

**rxwizenglish**

**COLLABORATORS**

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# Chapter 1

## rxwizenglish

### 1.1 Index

```
rxwiz.library 7.1

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6. System requirements
7. Installation
8. Terms
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```

### 1.2 warning

THIS SOFTWARE AND INFORMATION ARE PROVIDED "AS IS".  
ALL USE IS AT YOUR OWN RISK, AND NO LIABILITY OR  
RESPONSIBILITY IS ASSUMED. NO WARRANTY IS MADE.

### 1.3 guide

This guide contains links with inline ARexx macros which  
use rmh.library/OpenURL. They will work if and only if  
you have both openurl.library and rmh.library installed.

rmh.library is by me and can be found on aminet at rexx/utils/rmh.lha

---

openURL.library is by Troels Walsted Hansen

"This library was created to make it easier for application programmers to include clickable URLs in their applications, about windows, etc. ..."

You can find it on aminet at comm/www/OpenURL20.lha

## 1.4 distribution

rxwiz.library is FreeWare.

You are free to distribute it as long as the original archive is kept intact. Commercial use or its inclusion in other software package is prohibited ↵ without prior consens from the Author.

## 1.5 author

I am Alfonso Ranieri .

My e-mail address is alfier@iol.it .

My home page is at <http://users.iol.it/alfier/> .

You can find me on:

- #amigaita ircnet ;
- #amyita ircnet .

## 1.6 introduction

It is a bridge between wizard.library and ARexx.

The gui is described out of the macro. In the macro you just open the surfaces, the windows and handle them in an Amiga-Exec way.

You must name any window and object you want to receive messages from or you want to set/get attributes and you will be notified in the macro with symbolic name.

StormWizard and wizard.library are H&P copyright.

StormWizard is the GUI maker for wizard.library and is a commercial product. A demo of StormWizard is avaible free.

wizard.library is the AmigaDOS shared library that runs GUI created by StormWizard; it is free distribuible.

This is a new version, compatible with old rxwiz.library, but for the last time.

Function marked as "OBSOLETE" are supported in this version of the library, but will be nomore in next version.

Now the library handles full GUI with appicon and commodity.

The main terms are:

event - an event that can occur on a gui e.g. an IDCMP intuition message , an appicon message or a cx message.  
rxwiz.library is AmigaOS exec signals event driven so any event can be filtered via a signal.  
Usually rxwiz.library handles particular events by itself, but can be forced to not do that.

surface - it is the gui description, made of a wizard file created by StormWizard, and the GUI description passed to the library, in a macro, via "fields" of a "stem" .  
In the GUI description you define if the GUI has an appicon and a cx , if the GUI auto handles iconify - deiconify - close events.

appicon - an AmigaOS appicon that is auto created if the GUI has one, when the GUI is iconified

cx - a basic AmigaOS commodity with no hotkey (in this version)

windows - the windows defined in the wizard and opened in the GUI

objects - the BOOPSI gadget defined in the wizard and opened in a window

## 1.7 requirements

This library needs:

- AmigaOS, version >=3
- wizard.library, version >=38

If you want to create or to modify GUIs you need StormWizard not demo.

The examples require:

- rmh.library
- rxsocket.library
- rmh.library
- rxasl.library

## 1.8 installation

Run the installation script.

NOTA BENE: Catalogs are not installed by the installation script.

## 1.9 terms

- stem or stemName: a valid ARexx variable name e.g. var, var.0, var.name, var
- types of arguments: the types used are:

D	any data	--
N	int	/N
S	symbol	/S ARexx valid symbol
V	stemName	/V ARexx valid symbol as S but with length<20

## 1.10 bugs

- no way for the library to know when a critical stack situation may appear and so self-arrange the stack, anyway critical stack situations appear only with very very big GUI (e.g. try to open AmigaWriter.wizard GUI window 4).
- hummmmm maybe many others, let me know.

## 1.11 gui

To create a GUI you must use StormWizard, but not the demo version, because it doesn't let you save the GUI.

Name all the objects (menu items, gadgets, windows, ...) you want to receive messages from or you want to get/set attributes.

Before saving the GUI, do a "Renumber all" for all the windows and write down the last gadget ID.

Also write down the windows id.

You need these numbers to open your GUI.

## 1.12 functions

```
ActivateGadget
ActivateWindow
CheckMenu
CloseSurface
CloseWindow
GadgetConfig
GadgetKey
GetRxWizString
GetWindowAttr
GetWizAttr
HandleWindow
help
HelpControl
LockWindow
```

---

```
LockWindows
MenuStatus
OnMenu
OpenSurface
OpenWindow
SetStatcks
SetWindowatrrs
SetWizatrrs
snapshot
UnlockWindow
UnlockWindows
WindowSignal
WizEasyRequest
```

## 1.13 activategadget

```
ActivateGadget
```

```
Usage: res = ActivateGadget(surface,window,gadget)
<surface/S>,<window/S>,<gadget/S>
```

Activate a gadget.

Returns 0 for succes or a positive error code.

## 1.14 activatewindow

