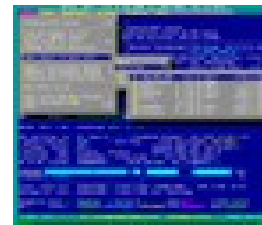


TxWin, a multi platform text mode windowing library

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A library for development of text mode applications using a windowing system including menus, dialogs and more ...

FSYS - *software*



TxWin

Presentation contents

- What & Why, text-mode windowing
- Main features of the Txwin library
- Some samples and demos
- Current shortcomings, future ...
- Availability and licencing

What is ...

- A text mode windowing system (UI)
 - A user interface based on the well-known principles of GUI's like Windows and OS2-PM, but operating entirely with text screen elements (ASCII, ANSI ...)
 - Uses UI elements like windows, buttons, lists, menus, entry fields; Is operated using keyboard and mouse.
 - As opposed to:
 - Graphical User Interface (GUI) environments
 - Simple STDIO based text applications that only use the keyboard and simple sequential output to the screen

Why text mode windowing

- Portable to many platforms
- Fast, even on old hardware
- Works in minimal environments like boot diskettes/CDROM (OS2, DOS, Linux ...)
- Appeals to command line users

Main features

- Multi-platform, currently available on:
 - DOS, 32-bits, using a DOS-extender (DOS32A)
 - OS/2, 32-bits only, OS/2 2.x and later, ArcaOS, eCS
 - Windows 32-bit, XP and later (no 9x or NT4)
 - Linux, works on most distributions, console or xterm
 - MacOS, 64 bit runs in Terminal or iTerm,
- API much like OS2-PM or Windows
- Message based, extendable to a certain degree using custom window procedures
- Windows build dynamically, no resource-files
(Instead, Widget lists can be used for easy dialog creation)

Message processing

- The main application function contains a message processing loop (like OS/2 PM):

```
while (txwGetMsg( &qmsg))  
{  
    txwDispatchMsg( &qmsg);  
}
```

- Dialogs have their own message loop, inside the 'txwDlgBox()' library function (these are modal dialogs in nature)

Familiar message names

- TxWindows uses familiar messages like:
 - TXWM_CREATE
 - TXWM_DESTROY
 - TXWM_CHAR
 - TXWM_COMMAND
 - TXWM_CLOSE
 - TXWM_QUIT
 - TXWM_HELP
 - TXWM_PAINT
 - TXWM_SETFOCUS
 - TXWM_MOVE
 - TXWM_SIZE
 - TXWM_CONTROL
 - TXWM_BUTTONDOWN
 - TXWM_USER

Familiar windowing functions

- TxWindows equivalents for many tasks:
 - txwSendMsg
 - txwPostMsg
 - txwCreateWindow
 - txwSetFocus
 - txwInvalidateWindow
 - txwQueryWindow
 - txwQueryWindowUShort
 - txwQueryWindowPos
 - txwSetWindowPos
 - txwDefWindowProc
 - txwDefDlgProc
 - txwDismissDlg
 - ...

Features, continued

- Includes common classes or controls like:
 - Frame or Canvas, text-window
 - Static text (output fields)
 - Text-viewer window (can be used for HELP)
 - Scrolling output window with status area
 - Buttons, including Check-box and radio-button
 - Entryfield, including history list popup
 - Hex-editor control, with HEX and ASCII areas
- Most standard behaviour implemented in default window-procedures in the library
 - Specific window procedures are mainly needed when controls in a dialog have mutual dependancies

Features, dialogs

- Includes a few standard dialogs:
 - Message-box, with one to four buttons (W*)
 - Prompt-box, to get simple single field input (W*)
 - File-Open and File-save-as dialogs (W*)
 - Directory picker dialog (W*)
 - Menubar dialog, with pulldown and sub menus
 - List-box, as submenu or standalone popup
 - Widget dialog, easy creation of custom dialogs (W*)
- The (W*) marked dialogs can be extended very easily using a list of Widget definitions
 - Any CONTROL class can be used in a widget list

Normal output handling

- Window based, application specific
- 'printf' semantics, with output redirected to the large scroll-buffer window, or STDOUT and optional log file (for LOG and TRACE).
 - The 'printf' based output is also available when no windowing is used at all, in that case the output will go to the the STDOUT stream and optional log file. It does support full ANSI support to allow cursor positioning and use of colors, either in the buffer or directly to the screen.

Argument and Option parsing

- Integrated parsing of program/command arguments and options (or switches)
- Allows nesting, and available throughout the whole application, not just in main()
- Has query functions like:
 - TxaArgCount
 - TxaArgValue
 - TxaGetOption
 - TxaOptionStr
 - TxaOptionNum
 - ...

Functional tracing

- Offers tracing of function ENTRY and EXIT, as well as parameters or other events.
- Available inside the library itself, can be used by the application by means of a set of specific TRACE macros like 'ENTER()'
- Tracing can be redirected to a file for analysis, displayed on a status line or to the normal output stream
- Start trace using a command or a hotkey

Non-windowing functionality

- The library has several modules and functions NOT related to windowing:
 - Additional string manipulation, like wildcards
 - Directory and file iterator (SysFileTree like)
 - Standard command interpreter/executor
 - LZW compression functions
 - REXX (OS/2 only) or NATIVE script processing
 - CRC calculation functions (several :-)
 - Filesystem information functions
 - Filename manipulation including wildcards
 - ...

Current limitations

- Not all behaviour is easy to extend/overrule
- Not modular enough (minimum code-size)
- Linux/macOS version not terminal independant
But works fine in Console, KDE and Gnome,
several other Linux xterm-like terminals and
macOS Terminal or iTerm,
- Minor issues:
 - Unreliable mouse-cursor in OS2 full-screen

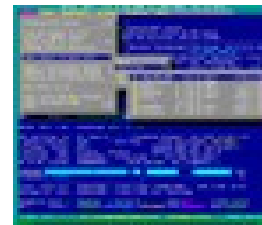
Availability and licencing

- Version 5.xx of TxWindows is available now
 - Interested developers can download the current version
<https://www.dfsee.com/download/#txwin>
 - For more info and support, contact: info@dfsee.com
 - Distribution will be in the form of ZIP files for the library, samples, sources and the development environment
- Licensing is based on LGPL
 - Source updates should flow back to the community
 - Commercial applications OK, but no derived libraries

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Questions ?

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