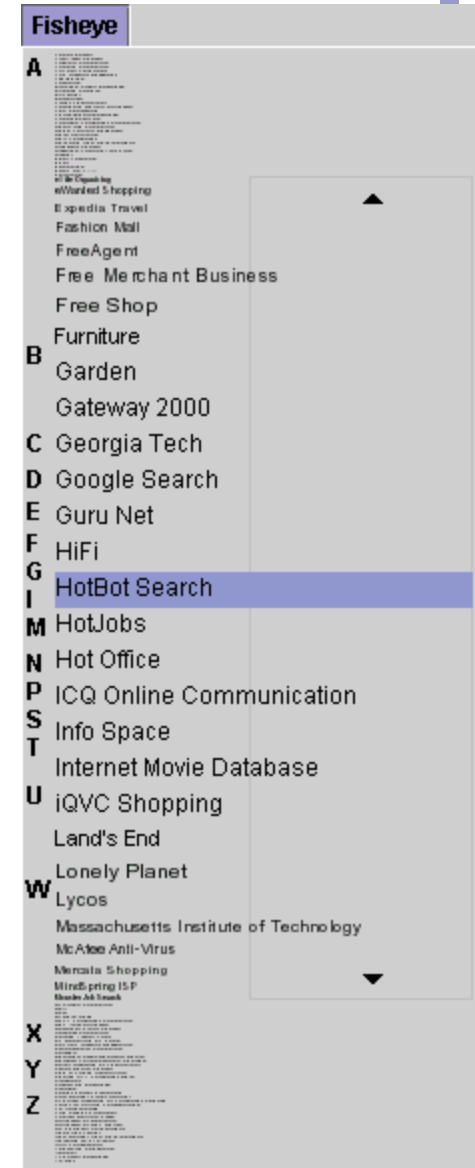
- display all of the menu items on the screen at once, but show only items near the cursor at full size.



► Class Task

■ Menus for long lists

- Users of the system did not like this Fisheye menu. What are the possible ways to convert this menu to some other form of menus or interaction style



► Single Menus

■ Menus for long lists (cont.)

□ Two-dimensional menus (multiple column)

- “Fast and vast” two-dimensional menus give users a good overview of the choices, reduce the number of required actions, and allow rapid selection.
- Useful in web-page design because they minimize scrolling
 - Calendars for choosing airline departure dates

► Single Menus

Two-Dimensional Menu



► Single Menus

■ Embedded menus and hotlinks

- Embedded menus are an alternative to *explicit menus*
- In many situations, however, the menu items might be embedded in text or graphics and still be selectable
- It is natural to allow users reading about people, events, and places to retrieve detailed information by selecting menus in context.
 - Examples: hotlinks on the web, calendar months in grid format
- Graphical menus are particularly attractive to present selection options while providing context to help users make their choices.
 - Examples:
 - Digital geographical maps

► Single Menus



Combination of Multiple Menus

■ Linear menu sequences and simultaneous menus

□ Linear

- Guide the user through complex decision-making process.
- One decision at a time
 - Effective for novice users performing simple tasks
- Examples: Online exams, wizards

□ Simultaneous

- Present multiple active menus at the same time and allows users to enter choices in any order
- Require more display space
- May benefit experienced users
- Example online shopping site

► Combination of Multiple Menus

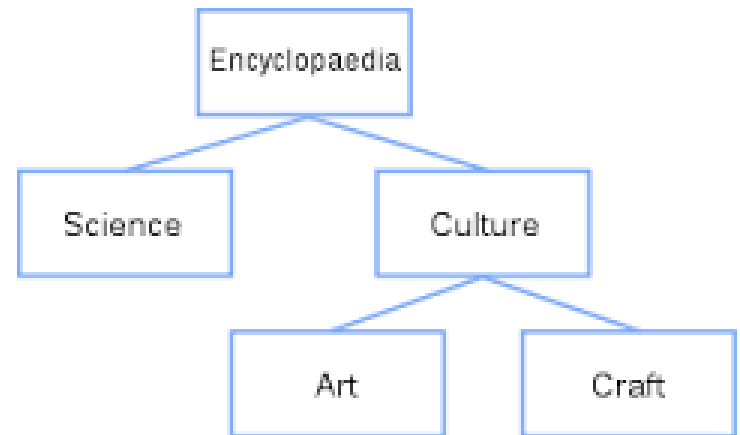
■ Menu Maps

- Menu maps can help users stay oriented in a large menu tree
- Effective for providing overviews to minimize user disorientation.
- On websites, site maps

► Combination of Multiple Menus

■ Tree-structured menus

- When a collection of items grows, designers can form categories of similar items, creating a tree structure.
- For example product in an online grocery store can be organized into categories such as meat, dairy, cleaning products etc. Dairy can be further organized into milk, cheese, yogurt etc.



