

## Lecture 8

### MENUS (Chapter 6)

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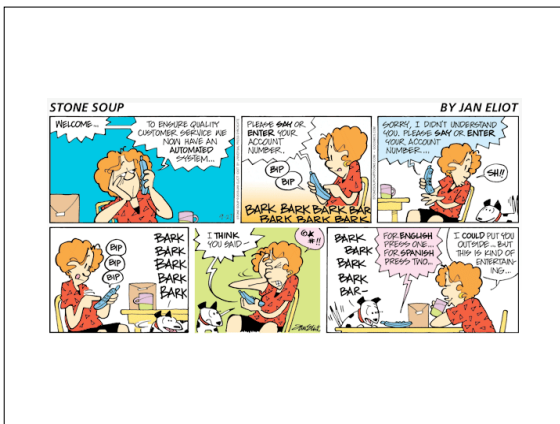
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## Chapter 6.1-6.4 Menu Types

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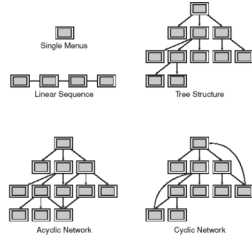
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## Task-Related Organization

"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."



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## Single Menu

- **Binary Menu**
  - Mnemonic letters
  - Radio Buttons
  - Button Choice
- **Multiple-item Menu (radio buttons)**
- **Multiple-selection menus or check boxes**

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## Single Menu (cont.)

- **Pull-down, pop-up, and toolbar menus**
  - Pull-down menus
    - Always available to the user by making selections on a top menu bar
    - Key board shortcuts
      - E.g., Ctrl-C important to support expert user efficiency
  - Pop-up menus
    - Appear on a display in response to a click or tap with a pointing device
    - "Pie" menu structure
  - Toolbars, iconic menus, and pallettes
    - Offers actions on a displayed object

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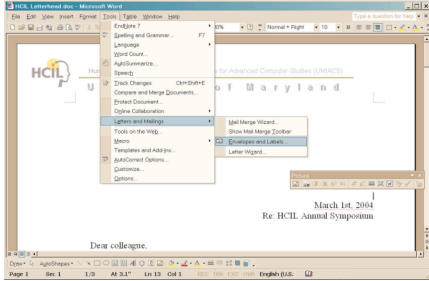
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## Single Menu (cont.) Pull-down, toolbar & palette examples




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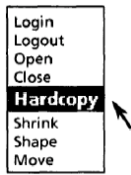
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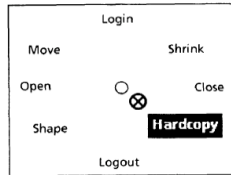
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## Pie menus



Simple linear pull-down menu



Pop-up Pie menu

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## Single Menu (cont.) Pop-up pie example




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## Single Menu (cont.)

- **Menus for long lists**
- **Problem: Long lists of items take a lot of time to read/select**
  - Scrolling menus, combo boxes, and fisheye menus
    - 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.
    - Combo boxes combine a scrolling menu with a text-entry field.
    - Fisheye menus display all of the menu items on the screen at once, but show only items near the cursor at full size.

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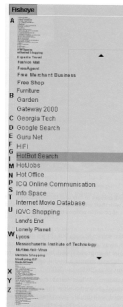
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## Fisheye Menu



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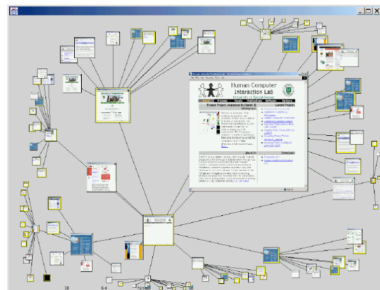
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## Fisheye for desktop icons (Gutwin CHI 2004)



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## Single Menus (cont.)

- **Menus for long lists (cont.)**
  - Sliders and alphasliders
    - When items consist of ranges or numerical values, a slider is a natural choice to allow the selection of a value.
    - The alphaslider uses multiple levels of granularity in moving the slider thumb and therefore can support tens or hundreds of thousand of items.

