# Interaction Styles

The interaction styles currently in use can be categorised as follows:

* Command-line
* Form-fill
* Menu-selection
* Direct Manipulation
* Anthropomorphic

## Command-line

For example, Unix, DOS.

* Powerful and flexible.
* The user must memorise the command set   
  (or at least the most important and frequently-used commands).
* Generally suited to complex systems used by trained staff.

## Form-fill

* Easy-to-use.
* Interactivity is limited.
* Generally suited to any application which involves gathering relatively large amounts of data, whether for novice/occasional or expert users.

## Menu-selection

* Easy to use since it relies on recognition, not recall.
* Not as flexible as command-line or direct-manipulation.
* Generally suited to relatively simple tasks performed by occasional and/or untrained users.

## Direct Manipulation

Shneiderman coined the term 'direct manipulation' to describe the style of interaction used in GUIs.

Its defining features are:

* Visibility of objects
* Replacement of complex command languages with actions to manipulate directly the visible objects
* Incremental action at the interface with rapid feedback
* Reversibility of actions
* Syntactic correctness of actions (every action is legal)

Advantages and disadvantages:

* Powerful and flexible
* Relies on recognition, not recall, so is easy to use.
* Suited to moderately complex and complex systems.
* The amount of training required varies with the application but is usually less than for equivalent command-line systems.

## Anthropomorphic

* Interfaces that are designed to allow natural forms of interaction, e.g.:
  + natural language (typed/speech)
  + gesture.
* Currently limited in power and flexibility but improving rapidly.
* Currently suited to the same kind as tasks as menu-selection interfaces (e.g., in voice-mail systems), but may eventually offer the same potential as CLI and DM systems.

Many interfaces incorporate more than one type of interaction.

For example:

* An interface may use direct-manipulation for most tasks, but...
* some tasks (e.g., writing macros) may be carried out using a command-line or form-filling approach.

Some guidelines apply to most or all interaction styles, whereas others are specific to one style of interaction.