Content Organization

■ Task-related grouping

Grouping menu items in a tree such that they are comprehensible to users and match the task structure is sometime difficult

- Create groups of logically similar items

 - e.g., countries at level 1, states at level 2, and cities at level 3

- Form groups that cover all possibilities

 - e.g., age groups (0-9, 10-19, 20-29, >30)

- Make sure that items are non-overlapping

 - e.g., “Entertainment” and “Events” are poor choices compared to “Concerts” and “Sports”

- Ensure that items are distinct from one another

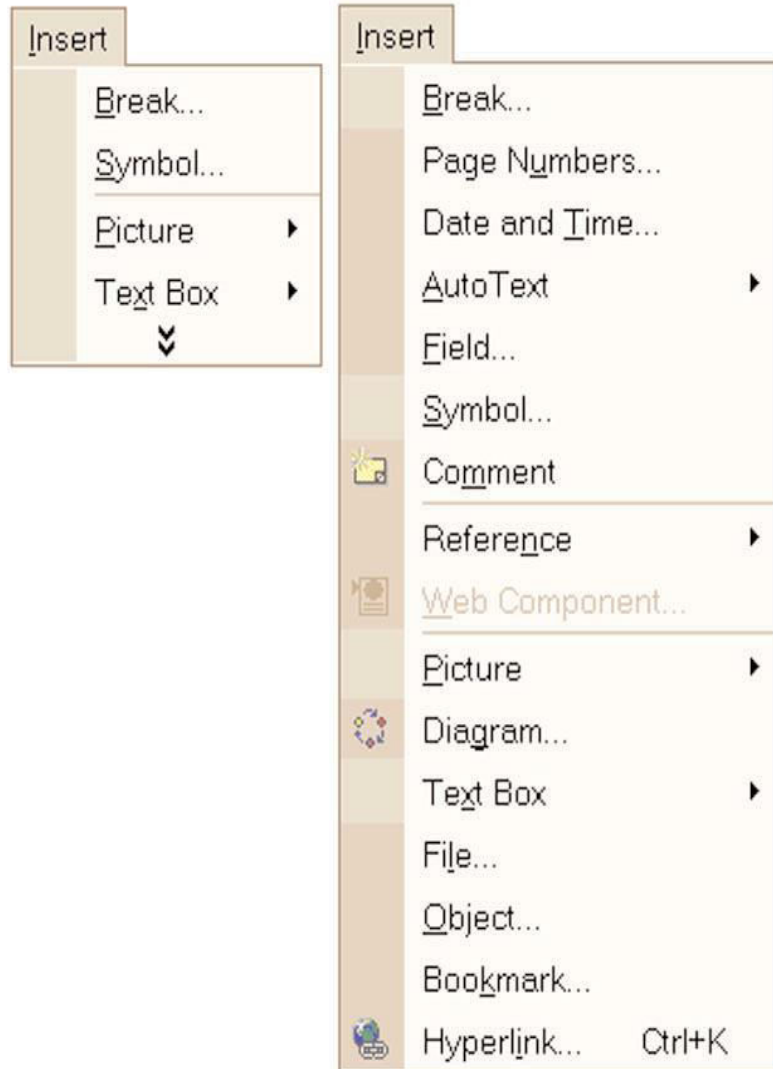
 - e.g., “Day” and “Night” maybe too vague; consider “6am to 6pm” ...

► Content Organization

■ Item Presentation Sequence

- The order of items in the menu is important, and should take natural sequence into account when possible:
 - Time (chronological ordering)
 - Numeric ordering (ascending or descending ordering)
 - Physical properties (increasing or decreasing length, area, volume, temperature, weight etc)
- When cases have no task-related orderings, the designer must choose from such possibilities as:
 - Alphabetic sequence of terms
 - Grouping of related items
 - Most frequently used items first
 - Most important items first.

► Content Organization



Adaptive menu: As users work with the program, the menu items that have not been selected disappear from the menu, making it shorter.