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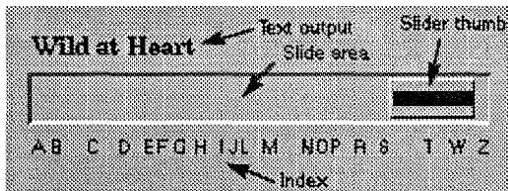
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## Alphaslider to select movie titles



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## Single Menus (cont.)

- **Menus for long lists (cont.)**
  - Two-dimensional menus
    - "Fast and vast" two-dimensional menus give users a good overview of the choices, reduce the number of required actions, and allow rapid selection.

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## Single Menus (cont.)



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## Single Menus (cont.)

- **Embedded menus and hotlinks**
  - Embedded menus are an alternative to explicit menus
  - It is natural to allow users reading about people, events, and places to retrieve detailed information by selecting menus in context.

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## Single Menus (cont.)



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## Combination of multiple menus

- **Linear menu sequences and simultaneous menus**
  - Linear
    - Guide the user through complex decision-making process.
      - E.g. cue cards or "Wizards"
    - Effective for novice users performing simple tasks
  - Simultaneous
    - Present multiple active menus at the same time and allows users to enter choices in any order

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## Combination of multiple menus (cont.)

- **Tree-structured menus**
  - Designers can form categories of similar items to create a tree structure
    - E.g., fonts, size style, spacing
  - Fast retrieved if natural and comprehensive
  - Use terminology from the task domain
  - Expanding menus maintain the full context of each choice
    - E.g., Windows Explorer

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## Combination of multiple menus (cont.)

- **Menu Maps**
  - Menu maps can help users stay oriented in a large menu tree
  - Effective for providing overviews to minimize user disorientation.
- **Acyclic and Cyclic Networks**
  - Useful for social relationships, transportation routing, scientific journal citations
  - Can cause confusion and disorientation
    - Example: Website with acyclic page structure where users get "lost" in the site

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## Chapter 6.5-6.8 Menu Content Organization

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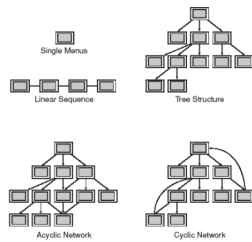
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## Task-Related Organization

"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."



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## Content Organization

- Problem: How do we create menu groupings (categories) that enhance usability

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## Content Organization

- **Task-related grouping in tree organization**
  - Create groups of logically similar items
    - Example: File menu and Edit menu
  - Form groups that cover all possibilities
  - Make sure that items are non-overlapping
  - Use familiar terminology, but ensure that items are distinct from one another

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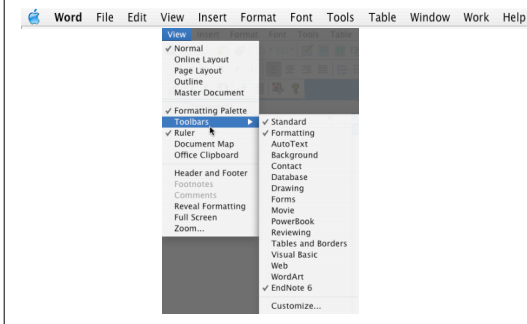
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## Example: Major Menu Categories in WORD



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## Content Organization (cont.)

- **Item Presentation Sequence within a menu**
  - Order of items is important, and should take natural sequence into account when possible:
    - Time
    - Numeric ordering
    - Physical properties
  - 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.

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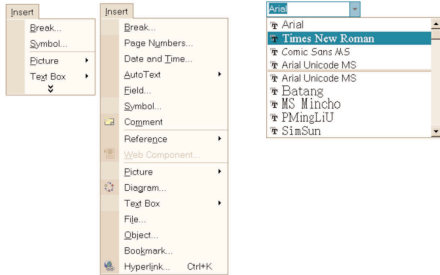
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## Content Organization (cont.)



