Fluid Navigation

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Fluid Navigation

Topics

1. Introduction
2. Navigation by selection
3. Small displays
4. Content Organization
5. Audio menus
6. Form fill-in and dialog boxes

Introduction (1 of 2)

- Navigation
  - Enables users to know where they are and to steer themselves to their intended destination
  - Is about getting work done or having fun through a series of actions, much like sailors who steer their boat to a harbor
  - Is key to:
    - successfully operating interactive applications, such as installing a mobile app, completing an on-line survey, or purchasing a train ticket (**task navigation**)
    - finding information on a website or browsing social media (**web navigation**)
    - finding the action needed in a desktop application (**command menu navigation**)

Introduction (2 of 2)

- Navigation
  - Note that even if a designer uses slick graphical menus, elegant form fill-in, or well known gestures **there is no guarantee** that the interface will be appealing and easy to use
  - Effective interfaces emerge only after careful consideration of and testing for numerous design issues, such as:
    - task-related organization
    - phrasing of items
    - sequence of items
    - graphic layout and design
    - responsive design to adapt to various sizes of devices
    - shortcuts for knowledgeable frequent users
    - online help and error correction

(Bailly, G., Lecolinet, E., Nigay, L., Visual menu techniques (2015) in preparation)
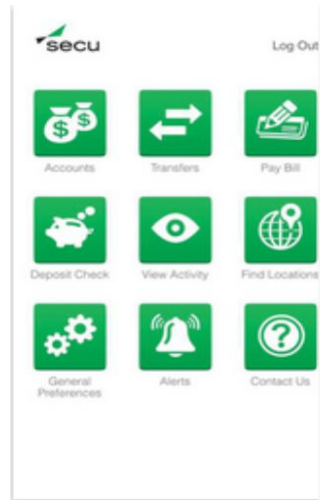
Navigation By Selection

ೞ Menu bars, pop-up menus, toolbars, palettes and ribbons

ೞ Shortcuts and gestures for rapid interaction

ೞ Long lists

ೞ Linear versus simultaneous presentation

Sample menus

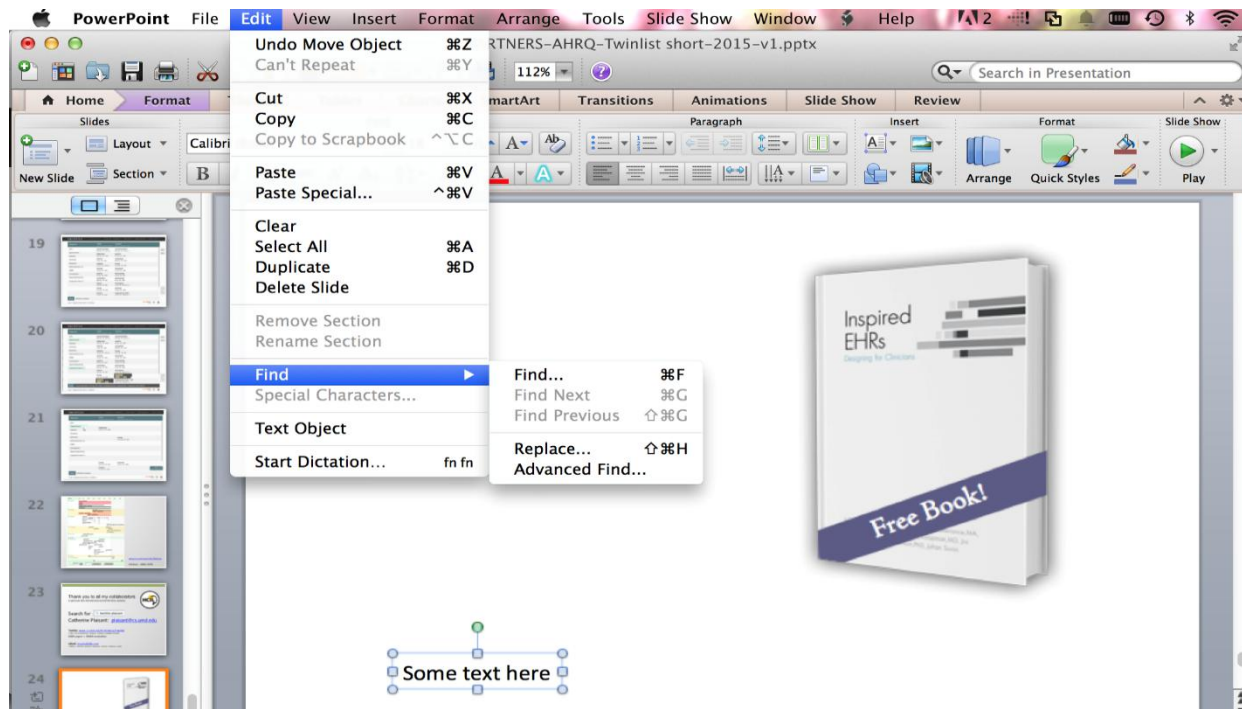ಊRadio Buttons and Checkboxes

Does anyone in your household currently smoke?

