

PART III: Interaction Styles

Fluid Navigation: Menu Selection & Form Fill in

SEEM3510 Human-Computer Interaction

By Prof. Helen MENG & Prof. Philip FU

Menu – the real thing



Helps diners make **choices/selections** more easily

Choices are divided into 3 groups, e.g.,

1. *Breakfast*
2. *Lunch*
3. *Dinner*

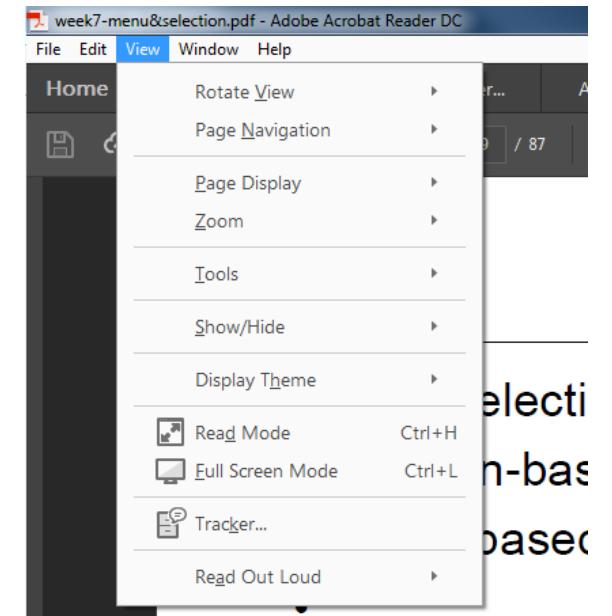
Items are further **categorized**, e.g.,

- Hot Items*
- Cold Items*
- Appetizers*
- Entrees*
- Dessert*

Hierarchical decomposition - Natural and comprehensible to most people

What are Menus in UI?

- Menus are for users to make choices
- Goals in this module: Fluid navigation in menus!
 - Introduce you to the uses of menus, selections, and form fill in
 - Introduce guidelines for menu design
 - Introduce guidelines for form fill in design



Topics:

- Menu Selection (about Making Choices)
 - Introduction
 - Single Menus
 - Multiple Menus
 - Menu Contents
- Data Entry: Form fill in

Goal in Menu Selection

- Primary goals:
 - Menu Organization
 - Sensible
 - Comprehensible
 - Memorable (follow the standard practice)
 - Convenient
 - Relevant to the user's tasks
 - Carefully consider task objects and actions
(remember OAI model in week 6 lecture?)

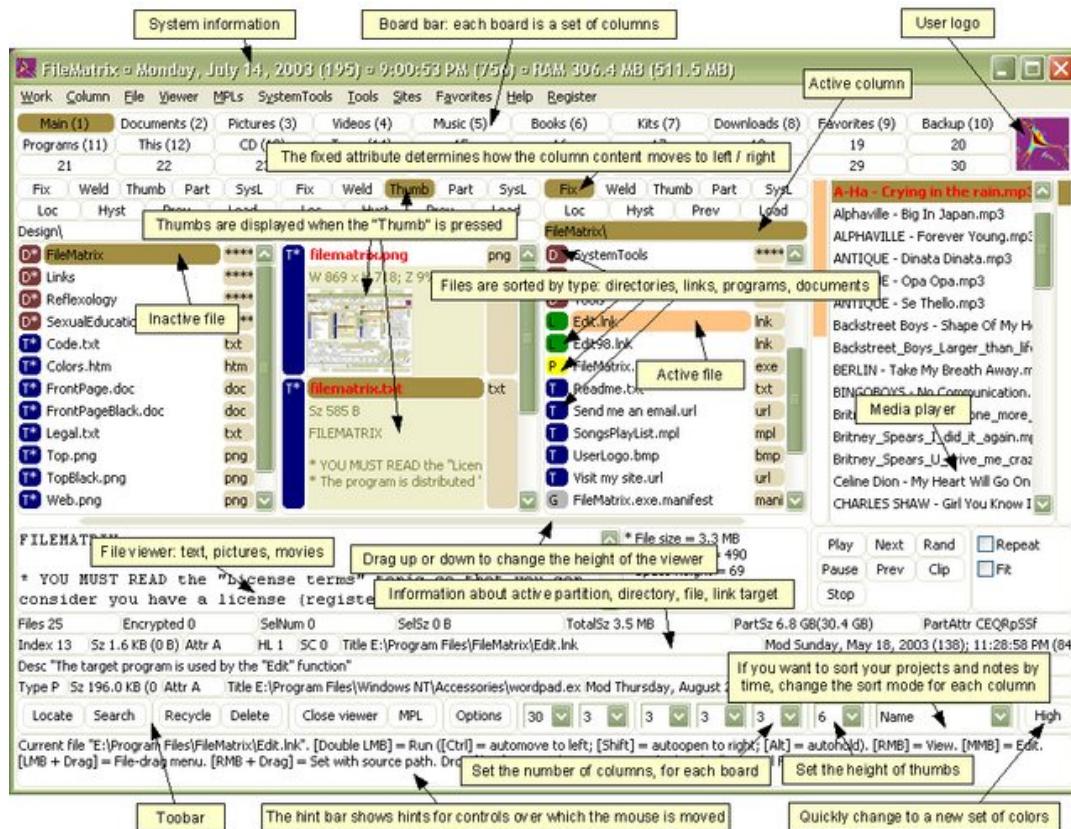
Introduction: Menu

- Menus have several advantages
 - Easily **recognizable**
 - **No special syntax** to remember
 - Can be used with **pointing devices** and **keystrokes (and finger touches)**
 - User actions give immediate feedback from selection
 - Good for **intermittent** users
 - Easy to learn and easy to use

Note : intermittent –stop & start at irregular intervals

Introduction: Menu

- While many advantages, **poorly designed menus** can be counter-productive



Any user experience problem?

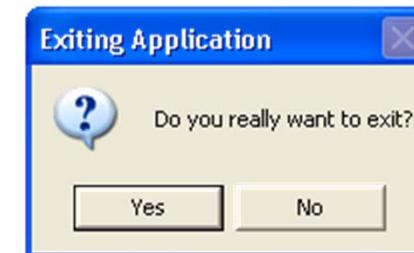
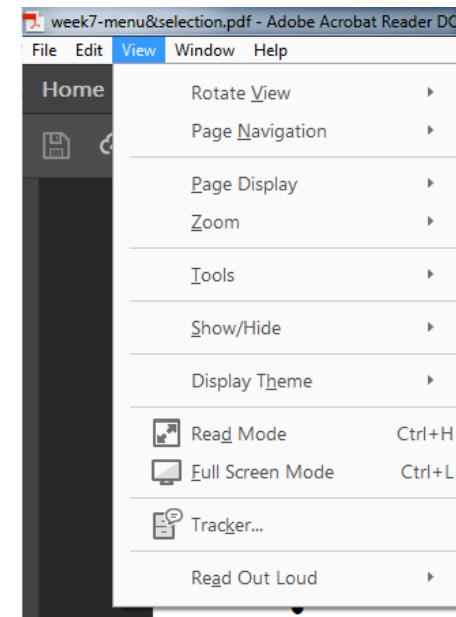
- **Findability** (a user experience): User can't find the target items
- User may easily **get lost** in the menu navigation
- Unclear categories or item labels can make it **difficult to navigate and reduce performance**

Introduction: Menu

- Purpose: **selection / making choices**
- Many different forms:
 - Button-based
 - Icon-based
 - Pull-down menu
 -

Three sub-parts here:

1. Single Menus
2. Multiple Menus
3. Menu Contents
 - Organization (order & group) & fast navigation



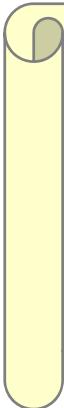
Topics:

- Menu Selection
 - Introduction
 - Single Menus (one decision step)
 - Multiple Menus
 - Menu Contents
- Data Entry: Form fill in

Menu 1 - Single Menus

1. Basics

1. Binary menus
2. Multi-choice menus
 - Radio and checkboxes
3. Pull-down menus
4. Icon menus, palettes and toolbars
5. Pop-up menus



In **graphical user interface (GUI)**, they are commonly known as **GUI widgets**

https://en.wikipedia.org/wiki/Graphical_widget

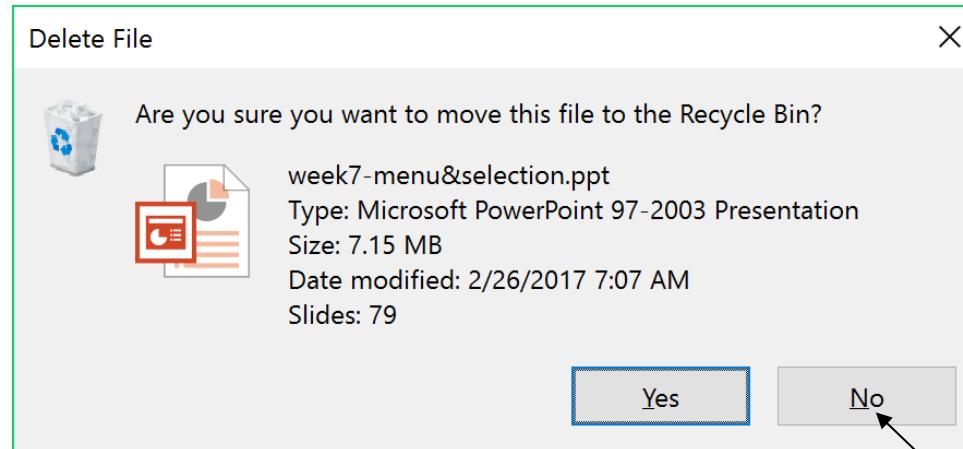
2. Menus with long list

3. Embedded Menus and Hot Links

#1 Binary menus

Binary Menus

- Yes/No – OK/Cancel questions
- Common in dialog box



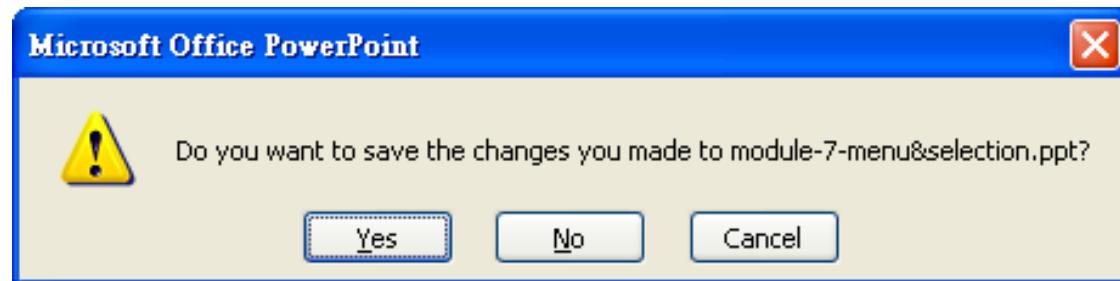
Usually with shortcut key
Y/N for performance

- Nice and easy
- Which one as **default** choice?
 - Consider error avoidance and efficiency!!!

#2 Multi-selection menus

Selecting Multiple items

- We can still use buttons to select a few items...

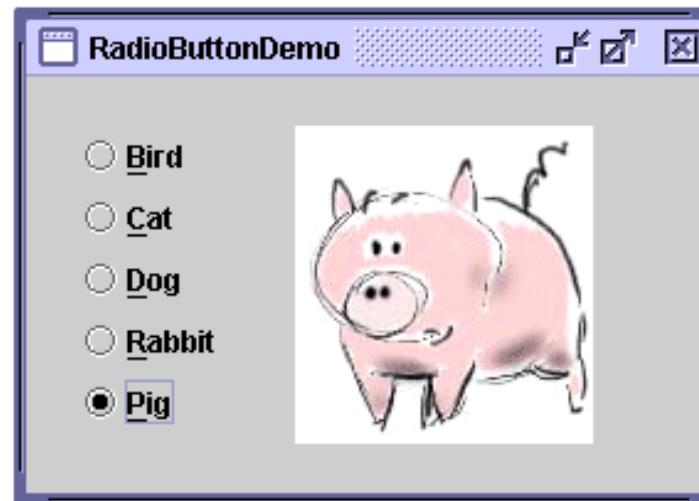


Button-based

Other forms:

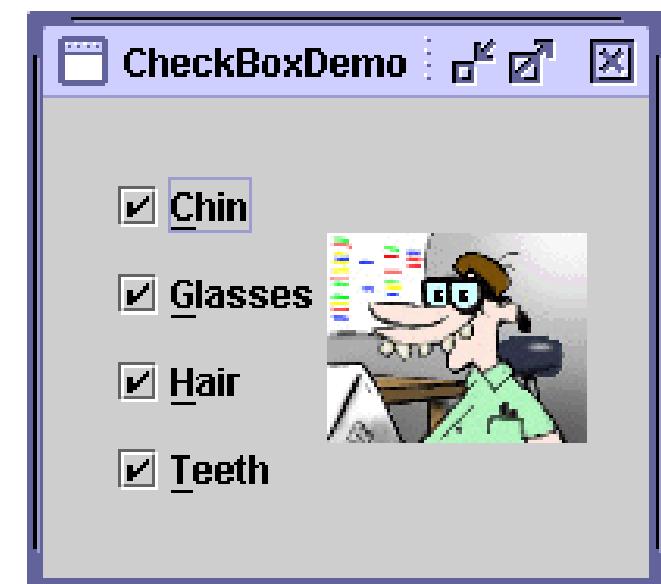


old-fashion radio



[Radio Buttons](#)

Generally only **one** choice allowed.



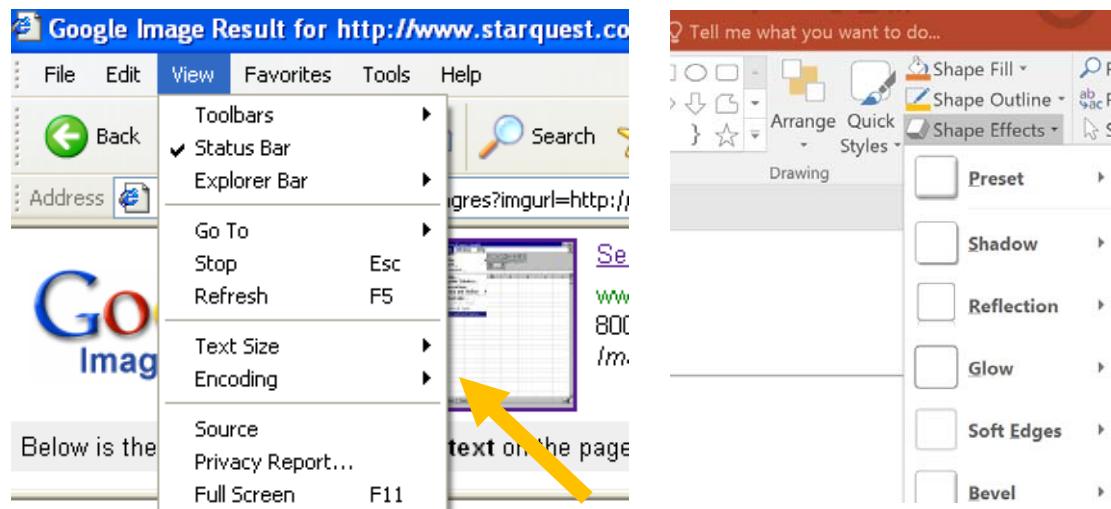
[Check Boxes](#)

Typically can make **more** than **one** choice.

