

UI Foibles

What when wrong?

Outline

- Four characteristics of a good user interface:
 - Consistency
 - Use of hierarchy and grouping
 - Explicitly shows states and state changes
 - Avoids overload

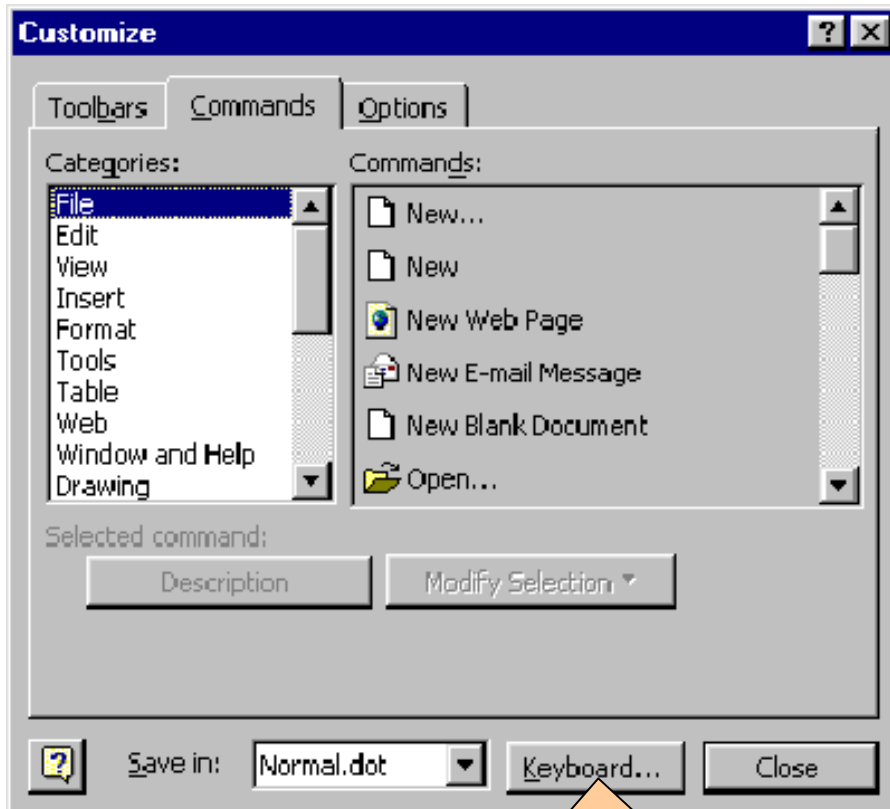


Consistency

- Interface components and layout should be consistent within and across applications
- Consistency refers to...
 1. Presence of features
 2. Location of features
 3. Appearance of features (widgets, text, icons)
 4. Interaction with features

Presence/Absence of Features - 1

Word:



Customize keyboard

Power Point:

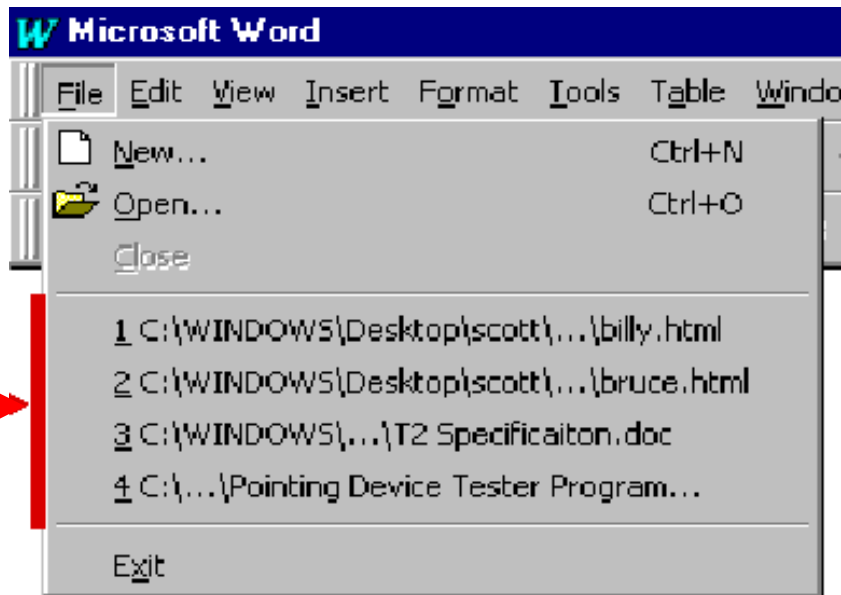


Can't customize keyboard



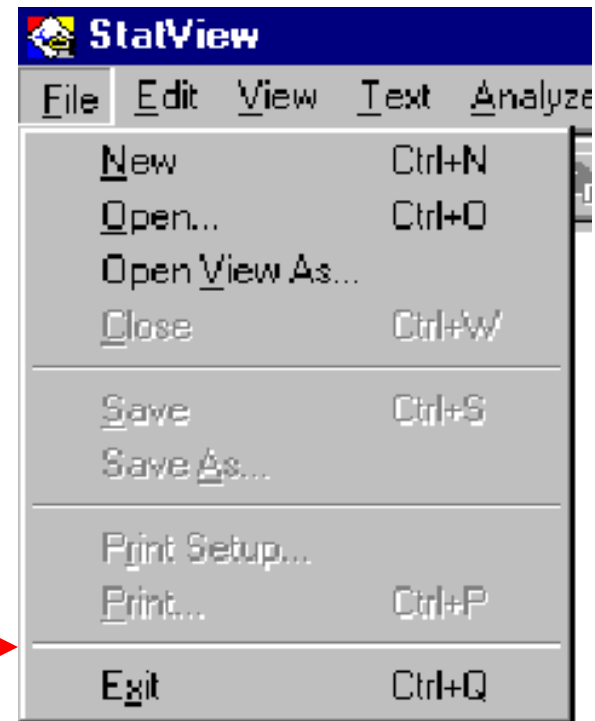
Presence/Absence of Features - 2

Word



Recently used
file list

StatView

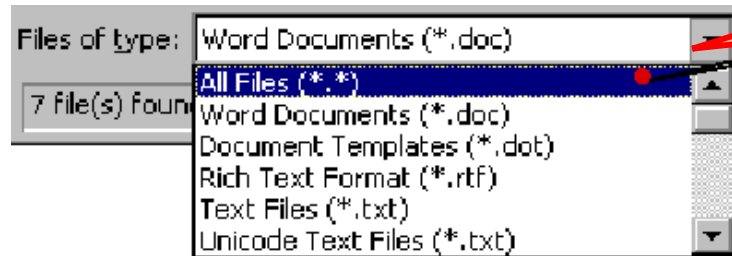


Not available



Location of Features - 1

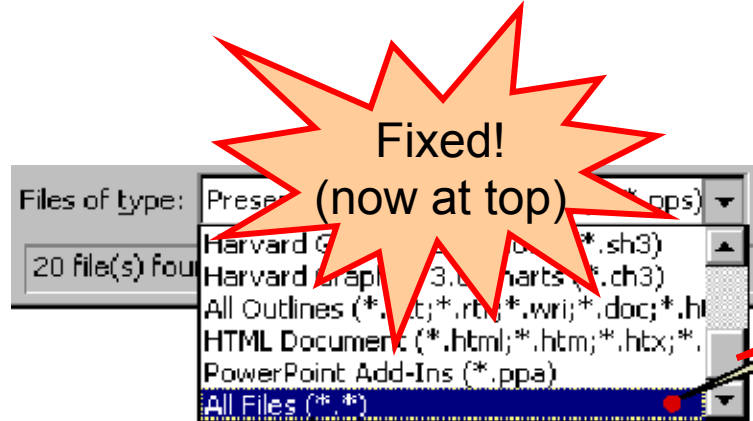
Word:



Top of list

“All files” option in different locations

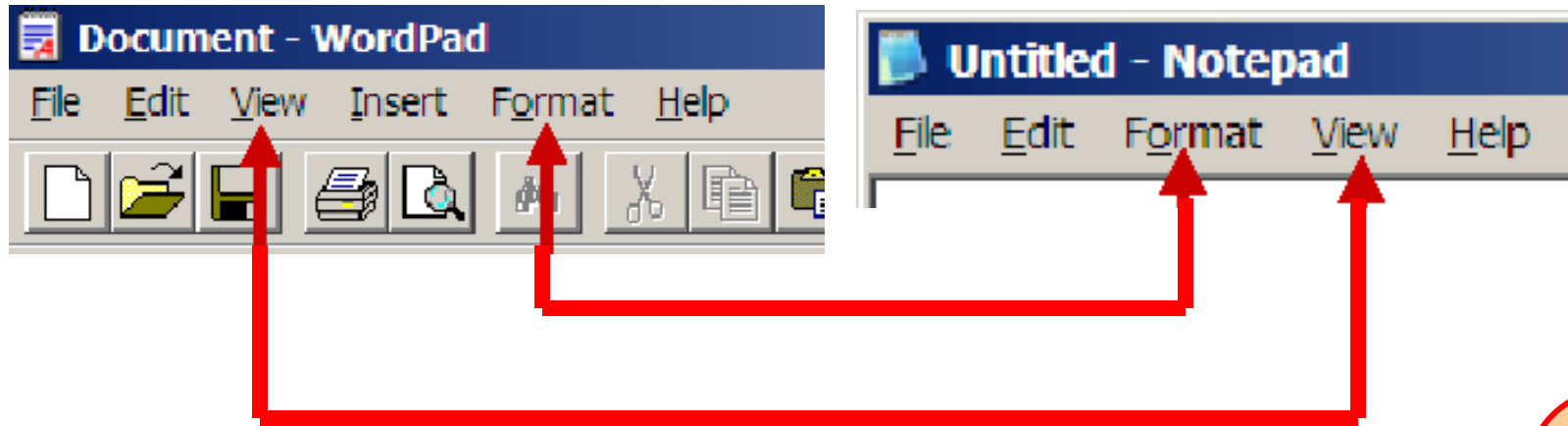
Power Point:



Bottom of list



Location of Features - 2

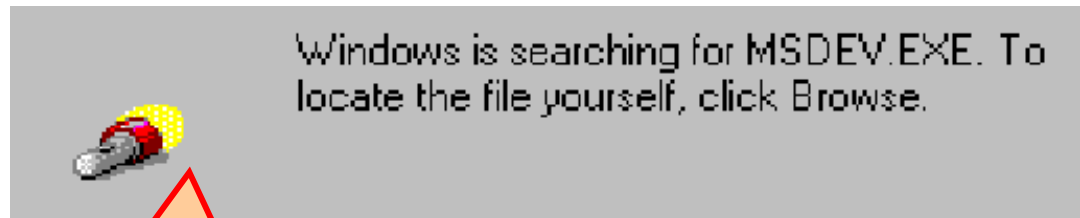


View and Format menus in different locations



Appearance of Features - 1

Windows:



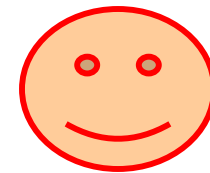
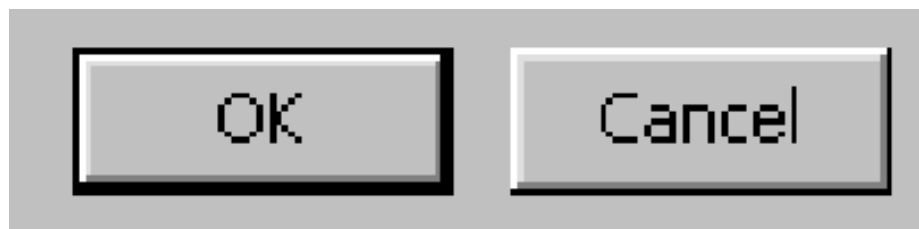
Windows is searching for a file

Windows is searching for a file



Appearance of Features - 2

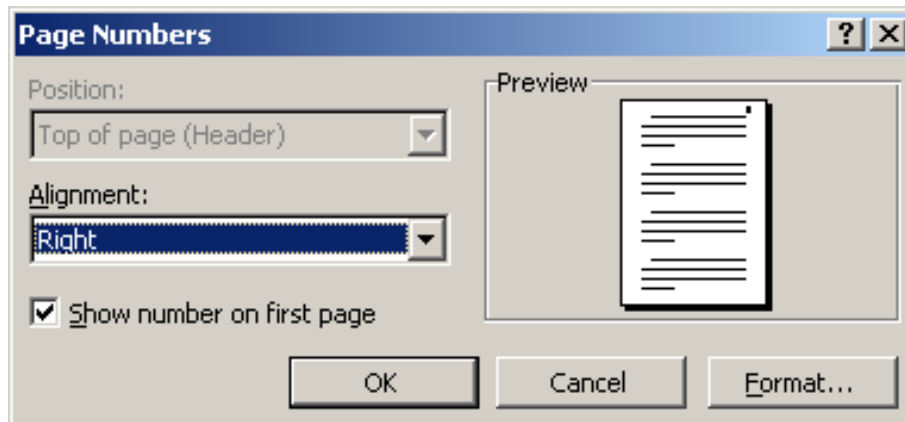
- Consistent (i.e., same) size within a group is aesthetically pleasing



Interaction with Features - 1

Insert Page Numbers

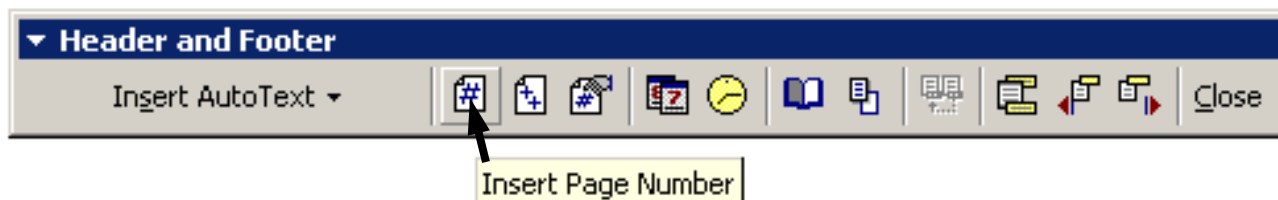
Word: From INSERT menu:



Two ways to insert page numbers!
Are they the same?



