

Lecture 20 - Chapter 11

User support

- Issues
 - different types of support at different times
 - implementation and presentation both important
 - all need careful design
- Types of user support
 - quick reference, task specific help, full explanation, tutorial
- Provided by help and documentation
 - help - problem-oriented and specific
 - documentation - system-oriented and general
 - same design principles apply to both

Requirements

- Availability
 - continuous access concurrent to main application
- Accuracy and completeness
 - help matches and covers actual system behaviour
- Consistency
 - between different parts of the help system and paper documentation
- Robustness
 - correct error handling and predictable behaviour
- Flexibility
 - allows user to interact in a way appropriate to experience and task
- Unobtrusiveness
 - does not prevent the user continuing with work

Approaches to user support

- Command assistance
 - User requests help on particular command
e.g., UNIX man, DOS help
 - Good for quick reference
 - Assumes user knows what to look for
- Command prompts
 - Provide information about correct usage when an error occurs
 - Good for simple syntactic errors
 - Also assumes knowledge of the command

Command assistance

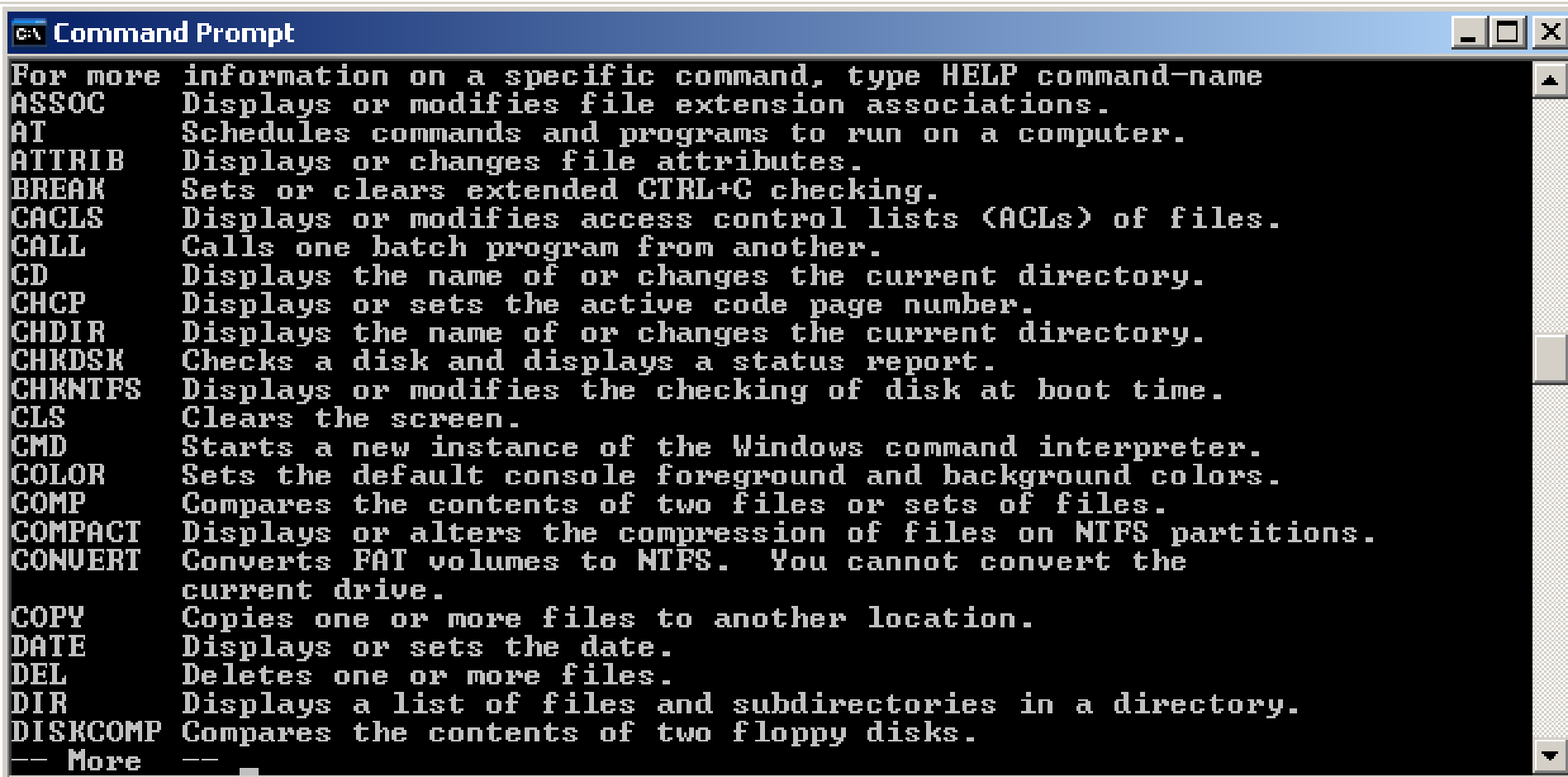
```
Command Prompt - help copy
C:\Documents and Settings\ramo001.EC>help copy
Copies one or more files to another location.

COPY [/D] [/U] [/N] [/Y | /-Y] [/Z] [/A | /B ] source [/A | /B]
[+ source [/A | /B] [+ ...]] [destination [/A | /B]]

source           Specifies the file or files to be copied.
/A              Indicates an ASCII text file.
/B              Indicates a binary file.
/D              Allow the destination file to be created decrypted
destination     Specifies the directory and/or filename for the new file(s).
/U              Verifies that new files are written correctly.
/N              Uses short filename, if available, when copying a file with a
non-8dot3 name.
/Y              Suppresses prompting to confirm you want to overwrite an
existing destination file.
/-Y             Causes prompting to confirm you want to overwrite an
existing destination file.
/Z              Copies networked files in restartable mode.

The switch /Y may be preset in the COPYCMD environment variable.
This may be overridden with /-Y on the command line. Default is
to prompt on overwrites unless COPY command is being executed from
within a batch script.
Press any key to continue . . .
```

