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
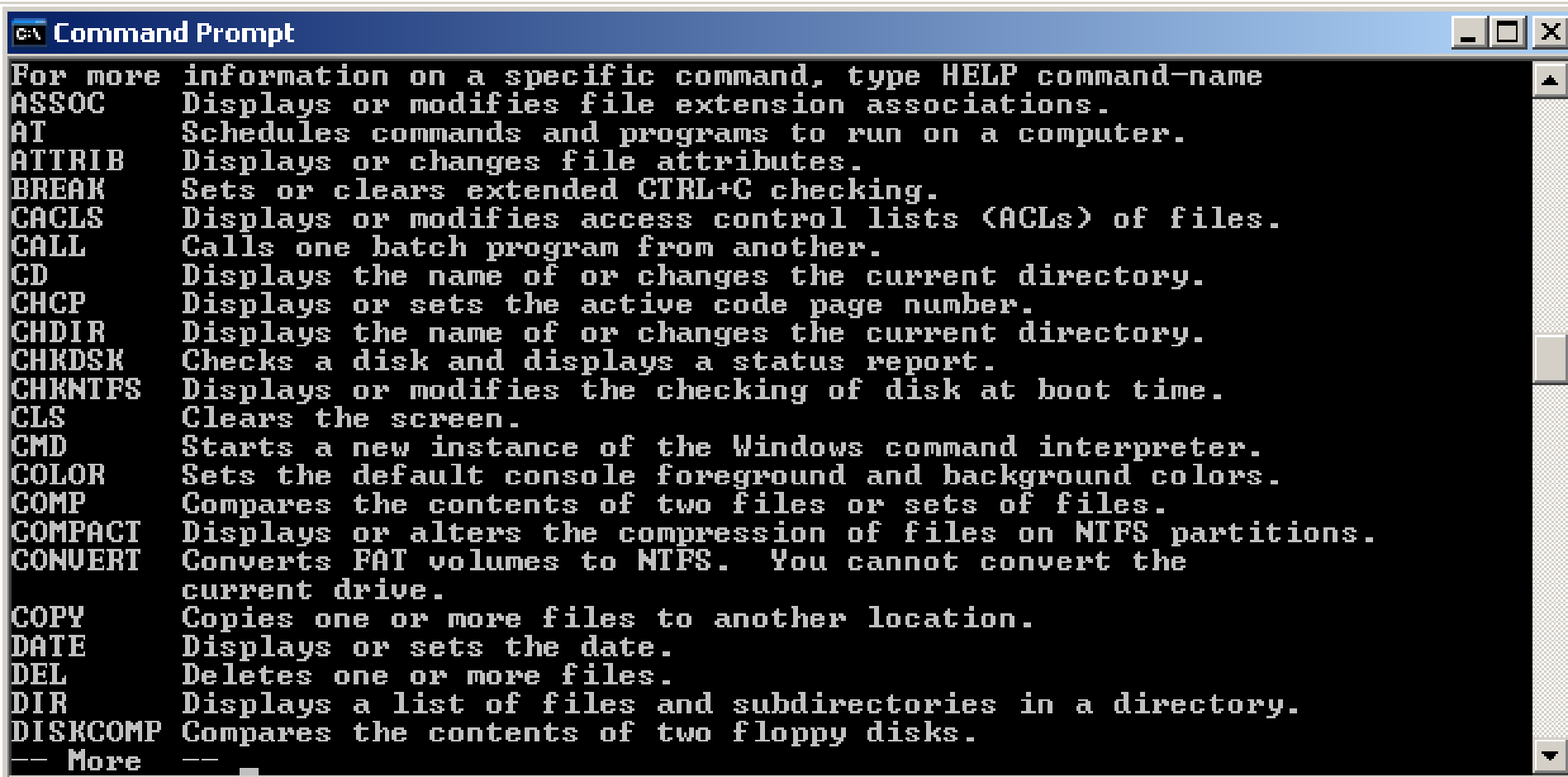 - Also assumes knowledge of the command