◯ Yes, someone does
◉ No, no one does
◯ Not sure

What treatment would you like to discuss with a nurse?

☐ Surgery
☑ Physical therapy
☑ Medication
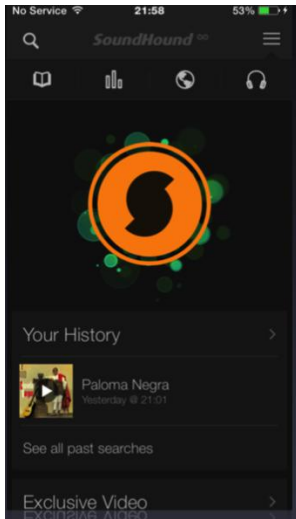☐ Acupuncture (not available in your area)

Navigation By Selection

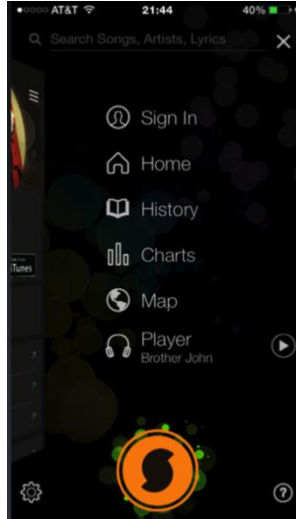ಞMenu bars, pop-up menus, toolbars, palettes and ribbons

ಞ On the top menu bar of Microsoft Powerpoint the Edit cascading pull-down menu (also called pulled-right) is open, followed by the Find menu

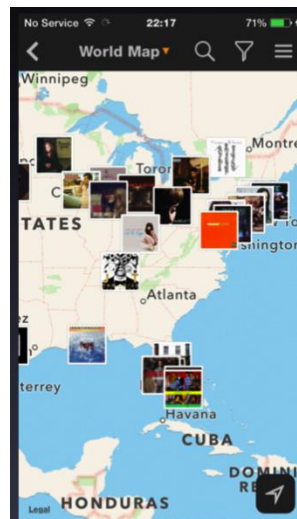# Navigation By Selection

- Menu bars, pop-up menus, toolbars, palettes and ribbons
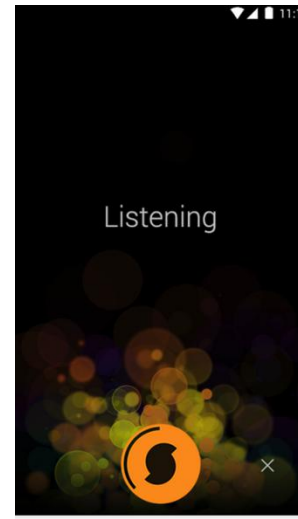

A   B   C   D

- The main menu of Soundhound has only 6 items, but it is still too much to be displayed on every page
- A main menu "hamburger" icon appears at the top right of all appropriate pages, e.g. it appears in A and C, but not in the recording screen D, where only the X close icon is visible

Examples of common gestures and their effect:

- Tap: select
- Long press: varied, from magnified cursor (iOS) to showing a tooltip (Windows 8)
- Double tap: varied, e.g. zoom (iOS)
- Small swipe: varied, e.g. move location or order of objects, reveal a delete button
- Large swipe: usually scroll
- Rapid swipe or fling: fast scroll with inertia
- Pinch and spread: zoom in and out
- Variation with two or more fingers: varied effects