Finding a command

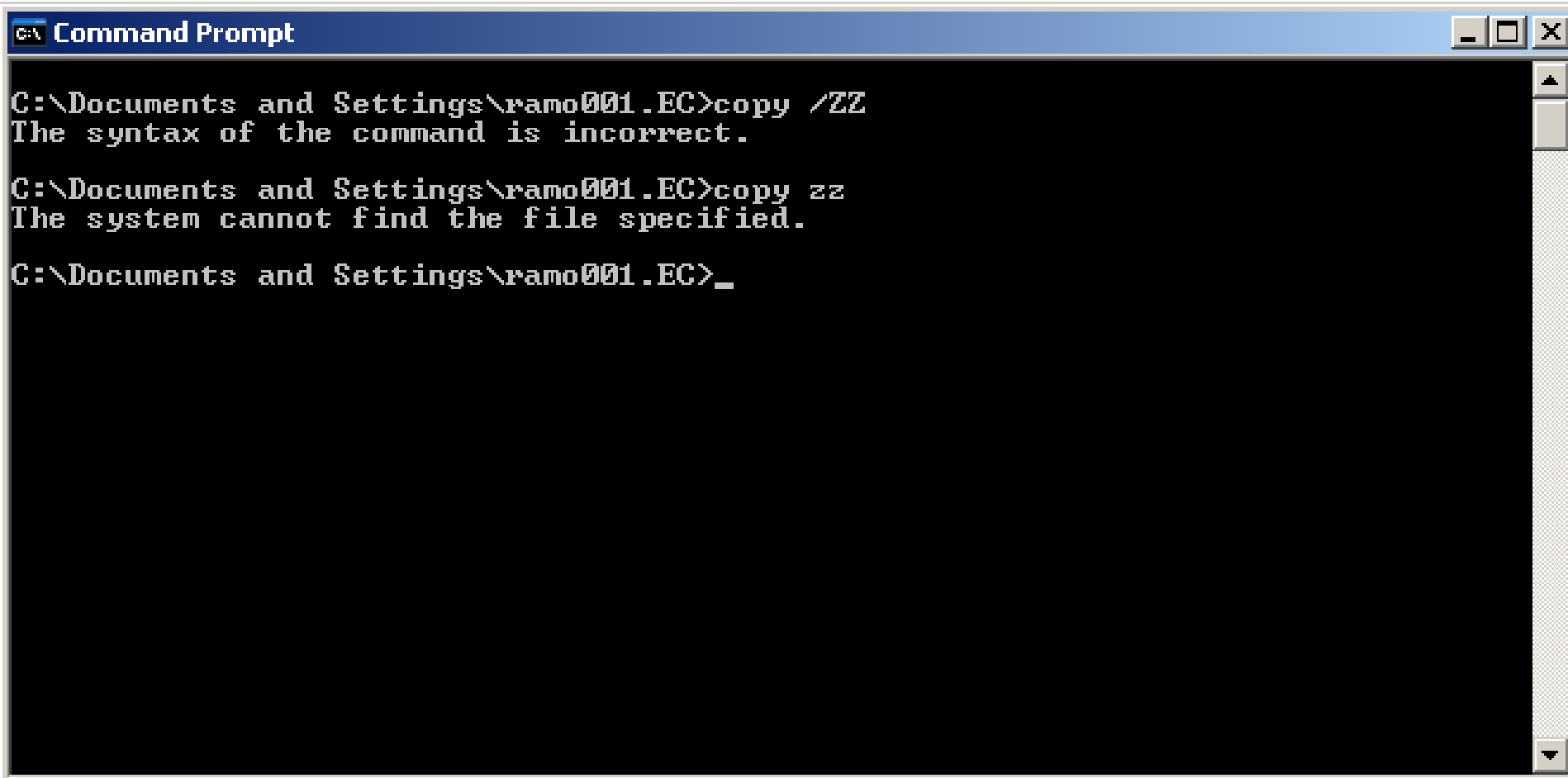


```
C:\> Command Prompt

For more information on a specific command, type HELP command-name
ASSOC      Displays or modifies file extension associations.
AT         Schedules commands and programs to run on a computer.
ATTRIB    Displays or changes file attributes.
BREAK     Sets or clears extended CTRL+C checking.
CACLS     Displays or modifies access control lists (ACLs) of files.
CALL      Calls one batch program from another.
CD        Displays the name of or changes the current directory.
CHCP     Displays or sets the active code page number.
CHDIR    Displays the name of or changes the current directory.
CHKDSK   Checks a disk and displays a status report.
CHKNTFS  Displays or modifies the checking of disk at boot time.
CLS      Clears the screen.
CMD      Starts a new instance of the Windows command interpreter.
COLOR    Sets the default console foreground and background colors.
COMP     Compares the contents of two files or sets of files.
COMPACT  Displays or alters the compression of files on NTFS partitions.
CONVERT  Converts FAT volumes to NTFS. You cannot convert the
current drive.
COPY     Copies one or more files to another location.
DATE    Displays or sets the date.
DEL     Deletes one or more files.
DIR     Displays a list of files and subdirectories in a directory.
DISKCOMP Compares the contents of two floppy disks.
-- More --
```

