Chapter 14
Designing Windowing Systems

Objectives:
• Be able to identify the key elements of windowing systems.
• Be able to assess the technical trade-offs in the design of windowing systems.
• Be aware of the range of technical decisions required for HCI design.

Overview

• Windows are areas of a visual display, usually rectangular, which divide the physical display area into several virtual displays.
General issues

• **Usage**
  – very useful to users using a single display to work with more than one document at a time
  – to analyze the organizational overhead placed on users in managing windows the idea of a *window working set* is used
  – Rooms model- enables users to handle about three times as many windows

General issues cont.

• **Software issues:**
  – **Imaging model**- a scheme for displaying graphical images via the windows.
    • **Bitmap**- a way of describing an image as a bit pattern or series of numbers that gives the shade of each pixel.
    • **Mathematical descriptions of curves**- graphical objects to be displayed are described internally by mathematical formula.
Basic window components

- Windows
- Menus
- Controls and control panels
- Dialogue boxes
- Cursors

Common tasks in windowing systems

- Managing input
  - mouse actions
  - modifier keys
- Changing window focus
  - click to focus
  - mouse focus
Common tasks cont.

- **Managing single windows**
  - moving, scrolling, resizing
- **Managing multiple windows**
  - iconification
  - tiling
  - overlapping

Issues in windowing systems for CSCW

- New issues emerging
- Consider support for shared windows
  - A situation in which two people are each using their own workstation to communicate with each other via a shared voice channel and desktop window.
  - Coordination issues arise.