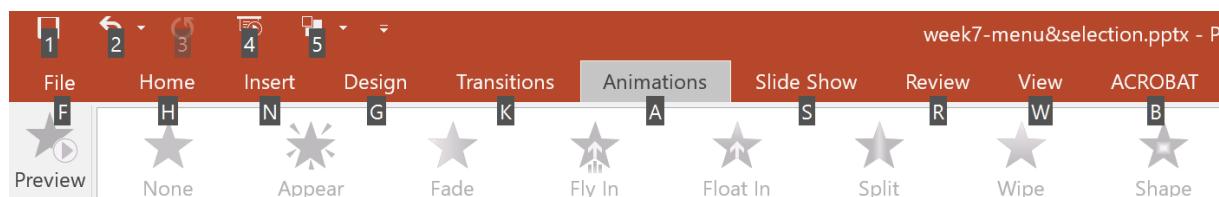
#3 Pull-down menus

- **Pull-down menus**

- *Always available* to user as a menu bar on top
- Users *always know* where these menus are (*findability*)
- Can be hierarchical
- Keyboard shortcuts (important to support “expert user” efficiency)
 - E.g., Ctrl-C / Ctrl-V: rather than using the push-down menu
 - E.g., Alt-something: to open a push-down menu

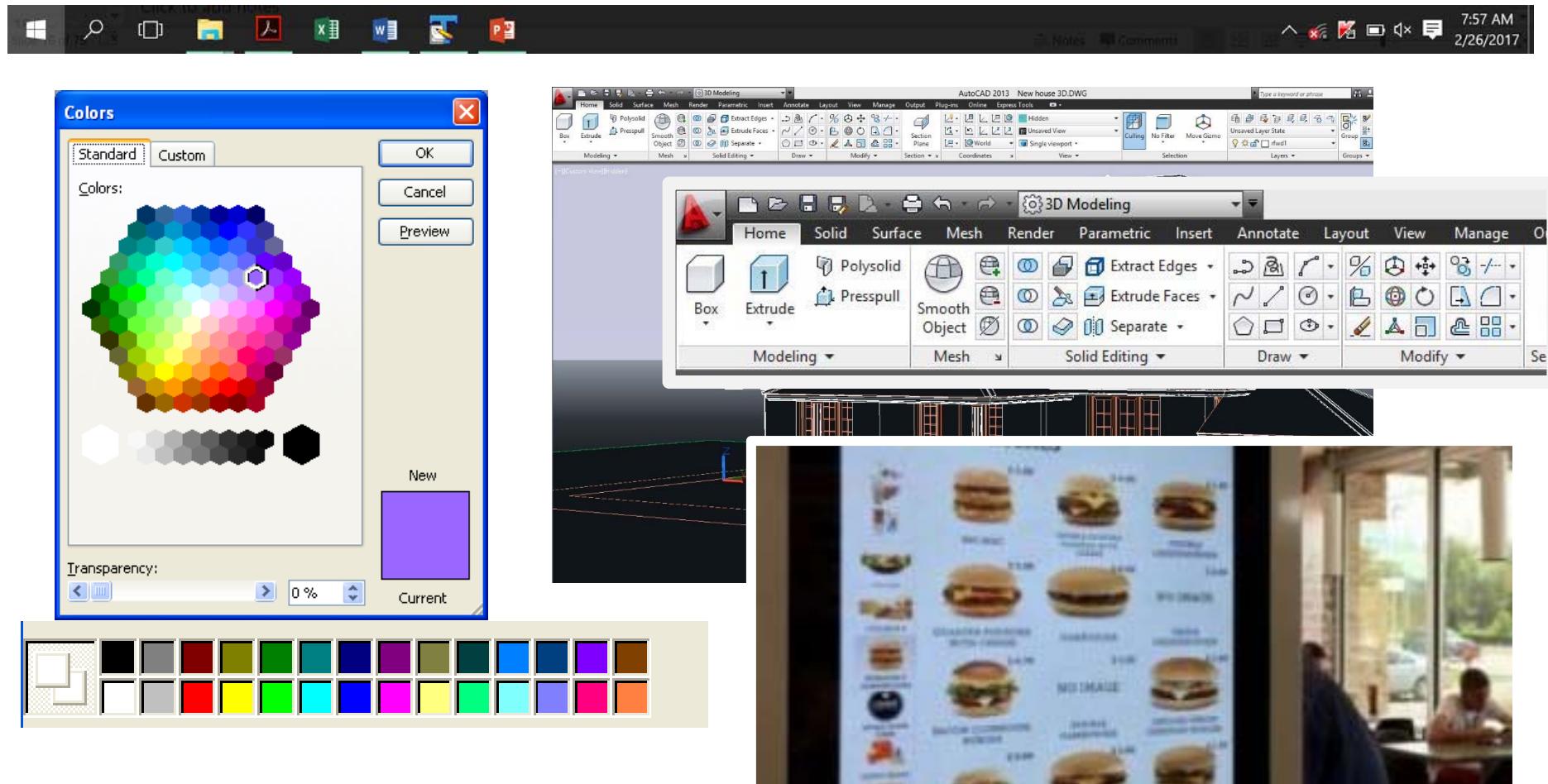


As mentioned several times, one good design practice is to have common menus, like “pull down” menus to be consistent.



#4 Icon menus, palette & toolbars

- **Toolbars, iconic menus and palettes**
 - First used in computer-aided (or computer-assisted) design
 - Example of “**Direct Manipulation**” implementation of menus



More Examples

The diagram illustrates two examples of direct-manipulation menus:

- GIMP Interface:** A screenshot of the GIMP application showing its toolbar and a floating "Rect Select Options" dialog. The toolbar includes icons for various tools like selection, drawing, and selection. The dialog shows settings for a selection tool, including mode, antialiasing, feather edges, and free select options.
- iPhone Home Screen:** A screenshot of an iPhone home screen displaying various app icons. A red circle highlights the four most commonly used features: Phone, Mail, Web, and iPod.

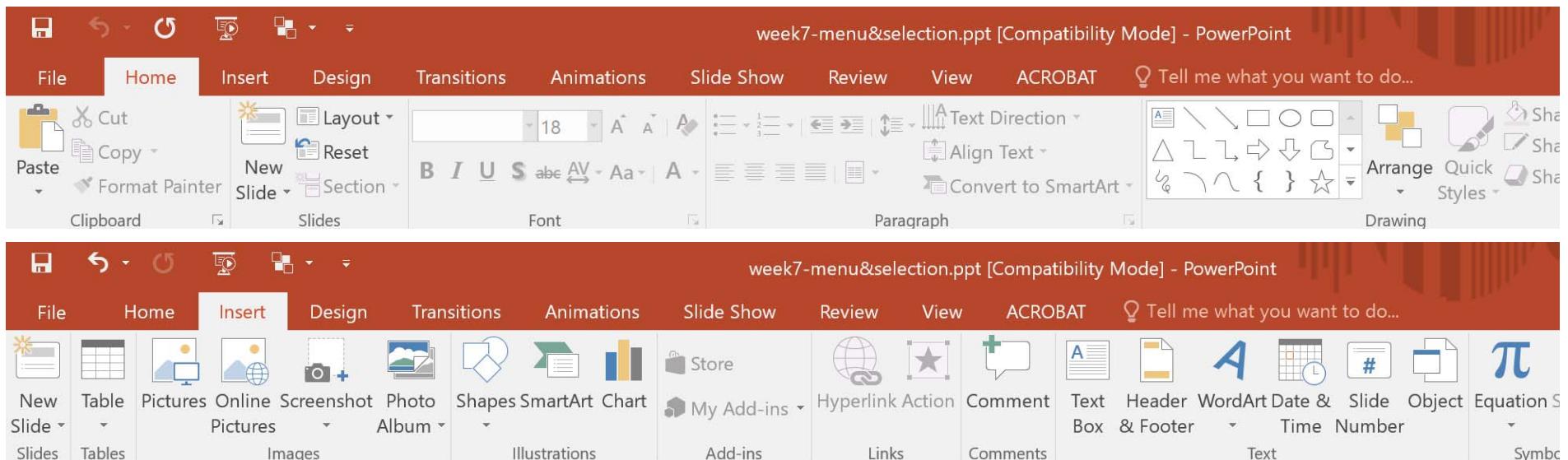
Annotations:

- A blue circle labeled "Most Commonly Used Features" highlights the GIMP toolbar.
- A red arrow points from the text "Common image editing mode" to the GIMP interface.
- A red circle highlights the "Most Commonly Used Features" on the iPhone home screen.
- A red arrow points from the text "Most Commonly Used Features" to the iPhone home screen.

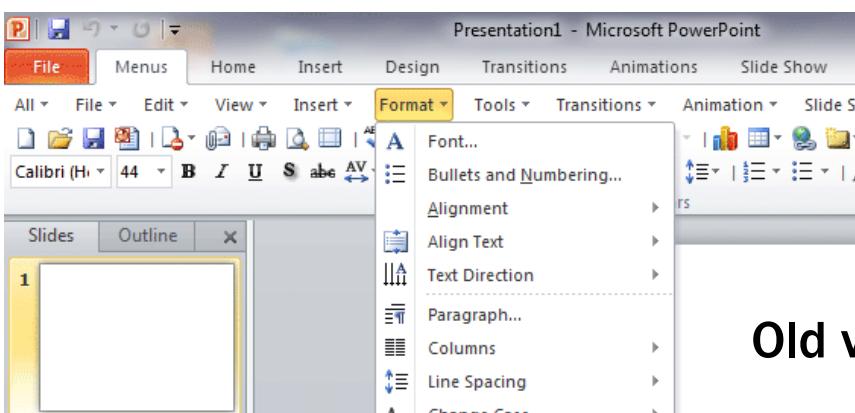
Direct-manipulation menus . . . Common for use in
direct-manipulation environments (GUIs, PCs, touchscreens, etc.)

Pull-down + Icons menus -> Ribbon

- **Mixture of pull-down menu and icon bar**
 - Better efficiency and better space utilization!!



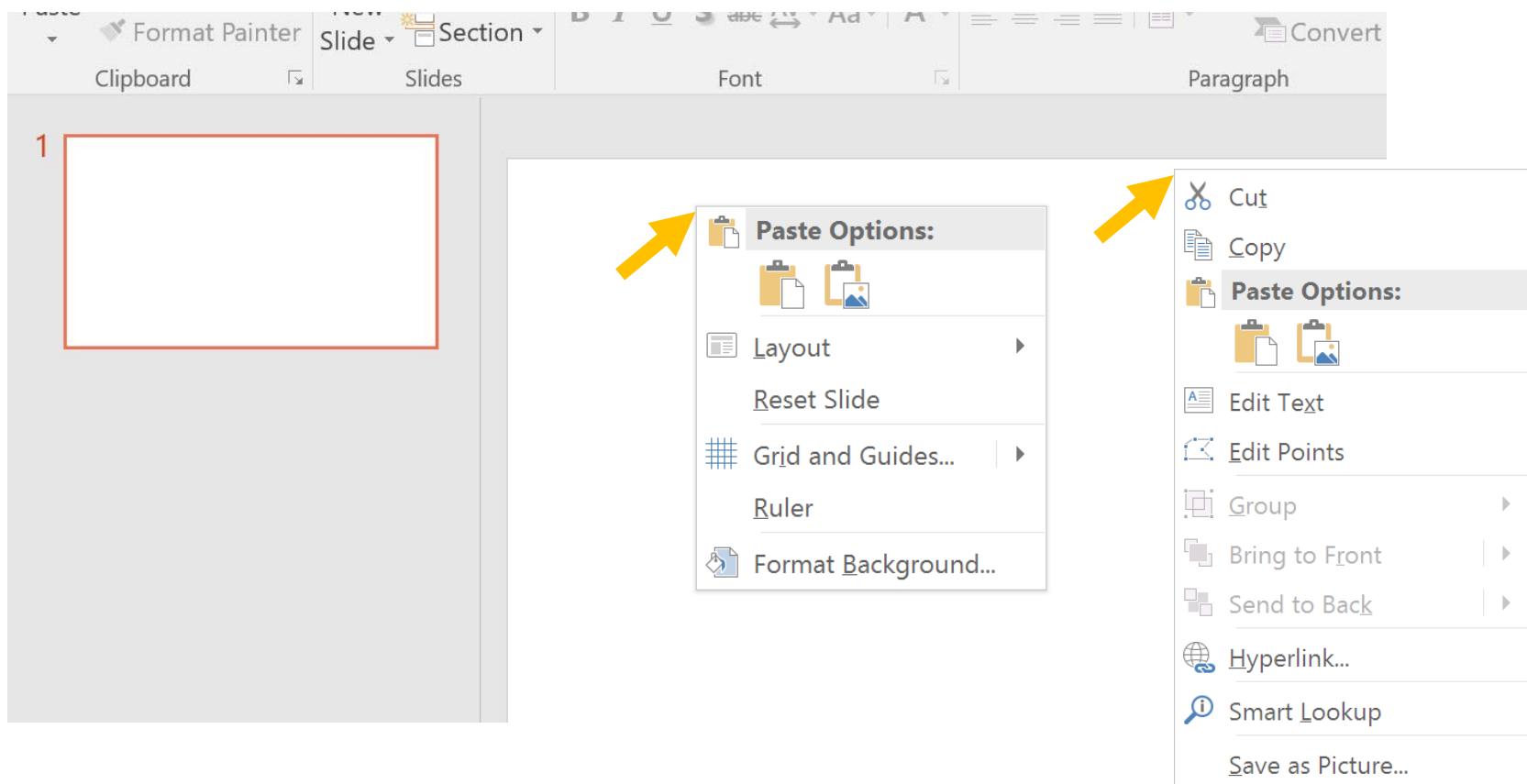
Kind of a combination with the direct manipulation interaction style!!!



Old version

#5 Pop-up menus

- Pop-up menus
 - Similar to “pull-down” menus, but now we can have the menu appear **anywhere** -> location relevant selection
 - Typically launched with a **button click**, e.g., right click

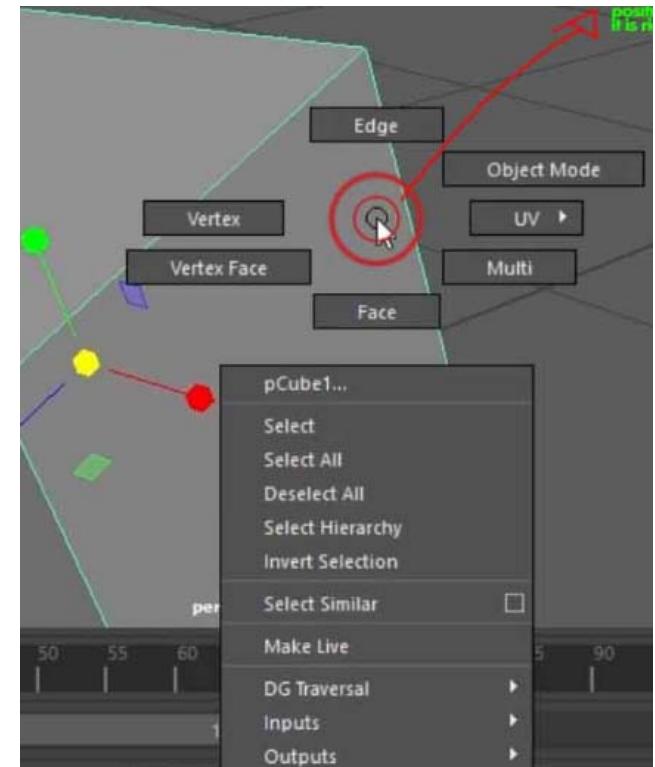


#5 Pop-up menus

- Comments on Pop-up Menus
 - Covers part of the application, so text and menu size should be kept small

Variants on standard pop-up

- "Pie menu" is a useful style of "pop-up"
 - Benefit: selection can be very fast once you get used to the item locations
 - Note: all items are just one motion away
- Another variant: **marking menu** (fast selection!!!)



* Marking menu – a video will be shown later

Menu 1 - Single Menus

1. Basics

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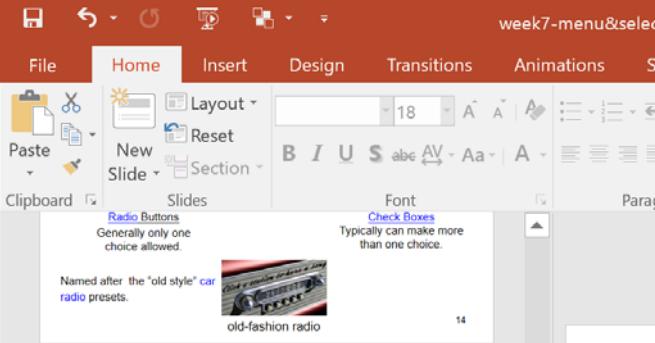
2. Menus with long list

3. Embedded Menus and Hot Links

#6 Menus for long lists of items

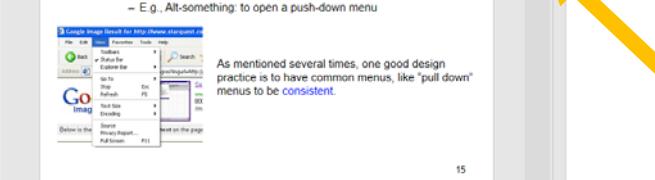
- **Menus for long lists (many items!!!)**
 1. Scrolling menus
 - List of items are shown, with one entry (typically an arrow) that leads to more items
 2. Combo boxes
 - Combined text/menu list
 - Often “hotkey” activated for fast selection
 3. List boxes
 - Similar to combo boxes but allow more than one choice
 4. Sliders
 - When items are bounded by a range
 5. Fisheye menus and toolbars
 - Size of items change dynamically
 - Items closer to “being selected” are larger
 - Looks nice, but need careful controls with precision
 6. Two-dimensional menus

#6.1 Scrolling Menu

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#3 Pull-down menus

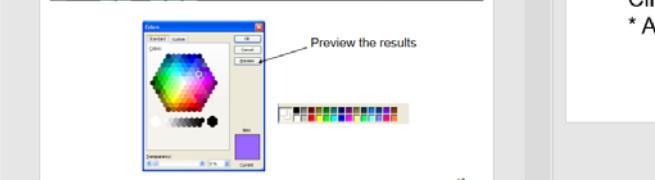
- Pull-down menus
 - Always available to user by making selections on a top menu bar
 - Users always know where these menus are found
 - Can be hierarchical
 - Keyboard shortcuts (important to support "expert user" efficiency)
 - E.g., Ctrl-C / Ctrl-V; rather than using the push-down menu
 - E.g., Alt+something to open a push-down menu

As mentioned several times, one good design practice is to have common menus, like "pull down" menus to be [consistent](#).

