Interaction styles

Conversational

Command language
Dialog imposed by the system

Menus, forms
The system guides the user
Dialog controlled by the system

Direct manipulation

Shneiderman (1983)

Four principles

1. Continuous representation of the objects of interest
2. Physical actions rather than complex syntax
3. Quick, incremental, reversible operations whose effect on the objects of interest is immediately visible
4. Layered approach to facilitate learning
Direct manipulation

Document editing
Interaction controlled by the user

Direct manipulation

Iconic interaction
Generic interface
Metaphorical approach
Drag-and-drop

WIMP interfaces: the current standard

Presentation
Windows
Icons (and other graphical representations)

Interaction
Menus,
Dialog boxes, Input fields, Scrollbars, etc.

Input
Pointing, Selection, Gestures

WIMP interfaces

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Interaction styles: gesture-based interaction

Pen-based
- PDA (Palm Zire)
- Tablet PC (HP)

Touch-based
- PLATO (Buxton, 1972)
- Multi-touch (Jeong Han)
- iPad (Apple)

3D gestures
- VideoPlace (Kouegar, 1983)
- Charade (Baudel, 1993)
- Kinect (Microsoft)

Interaction styles: multimodal interaction

Combine speech + gesture
- Put-that-there (Bolt, 1980)
- Minority Report (movie)

Interaction styles: Virtual reality

Immersion of the user
- Sutherland (1965)
- Cybermind
- LARS
Interaction styles: mixed and augmented reality

Augmented reality (later renamed Mixed reality):
Augment physical object with computational capabilities

Tangible interaction:
Use physical objects for interaction

Marble answering machine
Durrell Bishop
A-book
Wendy Mackay

What next?

Brain-computer interfaces?

Emotional agents

Robots

Your idea?