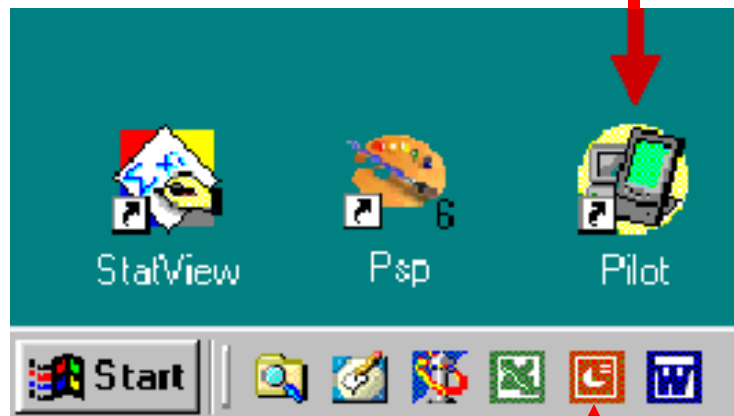
From VIEW menu:



Interaction with Features - 2

Launch application

Application on the desktop:
launch by **double click**



Application on the toolbar:
launch by **single click**

Single Click or Double Click?



Eudora

Go to link with **Double click**

Consent Forms:

While consent forms that adhere to the TD3 checklist ([link](#)) are acceptable, the sample form provided by FGS ([link](#)) is preferred from a legal standpoint.



MS Word

Go to link with **Single click**

- ❑ COSC 5910 M: Software Foundations ([W05](#) | [W06](#))
- ❑ COSC 6390C: Advanced Human-Computer Interaction ([W04](#))
- ❑ COSC 4441: Human-Computer Interaction ([F04](#) | [W06](#))
- ❑ COSC 3461: User Interfaces ([F01](#) | [W02](#) | [F03](#) | [F04](#) | [F05](#) | [F06](#))
- ❑ COSC 1020: Introduction to Computer Science I ([F00](#) | [W04](#))
- ❑ ITEC 1011: Introduction to Information Technologies ([W01](#))
- ❑ ITEC 1010: Information and Organizations ([W00](#))

Interaction with Features - 3

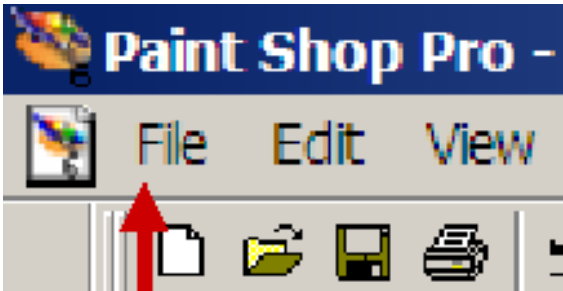
Print from alternate tray

The image displays three overlapping Windows dialog boxes related to printing an HP LaserJet 4M printer. The top-left box is the main 'Print' dialog, showing printer details and a 'Properties' button. The top-right box is the 'HP LaserJet 4M Document Properties' dialog, with the 'Paper/Quality' tab selected, showing 'Tray Selection' set to 'Lower Paper Tray'. The bottom-center box is a secondary 'Print' dialog with various options, including 'Default tray' set to 'Upper Paper Tray'. Red arrows indicate the flow from the main 'Print' dialog to the 'Properties' button, then to the 'Document Properties' dialog, and finally to the 'Options...' button in the main dialog. A red sad face icon is positioned in the bottom right corner.

Interaction with Features - 4



Keyboard mnemonics (underline) always visible



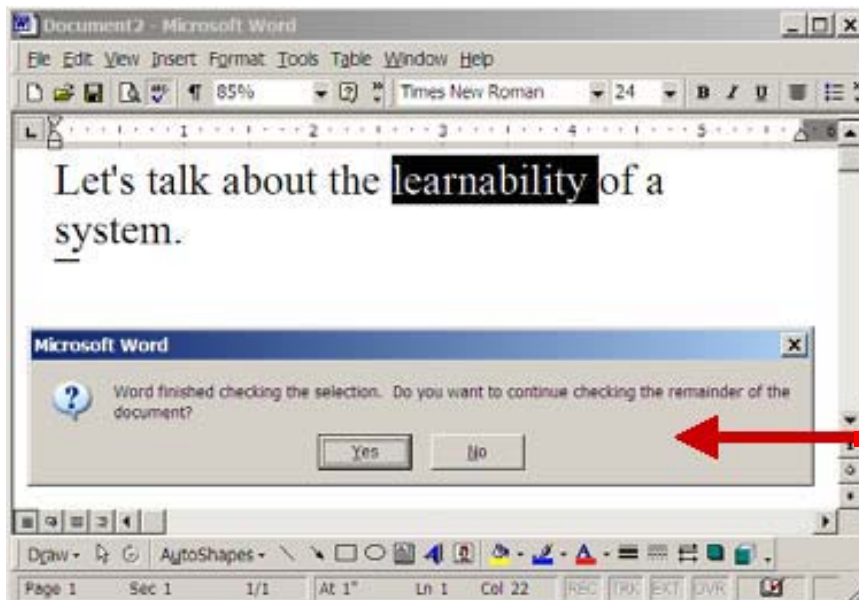
Keyboard mnemonics (underline) hidden until ALT key is pressed



Note: There is a system parameter to control this, but it does not work on all applications.

Interaction with Features - 5

Task: Spell check a single word



A dialog asks if you wish to spell check the rest of the document

MS Power Point – No dialog! Just continues checking the rest of the document

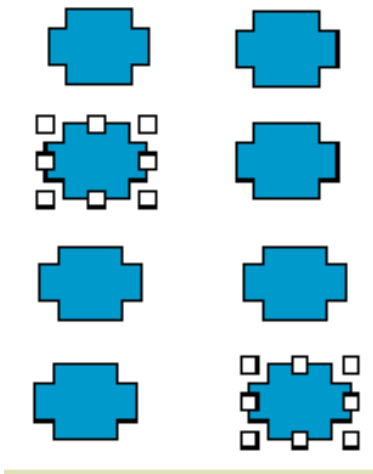
Interaction with Features - 6

- When closing an application, should we be asked...
 - Save changes?
 - Discard changes?
- If you are in a bit of a hurry, you might answer “yes” before carefully reading the dialog
- (This example is in Cooper, page14)

Interaction with Features - 7

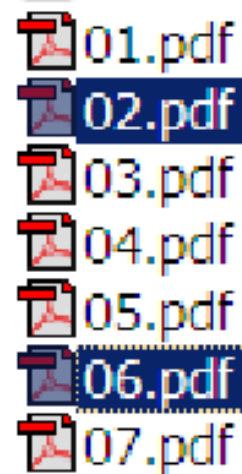
Task: Select two objects

MS Power Point:



Shift "click"

Windows Explorer

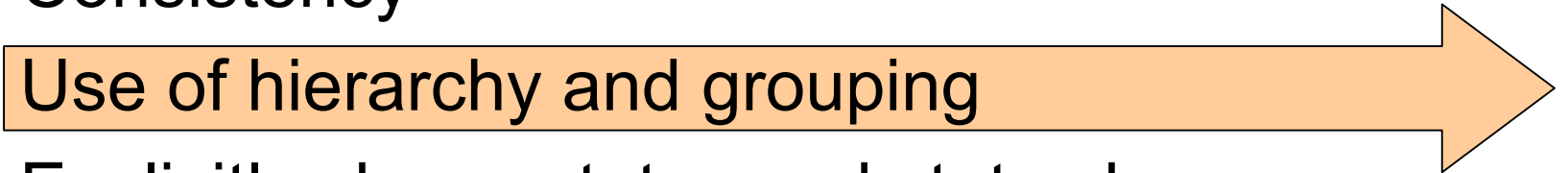


Control "click"



Outline

- Four characteristics of a good user interface:
 - Consistency
 - Use of hierarchy and grouping
 - Explicitly shows states and state changes
 - Avoids overload



Hierarchy and Grouping

- Make relationships obvious
- Provide “headings” to categorize groups of related items
- Use
 - Horizontal separators
 - Borders
 - Labeled borders
 - Alignment

ICQ:

Online” and “Offline”
entries are indented.