In unix we'd use "man -k" to find commands related to a keyword

Command prompts - not in DOS



```
C:\Documents and Settings\ramo001.EC>copy /ZZ
The syntax of the command is incorrect.

C:\Documents and Settings\ramo001.EC>copy zz
The system cannot find the file specified.

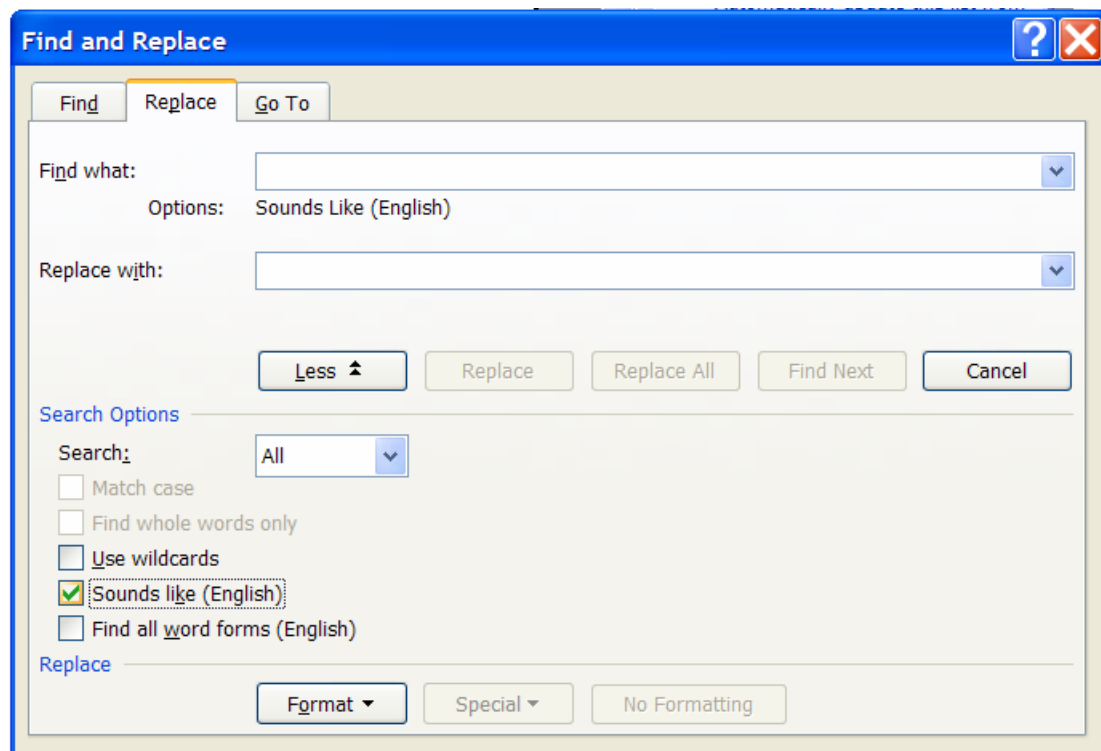
C:\Documents and Settings\ramo001.EC>_
```

Command Prompts - contd.

- The system should offer help on correct syntax when a user gets the command syntax incorrect
- In WIMP systems, the menus provide a degree of command prompting and error avoidance
 - First, the menus (and toolbars/buttons) identify available commands
 - Second, the parameters of a command are set out by the dialog of the command itself
 - Third, any file parameters can usually be achieved by browsing to a file

Command Prompts in GUI

- A GUI can prevent overt syntax errors through the dialog structure
- Of course, this doesn't mean the users can't still make *errors* in the sense of not achieving what they wanted (and possibly not knowing that they don't have what they wanted)