► Content Organization

■ Menu layout

□ Titles

- For single menus, use a simple descriptive title.
- For linear sequence menu the title should accurately represent the stages in the linear sequence.
- For tree-structured menus, use the exact same words in the higher-level menu items as in the titles for the next lower-level menu.
 - e.g. if a menu item is called “Business and Financial Services”, the next screen should have that phrase as its title.
- Consistency in placement of titles is also important

► Content Organization

■ Menu layout (cont.)

□ Phrasing of menu items

- Ensure that items are distinct from one another
- Use consistent and concise phrasing
 - e.g., “Animal”, “Vegetable” and “Mineral” are better than “Information about Animals”, “Vegetable choices you can make” and “Viewing mineral categories”
- Bring the keyword to the fore
 - e.g., use “Size of type” instead of “Set the type size”

► Content Organization

■ Menu layout (cont.)

□ Graphic layout and design

- Establish guidelines for consistency of at least these menu components:
 - Titles (centered or left justified)
 - Item placement (justification, blank lines)
 - Instructions (should appear in the same position)
 - Error messages (consistent position, terminology & syntax)
 - Status reports (where is the user now)

Data Entry with Menus:

Form Fill-in, Dialog Boxes, and Alternatives

■ Form Fill-in

- For some tasks, keyboard typing is more attractive than menu selection. e.g.,
 - Entry of personal names or numeric values
- Few instructions are necessary, since the display resembles familiar paper forms.
- Widely used to get some data.
- A combination of form fillins, pop-up or scrolling menus, and custom widgets can support rapid selection

Form-Fill-in Design Guidelines

- Meaningful title (identify the topic)
- Comprehensible instructions (avoid pronouns; “you should type the address”)
- Logical grouping and sequencing of fields
- Visually appealing layout of the form
- Familiar field labels (“Home Address” instead of “Domicile”)
- Consistent terminology and abbreviations
- Visible space and boundaries for data-entry fields
- Error correction for individual characters and entire fields
- Error prevention (e.g., in numeric fields, allow only numbers, ...)
- Error messages for unacceptable values (hint about permissible values)
- Immediate feedback (about errors; close to the erroneous field)
- Optional fields clearly marked (should follow required fields)
- Explanatory information for fields (should be close to the field)
- Completion signal (like “Submit”); “how to finish” should be known

Form-Fill-in Example

Alamo.com Membership Enrollment Form

Login and Password * Required Fields

TitleMrs.

First Name *Catherine

Middle InitialF

Last Name *Smith

SuffixNone

Email Address *catherine@email.com

Confirm Email Address *catherine@email.com

Create a Login Name *
(or use email address)CW

Create a Password *
*****Min. 6 characters and must contain at least one number

Confirm Password *

Password Clue

In case you forget your password this clue will help us retrieve and E-mail your password to you.

What is your mother's maiden name? *Leblanc

Type of Travel

Do you travel more on ☒ Leisure or ☐ Business

Alamo Programs

If you are a member of Quicksilver or our Corporate program, please enter your ID number below.

Quicksilver ID F342768
(The number begins with an 'F')

Corporate ID# 2738217

Data Entry with Menus: Form Fill-in, Dialog Boxes, and Alternatives

Dialog Boxes (usually pop up on top of the screen)

- Internal layout guidelines:

- ☐ Meaningful title
- ☐ Top-left to bottom-right sequencing
- ☐ Clustering of related items within a box and emphasis
- ☐ Consistent terminology, fonts, capitalization, justification, and layouts (margins, white space, lines, boxes)



▶ Dialog Boxes

- External Relationship
 - Smooth appearance and disappearance
 - Distinguishable but small boundary
 - Size small enough to reduce overlap problems
 - Display close to appropriate items
 - Easy to make disappear
 - Clear how to complete/cancel

Audio Menus and Menus for Small Displays

- Menu systems in small displays and situations where hands and eyes are busy are a challenge.
- Audio menus
 - Instruction prompts and list of options are spoken to users
 - Input is normally verbal or from keypad
 - Not persistent, like a visual display, so memorization is required
 - Complex menu structures should be avoided
 - Voice recognition enables users to speak their options instead of hitting keys
 - To hear your option again, press or say nine

▶ Audio Menus and Menus for Small Displays

- Menus for small displays

- Examples

- Entertainment
 - Information & communication services

- Learnability is a key issue

- Successful designs limit the number of functions to the most essential ones

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