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 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

Command assistance

Finding a command

```
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

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Command prompts – not in DOS

```
Command Prompt                                                    _ □ ×

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>_
```

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 in flexible.
- 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.
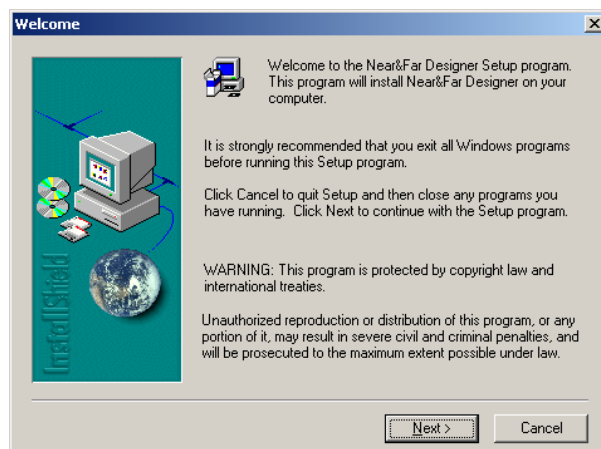

Context sensitive help
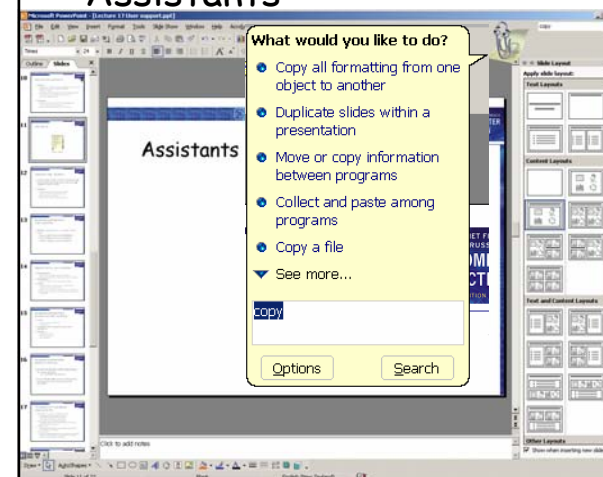
2

On-line documentation
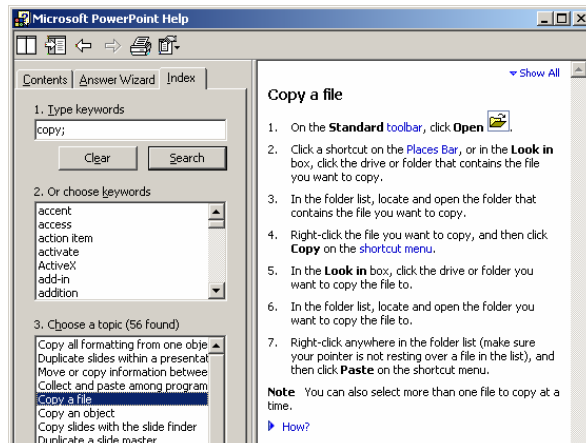
wizards and assistants

- 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

3

Smart tags

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

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.

Techniques for knowledge representation

- rule based (e.g. logic, production rules)
  - knowledge presented as rules and facts
  - interpreted using inference mechanism
  - can be used in relatively large domains.
- frame based (e.g. semantic network)
  - knowledge stored in structures with slots to be filled
  - useful for a small domain.
- network based
  - knowledge represented as relationships between facts
  - can be used to link frames.
- example based
  - knowledge represented implicitly within decision structure
  - trained to classify rather than programmed with rules
  - requires little knowledge acquisition

Problems with knowledge representation and modelling

- knowledge acquisition

- resources

- interpretation of user behaviour

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.

- 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
- application

What resources are available?
- screen space
- memory capacity
- speed

Structure of help data
- single file
- file hierarchy
- database

Issues
- flexibility and extensibility
- hard copy
- browsing