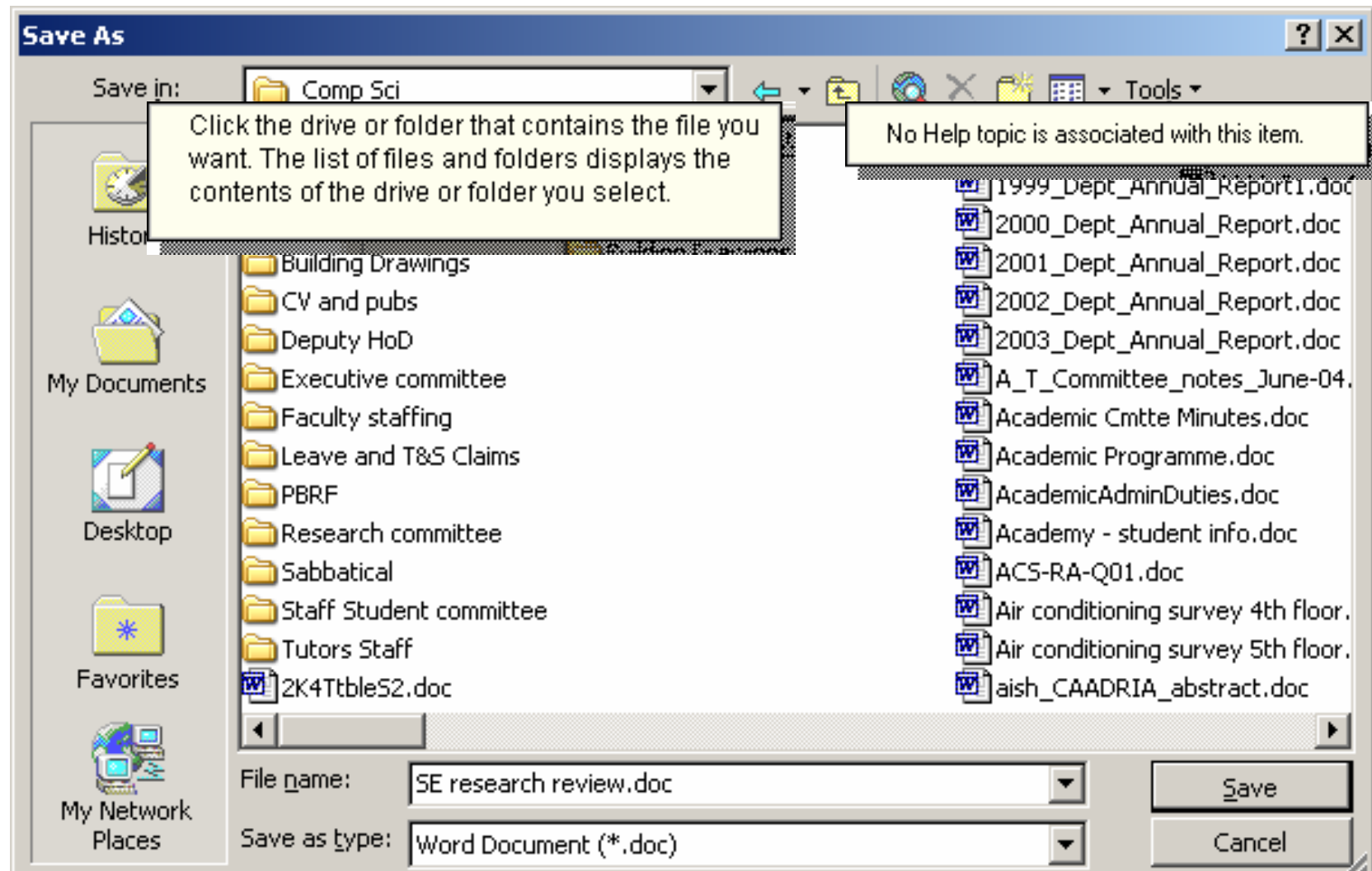
Approaches to user support (ctd)

Copy

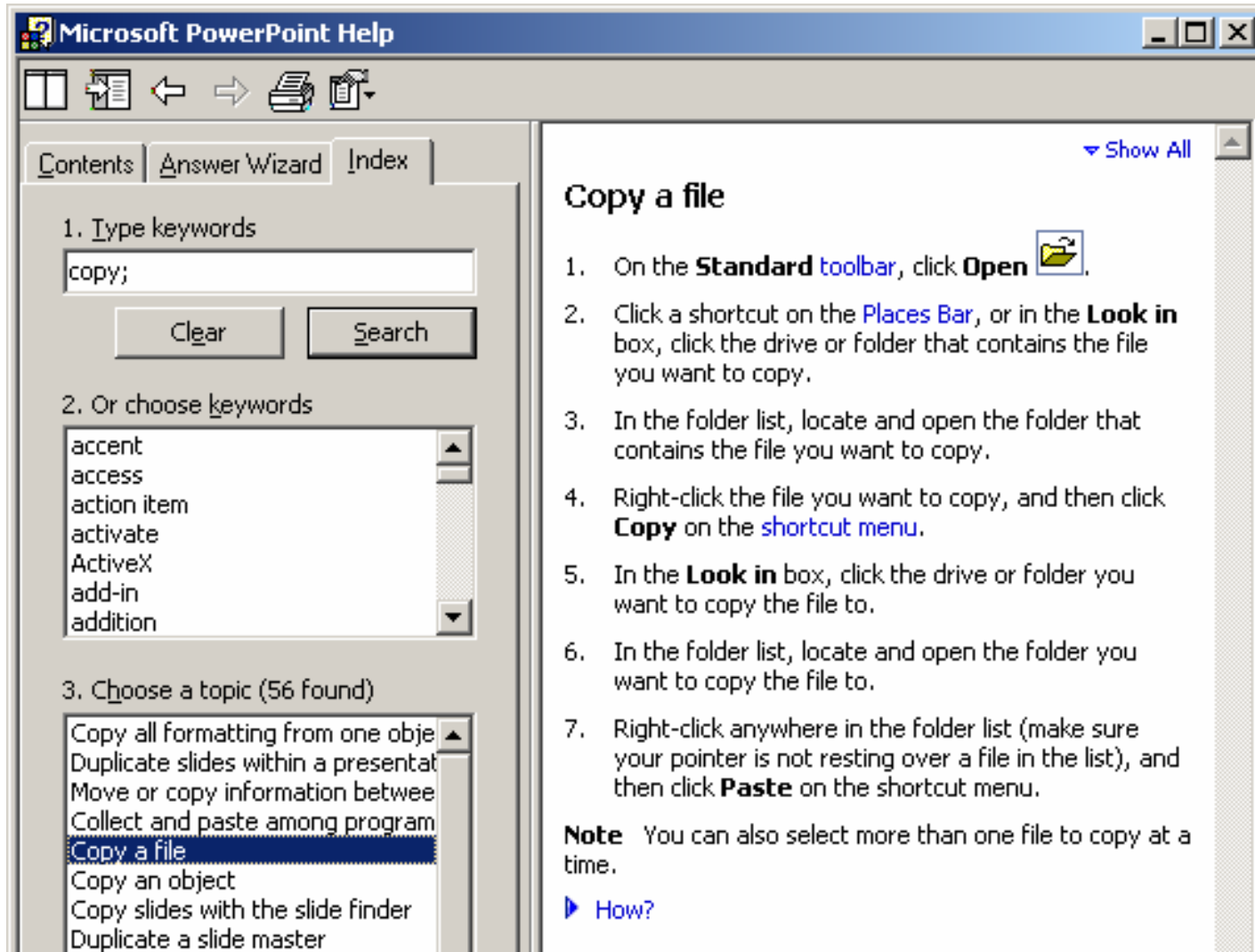
Copies the selection to the Clipboard.

