

Menu Design Guidelines

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SWE 632

User Interface Design and Development

Shneiderman, Ch. 7

Menus are Effective When

- Users will have little or no training
- Intermittent users
- Users are not familiar with terminology
- Users need help making decisions

Menu Design Elements

- Menu system structure
- Number of items
- Sequence of items
- Titles
- Prompts
- Phrasing of items
- Shortcuts
- On-line help
- How to select

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Types of Menus

1. Binary
2. Multiple-item
3. Extended
4. Pop-up
5. Permanent
6. Multiple selection
7. Linear sequence
8. Tree structure

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1. Binary Menu

One of two choices can be made (Yes or No)

Do you want another transaction (Y,N)?

- Brief
- Concise
- But not descriptive ...

You may:

1. Make another transaction
2. Quit and have your card returned

Type 1 or 2: ____

- More space
- Just as fast
- Instructions clear
- Results are clear
- Uses conversational dialogue, not stilted formalism

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2. Multiple-Item Menu

Only one item can be chosen

Do you want to:

Withdraw ⇒

Deposit ⇒

Check Balance ⇒

Quit ⇒

Touch the button by your choice.

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3. Extended Menu

One menu spanning two or more screens

Title Screen 1 of 2
1. _ 2. _ 3. _ 4. _
Press the number of your choice or N for Next screen. Then Press RETURN

Title Screen 2 of 2
5. _ 6. _ 7. _
Press the number of your choice or P for Previous screen. Then Press RETURN

- Titles must match
- Screen numbering must be consistent
- Choice labels must be unique across screens
- 3 screens is a lot, 4 is too many

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4. Pop-Up Menus (and Pull-Down)

Menus that appear for one selection, then disappear

- Must use highlighting to select
- Text must be short and concise
- If it needs a lot of text, don't use a pop-up!

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5. Permanent

Pop-up menus that remain on the screen

- May be automatic or requested by the user
- Contains very common choices
- Use very little text
- Must use highlighting of selection
- Much like pop-up

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6. Multiple Selection

More than one choice can be made at a time

Requires a “GO” button

Set List Files Options

<input checked="" type="checkbox"/>	Emphasize directories and executables
<input type="checkbox"/>	Show long format
<input type="checkbox"/>	Show “hidden” files
<input checked="" type="checkbox"/>	Sort by modification time
<input type="checkbox"/>	Show group owner

Choose as many options as you wish.

List Files

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7. Linear Sequence

The entire sequence is one task - separated into several steps

- One decision at a time
- Often used to implement options

Print

STEP 1: Choose Printer	STEP 2: Choose Spacing	STEP 3: Choose Numbering
1. Main office	1. Single	1. No numbering
2. Laboratory	2. Double	2. Full numbering
3. Secure room	3. One and half	3. Every 5 lines

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8. Tree Structure (1)

A hierarchy of menus and submenus

- 4 to 8 items per level
- No more than 3 or 4 levels

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8. Tree Structure (2)

Grouping

- Group items that are logically similar
- Groups should be comprehensive
- Overlapping ...
 - Confusing ...
 - But faster
- Use familiar distinct terminology

Menu Maps

- Offline documentation of menus
- On-screen reference (main/option3/option4)

Choice must be title of submenu

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Order Of Menu Items

1. Chronological (time)
2. Numeric
3. Physical properties
4. Alphabetic
5. Grouping of related items
6. Frequently used first (most common strategy)
7. “Important” items first (exit)

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Adaptive Menu

An adaptive menu changes to adapt to the user's habits

- Reorders the menu choices
- Infrequently used items put in a "background" menu
(as in MS Office 2000, 2003)
- Risky
 - Can be confusing
 - Multiple users on the same computer
 - Users must have some control
 - Many users hate it
 - (Old) empirical evidence was not positive

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Speeding Through Menus (Shortcuts)

- Increase # of items per menu
- Typeahead
 - If no returns, it's natural
 - Concatenation of characters yields one operation
- Menu names
 - Each menu has a name that can be used
 - Menu parsing must be more complicated
 - Allow users to define their own names
- Menu Macros
 - User assigns a name to a choice

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Screen Design Hints (1)

- Title – alone, top middle or top left
- Escape labeled – how to get out
- No irrelevant info
- Mixed upper & lower case
- Legibility
- Instructions at top
- How to enter command
- Few options (about 7)
- “Return” not an entry command or special key
- No strange symbols
- Number from 1 (we measure from 0, number from 1)

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Screen Design Hints (2)

- Verify selection with highlighting before committing
- Titles & selections same text !
- Same titles in documentation
- Text brief, descriptive and consistent grammatical style
- Consistent layout
- Take screen size into account
- Offer help !!
- Left justify items
- Instructions should be consistent
- Error messages in the same location
- Menu status always in the same place

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Phrasing of Menu Choices

- Words should be familiar
- All screens must be consistent
- Every word must be distinct
- Phrases must be concise
- Use the keyword first

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Selecting Choices (no mouse)

- Numbers
 - easy to read
 - more than 10 requires two keys
 - help, Back are different values
- Letters
 - sequential or mnemonic
 - not as easy to remember
- Mixed
 - number for choices
 - **H, B, M** for **H**elp, **B**ack, **M**ain
- Cursor Motion
 - easier to learn ... but more keystrokes
 - no type-ahead
 - dependent on hardware

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Speed of Use vs. Social Amenities

- “Please”, “do you wish”, “If you want” can be eliminated to improve speed of use
- Questions can be implicit, not explicit

Please select the criteria for Flagship report: ____

OR ...