❧ Menu bars, pop-up menus, toolbars, palettes, and ribbons
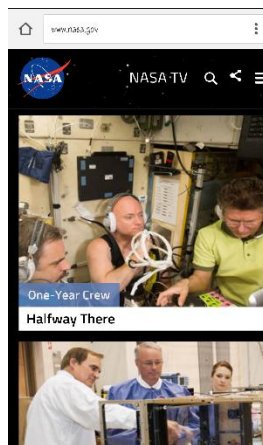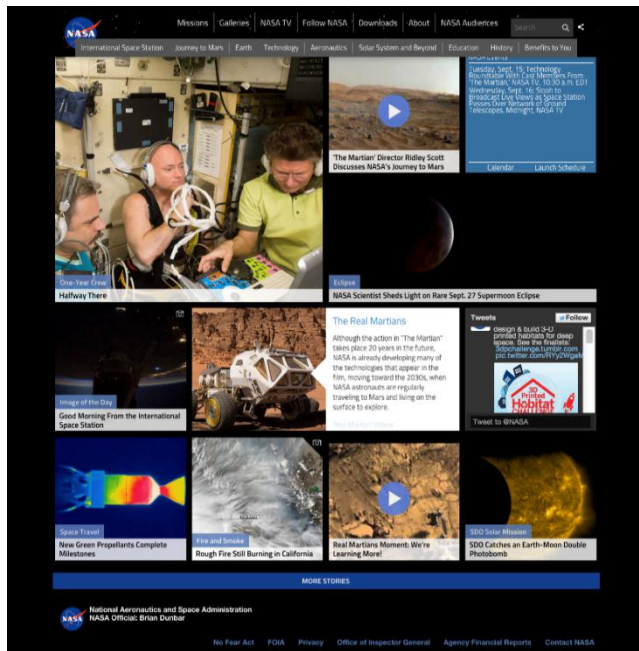
- The NASA website on the left consists of a large scrollable two-dimensional menu
  - Below the main menu each square or rectangle is a large button
  - Scrolling gives access to dozens of items easily updated and rearranged
  - This adaptive grid design scales down nicely to the small displays
- Above is the same webpage displayed on an Android phone
  - The grid now appears as a single column of items

Navigation By Selection

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

Navigation By Selection

   ❧Menu bars, pop-up menus, toolbars, palettes and ribbons
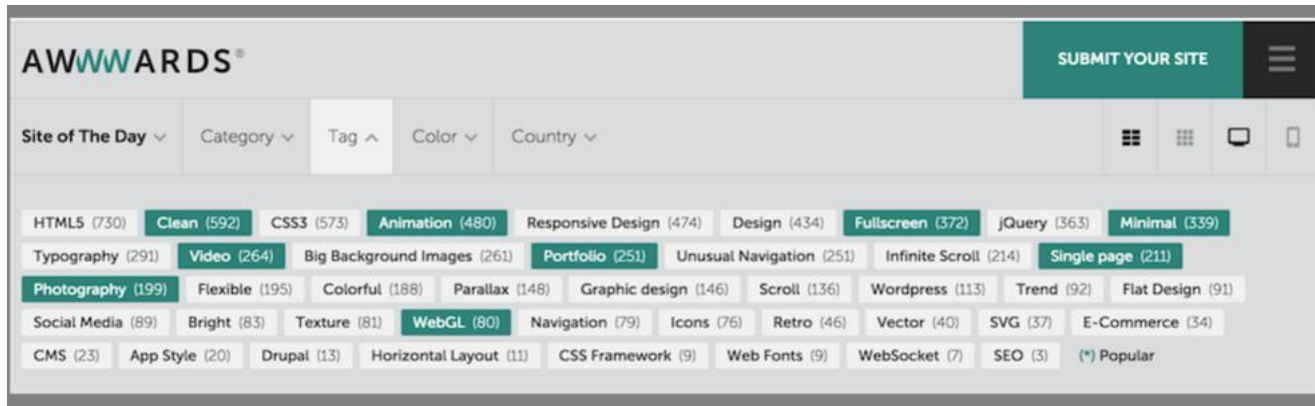
- http://www.awwwards.com gives awards to a large number of websites, which are tagged

- A tag index at the top of the page displays all the tags, sorted by total count

- The counts are indicated in parenthesis

- The green colored tags are the popular tags that have been selected more often (which most likely will lead to even more selection)

Small Displays

- Small devices have very focused functionalities and few selectable areas.
- Discoverability is often an issue

Small Displays (2 of 2)

Design considerations for small displays:

- Simplify: "less is more"
- Strive to reduce or eliminate data entry
- Learnability is key
- Consider use frequency and importance
- Plan for interruptions
- Use of contextual information
- Make clear what is selectable and what is not
- Leave room for scroll and swipe gestures to avoid inadvertent actions
- Consider relegating less important functions to other platforms

Content Organization (1 of 8)

- Organizing menus in a meaningful structure results in faster selection time and higher user satisfaction
- Approaches:
  - Linear sequence (e.g. in a wizard or survey)
  - Hierarchical structure that is natural and comprehensible (e.g. a store split into departments)
  - Network structure when choices may be reachable by more than one path (e.g. websites)