- Context sensitive help
 - help request interpreted according to context in which it occurs. e.g. tooltips
- On-line tutorials
 - user works through basics of application in a test environment.
 - can be useful but are often inflexible.
- On-line documentation
 - paper documentation is made available on computer.
 - continually available in common medium
 - can be difficult to browse
 - hypertext used to support browsing.

Context sensitive help



On-line documentation



The screenshot shows the Microsoft PowerPoint Help window. The title bar reads "Microsoft PowerPoint Help". Below the title bar is a toolbar with icons for home, back, forward, print, and search. The main content area is divided into two panes. The left pane contains a search interface with tabs for "Contents", "Answer Wizard", and "Index". Under "1. Type keywords", there is a text input field containing "copy;" and buttons for "Clear" and "Search". Under "2. Or choose keywords", there is a list box containing the following items: "accent", "access", "action item", "activate", "ActiveX", "add-in", and "addition". Under "3. Choose a topic (56 found)", there is a list box with the following items: "Copy all formatting from one object", "Duplicate slides within a presentation", "Move or copy information between presentations", "Collect and paste among presentations", "Copy a file", "Copy an object", "Copy slides with the slide finder", and "Duplicate a slide master". The "Copy a file" item is highlighted. The right pane displays the article "Copy a file" with a "Show All" link. The article contains a list of seven steps for copying a file, including instructions on using the Standard toolbar, Places Bar, folder list, and shortcut menu. A "Note" section states: "You can also select more than one file to copy at a time." A "How?" link is located at the bottom of the article.

Microsoft PowerPoint Help

Contents Answer Wizard Index

1. Type keywords

copy;

Clear Search

2. Or choose keywords


accent
access
action item
activate
ActiveX
add-in
addition

3. Choose a topic (56 found)

Copy all formatting from one object
Duplicate slides within a presentation
Move or copy information between presentations
Collect and paste among presentations
Copy a file
Copy an object
Copy slides with the slide finder
Duplicate a slide master

▼ Show All

Copy a file

1. On the **Standard toolbar**, click **Open** .
2. Click a shortcut on the **Places Bar**, or in the **Look in** box, click the drive or folder that contains the file you want to copy.
3. In the folder list, locate and open the folder that contains the file you want to copy.
4. Right-click the file you want to copy, and then click **Copy** on the **shortcut menu**.
5. In the **Look in** box, click the drive or folder you want to copy the file to.
6. In the folder list, locate and open the folder you want to copy the file to.
7. Right-click anywhere in the folder list (make sure your pointer is not resting over a file in the list), and then click **Paste** on the shortcut menu.

Note You can also select more than one file to copy at a time.