Command assistance

```
Command Prompt - help copy

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

COPY [/D] [/V] [/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).
  /V           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

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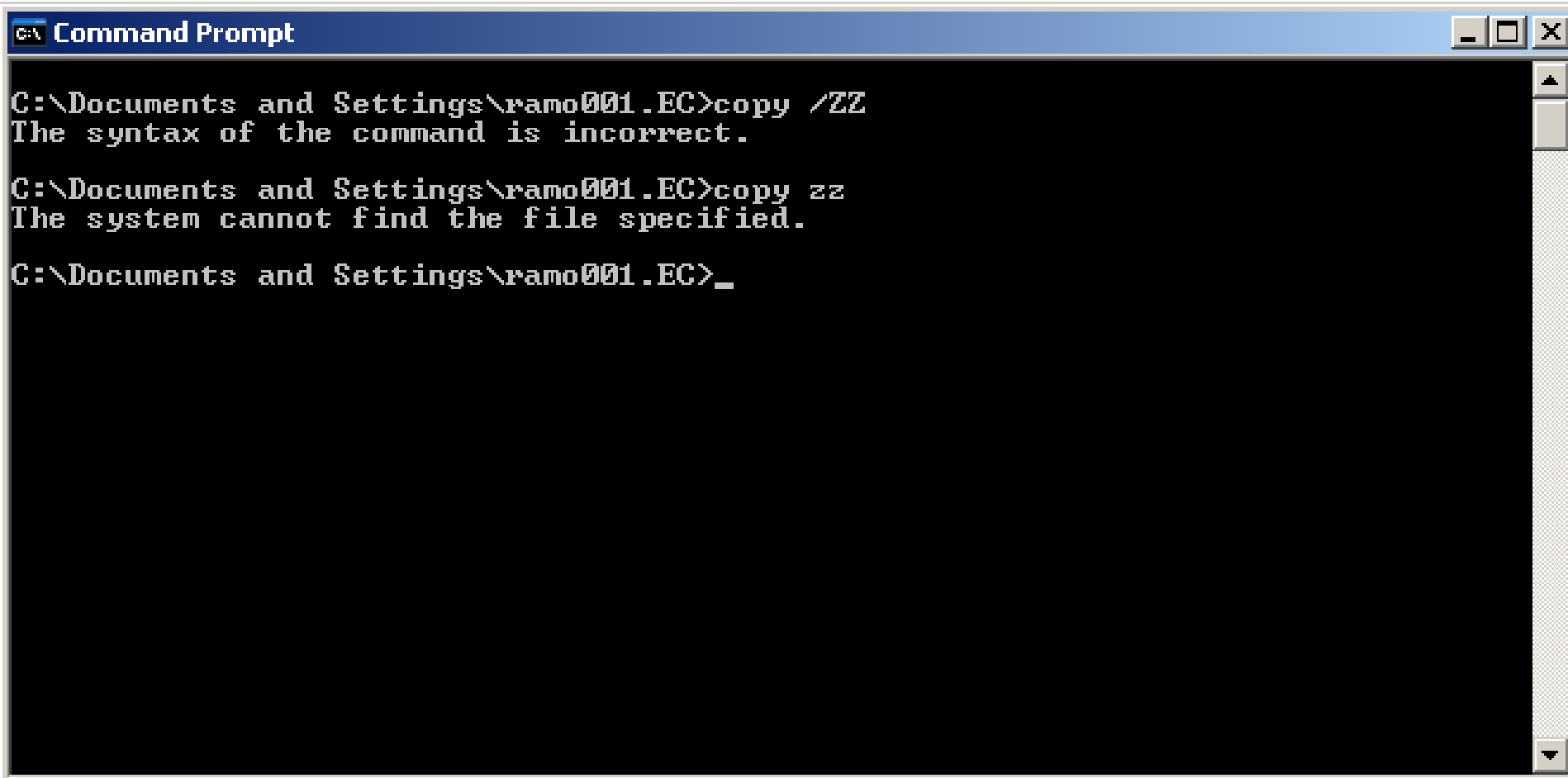
In unix we'd use "man –k" to find commands related to a keyword

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>_
```
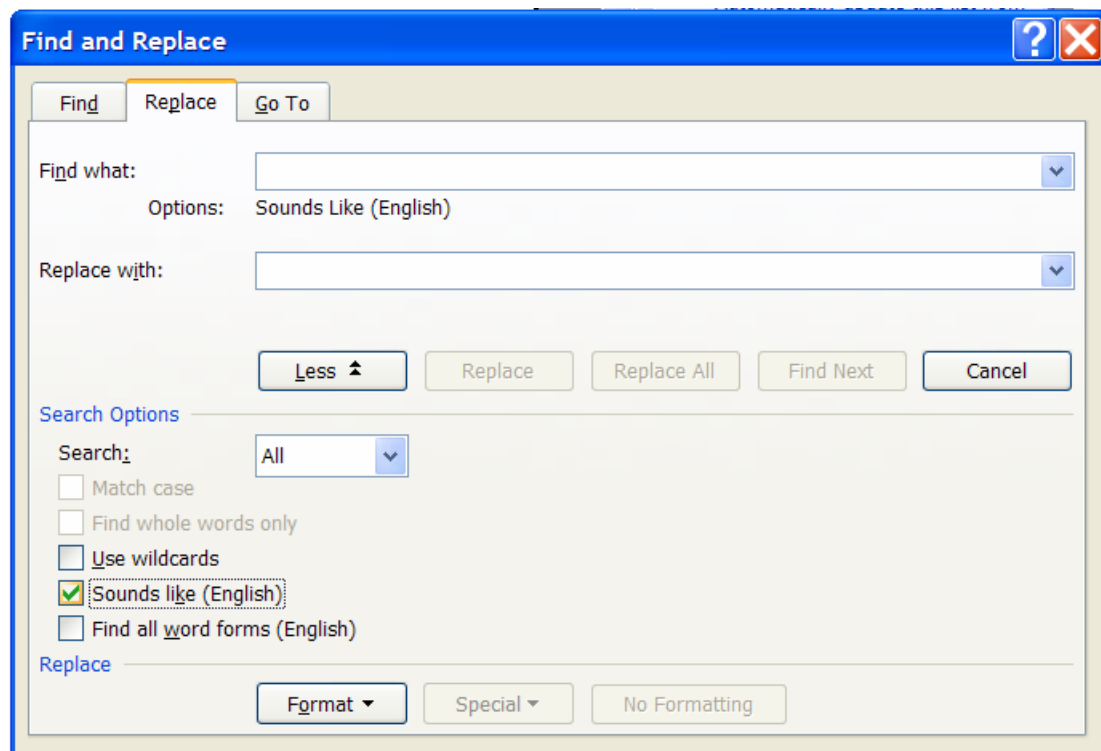
Command Prompts – contd.