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#4 Icon menus, palette & toolbars

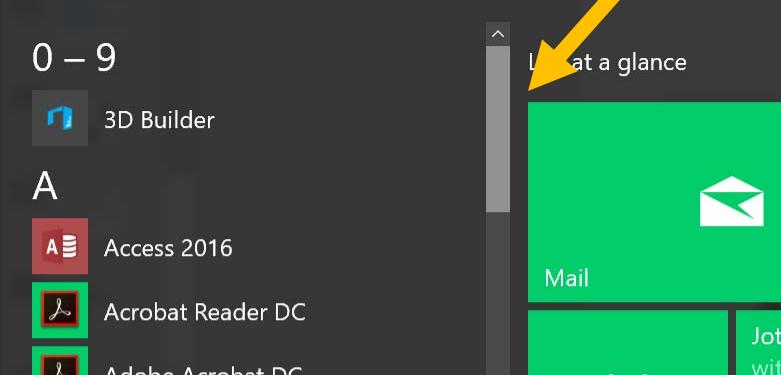
- Toolbars, iconic menus and palettes
 - First used in computer-assisted design
 - Example of "Direct Manipulation" implementation of menus

Preview the results

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More Examples

Click to a

Slide 22 of 80

0 – 9 

A

- 3D Builder
- Access 2016
- Acrobat Reader DC
- Adobe Acrobat DC
- Adobe Acrobat Distiller DC
- Alarms & Clock
- Apple Software Update

C

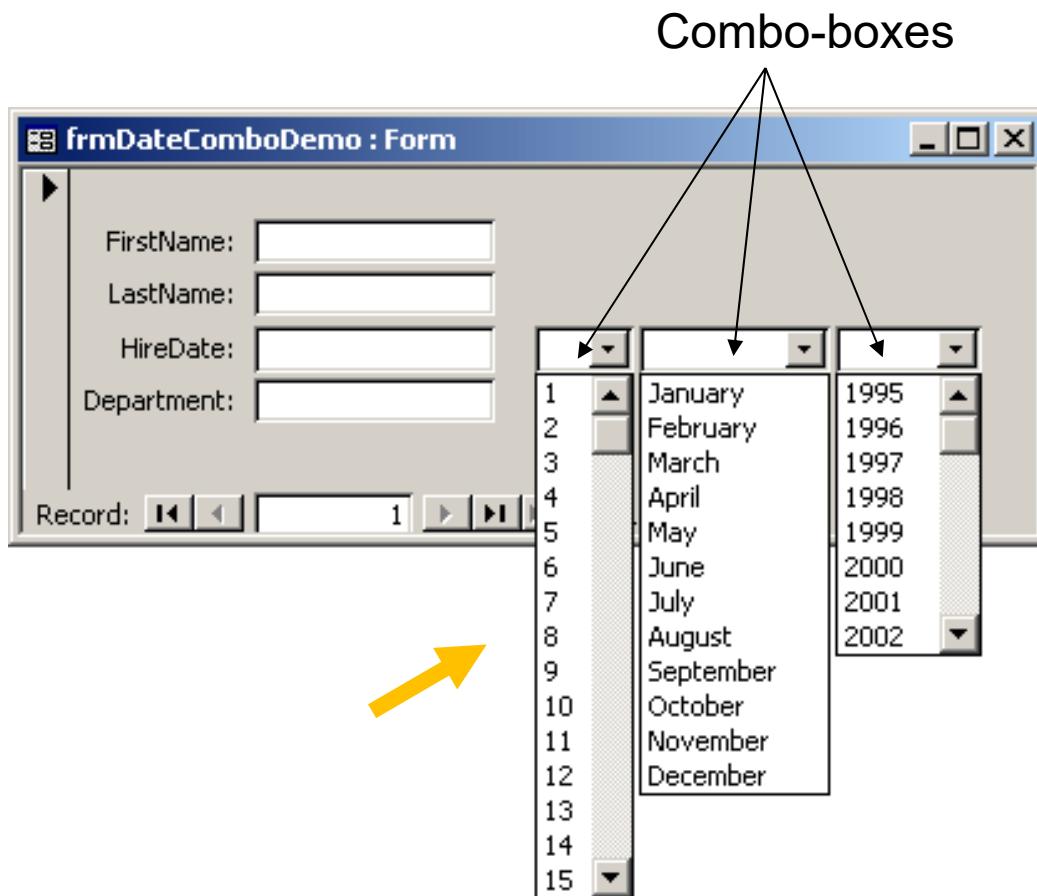
- Calculator
- Calendar
- Camera
- Canon MG2500 series Manual
- Canon Utilities
- Contact Support
- CyberLink PowerDVD 16

← Back

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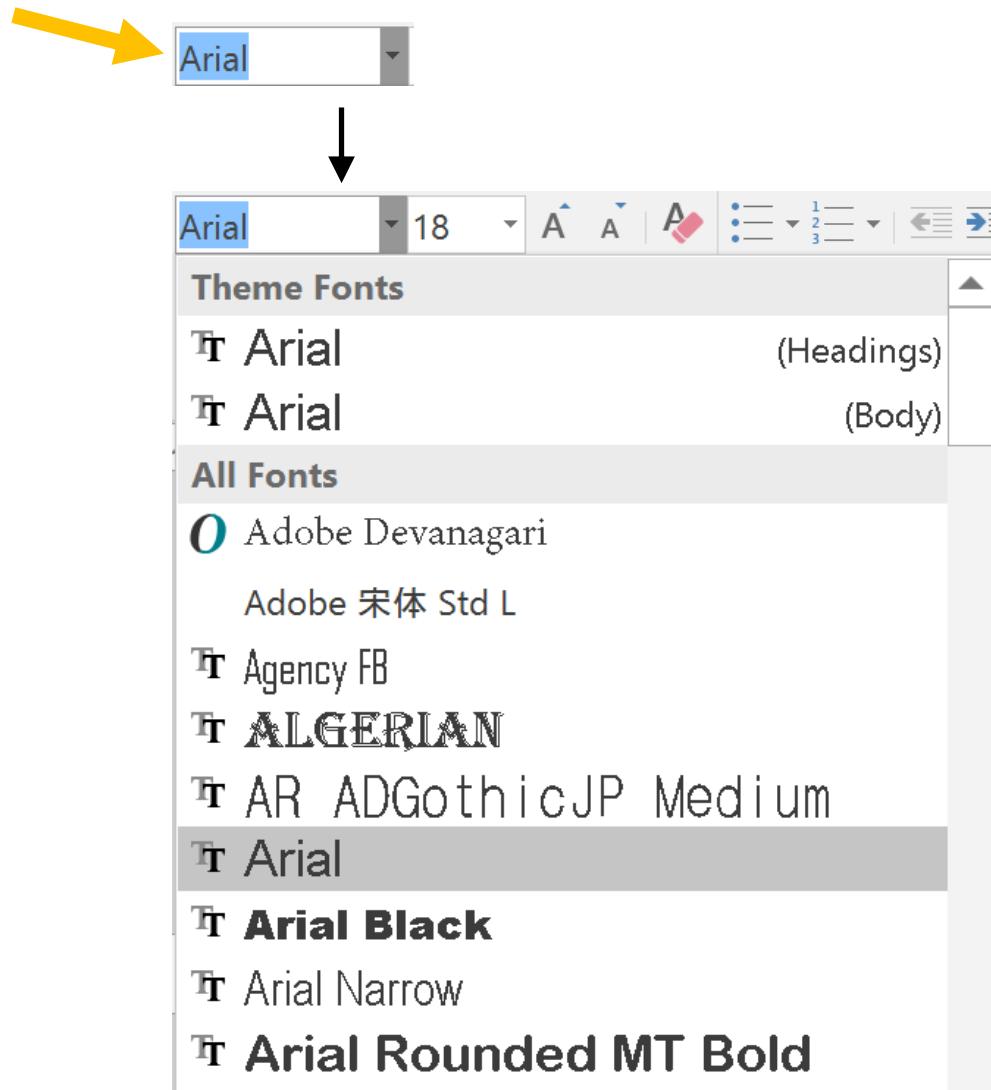
#6.2 Combo-Boxes

- Example



- Although it looks like text entries, it may or may not support form “fill-in”
 - however, **key strokes** often jump to choices.
 - It also keeps the display looking consistent in a form fill-in interface.

#6.2 Combo-Boxes

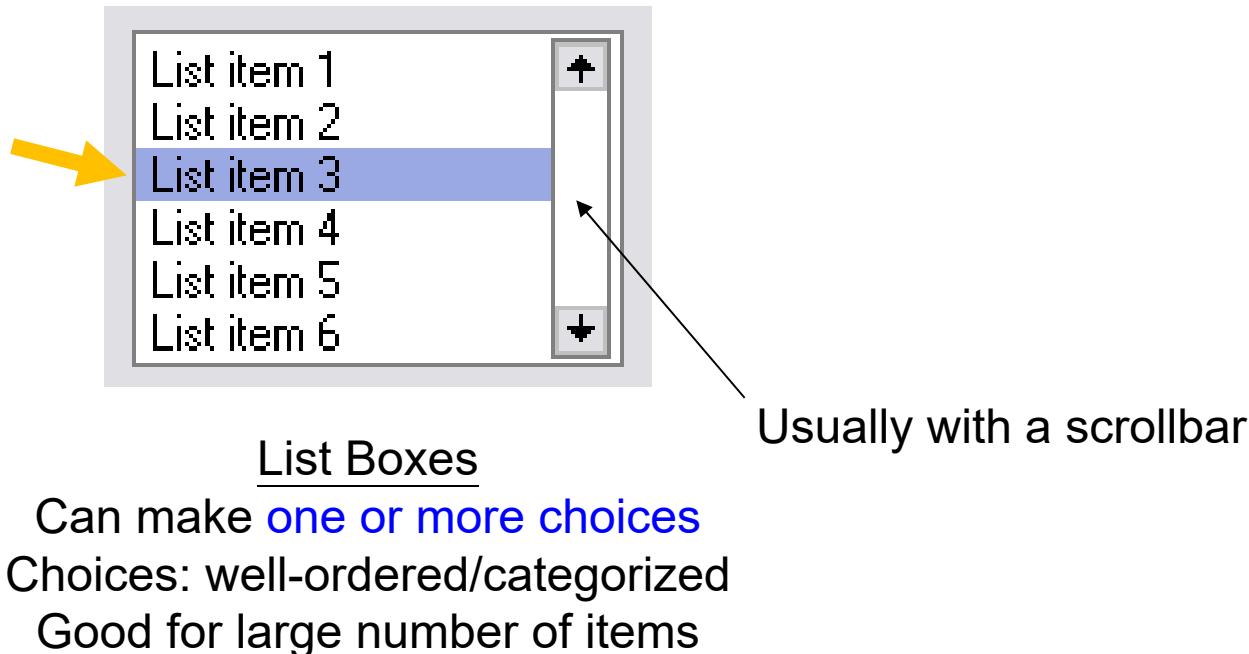


Combo Boxes

Typically one choice
but use less screen space (selection
choices are **hidden until needed**)
Choices: well-ordered/categorized

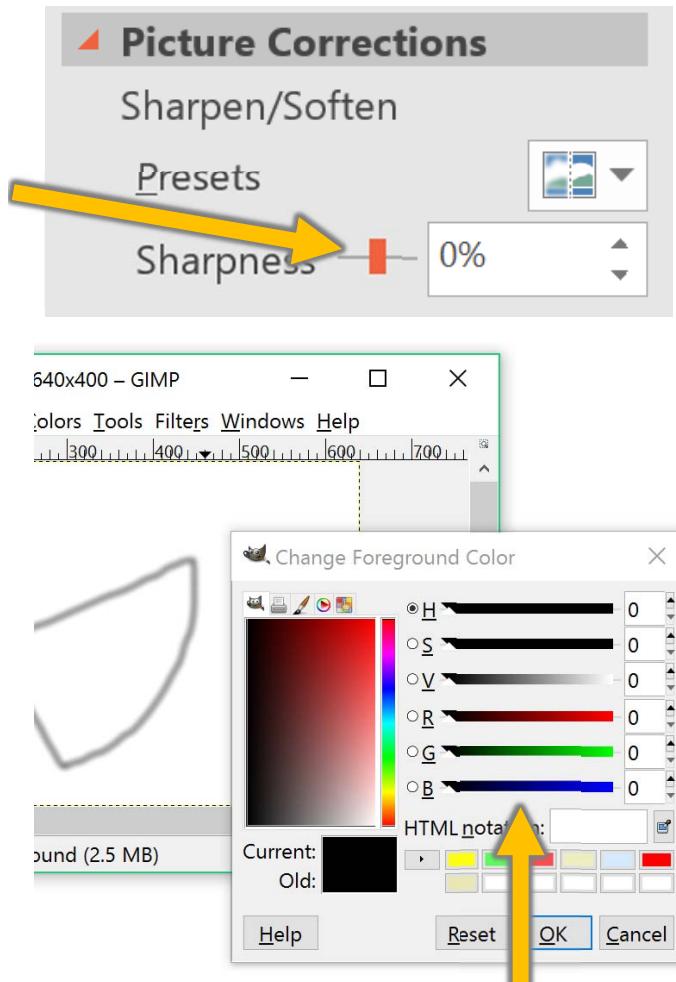
#6.3 List Boxes

Similar to combo boxes, but users **may** select **one or more** choices together, e.g., which course(s) to take?

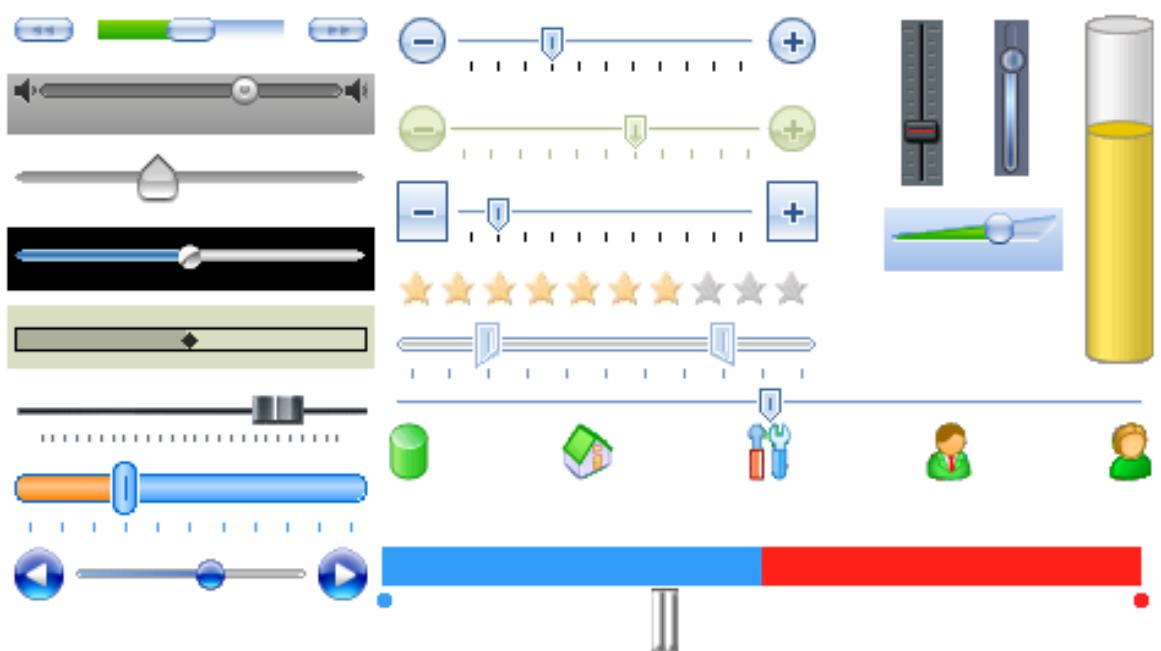


#6.4 Sliders

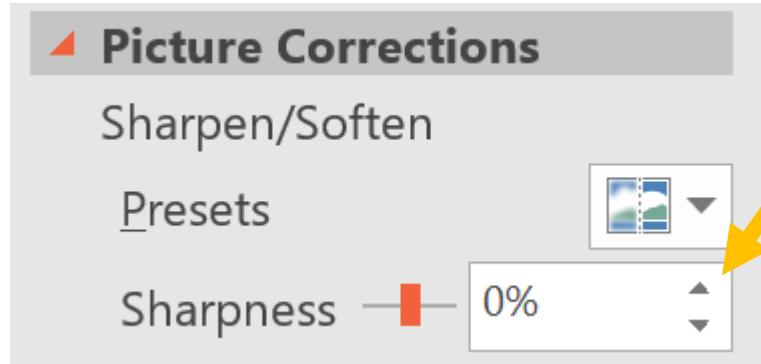
For users to **make a choice in a domain of values** (usually continuous)



Sliders can have different appearance and style,
and not necessary numerical/continuous values



#6.4 Sliders



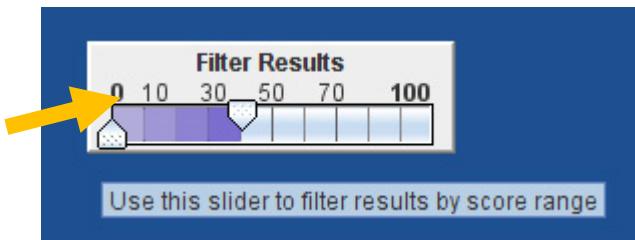
Variant: Spinners (or spin box)

Similar to sliders and combo-lists.
Allows user to move through finite range of choices.