Flagship report criteria: ____

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Example – Simplifying a Menu

Please enter report number or name: _ _ _ _ _

If entering name, also enter category: _ _ _
(Enter category for level 2 reports only)

1. Create a report
2. Delete a report
3. Modify a report
4. Modify several reports

option: ____

FLAGSHIP REPORT MAINTENANCE

1. Create
2. Delete
3. Modify

Maintenance Options: _
Report Number or Name: _ _ _ _ _
Report Category (L2): _ _ _

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Customization

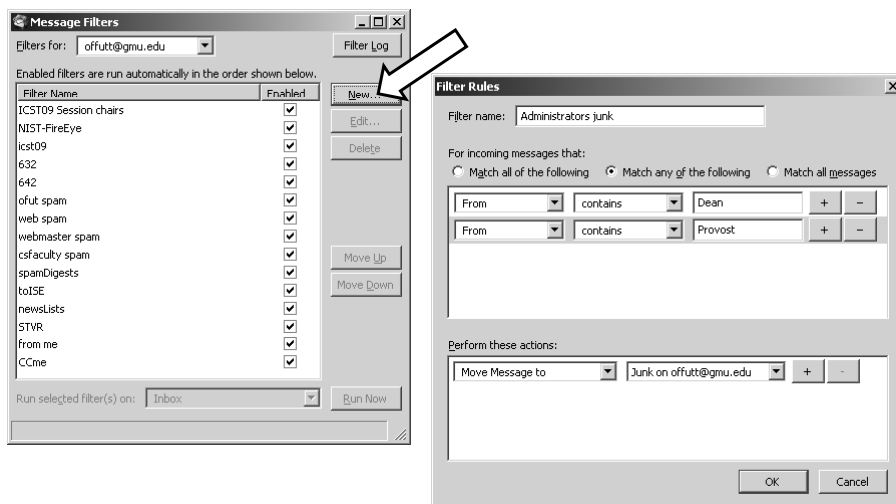
- As users' syntactic knowledge increases, they develop preferences for UI behavior
- Successful UIs allow users to customize aspects of the behavior
- UI designers must:
 1. Define aspects of the behavior that users will want to customize
 2. Design techniques to customize the UI
 3. Present the customization to the users in usable ways

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Thunderbird – Message Filters

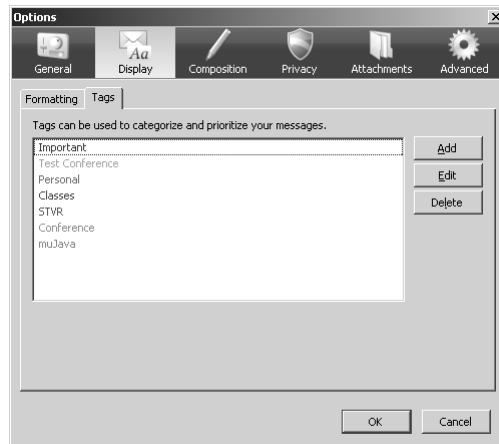


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Thunderbird – Tagging Messages



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Form Fill

- Effective when extracting information that is
 - Predefined
 - Simple in form
- Advantages
 - Few instructions are needed
 - User is in control

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Form Fill Guidelines (1)

- Title should be descriptive
- Concise, clear instructions – user’s vocabulary
- Logical grouping of fields
- Plenty of white space
- Familiar field labels
(from user’s vocabulary, not developer’s)
- Consistent terminology
- Consistent abbreviations and abbreviation strategy
- Convenient cursor movement
(PF4 is not convenient if I don’t have that key on my keyboard)

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Form Fill Guidelines (2)

- Error correction for characters and fields
(Only make me change what I got wrong!)
- Polite, clear messages for unacceptable values
- Mark optional fields clearly
- Don’t make the users enter the same data twice
- Use sensible defaults when appropriate
- How do I commit ?
- MINIMIZE TYPING
- Minimize keyboard/mouse moving

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Form Fill – Columns

- Left justify alphabetic
- Right justify numbers on display
- Line up decimals
- Don't make users enter leftmost zeros!

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Design for Common Data

Telephone (___) ___ - ____

Social Security: ___ - ____ - ____

Times: ___ : ___ P M

Dates: MM / DD / YY

Money: \$ ___ . 00

Address: Street _____

Box or number _____

Allow for
all sorts

State _____

Zip _____

Name: First _____

~~Middle Initial: _~~

Some people use
middle name

Last: _____

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Summary

- Simpler is always better
- Menus are for intermittent users
 - Moderate to high task-semantic knowledge
 - Limited syntactic knowledge
 - They need reminding – speed is secondary
- It is crucial to minimize hand-to-mouse movements
- Help users type less
 - Good defaults in forms
 - “Dynamic defaults” – filled in from another field
 - Selection is always better than typing (when possible)