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## Content Organization (cont.)

### • Menu layout guidelines

- Use task semantics to organize menus (single, linear sequence, tree structure, acyclic and cyclic networks)
- Prefer broad-shallow to narrow-deep
- Show position by graphics, numbers, or titles
- Use items as titles for subtrees
- Group items meaningfully
- Sequence items meaningfully
- Use brief items, begin with the keyword
- Use consistent grammar, layout, terminology
- Allow type ahead, jump ahead, or other shortcuts
- Enable jumps to previous and main menu
- Consider online help; novel selection mechanisms; and optimal response time, display rate, screen size

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## Content Organization (cont.)

### • Menu layout (cont.)

- Titles
  - For single menus, use a simple descriptive “familiar” title that is suggestive of function.
  - 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.

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## Content Organization (cont.)

- **Menu layout (cont.)**
  - **Phrasing of menu items**
    - Use familiar and consistent terminology
    - Ensure that items are distinct from one another
    - Use consistent and concise phrasing
    - Bring the keyword to the left

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## Content Organization (cont.)

- **Menu layout (cont.)**
  - **Graphic layout and design**
    - Constraints
      - screen width and length
      - display rate
      - character set
      - highlighting techniques
      - UI widget look & feel

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## Content Organization (cont.)

- **Menu layout (cont.)**
  - **Establish guidelines for consistency of at least these menu components:**
    - Titles
    - Item placement
    - Instructions
    - Error messages
    - Status reports
  - **Be consistent with the UI (Windows, Mac, X Window)**

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## Content Organization (cont.)

- **Menu layout (cont.)**
  - **Techniques to help users know where they are in a menu**
    - Indentation
    - Upper/lower case characters
    - Symbols such as \* or - to create separators or outlines
    - Position markers
    - Cascading or walking menus
    - Magic lens (transparent menus)

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## Fast Movement Through Menus

- **Keyboard shortcuts**
  - Supports expert use
  - Can make translation to a foreign language more difficult
  - Bookmarks in browsers
  - User configured toolbars

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## Data Entry with Form Fillin

- **Form Fillin**
  - Appropriate when many fields of data must be entered:
    - Full complement of information is visible to user.
    - Display resembles familiar paper forms.
    - Few instructions are required for many types of entries.
  - Users must be familiar with:
    - Keyboards
    - Use of TAB key or mouse to move the cursor
    - Error correction methods
    - Field-label meanings
    - Permissible field contents
    - Use of the ENTER and/or RETURN key.

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## Data Entry with Form Fillin

Alamo.com Membership Enrollment Form

Log in and Password - Required Fields

Title:

First Name:  Mobile Input:

Last Name:

Suffix:

Email Address:

Current Email Address:

Create an e-mail alias:

Country (if different):  (10 characters and must contain at least one number)

Confirm Password:

Forgot your password? [Click here](#)

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

What is your member's maiden name?

Type of Travel:

Do you travel alone on:  Leisure or  Business

Alamo Program:

Have you a member of our Corporate program, please enter your ID number below (the number begins with 99)

Corporate ID:

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## Data Entry with Form Fillin

- **Form-Fillin Design Guidelines**
  - Meaningful title
  - Comprehensible instructions
  - Logical grouping and sequencing of fields
  - Visually appealing layout of the form
  - Familiar field labels
  - Consistent terminology and abbreviations
  - Visible space and boundaries for data-entry fields
  - Convenient cursor movement
  - Error correction for individual characters and entire fields
  - Error prevention
  - Error messages for unacceptable values
  - Optional fields clearly marked
  - Explanatory messages for fields
  - Completion signal

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## Data Entry with Form Fillin

- **Format-specific field**
  - **Coded fields**
  - **Show users the format**
    - Telephone numbers
    - Social-security numbers
    - Times
    - Dates
    - Dollar amounts (or other currency)

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## Data Entry with Form Filling