- Content organization design:
  - **Tree-structure**: designers can form categories of similar items, e.g. online grocery markets divided into produce, meat, dairy, etc. further divided into vegetables, fruit, etc. for produce, and milk, cheese, etc. for dairy
  - **Breadth versus depth**: the depth (number of levels) of a menu tree depends in part on the breadth (number of items per level)
  - **Networks**: choices may be reachable by more than one path, e.g. websites for online shopping that provide access to banking information from both the personal profile and the checkout section of a link

    ∞ In the REI website, the categories for "Cycle" are expanded all at once below the top menu, showing 34 items organized in a meaningful h

Content Organization (4 of 8)

- Rules for forming menu trees:
  - Use task semantics to organize menus
  - Limit the number of levels (i.e. prefer broad-shallow to narrow-deep)
  - Create groups of logically similar items: e.g. Level 1: countries, Level 2: states, Level 3: cities
  - Form groups that cover all possibilities: e.g. Age ranges: [0-9] [10-19] [20-29] and [>= 30]
  - Make sure that items are non-overlapping: e.g. use "Concerts" and "Sports." over "Entertainment" and "Events"
  - Arrange items in each branch by natural sequence (not alphabetically) or group related items
  - Keep ordering of items fixed (or possibly duplicate frequent items in dedicated section of the menu)

* Additional considerations for content organization design include:
  * sequence, phrasing and layout
* Typical lists are alphabetically ordered, but categorical lists may be useful
  * Principles of menu-list sequencing apply, e.g. sequencing menu items by frequency of use can be more useful than sequencing by category or alphabetical order
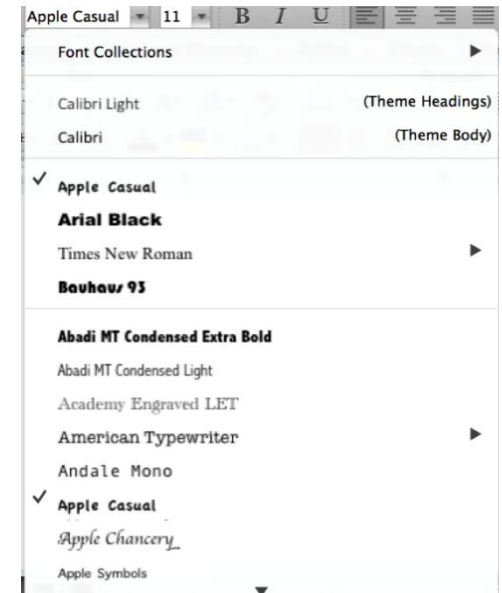
* Example of adaptive split menus in Microsoft Office
* A font-selection menu lists the theme fonts and then the recently used fonts near the top of the menu (as well as in the full list), making it easier to quickly select the popular fonts
* A thin line separates the sections

ଛPhrasing:
  ଛUse familiar and consistent terminology.
    ଛCarefully select terminology that is familiar to the designated user community and keep a list of these terms to facilitate consistent use
  ଛEnsure that items are distinct from one another
    ଛEach item should be distinguished clearly from other items. For example, "Slow tours of the countryside," "Journeys with visits to parks," and "Leisurely voyages" are less distinctive than are "Bike tours," "Train tours to national parks," and

- Use consistent and concise phrasing
  - Review the collection of items to ensure consistency and conciseness. Users are likely to feel more comfortable and to be more successful with "Animal," "Vegetable," and "Mineral" than with "Information about animals," "Vegetable choices you can make," and "Viewing mineral categories"
- Bring the keyword to the fore
  - Try to write menu items such that the first word aids the user in recognizing and discriminating between items —use "Size of type" instead of "Set the type size." Then, if the first word indicates that this item is not relevant, users can begin

Content Organization (8 of 8)

- Layout
  - Techniques to indicate position in the menu structure can be useful
  - The set of headers below from the Library of Congress collections webpages gives a clear indication of progress down the tree
    - When users want to do a traversal back up the tree or to an adjoining menu at the same level, they will feel c̲   ke