Hierarchy is
ambiguous



CBC Television Guide:

Keyword Search : 'sports'
Friday 12 / 4 / 2002

05:30 06:00 Sports Journal	CBCNEWSWORLD
06:00 10:00 Newsworld Morning	CBCNEWSWORLD
19:30 20:00 Mansbridge One on One	CBCNEWSWORLD

Saturday 13 / 4 / 2002

08:30 09:00 Sports Journal	CBCNEWSWORLD
12:30 13:00 Sports Journal	CBCTELEVISION
16:30 17:00 Mansbridge One on One	CBCNEWSWORLD

Sunday 14 / 4 / 2002

07:30 08:00 Sports Journal	CBCNEWSWORLD
09:30 10:00 Mansbridge One on One	CBCNEWSWORLD
15:30 16:00 Mansbridge One on One	CBCNEWSWORLD



Keyword Search : 'sports'
Friday 12 / 4 / 2002

05:30 06:00 Sports Journal	CBCNEWSWORLD
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Sunday 14 / 4 / 2002


07:30 08:00 Sports Journal	CBCNEWSWORLD
09:30 10:00 Mansbridge One on One	CBCNEWSWORLD
15:30 16:00 Mansbridge One on One	CBCNEWSWORLD





Or...

Keyword Search : 'sports'

Friday 12 / 4 / 2002

05:30 06:00 Sports Journal  CBCNEWSWORLD


06:00 10:00 Newsworld Morning  CBCNEWSWORLD

19:30 20:00 Mansbridge One on One  CBCNEWSWORLD


Saturday 13 / 4 / 2002


08:30 09:00 Sports Journal  CBCNEWSWORLD


12:30 13:00 Sports Journal  CBCtelevision

16:30 17:00 Mansbridge One on One  CBCNEWSWORLD

Sunday 14 / 4 / 2002

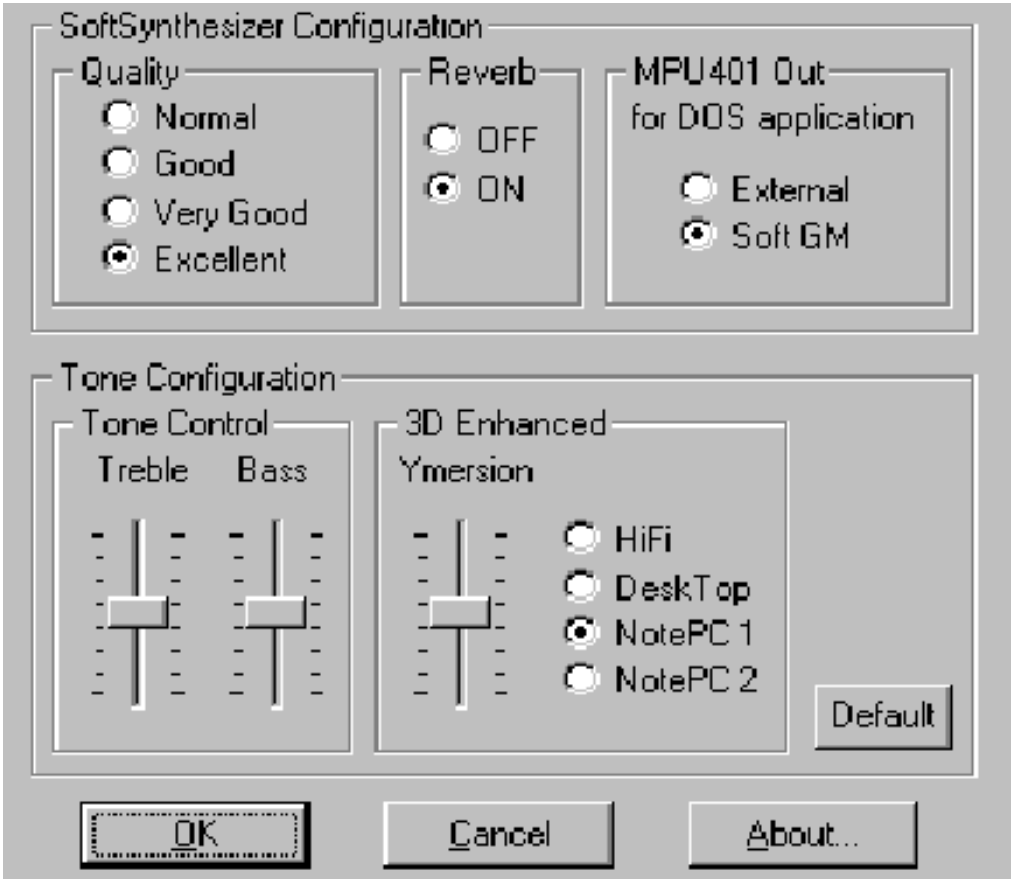
07:30 08:00 Sports Journal  CBCNEWSWORLD