Benefit: [] & []

Variant: Range slider

Sliders with two markers (max. and min.) – but not all UI tools support this
Any application? E.g., [] , and []



Horizontal slider



Horizontal Slider Min Value: 50,0%

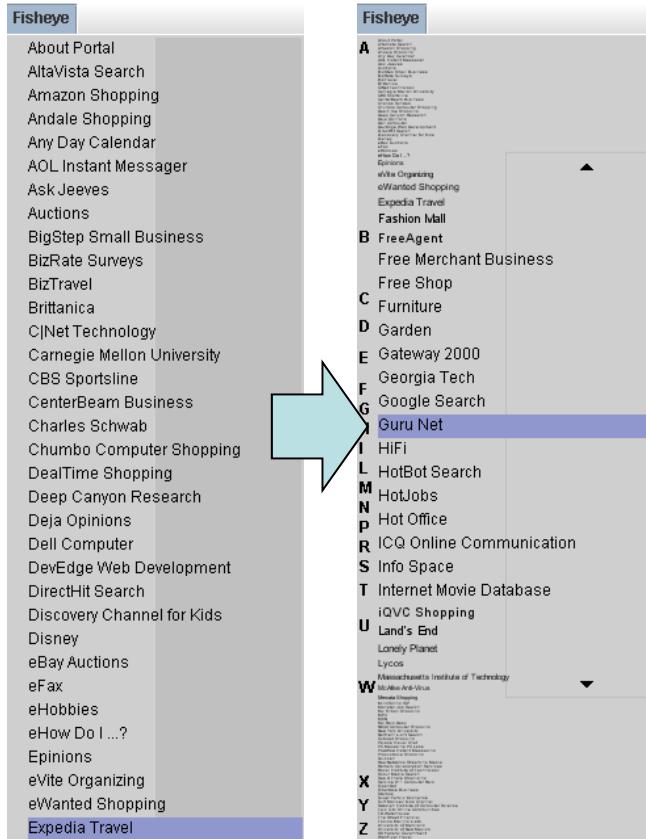
Horizontal Slider Max Value: 70,0%

Disable previous slider

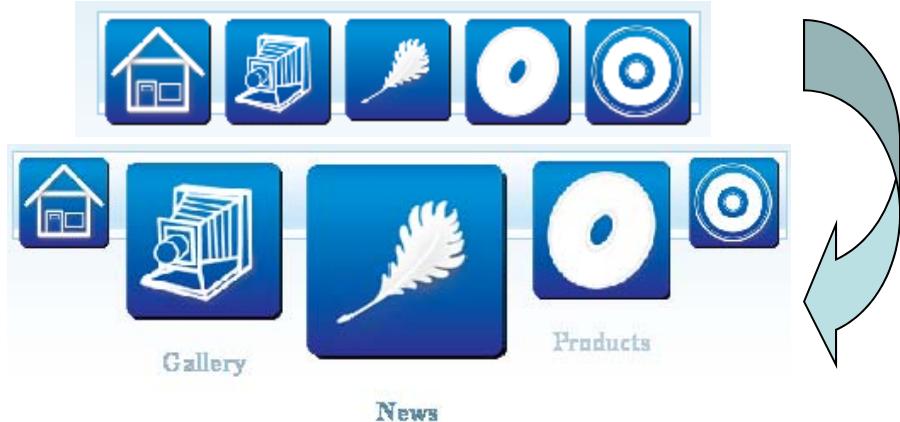
Enable previous slider

#6.5 Fisheye Menu/Toolbar

- Items resize dynamically
- Items closer to “being selected” are larger
- Looks nice, but need careful controls with precision



<http://www.dmxzone.com/demo/fim/minidemo/minidemo.html>



Fisheye menu in Mac OSX on bottom

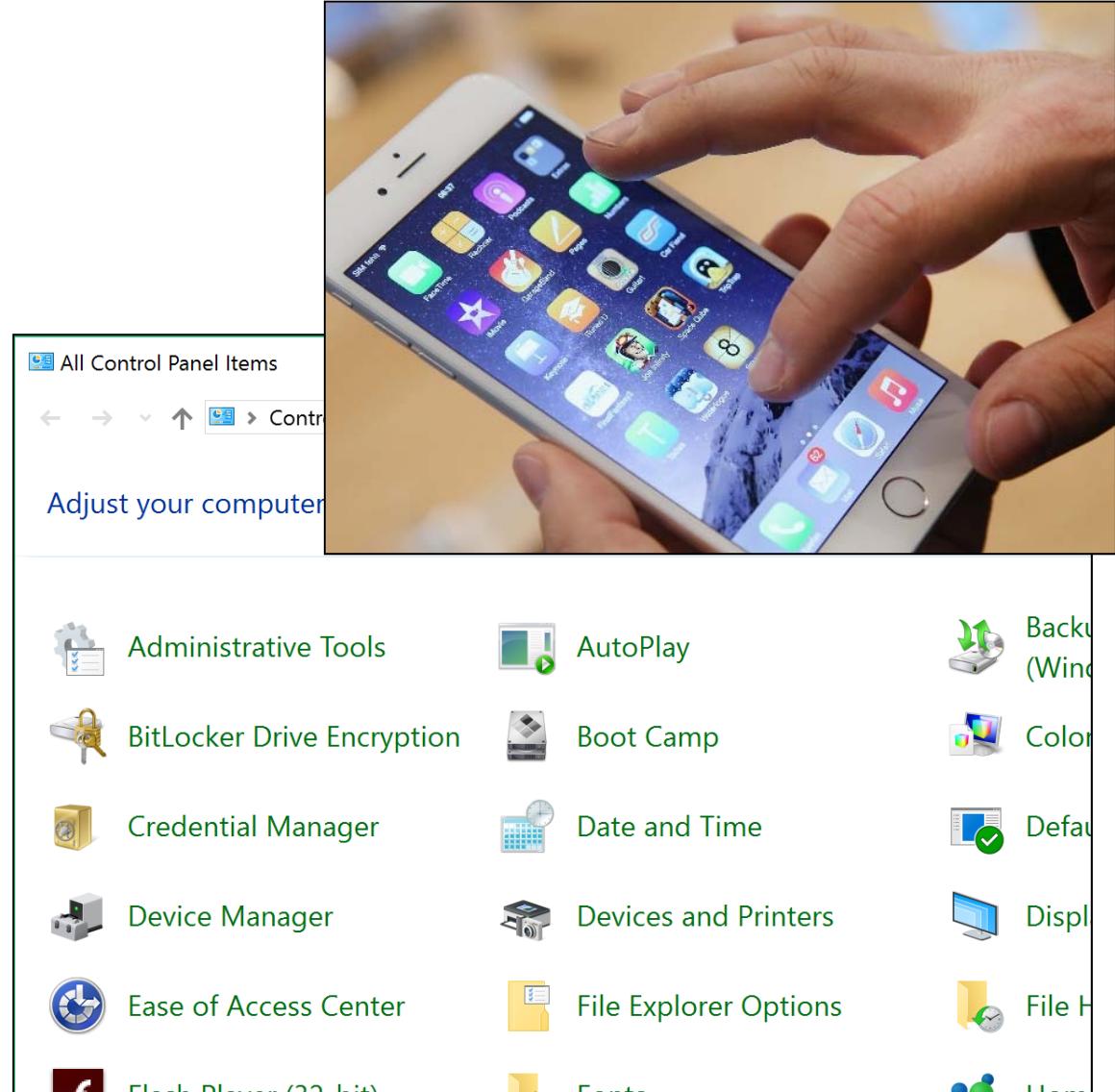


#6.6 2D Menu

Choices are laid out in a 2D fashion.

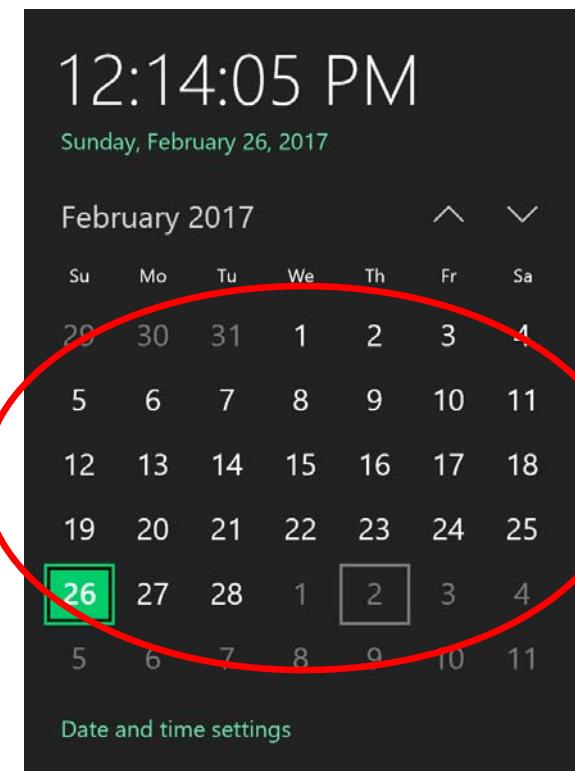
- Good overview
- Allow rapid selection (no need to scroll)

Items position shouldn't change (in alphabetical order or let user decide).



#6.6 2D Menu

- Example:
 - Calendar: day selection



Book a Flight Check In Flight Status My Bookings

Member Log-in

Round Trip One Way Stopover/Multi-city

From: Departure City Depart: Wed 4 Mar 2009

To: Destination City Return: Wed 11 Mar 2009

Must travel on these dates Flexible with travel dates

Adults: 1 Children (2-11): 0 Infants: 0 Class: Economy

Need Help? View Book A Flight Guide Route Maps Travel Advice Book Now

Depart Close

Feb Mar Apr May Jun Jul

Aug Sep Oct Nov Dec Jan

← March 2009 →

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

#6.6 2D Menu

- Example:
 - Select departure & arrival date

DEPARTING	Thu 20 Apr	Fri 21 Apr	Sat 22 Apr	RETURNING Sun 23 Apr	Mon 24 Apr	Tue 25 Apr	Wed 26 Apr
Fri 14 Apr	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00		
Sat 15 Apr	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00		
Sun 16 Apr	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00	HKD 7,470.00		
DEPARTING Mon 17 Apr	HKD 4,980.00	HKD 5,310.00	HKD 5,310.00	SELECTED HKD 5,840.00	HKD 4,980.00		
Tue 18 Apr	HKD 3,520.00	HKD 3,920.00	HKD 4,060.00	HKD 4,810.00	HKD 3,600.00		
Wed 19 Apr	HKD 3,620.00	HKD 3,380.00	HKD 3,520.00	HKD 4,480.00	HKD 3,060.00		

Select your travel dates

Departing on **20 Feb 2022**  Returning on **08 Mar 2022**

February 2022					March 2022								
Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
							1	2	3	4	5		
6	7	8	9	10	11	12			1	2	3	4	5
13	14	15	16	17	18	19	13	14	15	16	17	18	19
20	21	22	23	24	25	26	20	21	22	23	24	25	26
27	28						27	28	29	30	31		

https://www.cathaypacific.com/cx/en_HK.html

Retarget (Contents-aware Resize)

Note:

- If we reduce the window width, the user interface can automatically change (retarget) the menu selection style to adopt to the new window size
- This is known as “**retargeting**”, which helps to adopt an interface for different display window sizes OR different devices, e.g., phones, tablets, etc.

The screenshot shows a flight search interface for Hong Kong (HKG) to Kyoto (KIX) from April 17, 2017, to April 23, 2017. The interface includes a date selector at the top where April 17 is highlighted, and a table below showing flight prices for various return dates. The table includes columns for the return date, price in HKD, and the price again.

RETURNING	HKD
Thu 20 Apr	4,980.00
Fri 21 Apr	5,310.00
Sat 22 Apr	5,310.00
Sun 23 Apr	5,840.00
Mon 24 Apr	4,980.00
Tue 25 Apr	7,470.00

Menu 1 - Single Menus

1. Basics

1. Binary menus
2. Multi-choice menus
 - Radio and checkboxes
3. Pull-down menus
4. Icon menus, palettes and toolbars
5. Pop-up menus

2. Menus with long list

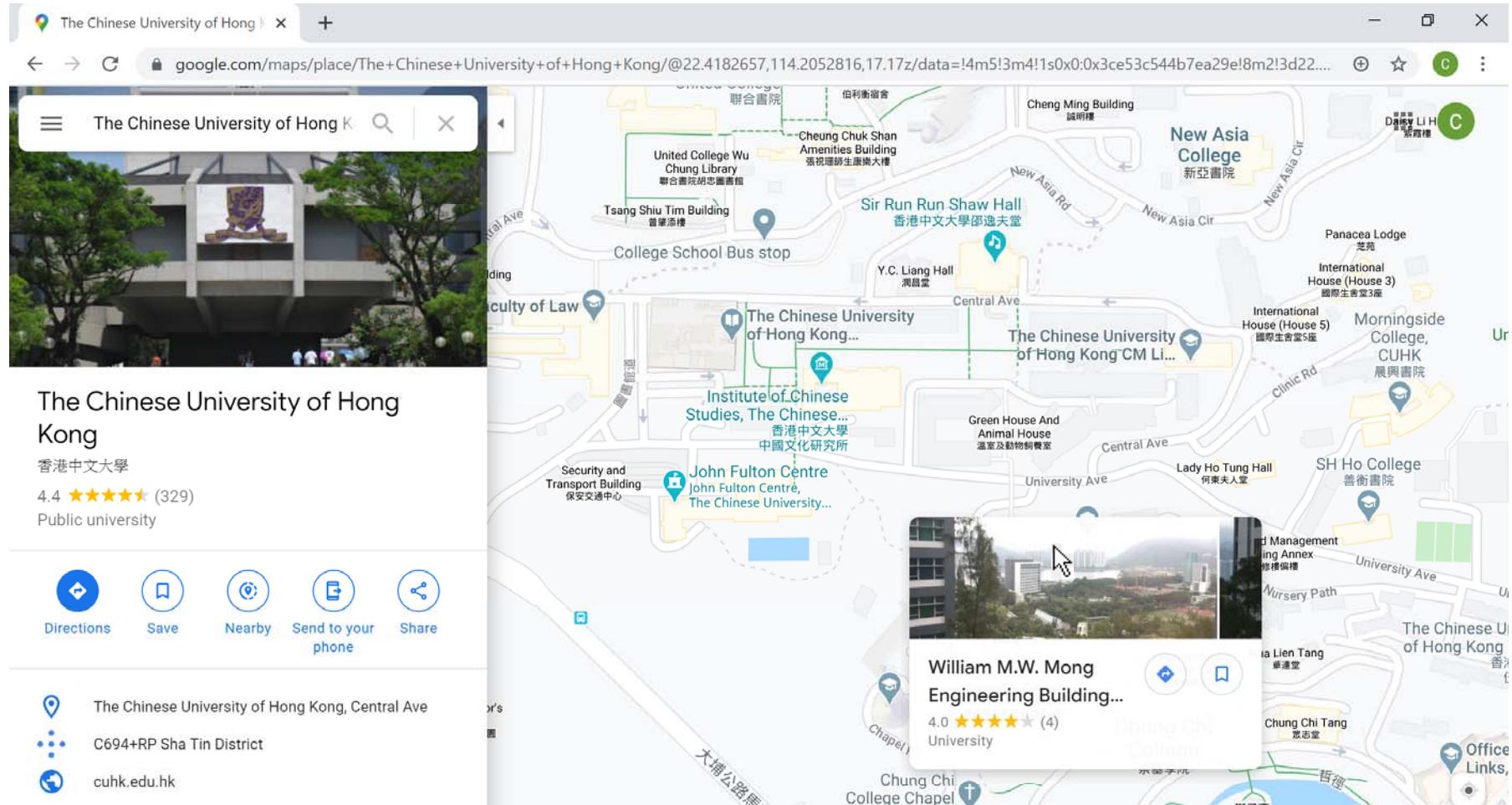
3. Embedded Menus and Hot Links

#7.1 Embedded Menus

- **The menus we've discussed are “explicit menus”**
 - It is very clear that the item is intended to be used in a menu fashion to aid user selection
- **Embedded menus and Hotlinks**
 - Embedded menus are an alternative to explicit menus
 - **Implicit** menus
 - Imagine that “**data**” could be menu “**choices**”
 - For example, you are looking at a database of names and you may click on a name to get additional information about a name
 - Make sure the user knows that the items are clickable!