BROWSE BY TOPIC

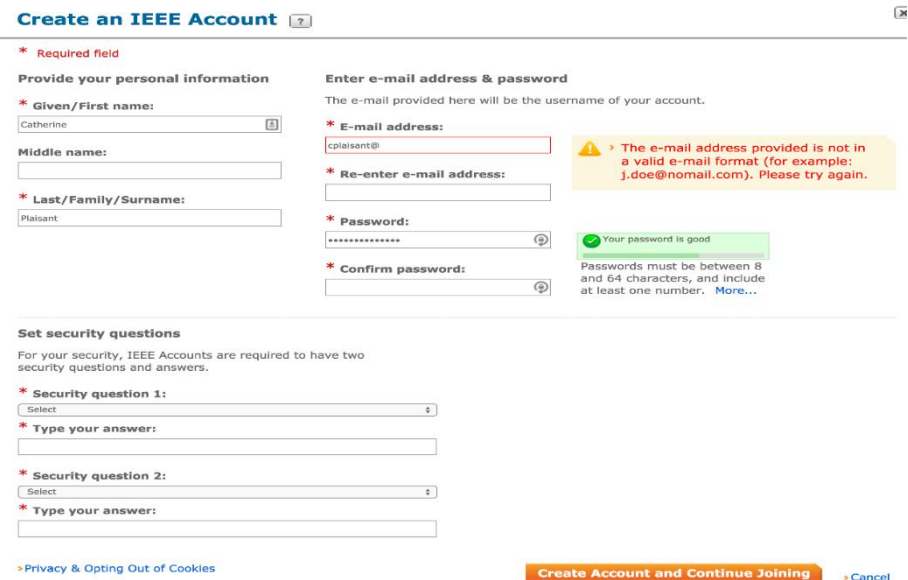**Sports, Recreation & Leisure**

Baseball

Baseball Cards 1887-1914

Audio Menus

- For Interactive Voice Response (I V R) systems, instruction prompts and lists of options are spoken to users, who respond by using the keys of a keyboard, phone, or by speaking
- Complex and deep menu structures should be avoided
  - 'Listen carefully, as our menu options have recently changed'
  - More in the next chapter

Form Fill-in

- This form fill-in allows users to enter information when joining the IEEE Society

- Fields are grouped meaningfully, and field-specific rules such as password requirements are provided next to the fields

- The data is validated as soon as it is being provided (opposed to being validated when the form is submitted) and error me[...] the problem

  - (http://www.ieee.org[...]

Data Entry with Form Fill-in

- **Form Fill-in**
  - 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 T A B key or mouse to move the cursor
    - Error correction methods
    - Field-label meanings
    - Permissible field contents
    - Use of the ENTER and/or RETURN key

Dialog Boxes (1 of 2)

- This dialog box includes a binary menu with two choices (Yes or No)
- The blue highlighting on Yes indicates that this selection is the default and that pressing Return will select it
- Specific keyboard shortcuts can be made available
- Escape closes the dialog box
- Typing the letter 'N' will select 'No' as indicated by the

Delete File

Are you sure you want to move this file to the Recycle Bin?

UXGuide
Type: Text Document
Size: 14.8 KB
Date modified: 4/26/2007 12:50 AM

Yes   No

Dialog Boxes (2 of 2)

- This dialog box is used to alert clinicians who try to prescribe the drug Warfarin, because it increases the risk of bleeding of patients already on Aspirin
- Several possible actions are proposed
- Overriding the alert is possible but requires confirmation by clicking a check box
- Because of the severity of the alert, this is a modal dialog box and it requires immediate action
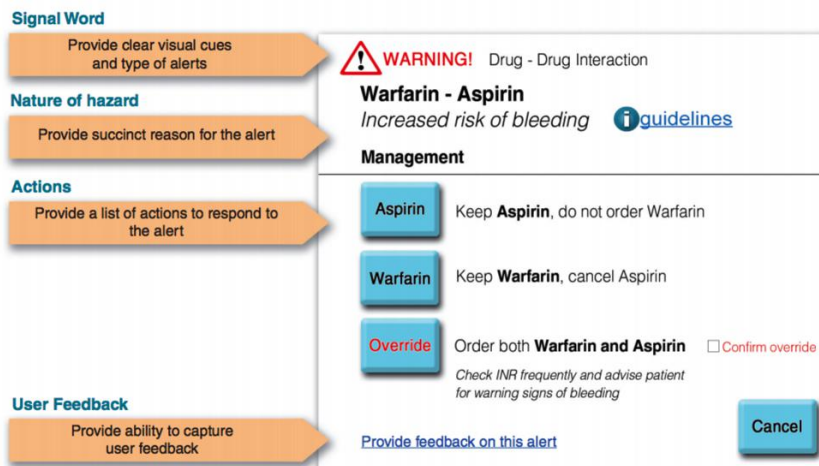
Data Entry with Dialog Boxes
(1 of 2)

- Dialog Boxes
  - Combination of menu and form fill-in 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

ಎ**Dialog Boxes**
  ಎExternal Relationship
    ಎSmooth appearance and disappearance
    ಎDistinguishable but small boundary
    ಎSize small enough to reduce overlap problems
    ಎDisplay close to appropriate items
    ಎNo overlap of required items
    ಎEasy to make disappear
    ಎClear how to complete/cancel