09:30 10:00 Mansbridge One on One  CBCNEWSWORLD

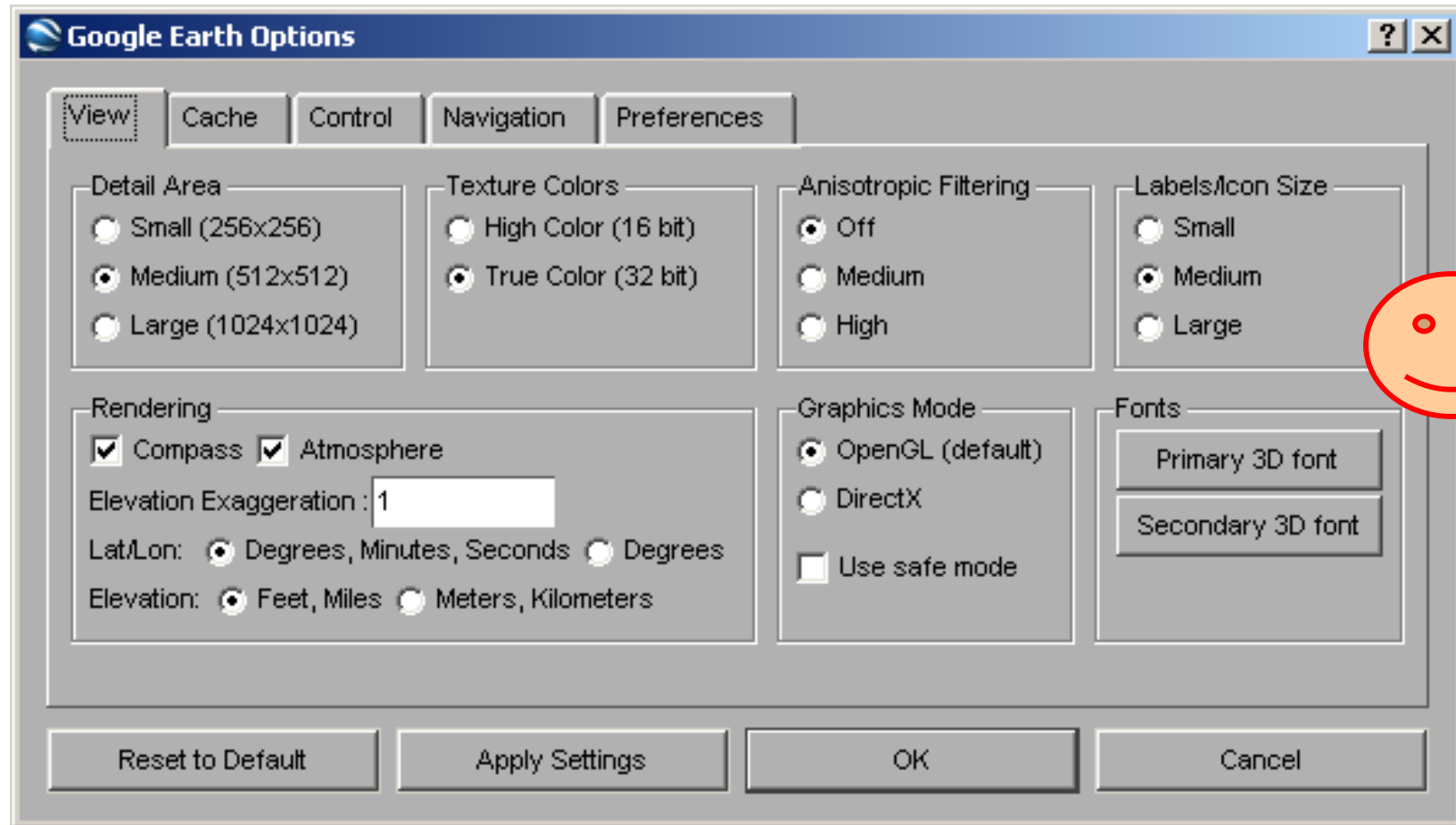
15:30 16:00 Mansbridge One on One  CBCNEWSWORLD

Yamaha OPL Sound Driver:

Good sense of hierarchy and groupings via labeled borders



Google Earth:



Outline

- Four characteristics of a good user interface:
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 - Explicitly shows states and state changes
 - Avoids overload

States and State Changes

- The user must
 - Know the state of the system at all times
 - Be informed of state changes

Caps Lock State

If would be nice if Caps Lock were indicated!



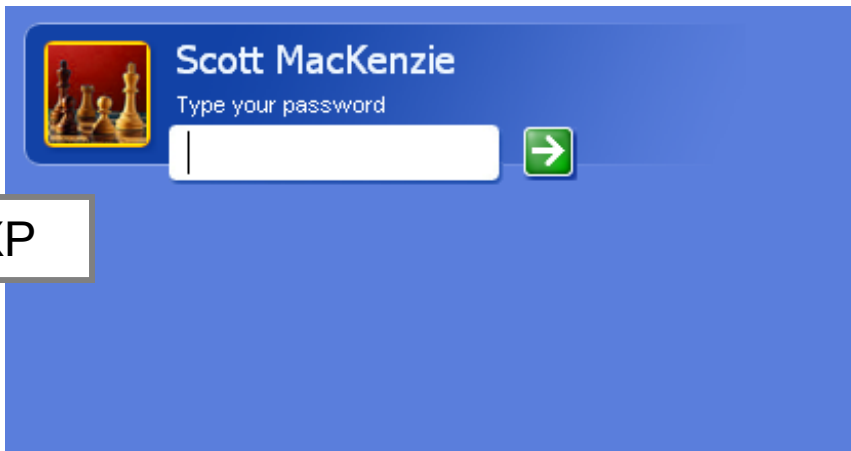
What if Caps Lock is on?

Caps Lock State (2)

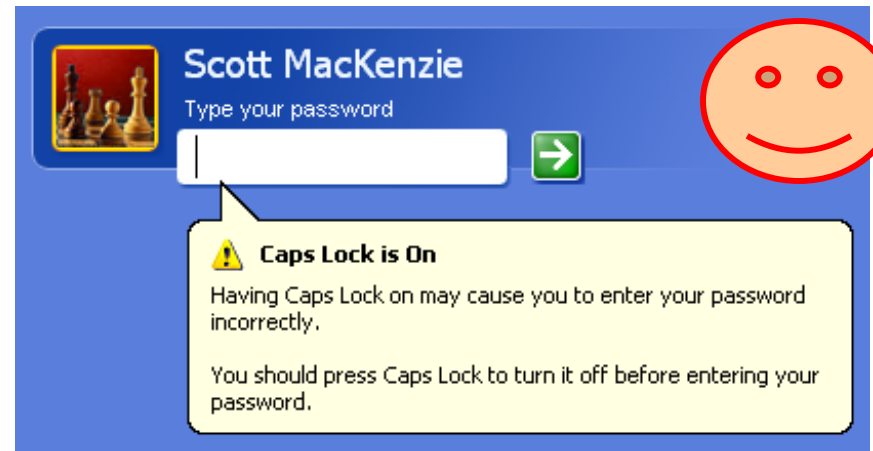

Caps Lock off

Caps Lock on



XP



Scott MacKenzie
Type your password

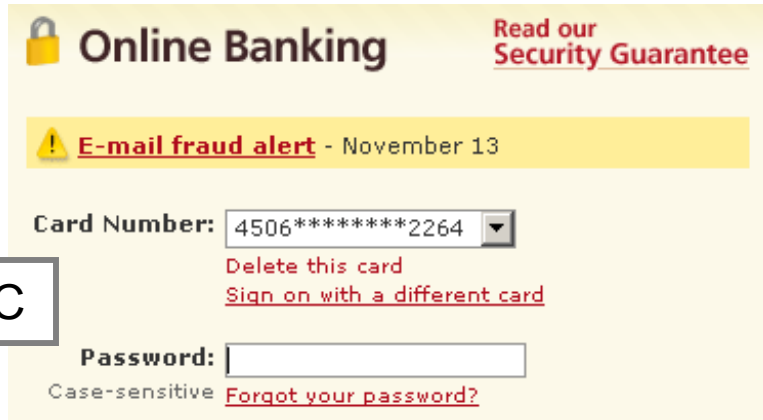



Scott MacKenzie
Type your password




⚠ Caps Lock is On
Having Caps Lock on may cause you to enter your password incorrectly.
You should press Caps Lock to turn it off before entering your password.