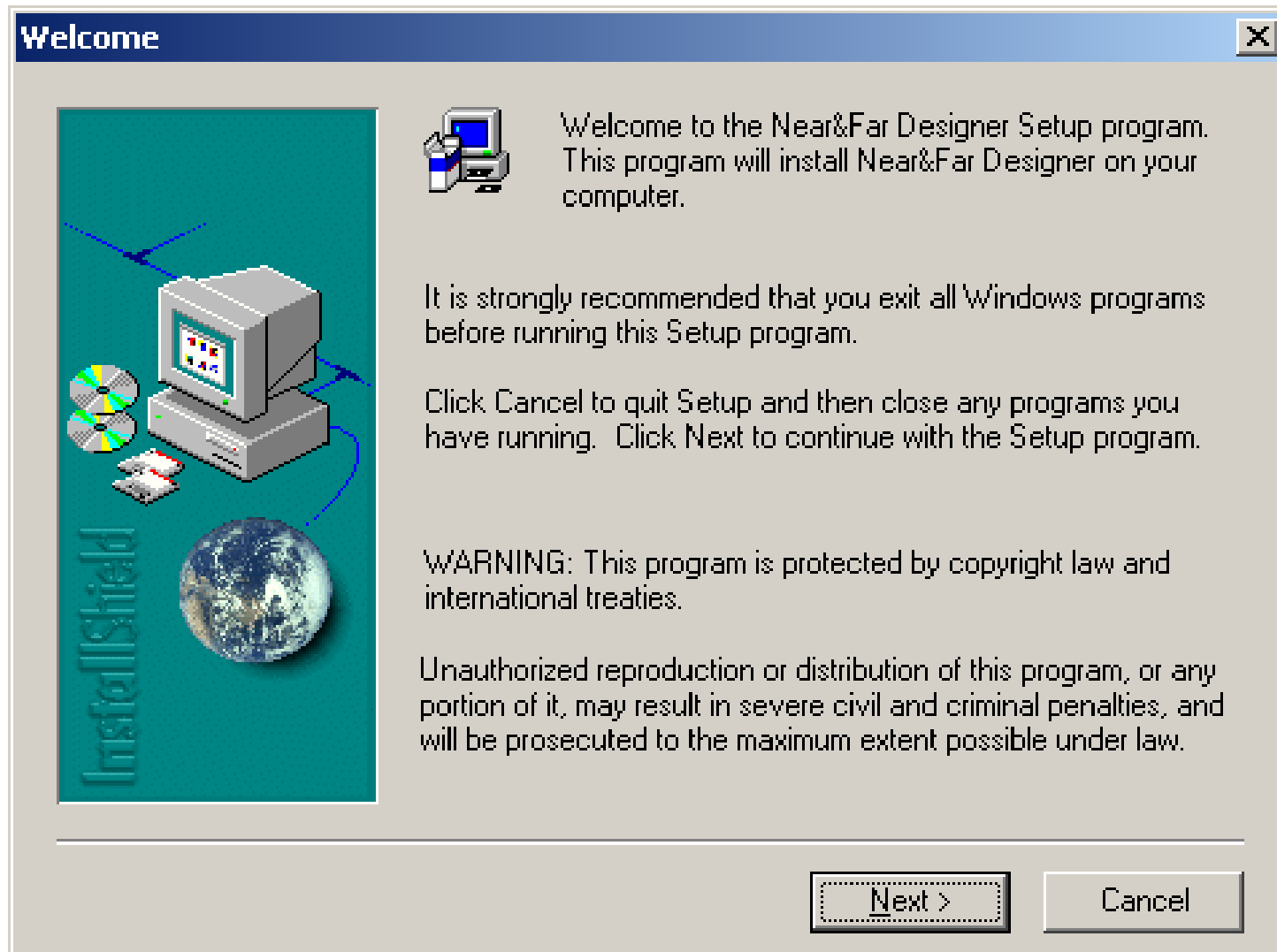
► [How?](#)



wizards and assistants

- wizards
 - task specific tool leads the user through task, step by step, using user's answers to specific questions
 - example: résumé
 - useful for safe completion of complex or infrequent tasks
 - constrained task execution so limited flexibility
 - must allow user to go back
- assistants
 - monitor user behaviour and offer contextual advice
 - can be irritating e.g. MS paperclip
 - must be under user control e.g. XP smart tags

Wizards



Assistants

Microsoft PowerPoint - [Lecture 17 User support.ppt]

File Edit View Insert Format Tools Slide Show Window Help Acrobat

Times 24 B I U

Outline Slides

10 Assistants and assistants

11 Assistants

12 Assistants help, get help

13 Knowledge representation for domain and task modeling

14 Approaches to user modeling

15 Knowledge representation for domain and task modeling

16 Knowledge representation for domain and task modeling

17 Techniques for knowledge representation

Click to add notes

Draw AutoShapes

Slide 11 of 22 Blank English (New Zealand)

What would you like to do?

- Copy all formatting from one object to another
- Duplicate slides within a presentation
- Move or copy information between programs
- Collect and paste among programs
- Copy a file
- See more...

copy

Options Search

Slide Layout

Apply slide layout:

Text Layouts

Content Layouts

Text and Content Layouts

Other Layouts

Show when inserting new slides

Smart tags

Let you know the system has a series of options available with respect to the most recent action (e.g., after Edit Paste)

SE research review.doc - Microsoft Word

File Edit View Insert Format Tools Table Window Help Acrobat

Type a question for help

Normal Times New Roman 12 B I U

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

mechanisms for these students including: scholarships from research grants, TIF, competitively awarded scholarships from UoA, Faculty, Department, and Government. Joint papers between research students and SIRG members is the norm and students are encouraged to attend conferences and present their papers (dependant upon available funding from the department and research projects). The number of PhD and MSc students working in this domain over the last five years is as follows: SIRG

	1999	2000	2001	2002	2003
PhD	1	0	3	3	
MSc	5	8	15	13	

Publications

Members of SIRG are active in their research domains leading to many publications, often in the more highly ranked journals and conferences of their fields (e.g., ACM Transactions on Database Systems, IEEE Multimedia, IEE Software). Over the last five years there have been approximately 200 publications from this group, the vast majority in refereed outlets. A summary of publications per year is shown below.

	1999	2000	2001	2002	2003
Books (authored & edited)	-	1	1	3	2
Book chapters	1	-	2	-	3
Refereed journal articles	4	7	4	6	4
Refereed conference proceedings	11	25	25	29	50

Adaptive Help Systems

- Use knowledge of the context, individual user, task, domain and instruction to provide help adapted to user's needs.
- Problems
 - knowledge requirements considerable
 - who has control of the interaction?
 - what should be adapted?
 - what is the scope of the adaptation?