Clickable? How to let user know?

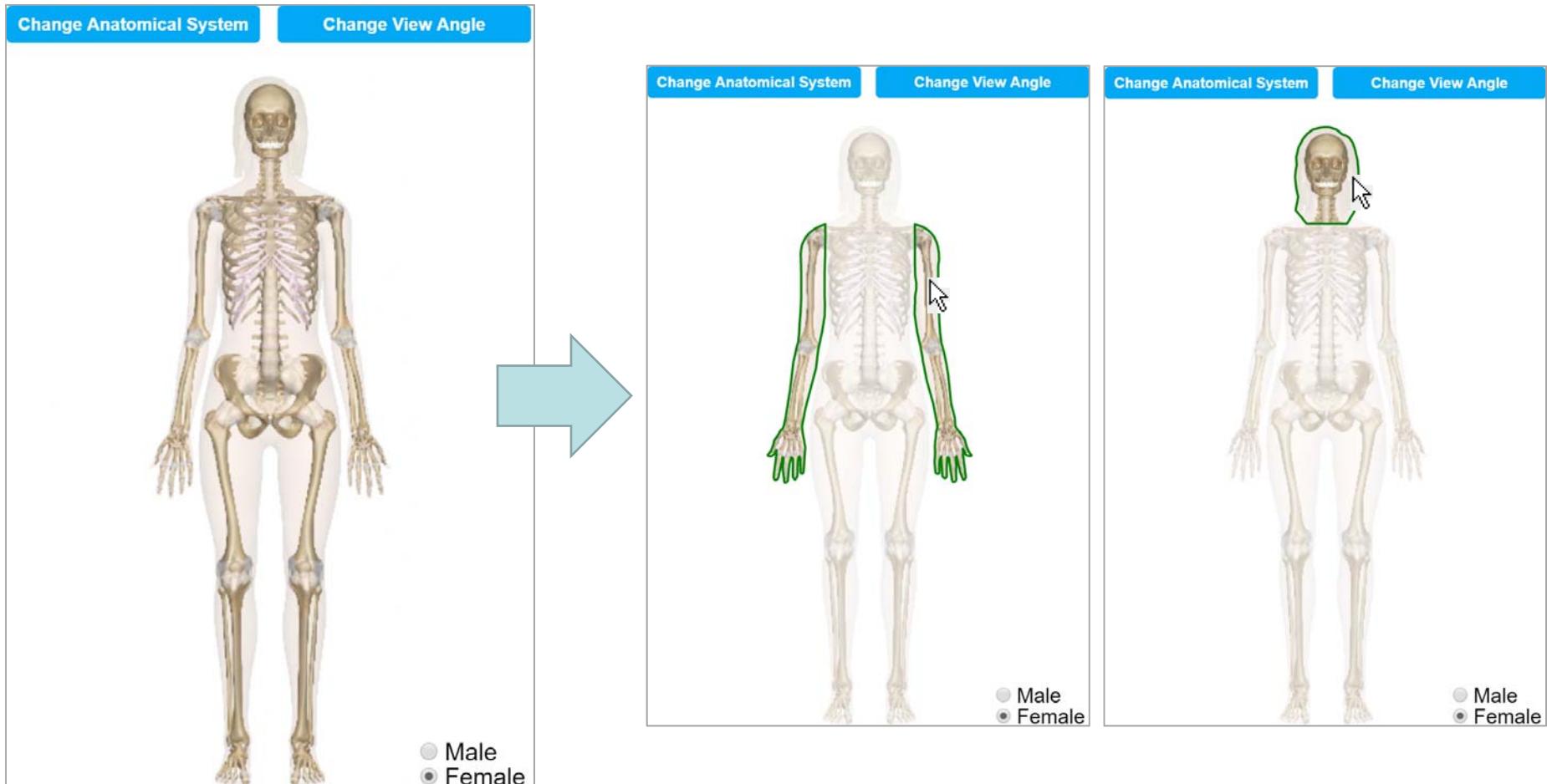
Embedded Menus Example #1



GIS (Geographical information system): **not necessary text**

Clicking directly at a location will launch related information.

Embedded Menus Example #2



Human anatomy or museum software: **not necessary text and map**

Source: <http://www.innerbody.com/image/skelfov.html>

Hot Links

- Example from Wikipedia and Mathworld
 - Majority of the text is “clickable” to navigate to other information

<http://mathworld.wolfram.com/HazardFunction.html>

The screenshot shows a web browser with two tabs open. The left tab is titled "Human-computer interaction" and is from the Wikipedia website (https://en.wikipedia.org/wiki/Human-computer_interaction). The right tab is titled "Hazard Function" and is from the MathWorld website (<http://mathworld.wolfram.com/HazardFunction.html>). Both tabs show their respective content with some text and formulas.

Wikipedia Tab Content:

Hazard Function Tab Content:

The hazard function (also known as the failure rate, hazard rate, or force of mortality) λ (probability function $P(x)$ to the survival function $S(x)$, given by

$$\lambda(x) = \frac{P(x)}{S(x)} = \frac{P(x)}{1 - D(x)},$$

where $D(x)$ is the distribution function (Evans et al. 2000, p. 13).

SEE ALSO: Mills Ratio, Probability Function, Survival Function. [Pages Linking Here]

https://en.wikipedia.org/wiki/Human-computer_interaction

Comments

- **Overview** the data (items) **in its own context**
- To indicate that a specific item is “**clickable**”, give (visual) feedback to user “before” and “when” the mouse hops over the item. Also, should consistently use a specific color for the clickable items, e.g., hot links
- **Graphical menus** and **embedded hotlinks** are particularly attractive to users
- With the increase in the use of graphic displays, this combination of clickable graphics is often hard to distinguish from “**direct-manipulation**” styles
- Of course, more resources and effort are required to create these types of “menus” and they will likely occupy more screen space

Topics:

- Menu Selection
 - Introduction
 - Single Menus
 - Multiple Menus (multiple "relevant" decisions)
 - Menu Contents
- Data Entry: Form fill in

Multiple Menus

Any strategy?

- Linear Menus
- Simultaneous Menus
- Tree-structured menus

Menu 2 - Combination of Multiple Menus

#1 Linear Menus

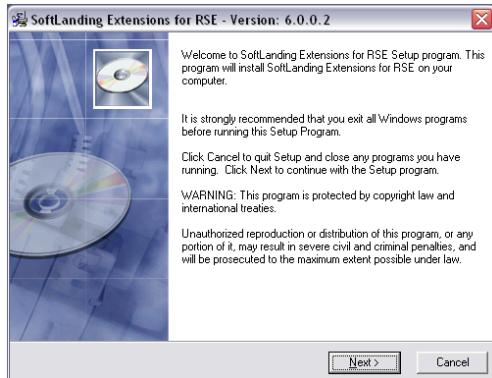
- Guide the user through complex decision-making process step by step.
 - E.g., Any Example?, Any Example?,
Any Example?
- Effective for novice users performing simple tasks

#2 Simultaneous Menus

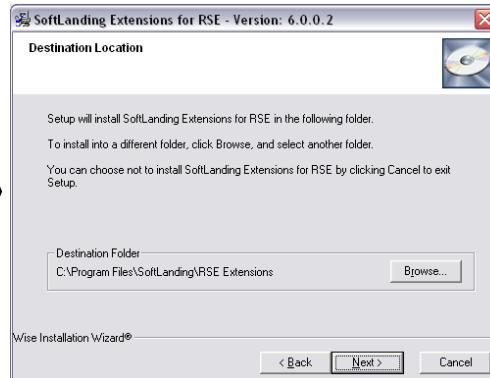
#3 Tree-structured Menus

#1 Linear menus

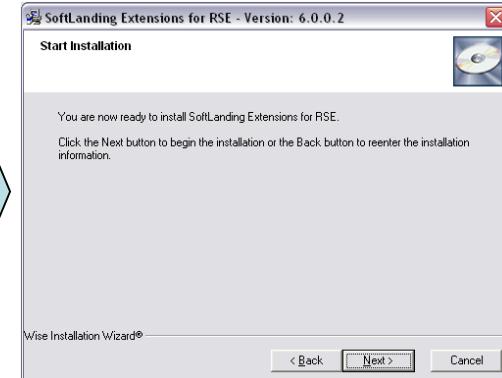
(Good example, install wizards)



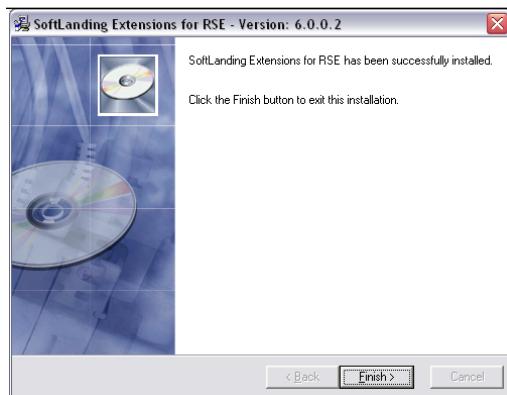
(screen 1)



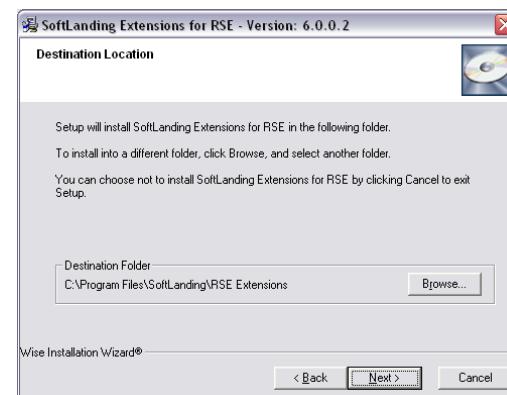
(screen 2)



(screen 3)



(screen 5)

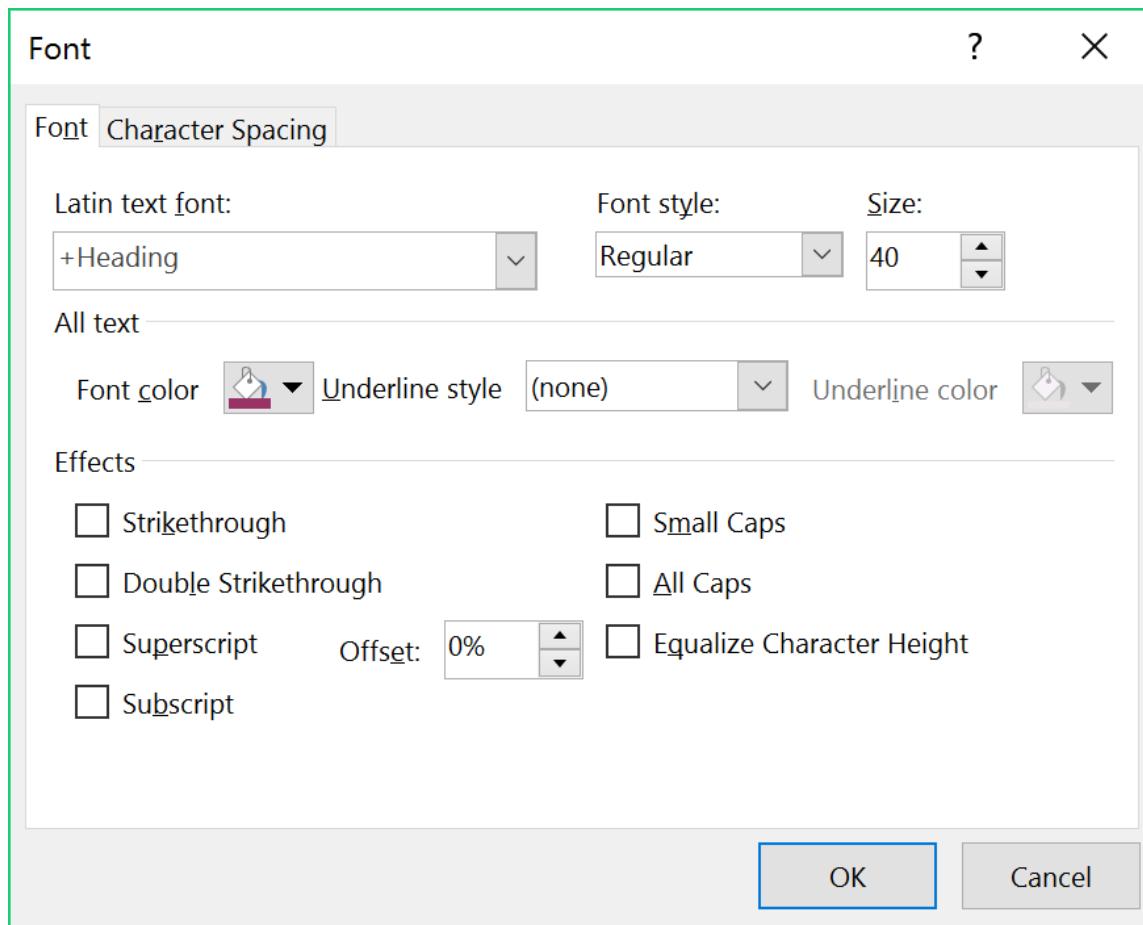


(screen 4)

Note: such menus are inline with one of the “8 golden principles” –
“design dialogues to yield closure”.

#2 Simultaneous menus

Present multiple “relevant” menus on screen at the same time and allow users to enter choices in any order, or together



Drawback:
Consumes more
screen space

Benefits: Studies
(Shneiderman'99)
show this type of
menu is more
effective for many
users, including
expert users.