The screenshot shows a web form titled "Alamo.com Membership Enrollment Form". It contains several input fields and sections:

- Personal Info:** Title (dropdown: Mrs.), First Name (text: Catherine), Last Name (text: Smith), Middle Initial (text: J), Suffix (dropdown: Name).
- Contact Info:** Email Address (text: catherine@email.com), Confirm Email Address (text: catherine@email.com).
- Account Info:** Create an e-mail alias (dropdown: CW), Username (text: catherine), Password (text: catherine), Confirm Password (text: catherine).
- Additional Info:** A note about password requirements, a field for "What is your mother's maiden name?" (text: AllMaid), and a "Date of Travel" section with radio buttons for "Lease" or "Renter".
- Alamo Programs:** A section for corporate programs with a "Corporate ID" field (text: 123456).

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## Data Entry with Dialog Boxes

- **Dialog Boxes**
  - Combination of menu and form-filling techniques.
  - Internal layout guidelines:
    - Meaningful title, consistent style
    - Top-left to bottom-right sequencing
    - Clustering and emphasis
    - Consistent layouts (margins, grid, white space, lines, boxes)
    - Consistent terminology, fonts, capitalization, justification
    - Standard buttons (OK, Cancel)
    - Error prevention by direct manipulation

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## Dialog Box Example

The screenshot shows a "New" dialog box for creating a new image. It has a title bar "New" and two buttons: "OK" and "Cancel".

Fields and controls:

- Name:** Untitled-1
- Image Size:** 625K
- Width:** 2654 pixels (with a dropdown arrow)
- Height:** 241 pixels (with a dropdown arrow)
- Resolution:** 576 pixels/inch (with a dropdown arrow)
- Mode:** Grayscale (with a dropdown arrow)
- Contents:** Radio buttons for White (selected), Background Color, and Transparent.

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## Data Entry with Dialog Boxes

- **Dialog Boxes (cont.)**
  - External Relationship guidelines
    - Smooth appearance and disappearance
    - Distinguishable but small boundary
    - Size small enough to reduce overlap problems
    - Display close to appropriate items
    - No overlap of required items
    - Easy to make disappear
    - Clear how to complete/cancel

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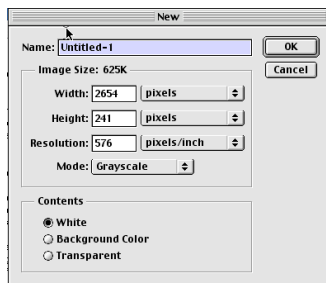
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## Dialog Box Example



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## Audio Menus and Menus for Small Displays

- Menu systems in small displays and situations where hands and eyes are busy are a challenge.

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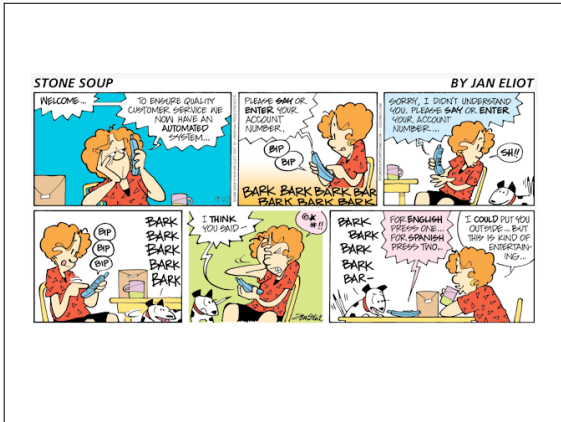
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### Audio menus

- Verbal prompts and option descriptions
- Input is normally verbal or keypad
- Not persistent, like a visual display, so memorization is required.
- Help users avoid listening to all options
  - Accept or reject each option as read
  - Allow users to select an item while list is being read

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### Menu for small displays

- E.g., entertainment, communication services
- Learnability is a key issue
- Hardware buttons
  - Navigation, select
- Expect interactions
- Tap interface
- GPS and radio frequency identification provides some automatic input

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