Knowledge representation

User modelling

- All help systems have a model of the user
 - single, generic user (non-intelligent)
 - user-configured model (adaptable)
 - system-configure model (adaptive)

Approaches to user modelling

- Quantification
 - user moves between levels of expertise
 - based on quantitative measure of what he knows.
- Stereotypes
 - user is classified into a particular category.
- Overlay
 - idealized model of expert use is constructed
 - actual use compared to ideal
 - model may contain the commonality or difference

Special case: user behaviour compared to known error catalogue

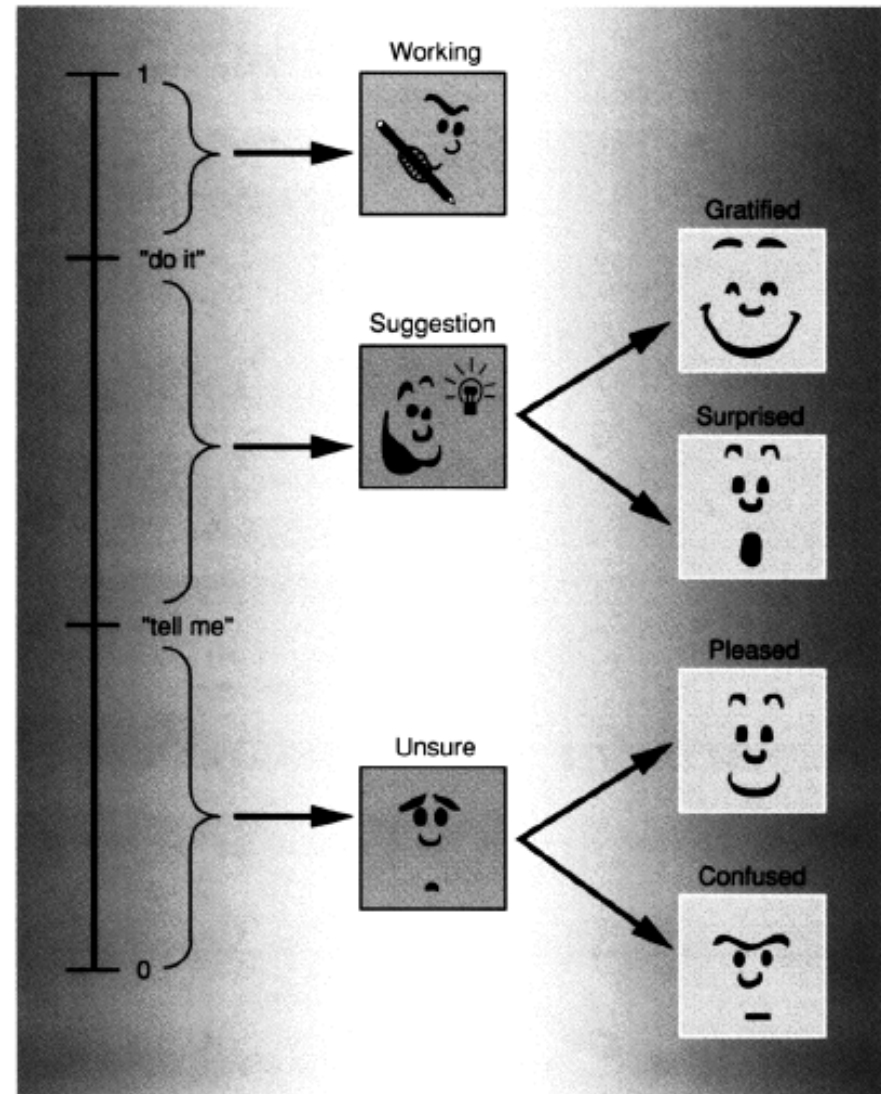
Knowledge representation

Domain and task modelling

- Covers
 - common errors and tasks
 - current task
- Usually involves analysis of command sequences.
- Problems
 - representing tasks
 - interleaved tasks
 - user intention

Anthropomorphic agents

- If we give agents a 'face' the metaphor is of an 'intelligent' assistant
 - Patti Maes espoused assistant agents in the '90s for sorting news, email, etc.
 - Combines probability with *agency*
 - An agent is something you can 'trust' to do a task for you
 - E.g., an e-commerce agent might make purchases or sales for you within specified parameters
 - It seems more like an agent and less like a tool when its reasoning is opaque



