

User Interface System

An example of a **complete user interface system**: Mac Common Lisp

- **windowing** tools
 - menus
 - views and windows
 - dialogs
- **display** interface tools
 - graphics system
 - fonts and points
 - color
- **programming** interface tools
 - object-oriented class, instance, and message system <initialize-, make->
 - load, compile, link, and evaluate
 - text editor
 - interface construction toolkit
 - debugging and error handling
 - foreign function interface
- **interactivity** system tools
 - event handling and management
 - streams and buffers
- **operating system** tools
 - multitasking
 - memory management
 - file system interface
 - low level: internal data structures, pointers, memory blocks
 - high-level: traps and records

Generic object operators/functions:

constructors:	make-, initialize-, set-
assessors:	get-
queries:	? -
functions:	act-on-
relations:	constrain-

Turnkey dialog boxes

throw-cancel and catch-cancel	<aborts>
message-dialog	
yes-or-no-dialog	
get-string-from-user-dialog	
select-item-from-list-dialog	

Windows

nested-views, size, position, scroller, click-handler
title, font, color, active?, layer, zoom, grow, drag

Menu Class structure

```

menu-element
  menubar          (class, variable, function)
    set-menubar
    find-menu
    <color-functions>
    *default-menubar*
  menu
    initialize-, set-
      menu-title, menu-items, menu-colors
      update-function
      help-spec          (balloon-help system)
    install, deinstall, installed?
    enable, disable, enabled?
    font-style
    add-menu-items, remove-menu-items, get-menu-items, find-menu-item
    <color-functions>
    menu-item
      initialize-, set-, get-, query?-
        owner          title
        command-key    action-function  (call vs get)
        disabled?      colors
        checked         font-style
        update-function help-spec
    window-menu-item
      close, save, save-as, save-copy-as, revert, hardcopy
      undo, undo-more
      cut, copy, paste, clear, select-all
      load/evaluate-selection, load/evaluate-whole-buffer
  
```

Dialog-items

```

initialize-, set-, get-, make-
  view-size, view-container, view-position, view-nickname, view-font
  dialog-item-text, dialog-item-handle, dialog-item-enabled?
  part-color-list, dialog-item-action, help-spec, window-pointer
install, activate, activate-event-handler, default

button-dialog-item
  press-button, default-button-dialog-item          (make-, get-, set-, ?-)
static-text-dialog-item
editable-text-dialog-item  <key-stroke-handlers>
checkbox-dialog-item
  checkbox-check, -uncheck, -checked?
radio-button-dialog-item
  radio-button-cluster, -push, -unpush, -pushed?
table-dialog-item          <table-constructors>, <cell-contents-handlers>
  sequence-dialog-item
pop-up-menu <handlers>
scroll-bar          <handlers>
  
```