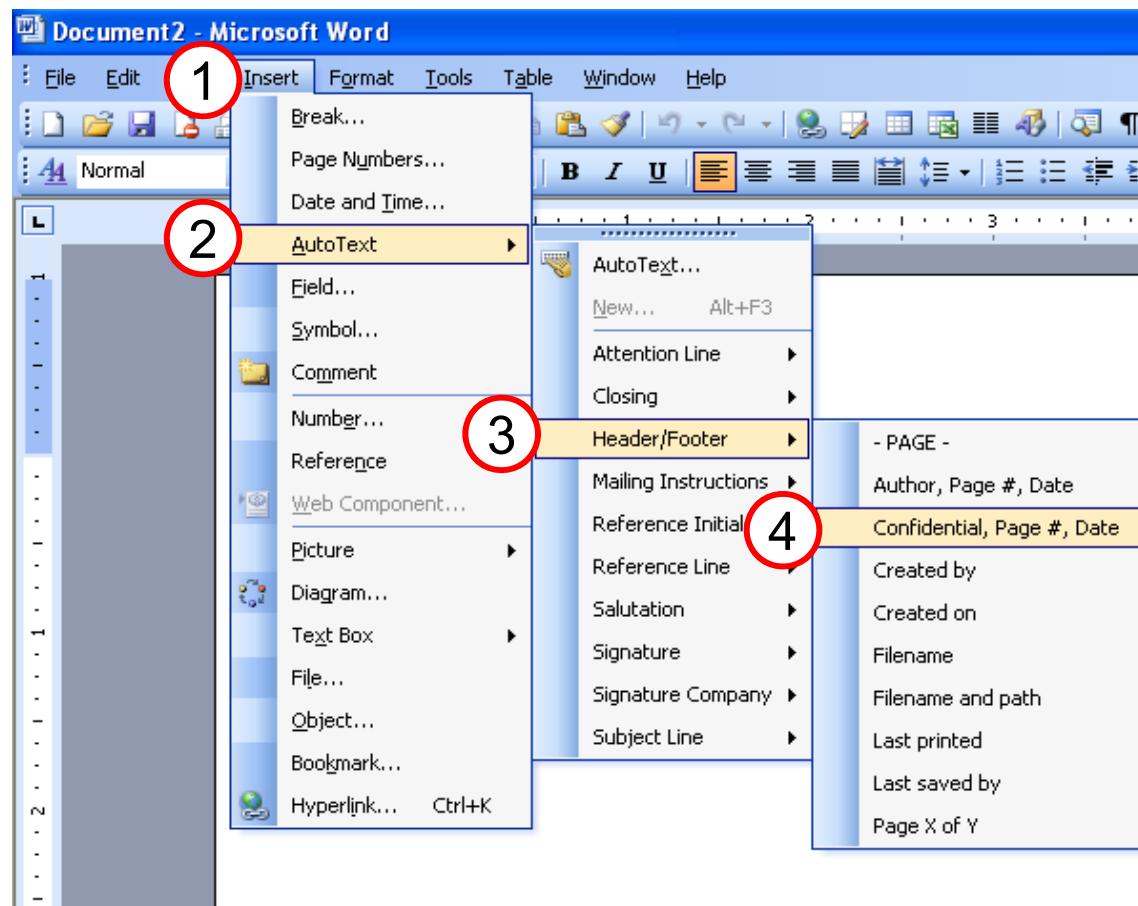
#2 Simultaneous menus

The screenshot shows the Google Chrome settings page (`chrome://settings`) with several menus open simultaneously:

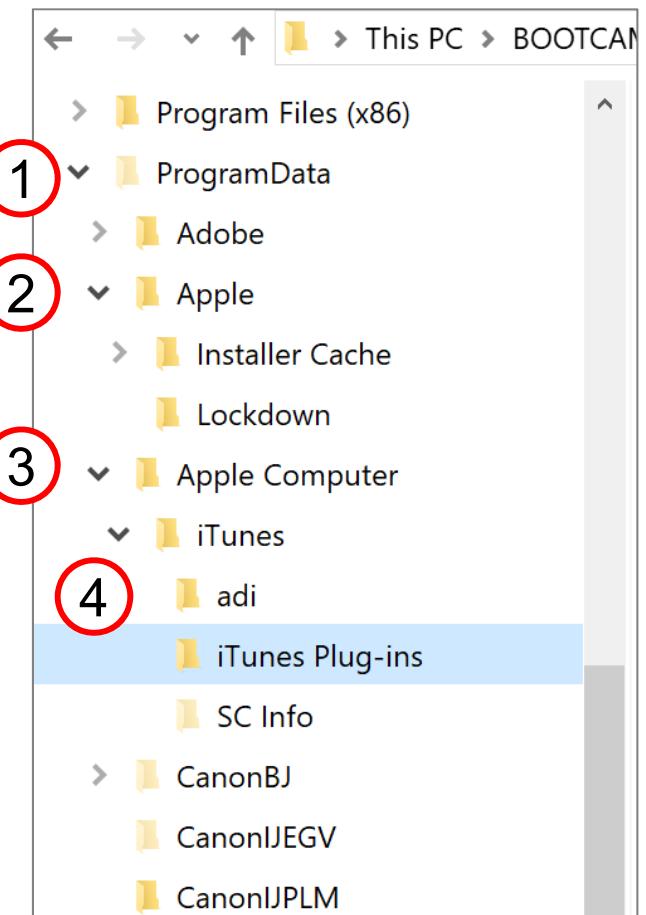
- Top-level menus:** Chrome, Extensions, Settings, About.
- Sign-in section:** Signed in as `philip`, Manage your synced data on [Google Dashboard](#). Buttons: Disconnect your Google Account..., Advanced sync settings... .
- On startup section:** Radio buttons for Open the New Tab page (selected), Continue where you left off, and Open a specific page or set of pages. Set pages.
- Appearance section:** Buttons: Get themes, Reset to default theme. Checkboxes: Show Home button, Always show the bookmarks bar.
- Search section:** Set which search engine is used when searching from the [omnibox](#). Buttons: Google ▾, Manage search engines... .

#3 Tree-structured menus

- Designers can form categories of similar items to create a tree structure



Menu Tree in old MS Word version



#3 Tree-structured menus

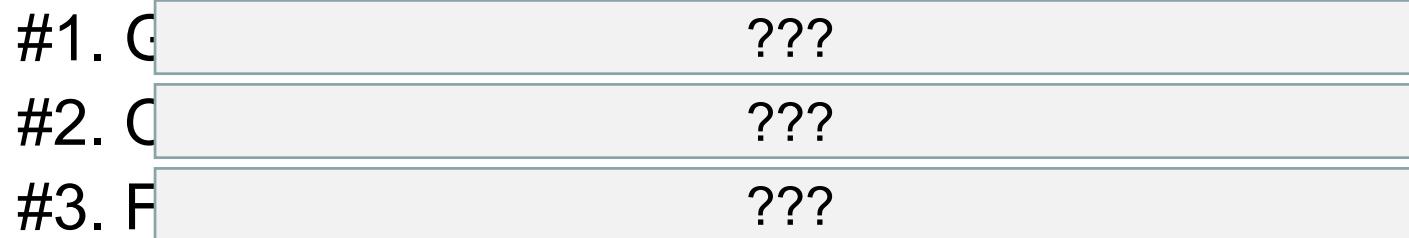
- It is a straightforward UI design for a large number of data/choices in a “hierarchy”
 - Data/choices is organized into categories
 - However...
- Nowadays, many UI designs try to **avoid over two levels**, e.g., office tools, web browser, etc.
 - With too many levels...
 - Hard to navigate;
 - Get lost easily; and
 - Hard to remember the tree structure

Topics:

- Menu Selection
 - Introduction
 - Single Menus
 - Multiple Menus
 - Menu Contents
 - Three basic issues in making a menu!!!
- Data Entry: Form fill in

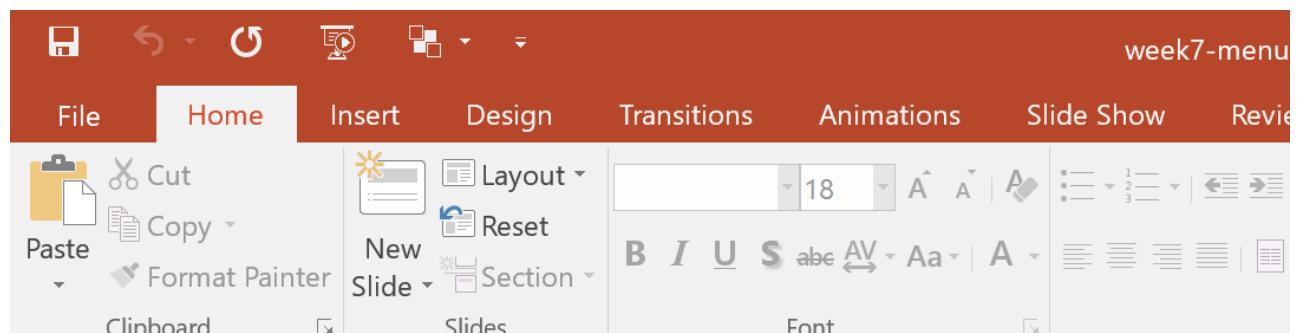
Menu Contents

- Let's say we already have the menu items
- There are three issues for creating the menu:



Recall the Basic Principles in Menu Organization:

- Sensible
- Comprehensible
- Memorable, and
- Convenient



Early User Studies

- 1982-1983, study by Liebelt et al.
- Experiment 1: “**Organization**”
 - 1. Menu constructed with **meaningful** organization
 - 2. Menu constructed in a **disorganized** fashion

RESULT: Users using menu  required **50%** less time to perform selection tasks

- Experiment 2: “**Ordering of Items**”
 - Items placed in menu via
 - 1. **Meaningful** categories
 - 2. **Alphabetical** order
 - 3. **Random** order

RESULT: Users using menu  demonstrated superior performance

#1 Grouping Items in a Menu

- How should we group menu items (choices)?
 - Logical groups – time of day, countries, states, cities
 - Covers all possibilities – alphabets, #s



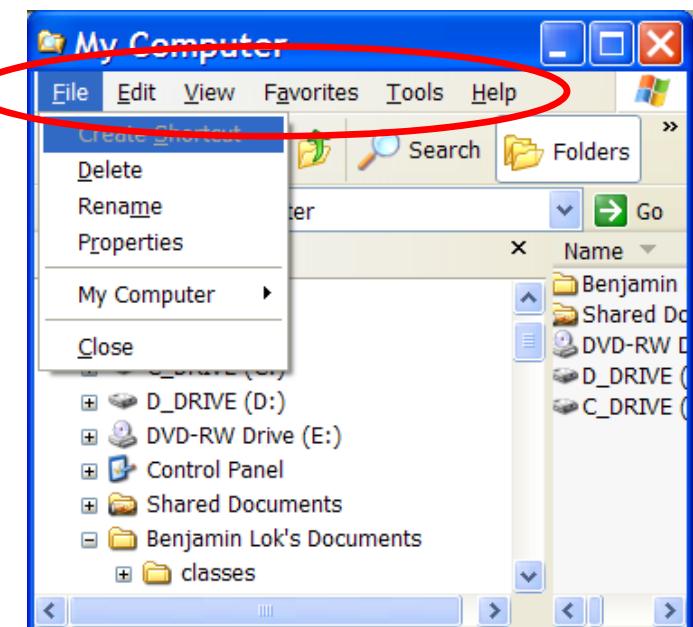
#1 Grouping Items in a Menu

- How should we group menu items (choices)?
 - Logical groups – time of day, countries, states, cities
 - Covers all possibilities – alphabets, #s

Guidelines:

1. Category names should be distinctive & specific!

- Use categories that are unambiguous when grouping choices
- For example:
 - Event vs. Entertainments (ambiguous)
 - Sports vs. Concert (unambiguous)
i.e., without overlap in meaning



#1 Grouping Items in a Menu

2. Use **familiar but distinct terminology**
 - “6 AM to 6 PM” is better than “Daytime” (vague)

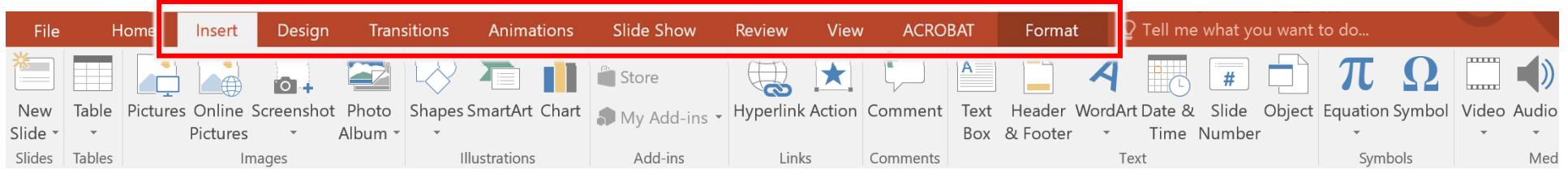
For a medical system, the terminology?

3. Get **real user feedback** after the initial design
 - Do **testing**, especially if you are **designing for a domain** that you are not an expert in.

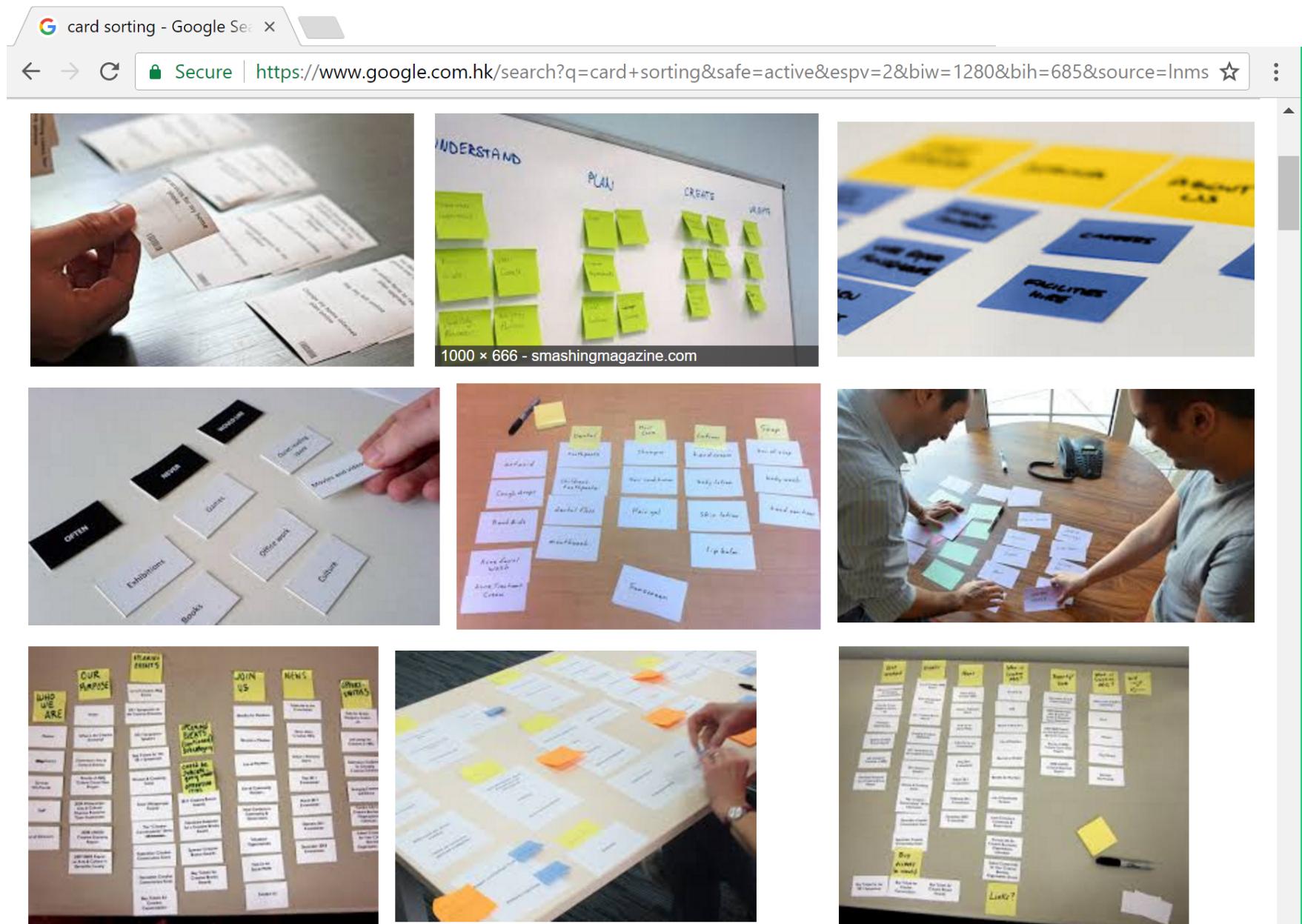
Strategies for grouping menu items:

- Task-oriented grouping
- Card sorting

Which lecture did we see card sorting?