CIBC

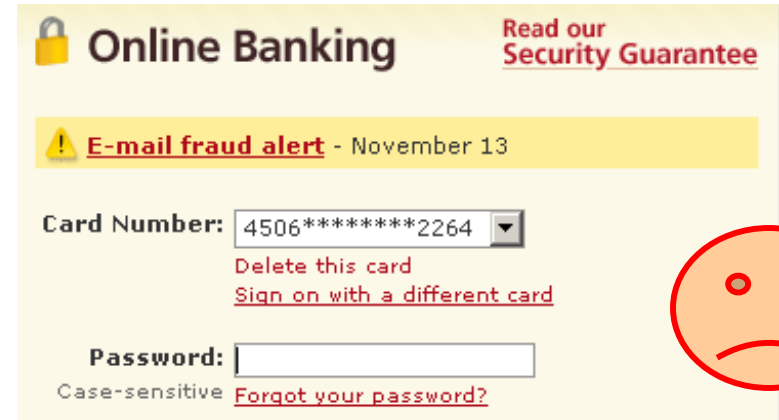



 **Online Banking** [Read our Security Guarantee](#)

⚠ E-mail fraud alert - November 13


Card Number: 4506*****2264 
[Delete this card](#)
[Sign on with a different card](#)

Password:
Case-sensitive [Forgot your password?](#)




 **Online Banking** [Read our Security Guarantee](#)

⚠ E-mail fraud alert - November 13

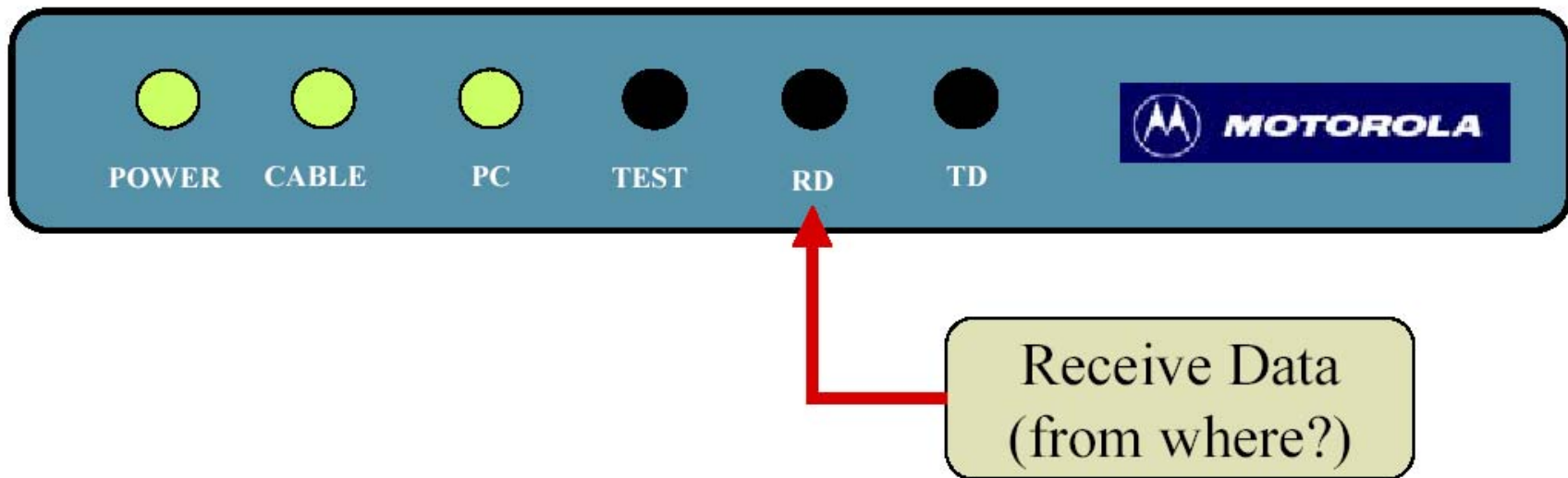
Card Number: 4506*****2264 
[Delete this card](#)
[Sign on with a different card](#)

Password:
Case-sensitive [Forgot your password?](#)

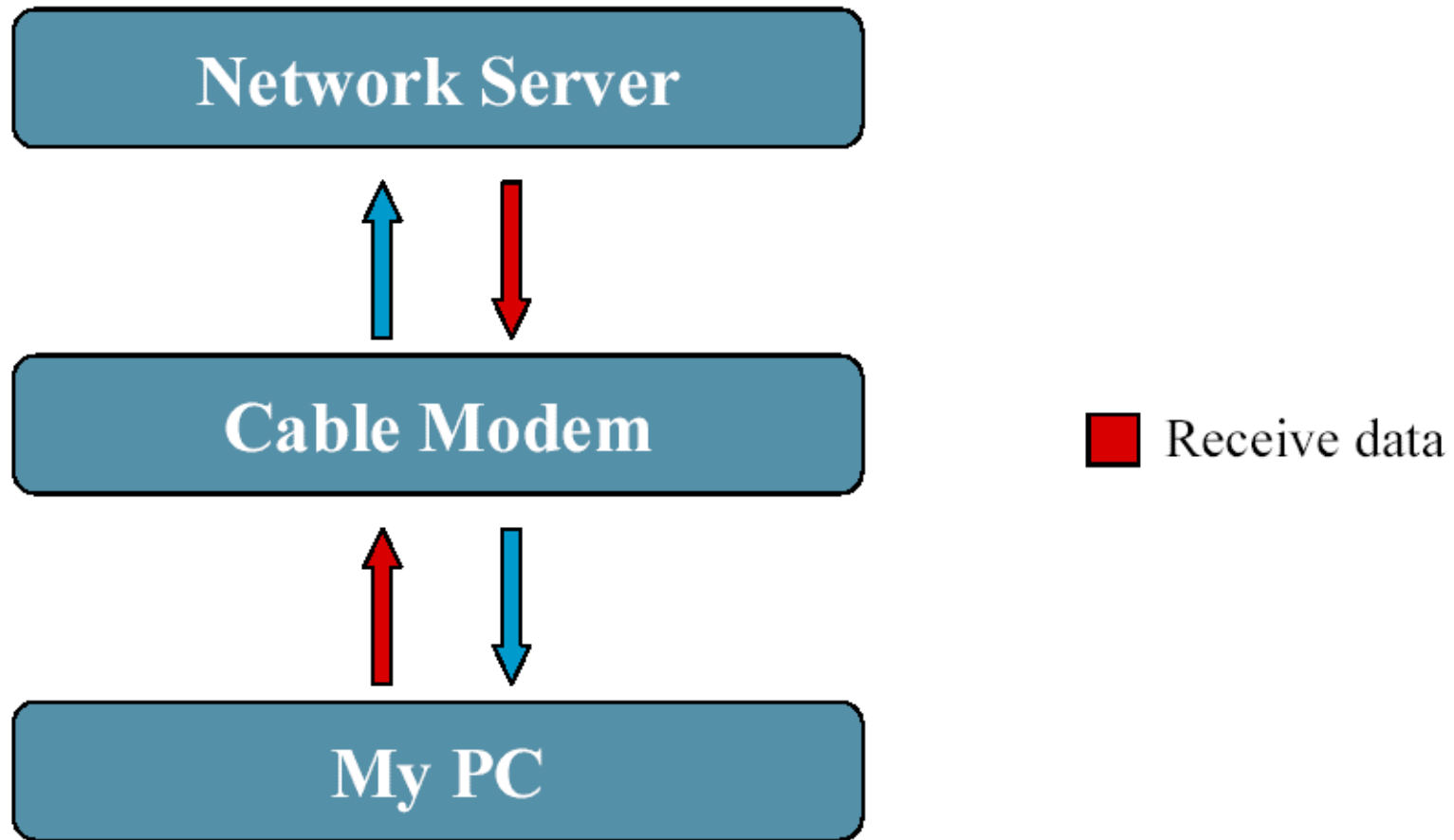


State Uncertainty

- Cable modem...