- 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)

Find and Replace

Find | Replace | Go To

Find what:

Options: Sounds Like (English)

Replace with:

Less ▲ | Replace | Replace All | Find Next | Cancel

Search Options

Search: All

☐ Match case
☐ Find whole words only
☐ Use wildcards
☑ Sounds like (English)
☐ Find all word forms (English)

Replace

Format ▼ | Special ▼ | No Formatting

Approaches to user support (ctd)

Copy
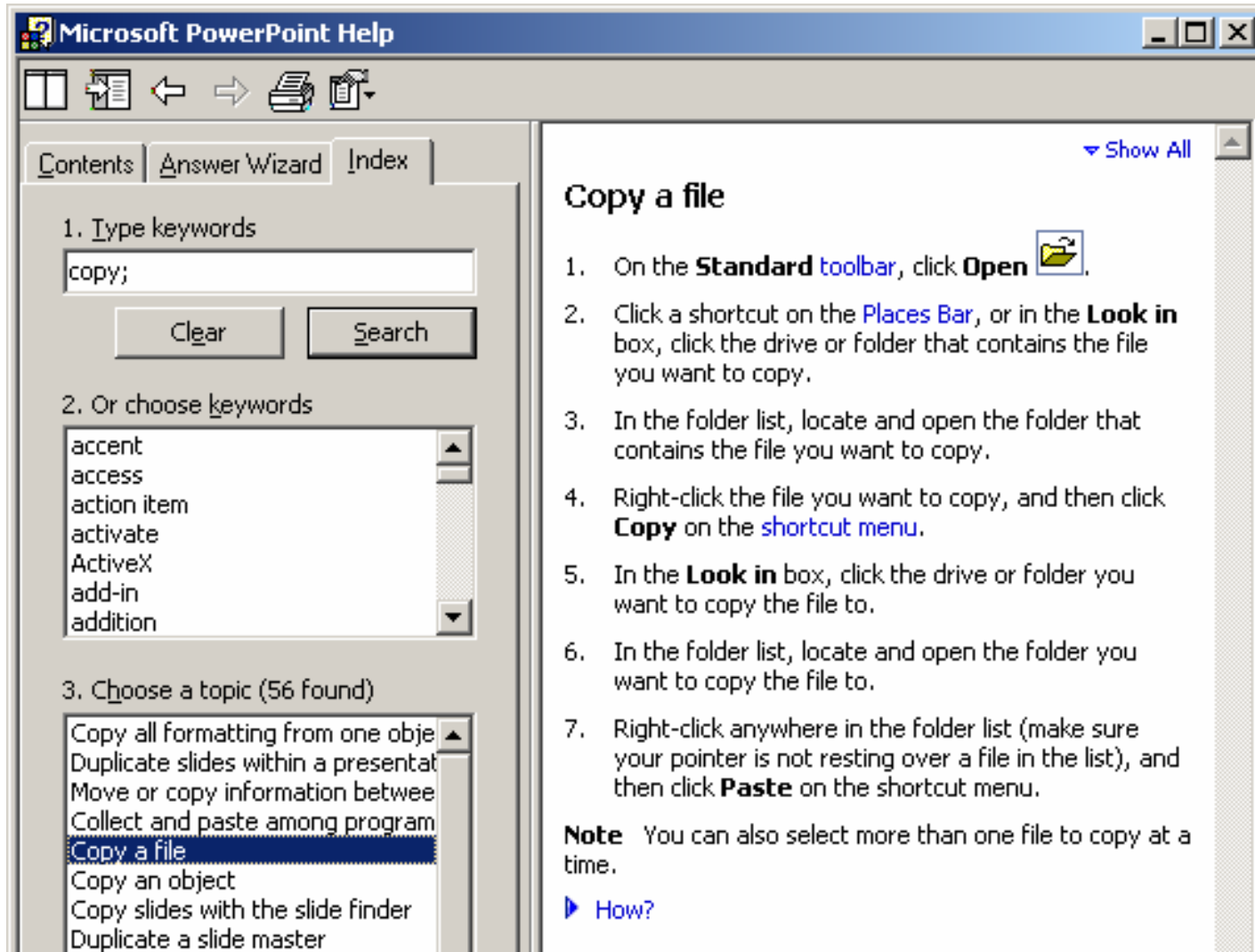
Copies the selection to the Clipboard.

