

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

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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

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Approaches to user support

- Command assistance
 - User requests help on particular command
e.g., UNIX man, DOS help
 - Good for quick reference
 - Assumes user know 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

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Command assistance

```

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

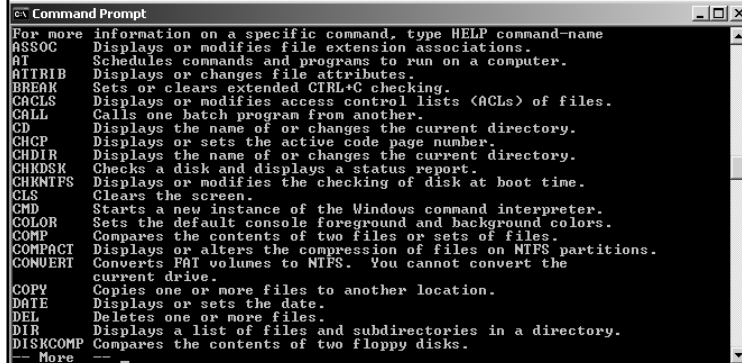
COPY [/D] [/U] [/N] [/Y] [/Z] [/A | /B] source [/A | /B]
[+ source [/A | /B] [+ ...]] [destination [/A | /B]]

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
/U          Specifies the directory and/or filename for the new file(s).
            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 . . .
  
```

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Finding a command



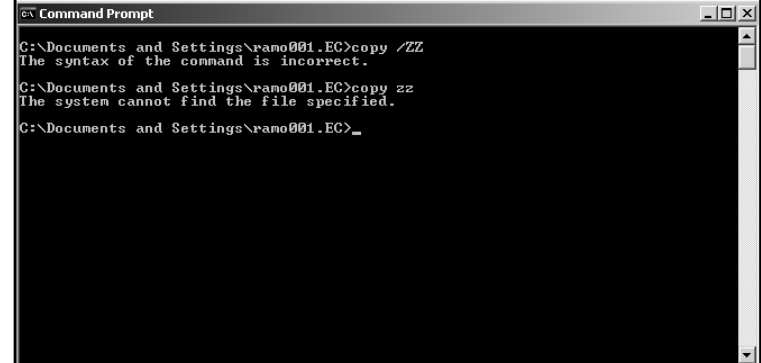
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C:\Command Prompt
For more information on a specific command, type HELP command-name
ASSOC Displays or modifies file extension associations.
AT Schedules commands and programs to run on a computer.
ATTRIB Displays or changes file attributes.
BREAK 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>_

```

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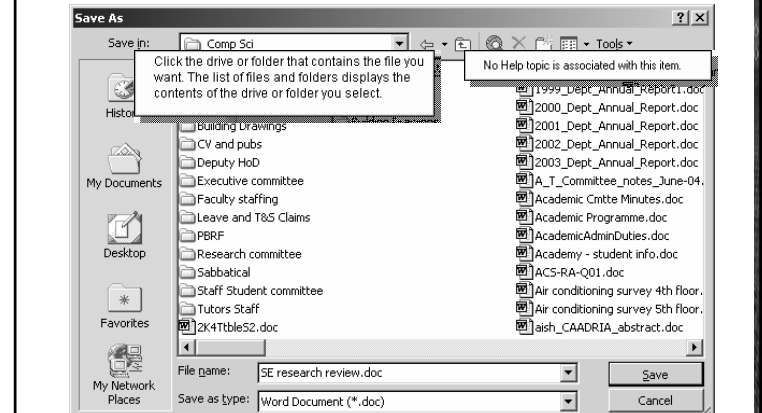
Approaches to user support (ctd)

- 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.

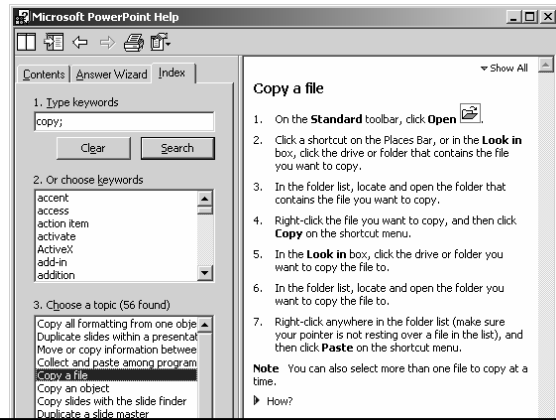
Copy
Copies the selection to the Clipboard.

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Context sensitive help



On-line documentation



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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

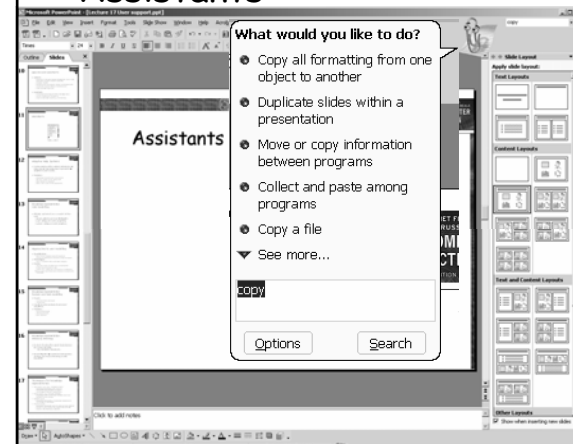
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Wizards



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Assistants



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Smart tags

...to these students including: Oxford ship, 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, IEEE 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	26	26	20	60

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

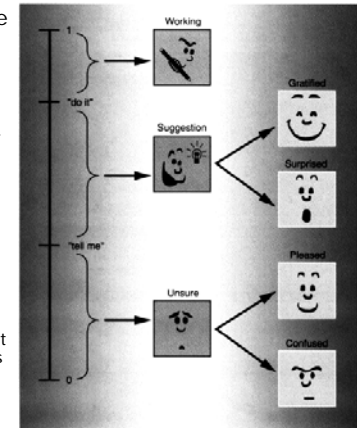
Knowledge representation Domain and task modelling

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

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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



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

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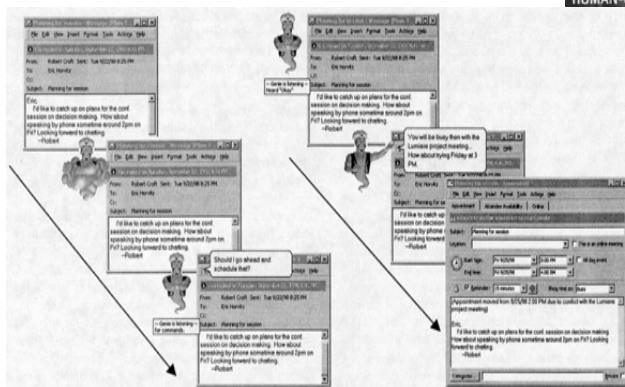


Figure 2. LookOut sequence showing its operation in its explicit social-agent modality. A new message (top left) is analyzed and a decision is made to engage the user in a dialog (left). After receiving confirmation via speech input, the system creates an appointment and presents its guess to the user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

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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.

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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.

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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

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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

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Implementation issues

Is help

- operating system command
- meta command
- 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

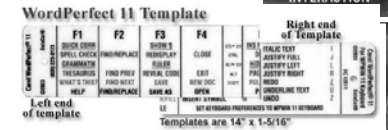
Issues

- flexibility and extensibility
- hard copy
- browsing

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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 overlay template or quick reference card (Word Perfect had a great overlay)



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