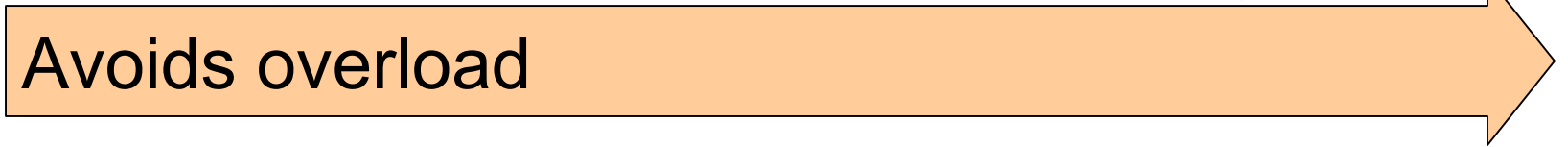


What is “Receive Data”?



Outline

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Overload

- From Miller's famous essay...

The magical number seven plus or minus two!

- Refers to the number of items a human can reasonably process at once

Reference:

Miller, G. A. (1956, March). The magical number seven plus or minus two: Some limits on our capacity for processing information. *The Psychological Review*, 63(2), 81-97.

Feature/option Overload:

Eudora:

Too much to
digest without
groupings

POP account:

Check for mail every minutes

Skip messages over K in size

Send on check

Save password

Leave mail on server

Delete from server after days

Determine first unread message by:

First message not read by this machine

Status: headers

POP3 LAST command

Delete from server when emptied from Trash

Authentication style:

Passwords Kerberos APOP



Colour Overload!

ICQ:



The following people are "offline"

Painted in red to indicate "offline" (but we already know that!)

Colour Overload! (2)

ICQ:

Why is this blue?

Why is this purple?

Why is this yellow?



Colour Overload! (3)

Eudora:

Good use of colour

POP account:

Check for mail every minutes

Skip messages over K in size

Send on check

Save password

Leave mail on server

Delete from server after days

Determine first unread message by:

- First message not read by this machine
- Status: headers
- POP3 LAST command

Delete from server when emptied from Trash

Authentication style:

- Passwords
- Kerberos
- APOP



Windows Media Player - Progress While Burning a CD



Can you read this?
(I can't!)

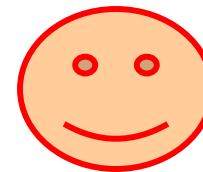
Color Example



The screenshot shows a website with a green sidebar on the left containing navigation links: 'The Races', 'The Course', 'How to Enter', 'Participant Info', and 'Bob Hartwell'. The main content area has a purple heading 'Race Results' and a green sub-heading 'The Results are in!'. Below this is a green message: 'Congratulations to all participants, sponsors and volunteers for an outstanding event!'. To the right is a logo for 'Bob Hartwell's Runner's Challenge' featuring a blue and yellow running track and the text 'Half Marathon Relay' and 'Half Marathon' with a red maple leaf.

Cast your vote

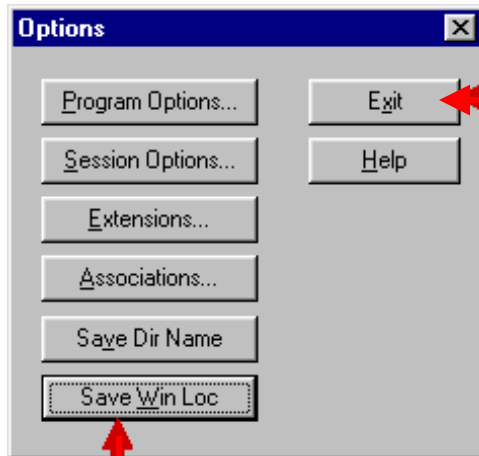
- Strongly approve
- Mildly approve
- Neutral
- Mildly disapprove
- Disapprove



Post Script – a few quibbles!

No Confirmation

WS-Ftp:



Are the changes saved?



Click here to
"save Windows location"
(for next ftp login)

Then what?

What Do I Do Now?



Where?



Design Challenge

Design a display to present the scores of sports matches. Things to consider: the score, teams names, home/visitor status, information alignment, use of colour to provide a visual clue on “win” vs. “loss”.

Leafs 3 vs. Canadiens 0

Bruins 3 vs. Rangers 7


Black Hawks 1 vs. Red Wings 0

Avalanche 4 vs. Flyers 5

Speak the User's Language

From Environment Canada's
web site...

Toronto
Currently

Observed on: Mar. 24, 2002 at 11:00 UTC.	
	
Clear	
Temp.:	-7°C
Pressure:	101.9 kPa
Visibility:	24 km
Humidity:	75%
DewPoint:	-11°C
Wind:	W 7 km/h

Case Study

Task: Determine weather conditions. Mostly likely you want to know the current weather in your present location.

But...

When were these weather conditions gathered? 11:00 UTC, apparently. What is UTC? (The answer is in their FAQ page!)

(Not so) Intelligent Dragging

Case Study

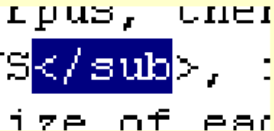
Task: In an editor, select a region of text by dragging

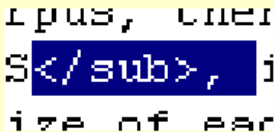
1 in the corpus, the
>_{CORPUS},
rily the size of ea

Select this region

But...

I can't select the desired region.

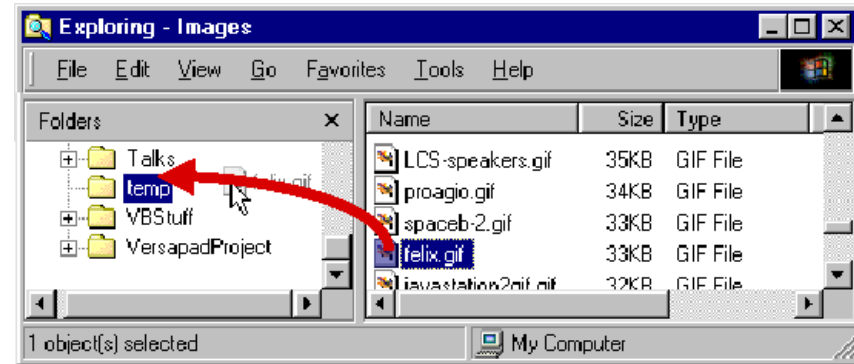
I get → A screenshot of a text editor showing the text "pus, the", "</sub>,", and "ize of ea". A blue selection box highlights the closing tag "</sub>".

Or → A screenshot of a text editor showing the text "pus, the", "<sub>,", and "ize of ea". A blue selection box highlights the opening tag "<sub>".

Time-dependent Foibles

- Many UI problems are aptly revealed in static imagines (see previous slides)
- But many UI problems are time-dependent; i.e., they are revealed in examining a sequence of events (actions and responses)
- Some follow

The Dead Zone! (no feedback)



Case Study – When a file is copied to a folder, feedback in the form of a progress bar is presented during copying – but only if the file is large and the operation takes several seconds, or more. This is fine. However, the progress bar only appears when copying begins. If the source file is on a local hard drive, copying begins “immediately” because the seek time – the time to find the file – is negligible. If the source file is on a remote drive or a tape drive, there may be a dead zone – a prolonged period of time without feedback. This occurs because there is no progress bar during the seek time. The designers assumed the seek time is negligible (true most of the time) and, therefore, no provision was made to include a progress bar when seek time is substantial..