- 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

On-line documentation

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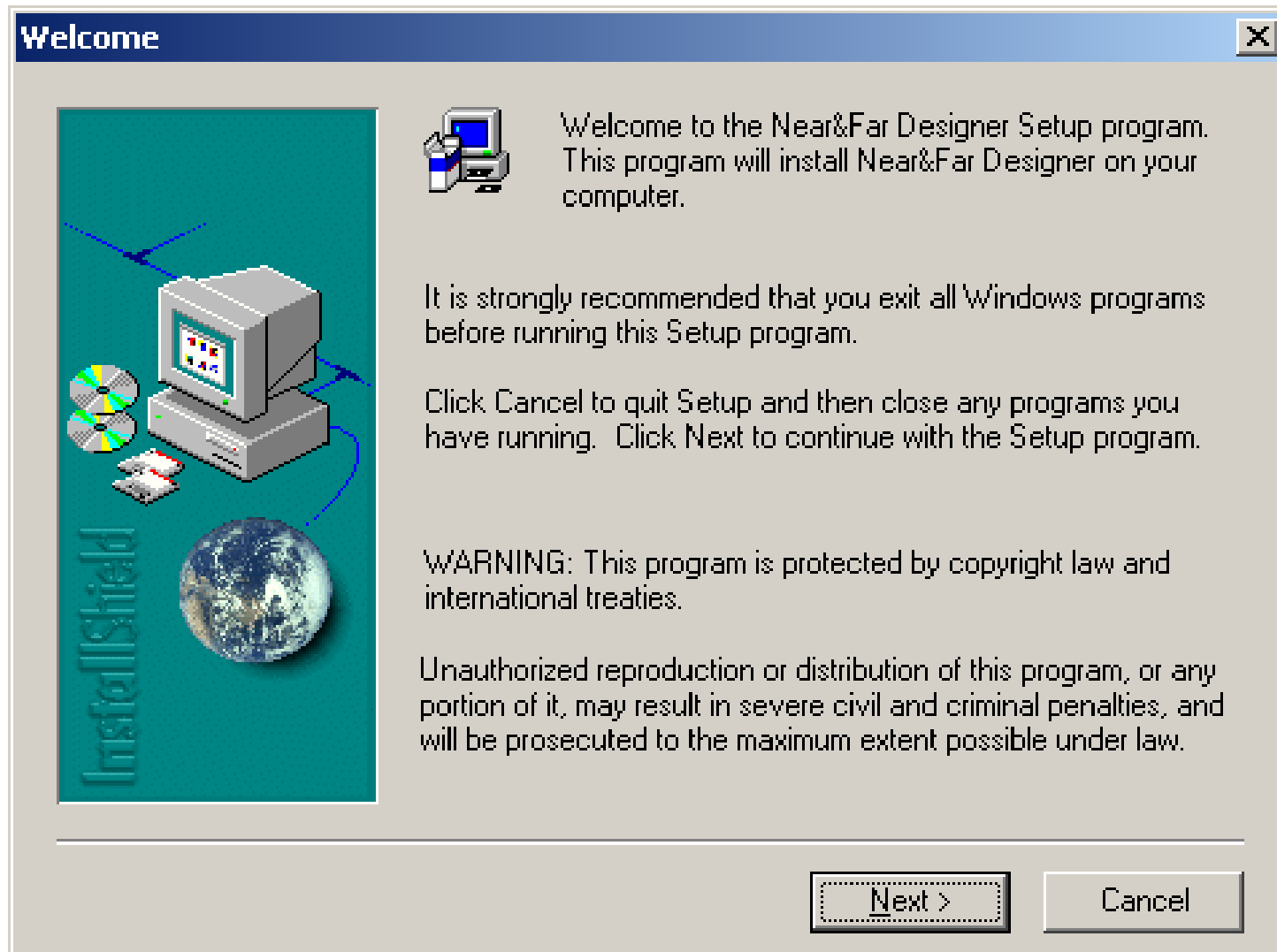
wizards and assistants

- ## 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

Wizards

Welcome   ✕

Welcome to the Near&Far Designer Setup program.
This program will install Near&Far Designer on your
computer.

It is strongly recommended that you exit all Windows programs
before running this Setup program.