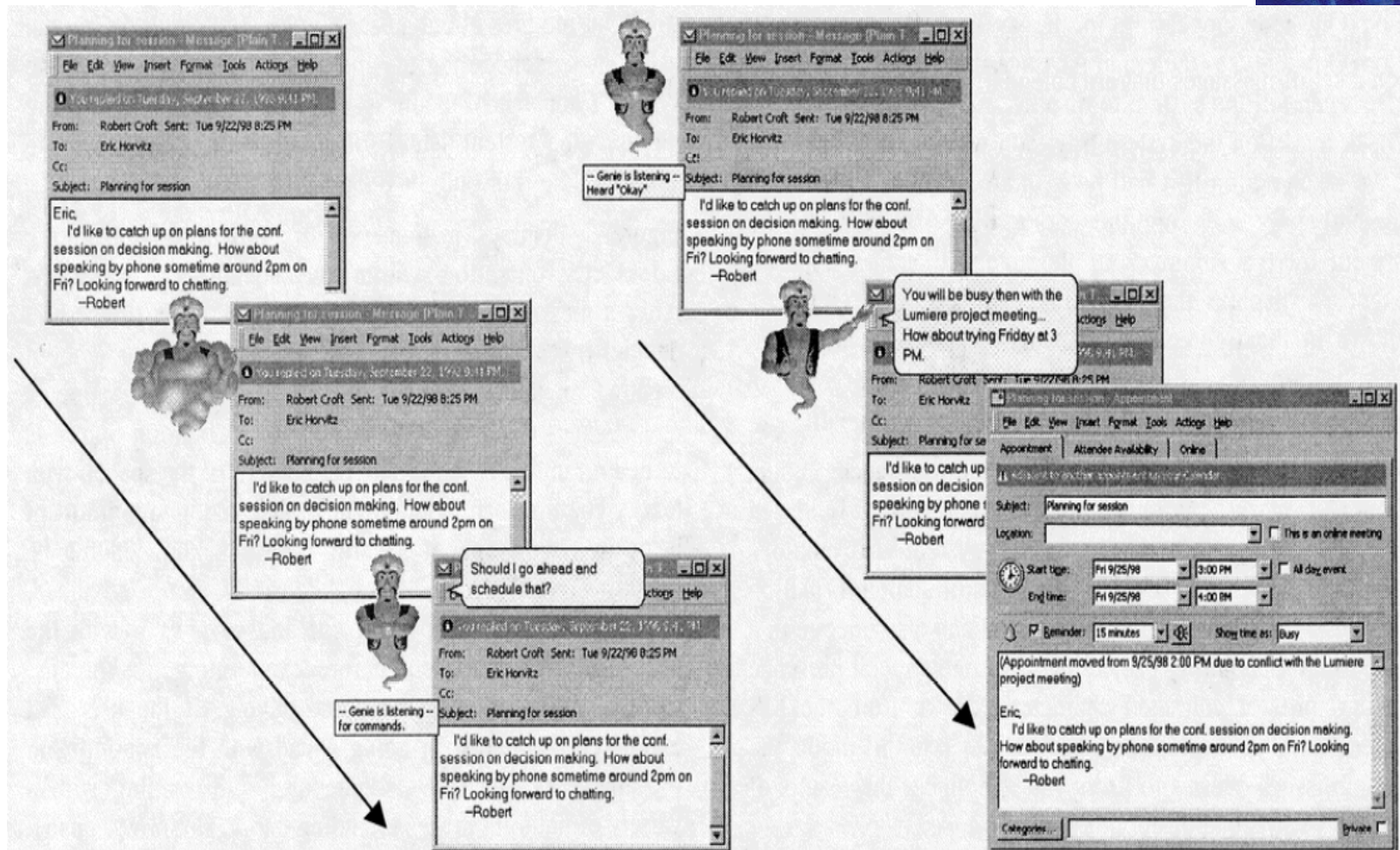


Figure 2. LookOut sequence showing its operation in its explicit social-agent modality. A new message (top left) is analyzed and a decision is made to engage the user in a dialog (left). After receiving confirmation via speech input, the system creates an appointment and presents its guess to the user for refinement (right).

Including 'buggy rules'

- A great application of adaptive UI is in online learning environments
 - Also known as 'Intelligent Tutoring Systems'
 - Want to represent the 'syllabus' (what user should know)
 - And an overlay template for each user (how well they know each concept)
 - And possibly common 'bugs' or errors that users make
 - Ways they commonly get a program or procedure wrong
 - They you can recognize the bug and give special advice on how to avoid it

Knowledge representation

Advisory strategy

- involves choosing the correct style of advice for a given situation.
e.g. reminder, tutorial, etc.
- few intelligent help systems model advisory strategy, but choice of strategy is still important.

Issues in adaptive help

- Initiative
 - does the user retain control or can the system direct the interaction?
 - can the system interrupt the user to offer help?
- Effect
 - what is going to be adapted and what information is needed to do this?
 - only model what is needed.
- Scope
 - is modelling at application or system level?
 - latter more complex
 - e.g. expertise varies between applications.

Designing user support

- User support is not an `add on'
 - should be designed integrally with the system
 - Common problem is that user support gets squeezed out as a project runs over time (bad mistake!)
- Concentrate on content and context of help rather than technological issues

Presentation issues

- How is help requested?
 - command, button, function (on/off), separate application
- How is help displayed?
 - new window, whole screen, split screen,
 - pop-up boxes, hint icons
- Effective presentation requires
 - clear, familiar, consistent language
 - instructional rather than descriptive language
 - avoidance of blocks of text
 - clear indication of summary and example information

Implementation issues

Is help

- operating system command
- meta command (i.e., a command option)
- application

Structure of help data

- single file (XLM?)
- file hierarchy
- database

What resources are available?

- screen space (problem with online help is that it occupies the same screen as the application!)
- memory capacity
- speed

Issues

- flexibility and extensibility
- hard copy
- browsing

Design to user needs

- The User Support plan must fit the users' needs
 - Possibly multiple strategies for multiple types of users
 - Must fit the flow of work that you expect from the user
 - Will they have time for online help when they actually have a problem (in air traffic control)?
 - Can they reasonably be expected to do a tutorial or training course in advance?
 - Can we design a keyboard overlap template or quick reference card (Word Perfect had a great overlay)