#1 Grouping Items in a Menu



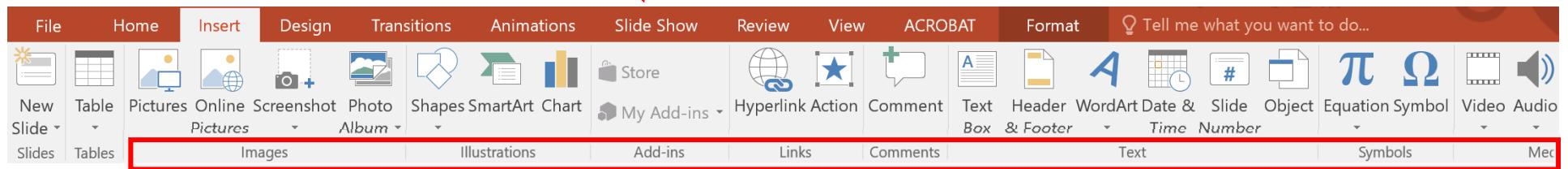
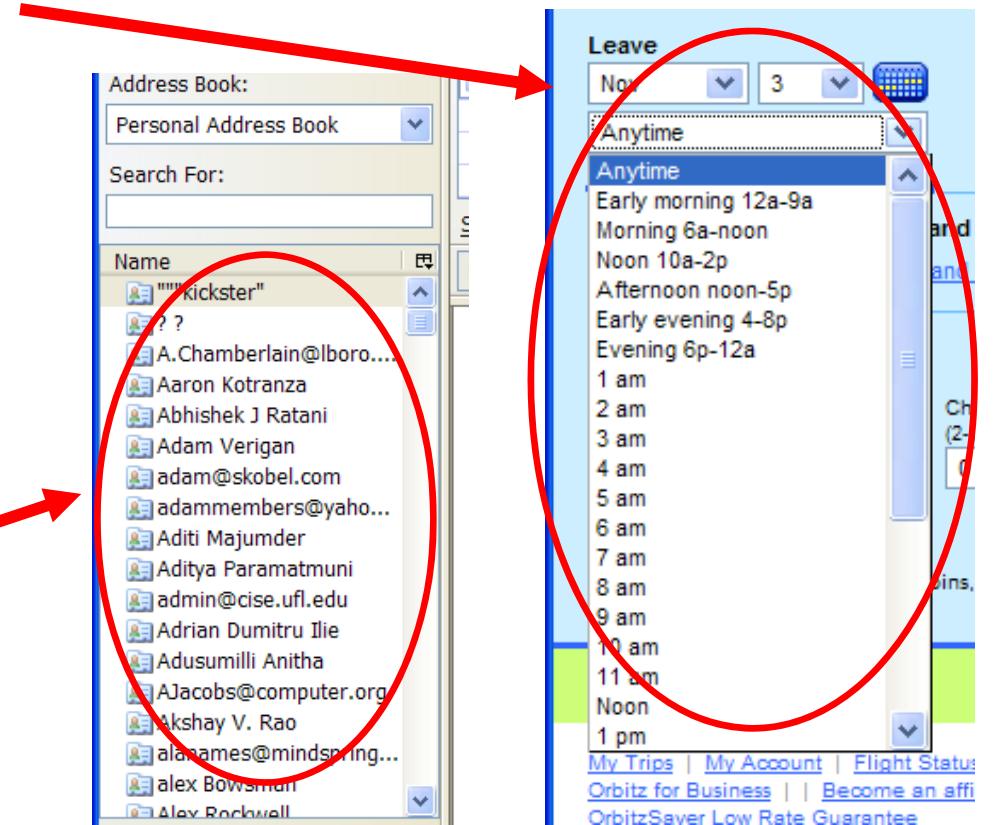
#2 Ordering: Item Presentation Sequence

- Natural methods should be used if they exist

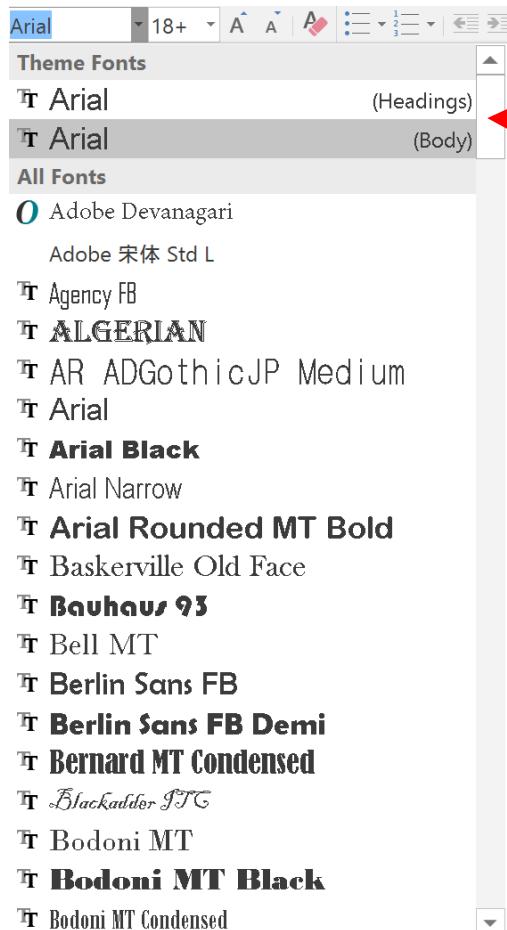
- Time (days of week, etc.)
 - Numeric ordering
 - Physical properties (small, medium, large)

- Otherwise try:

- Alphabetic (e.g., contact list)
 - Grouping of Related Items
 - Can use card sorting
 - Frequent Items First
 - Important Items First

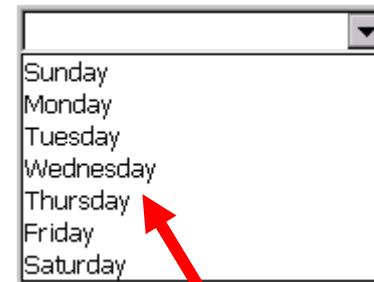


Examples

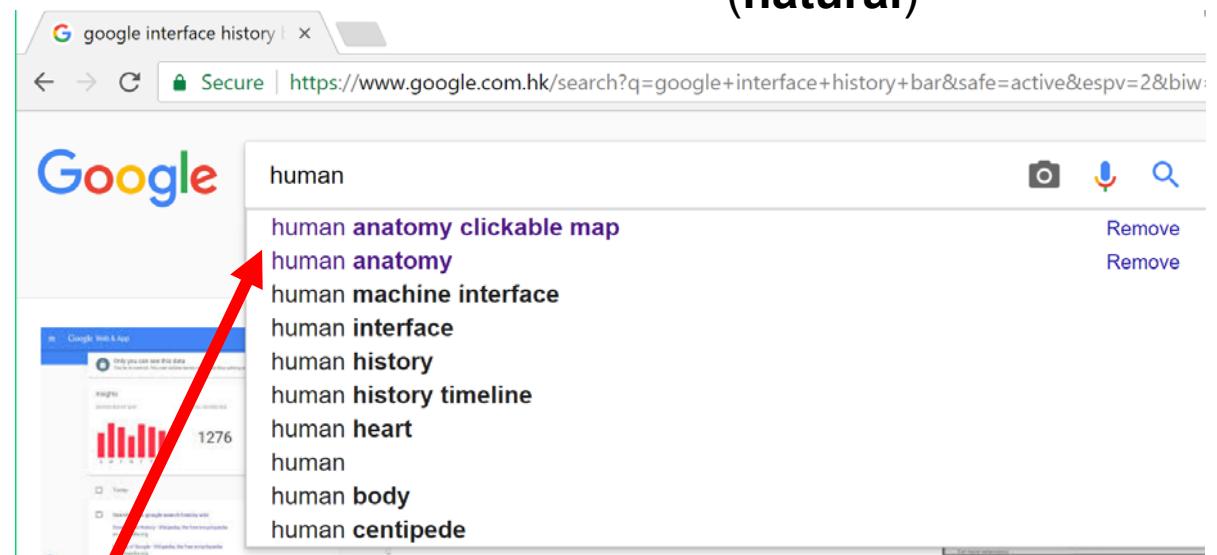


Font names
are alphabetical

Fonts menu show
“theme font” first
Maybe frequent
or important item



Selections ordered
by days of the week
(natural)

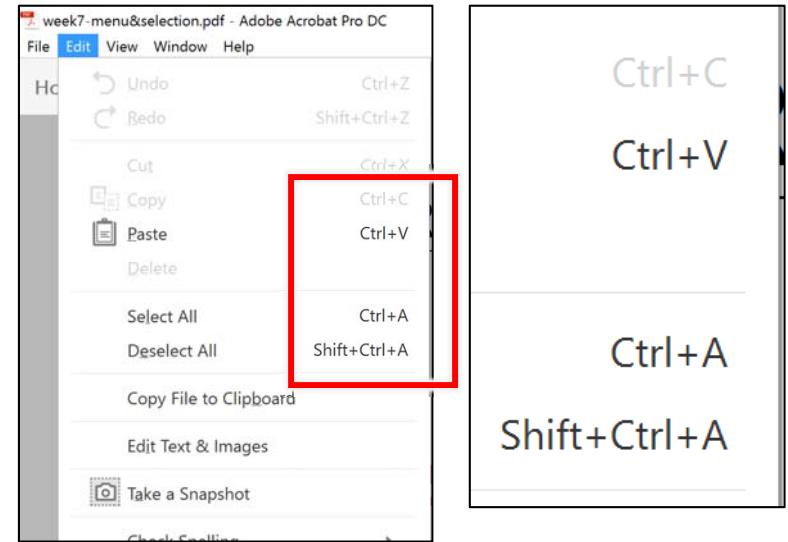


Put first the items that the user has searched before
recently (then the frequency)... Concept: **Adaptive Menu**

#3 Fast Movement through Menus

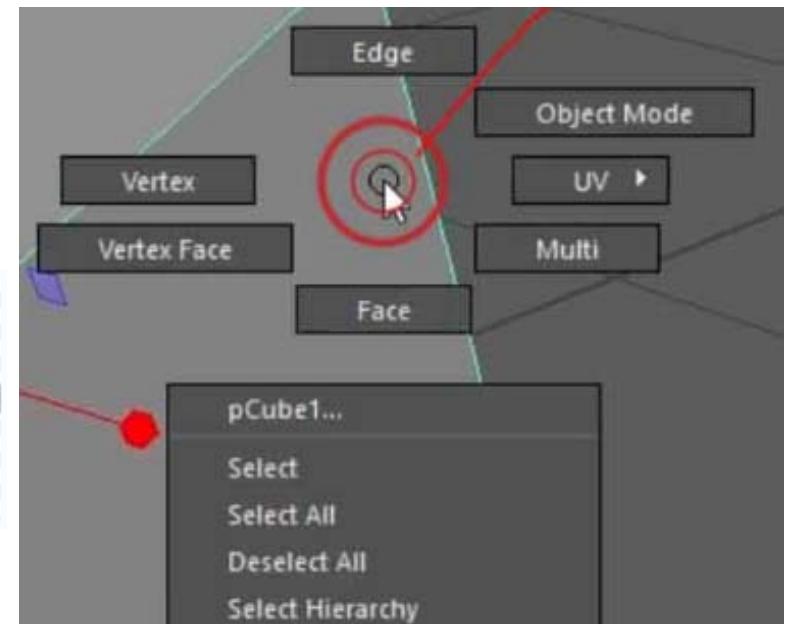
1. Keyboard shortcuts

- Evolution for novices is natural
- Faster vs. hand to mouse, move, and select
- Use clear mnemonic choices



2. Pie and Marking menus

- Mouse ahead by relying on muscle memory to reproduce the angular displacement (once you get used to)



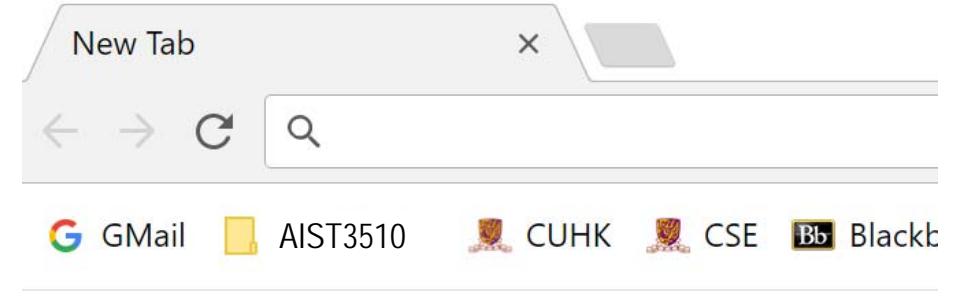
Demo: Marking menus

<https://www.youtube.com/watch?v=dtH9GdFSQaw>

#3 Fast Movement through Menus

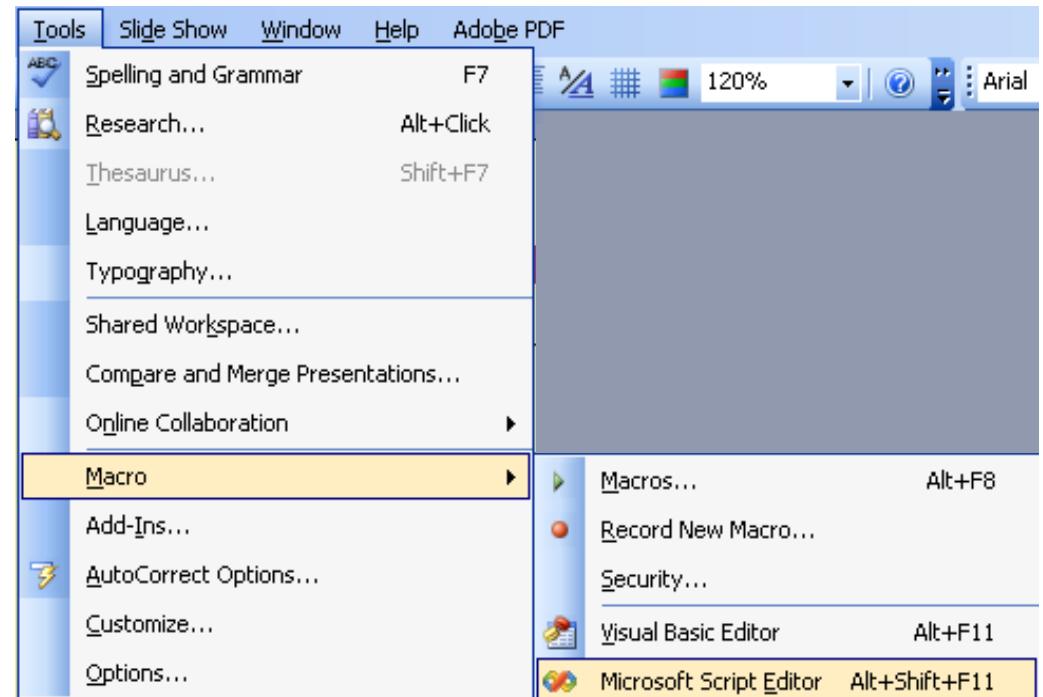
3. Bookmarks

- User can customize
- Could require hierarchies
- E.g., favorites in Internet



4. Menu Macros

- Record actions, and create a new toolbar button
- Style sheets in word processors
- Even programmable



Anything else?

E.g., search for an menu item with “partial word” (autocomplete)

Summary: Menu 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

Topics:

- Menu Selection
 - Introduction
 - Single Menus
 - Multiple Menus
 - Menu Contents
- Data Entry: Form fill in

Data Entry: Menus vs. Form Fill-in

- Everyone has experience in form fill-in, right?

**逾期加/退選科目申請表
LATE COURSE ADD/ DROP FORM**

申請程序：
Application procedures:
①先諮詢有關老師意見 → ②獲老師批准後將申請表交有關學系審批 → ③將已獲學系批准之申請表交所屬學院院長批核後交回註冊及考試組
① Approach course teaching staff for advice → ② Seek endorsement from course offering department after endorsement from course teaching staff → ③ Pass the endorsed application form to Faculty Dean for approval before submitting the form to RES
如在申請程序上遇到任何問題，可直接向註冊及考試組查詢（電郵：ugadmin@cuhk.edu.hk）。
Please approach RES directly for advice (e-mail: ugadmin@cuhk.edu.hk) if you encounter any problems in completing the procedures.