Click Cancel to quit Setup and then close any programs you
have running. Click Next to continue with the Setup program.

WARNING: This program is protected by copyright law and
international treaties.

Unauthorized reproduction or distribution of this program, or any
portion of it, may result in severe civil and criminal penalties, and
will be prosecuted to the maximum extent possible under law.

InstallShield

[Next >]   Cancel

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Assistants

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)

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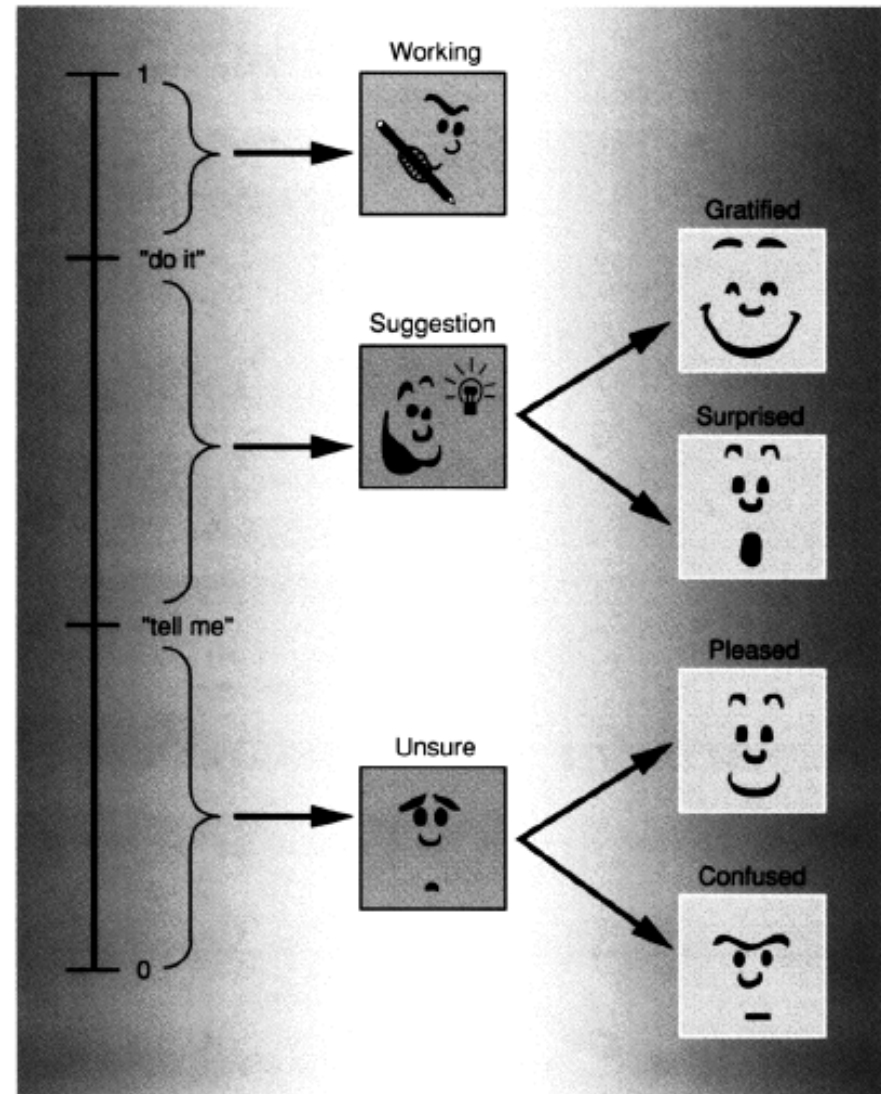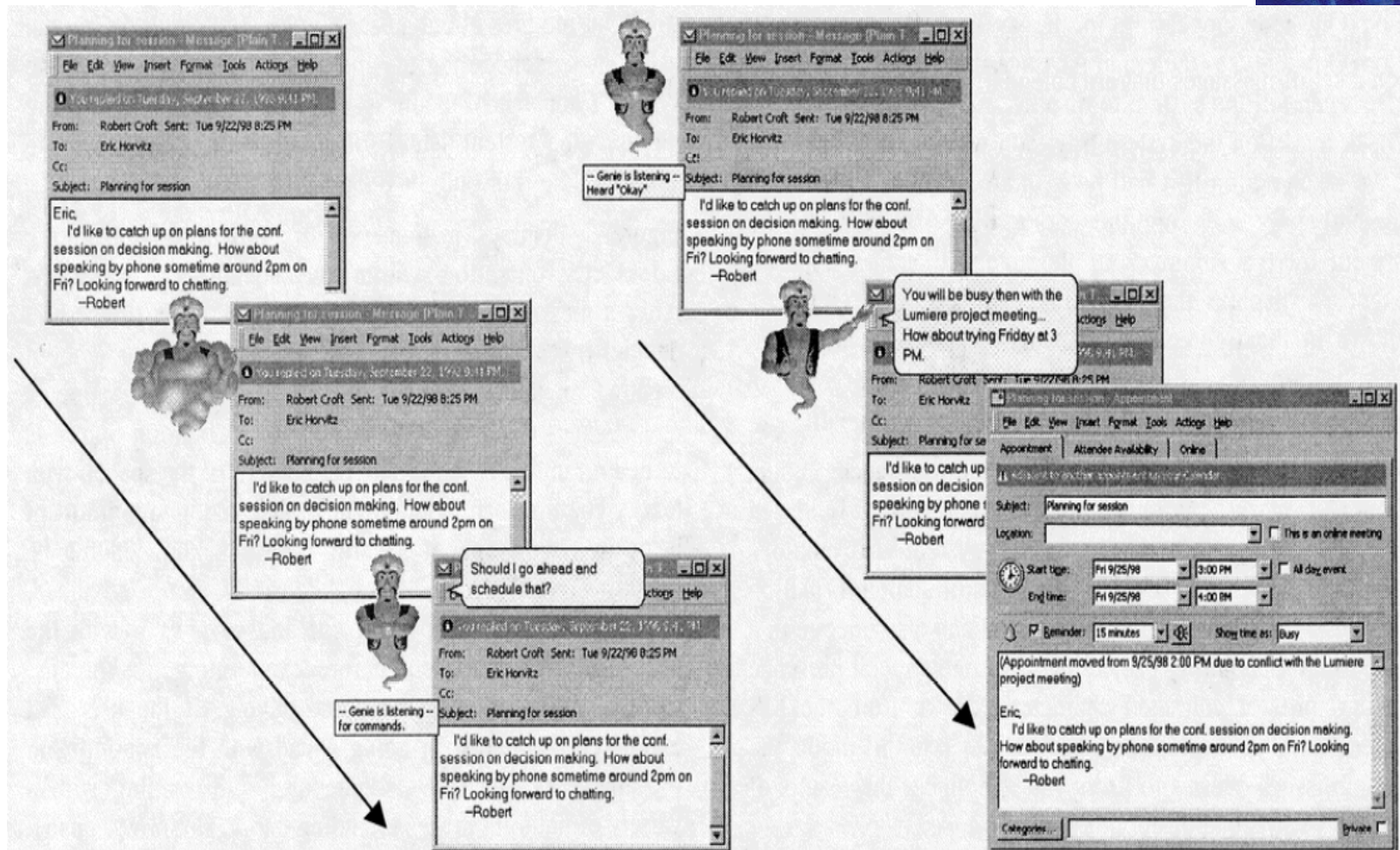
Figure 2. LookOut sequence showing its operation in its explicit social-agent modality. A new message (top left) is analyzed and a decision is made to engage the user in a dialog (left). After receiving confirmation via speech input, the system creates an appointment and presents its guess to the user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

WordPerfect 11 Template

- 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)