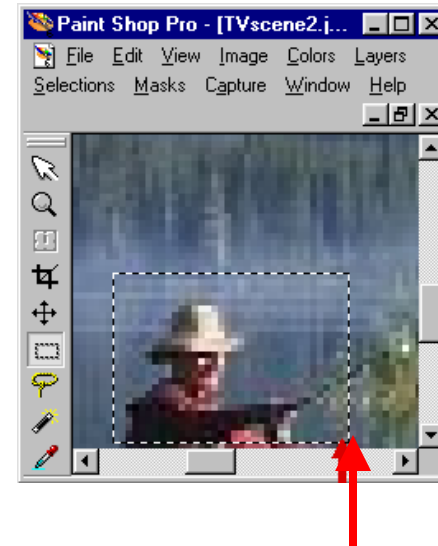
Kangaroo Effects

Case Study

Task: In a paint program select a region of an image, part of which is outside the viewport

Step 1. Click Selection tool

Step 2. Click and drag

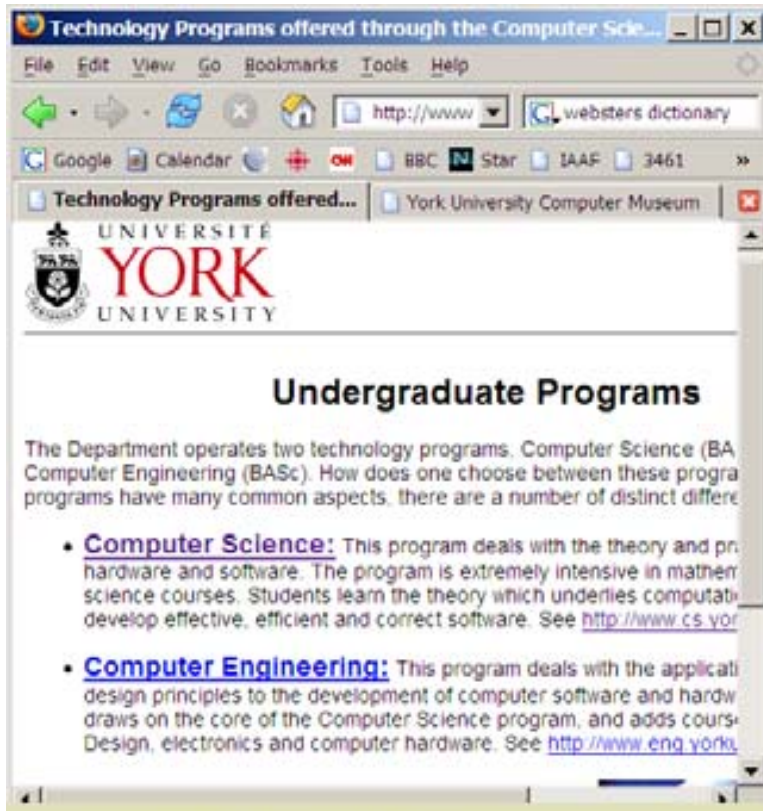


Select to off-screen region

But...

When the selected region hits the edge of the window, the viewport automatically scrolls. But the scroll rate is too fast. The selected region extends far beyond the desired end-point. Attempting to correct this by moving in the reverse direction produces the same problem but in the opposite direction. I end up hopping – like a kangaroo – back and forth trying to get the desired region selected.

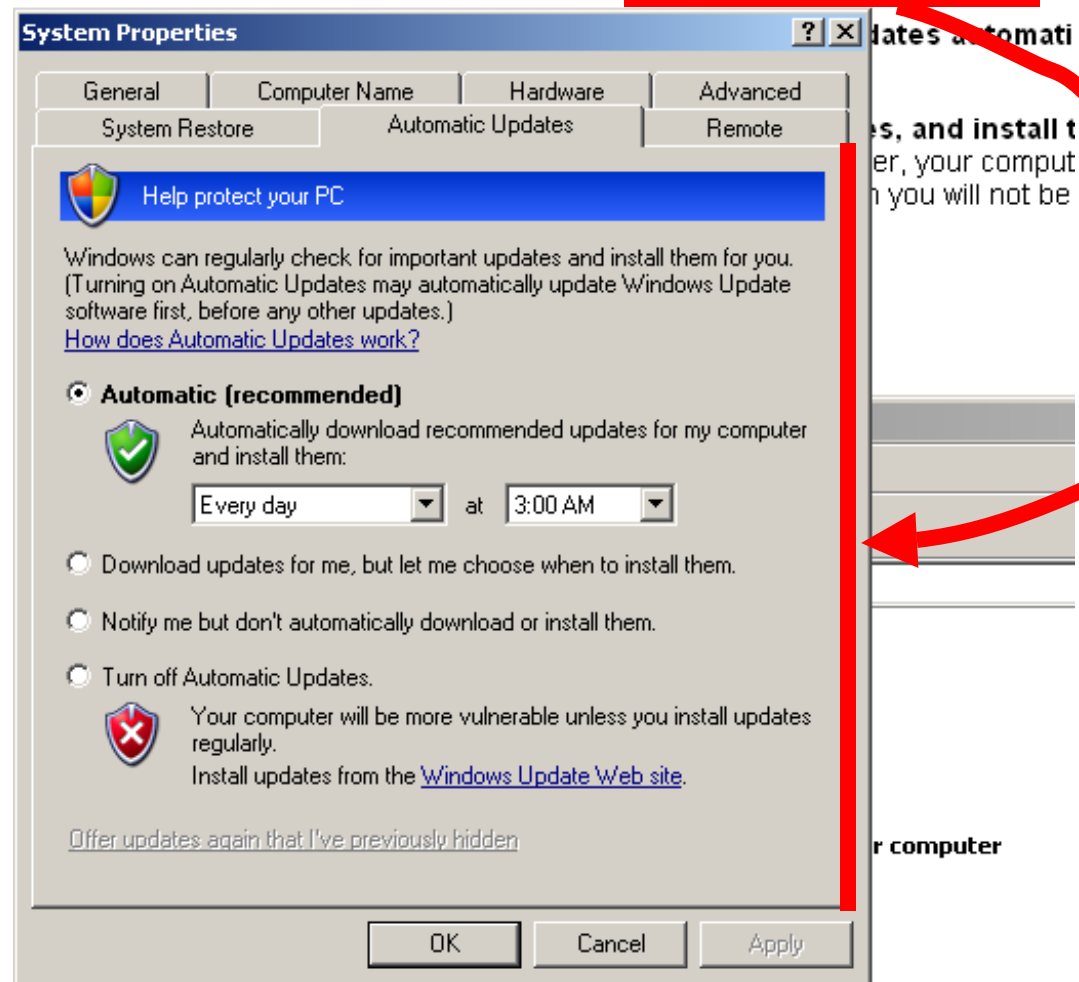
Jump Scrolling



Jump scrolling: There is a minimum scrolling distance when using the mouse wheel (see above). Reading a document is very difficult. Smooth scrolling is possible by dragging the scroll bar elevator.

Can't Follow Instructions

3. Click **System** to open the System Properties dialog box.
4. Click **Automatic Updates** and then select **Keep my computer up to date.**



Thank you