姓名〔英文〕 Name : (in English) _____ 中文〔in Chinese〕 _____ 學號 Student I.D. No. : _____

主修 / 課程 Major / Programme : _____ 課程編碼 (Programme Code: _____)

修業年 Year of Attendance : _____ 預期畢業年份/學期 Expected Year/Term of Graduation: _____ 聯絡電話 Contact Tel. No. : _____

本人擬申請(請在方格內以✓表示)
I wish to apply for (please tick as appropriate)

逾期加選 * Late Add 逾期退選 Late Drop

科目編號 Course Code: _____ 學分 Units: _____ * 1st term 上學期 2018-19
Course Title: _____ 授課老師 Course Teaching Staff's Name: _____ 2nd term 下學期 2018-19

逾期加選/退選原因 Reason for late add / drop: _____

學生簽署 Signature of Student : _____ 日期 Date : _____

Data Entry: Menus vs. Form Fill-in

- Menus usually choose from a list
- But some tasks (**data entry**) are better via other input forms, e.g., keyboard
- Form Fill-in
 - Standard interface for complex searches, e.g., the web

Edit your address

Full Name: Benjamin Lok

Address Line 1: 4000 NW 51st St. Apt. D75

Address Line 2:

City: Gainesville

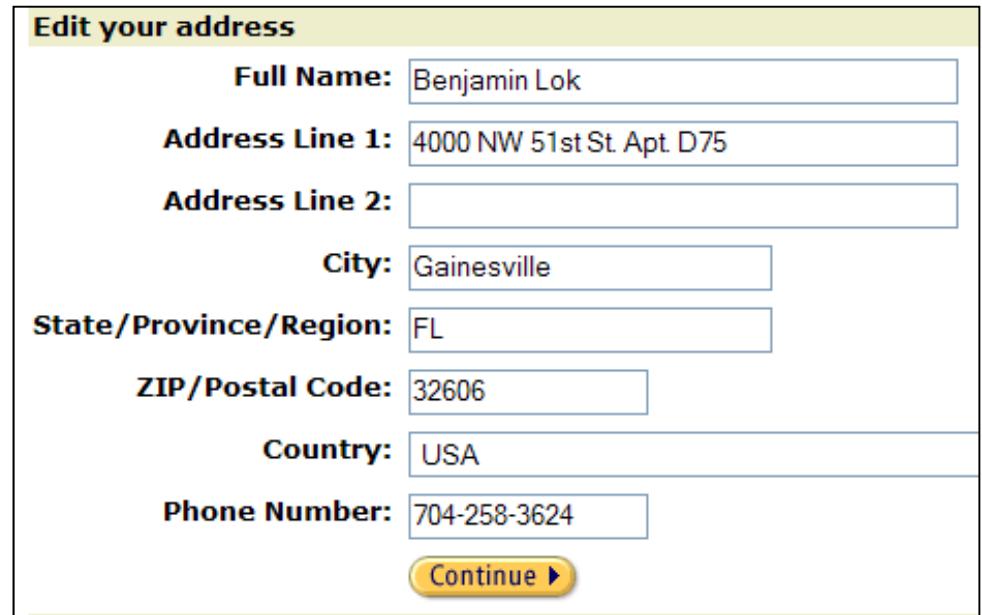
State/Province/Region: FL

ZIP/Postal Code: 32606

Country: USA

Phone Number: 704-258-3624

Continue ▶



Data Entry with Form Fill-in

Form Fill-in

- Appropriate when many fields of data must be entered:
 - Full information is visible to user
 - Resembles familiar paper forms
 - Almost no syntax required to remember

- **Useful Strategies:**

- (1) For performance:**

- Use of TAB key or mouse for fast cursor movement
 - Use of the ENTER and/or RETURN key

- (2) For reducing errors:**

- Error prevention, e.g., cannot enter –ve number for age
 - Error correction on the user inputs, e.g., auto-correction
 - Field-label meanings must be specific (unambiguous)
 - Use menu selection, whenever possible (e.g., date)

Edit your address	
Full Name:	Benjamin Lok
Address Line 1:	4000 NW 51st St. Apt. D75
Address Line 2:	
City:	Gainesville
State/Province/Region:	FL
ZIP/Postal Code:	32606
Country:	USA
Phone Number:	704-258-3624

Field Format

- **Format-specific field, should provide some indications!**
Hence, clear and avoid errors; and user no need to remember syntax

- **Coded fields**

- Telephone numbers

(___) - ___ - ___ or ___ - ___ - ___
- - - - -

- Student ID, HKID, ...

- Dates

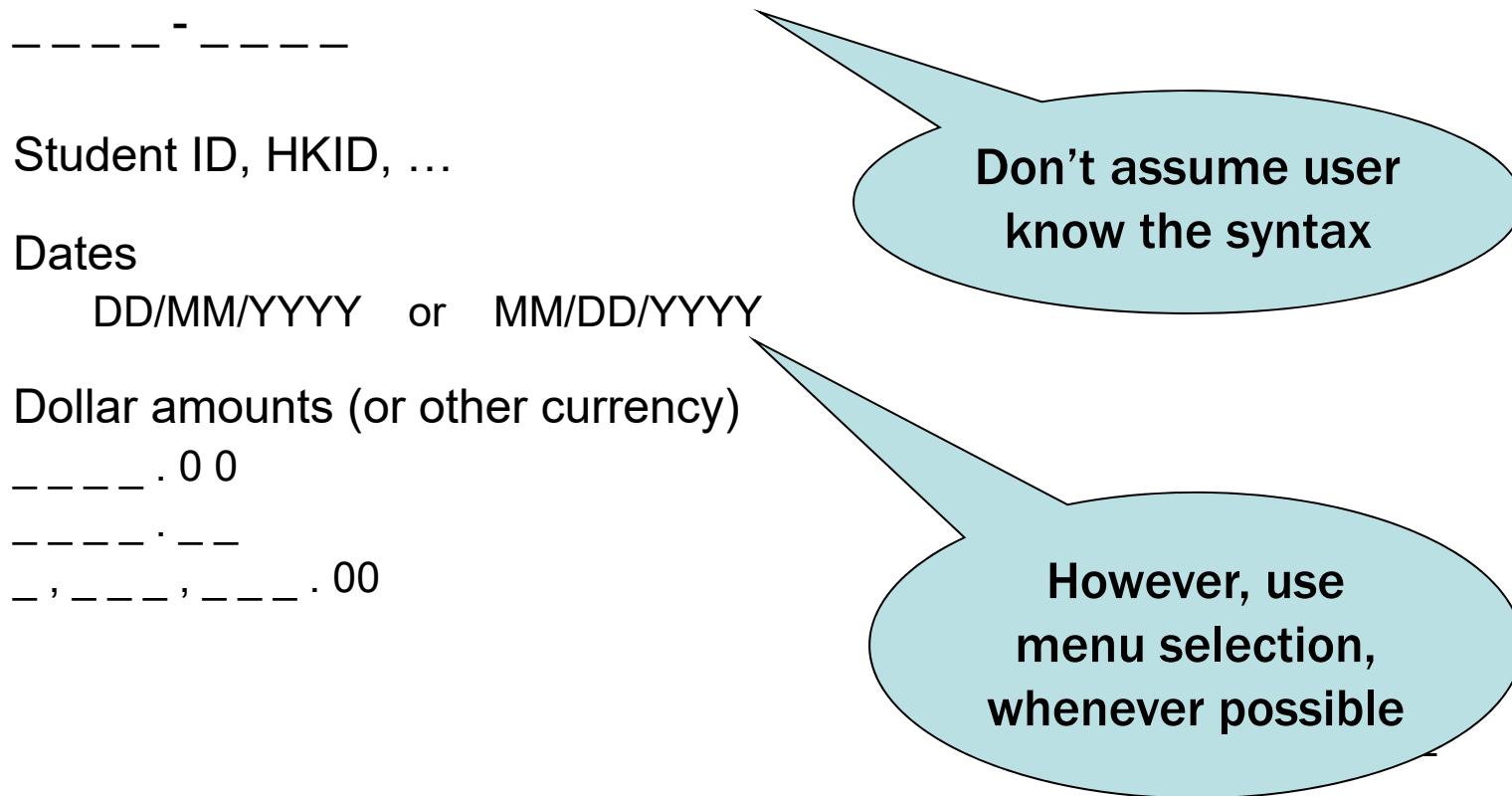
DD/MM/YYYY or MM/DD/YYYY

- Dollar amounts (or other currency)

___ . 0 0

___ . ___

___ , ___ , ___ . 0 0



Don't assume user
know the syntax

However, use
menu selection,
whenever possible

Fill-in Guidelines

Form Fill-in Design Guidelines

- Logical grouping and sequencing of fields
 - Related fields should go together, e.g., name and address
- Familiar field labels
 - Don't use unfamiliar terms or terms from other culture, e.g., flat vs. apartment, and restroom vs. toilet
- Consistent terminology and abbreviations
 - Don't mix abbreviations, e.g., ADDR and Addr
- Visible space and boundary for each data-entry field
- Error messages for unacceptable values
- Optional / Required fields should be clearly marked
 - Common these days for web-forms
- Explanatory messages for fields
 - If possible, show examples field values

Bad Example

Apartmental Location Service Form

Please fill in the information belw and we'll help you find the apartment of your dreams.

Name:

Current Address (street, city, state, zip) :

Email:

Phone (with area code):

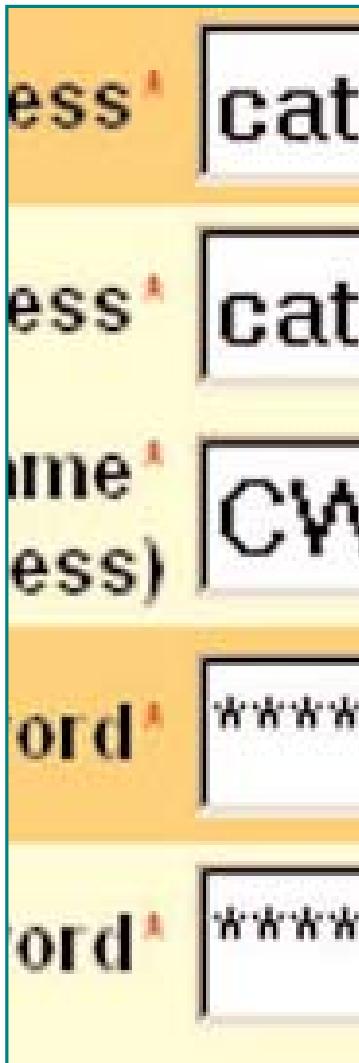
When do you want to move in ?

Any problem in the above form?

- Address fill-in is not very clear... one row per item?
- What is the phone number format?
- Last question is unclear, maybe a date, or time of day? Or both?
- If so, what is the date format? Time format?

Good example

Required
fields
marked
with “ * ”



Alamo.com Membership Enrollment Form

Login and Password * Required Fields

Title	<input type="text" value="Mrs."/>
First Name*	<input type="text" value="Catherine"/>
Middle Initial	<input type="text" value="F"/>
Last Name*	<input type="text" value="Smith"/>
Suffix	<input type="text" value="None"/>
Email Address*	<input type="text" value="catherine@email.com"/>
Confirm Email Address*	<input type="text" value="catherine@email.com"/>
Create a Login Name (or use email address)	<input type="text" value="CW"/>
Create a Password*	<input type="text" value="*****"/> Min. 6 characters and must contain at least one number
Confirm Password*	<input type="text" value="*****"/>

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?*

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
(The number begins with an 'F')

For Efficiency in Form Fill-in

Search → Select → Review → Passengers → Payment → Confirmation

Enter Passenger Details

Travelling Party

The person paying is travelling on this booking: Yes No

Passenger 1

Personal Information - * indicates required field

Title* First/Given Name (as in passport) Last/Family Name* (as in passport)

Mr

This passenger will be at least 18 years old on the day of travel.

Contact Information - The travelling party's info is required in case of flight schedule changes.

Contact Phone* Phone Type*

Japan 81 Mobile phone Please provide your mobile number to receive a SMS alert in the event of flight disruptions

Country Name Country Code* Area Code Phone Number*

Passport Information (Optional) - All travellers are required to have a valid passport for travel. Please provide your passport details to speed up your check-in time. You may also update this info after completing your booking.

Passport Number Nationality (as in passport) Gender Date of Birth

Select Nationality (as in pas Male Female

Frequent Flyer Programme Frequent Flyer Number

Select

On previous page:

- Continue as a KrisFlyer Member

KrisFlyer Number

6-Digit PIN

Login 

As a KrisFlyer Member you benefit from : - Faster Booking as your details will be a
- Waiver of the Credit Card Check for ce

- **Use Default values or give explanation**
- **Tab key to go to next entry**
- **Fetch user records from Database, whenever possible**

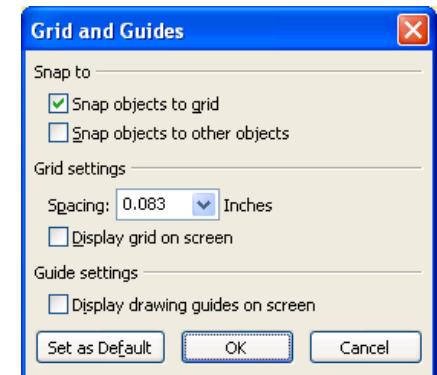
Summary

- Menus
 - Lots of considerations in menu design
 - Several different styles of menus
 - Menu design definitely affects performance
 - Several guidelines have been established
 - Some with “direct manipulation” style
- Form-fill in
 - Several guidelines for organizing data and form fill in

Note: optional material (next pages) not in exams

Optional #1: Dialog Boxes

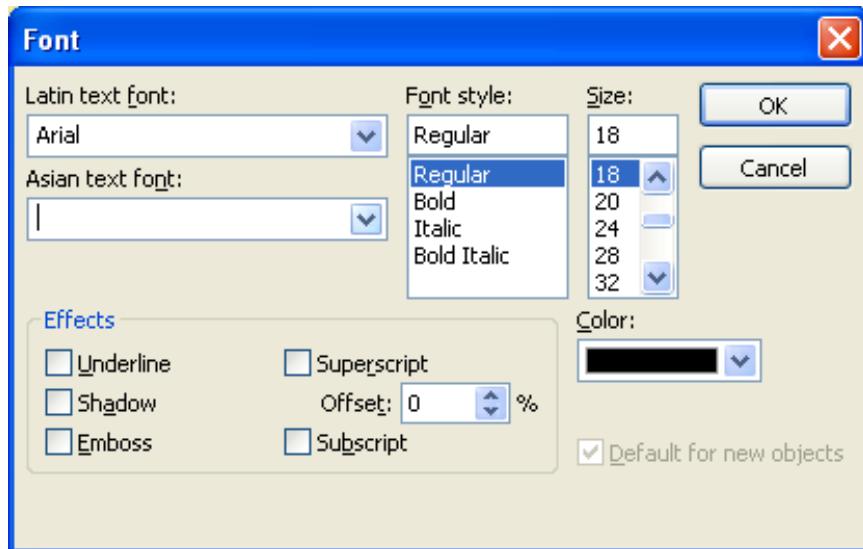
- **Dialog Boxes**
 - Combination of menu and form fill-in techniques
 - Good for important tasks (but interrupt to request user selection) or events where limited data is needed
 - Internal layout guidelines:
 - Meaningful title, consistent style
 - Top-left to bottom-right sequencing
 - Clustering and emphasis
 - Related items within a box or separated by Horizontal/Vertical rules; emphasis can be added by color, font size/style
 - Consistent layouts (margins, grid, white space, lines, boxes)
 - Consistent terminology, fonts, capitalization, justification
 - Standard buttons (OK, Cancel)
 - Keep button text short, simple, and clear
 - Error prevention by direct manipulation



Optional #1: Dialog Boxes

- **Dialog Boxes (cont.)**
 - External Relationship
 - 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

Dialog Box Examples



Good example



Example of Bad Dialog



Useless dialog box?

Interesting Example: IE .exe file security



Original Version

- To an inexperienced user, what does this mean?
- If the file is harmful, why would you save it?
- Is saving it better than running it?

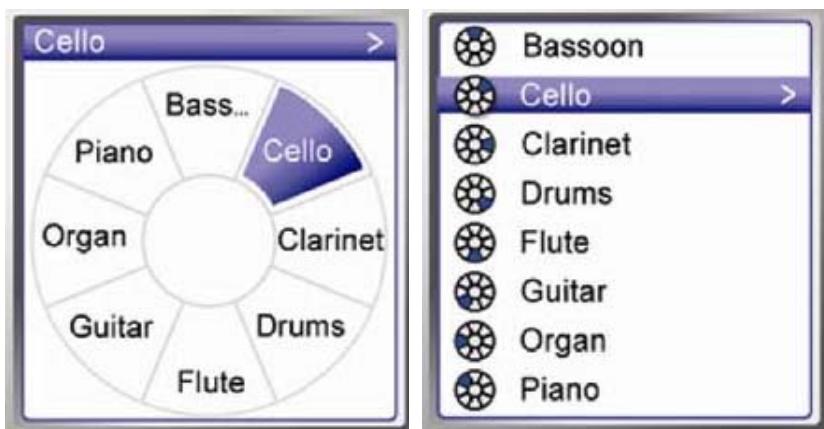


Updated Version

Doesn't ask at "save" time, but asks you after it is saved whether you really want to run it or not.

Optional #2: Audio Menus

- List of options and instructions are spoken to the users
- Audio menu systems are useful when hands and eyes are busy and are important for blind or visual-impaired users
- **Audio menus**
 - Verbal prompts and option descriptions
 - Input is normally verbal or keypad (e.g., telephone services)
 - Not persistent, like a visual display, so memorization is required.
 - A way to repeat the options and an exit mechanism
 - Complex menu structures should be avoided
 - Provide confirmation/feedback to users



Audio Menus for iPods

Researchers are testing ways to let people listen to gadget menu options instead of looking at them.

Any alternative?
AI solution: Chatbot!!!

<https://www.technologyreview.com/s/407876/audio-menus-for-ipods/>