```
ActivateWindow
```

```
Usage: res = ActivateWindow(surface,window)
<surface/S>,<window/S>
```

Activate a window.

Returns 0 for succes or a positive error code.

## 1.15 checkmenu

```
CheckMenu
```

```
Usage: res = CheckMenu(surface,window,menu,status)
<surface/S>,<window/S>,<menu/S>,[status/N]
```

Check a menu item (if checkable).

menu is the name of the menu (you have to name it).

status is 0 or 1 (1 is the default)

If the menu can't be found it returns 58 "object not found"

If the menu is not checkable it returns 61

"incomplente attribute reading or setting".

## 1.16 closesurface

CloseSurface

Usage: res = CloseSurface(surface)  
<surface/S>

Close a surface and all the windows that belong to it.

Returns 0 for succes or a positive error code.

## 1.17 closewindow

CloseWindow

Usage: res = CloseWindow(surface,win,ONLYWIN)  
<surface/S>,<win/S>,[ONLYWIN]

Close a window opened with OpenWindow().  
Surface is the name of the surface the window belongs to.  
If ONLYWIN is given as third argument, only the window is  
closed. It let you close the window, but still use the  
gadgets in it, to set/get their attribute.  
It also let you re-open the window very fast, without re-set  
its gadgets.

Returns 0 for succes or a positive error code.

## 1.18 gadgetconfig

GadgetConfig

Usage: res = GadgetConfig(surface,win,obj,var)  
<surface/S>,<win/S>,<obj/S>,<var/S>

Write in var the configuration string of a gadget in a window  
of a surface as defined in the surface description in StormWizard.

Returns 0 for succes or a positive error code.

## 1.19 gadgetkey

GadgetKey

Usage: res=GadgetKey(surface,window,code,qualifier)  
<surface/S>,<window/S>,<code/N>,<qualifier/N>

Notifies gadgets from a window of a surface of a key pressed  
of code and qualifier specified.

If some gadget reserved that qualifier/code key combination,  
it will notify its attributes via ICMPUPDATE.

Returns an ARexx boolean.

## 1.20 getrxwizstring

GetRxWizString

Usage: string=GetRXWizString(code)  
<code/N>

Return a localized error string from an error code.  
All the functions returns 0 for succes or a positive  
integer for failure.

The string is localized; if the function is able to  
open the catalog rxwiz.catalog" the string is read  
from there. Internal library language is english.

Codes and strings actually defined are:

- 51 "too few memory"
- 52 "required argument missing"
- 53 "bad number"
- 54 "bad value"
- 55 "screen not found"
- 56 "surface not found"
- 57 "can't open window"
- 58 "object not found"
- 59 "object name already in use"
- 60 "object not created"
- 61 "incomplente attribute reading or setting"
- 62 "invalid hotkey description"
  
- 1000 "Can't find"
- 1001 "field"
- 1002 "line"
- 1003 "unknown error %ld" - (internal, DO NOT USE !!!)

## 1.21 getsurfaceattr

GetSurfaceAttr

Usage: res = GetSurfaceAttr(surface,attr,var)  
<surface/S>,<attr/S>,<var/V>

Reads ONE attribute of a surface.

The value of the attribute is stored in var, in attribute specific way.

The attributes that can be read are:

Snaphost

Returns 0 for succes or a positive error code.

## 1.22 getwindowattr

GetWindowAttr

Usage: res = GetWindowAttr(surface,win,attr,var)  
 <surface/S>,<win/S>,<attr/S>,<var/V>

Reads ONE attribute of a window of a surface.  
 The value of the attribute is stored in var, in attribute specific way.  
 See attributes for a list of the attributes.

Returns 0 for succes or a positive error code.

## 1.23 getwizattr

GetWizAttr

Usage: res = GetWizAttr(surface,win,obj,attr,var)  
 <surface/S>,<win/S>,<obj/V>,<attr/S>,<var/V>

Reads ONE attribute from an obj in a window of a surface.  
 The value of the attribute is stored in var, in attribute specific way.  
 See Object Attributes for a list of the attributes.

Returns 0 for succes or a positive error code.

## 1.24 handlewindow

HandleWindow OBSOLETE

Usage: res = HandleWindow(surface,win,handle)  
 <surface/S>,<win/S>,[handleStem/V]

Handle windows of a surface.

- surface is the name of a surface
- win see below
- handle is a stem to pass arguments and where functions return results;  
 the fields that may be passed are:
  - WAIT doesn't return untill a signal or an intuition message comes  
 (default 1)
  - SIGNALS signals to wait for
  - CTRLC wait for ctrl-c (2\*\*12)
  - MULTI win is a stem not a window name

If the field MULTI of the stem handle is set, win is a list  
 of n windows names, win.0, win.1,... till win.n exists; all those  
 windows are handled. The result fields are store in handle.winName.i,  
 where winName is the name of the window and i is the index for the  
 i-th intuition message.

If the field MULTI of the stem win is not set, win is a window name,

and just that window is handled. The result field are store in handle.i where i is the index for the i-th intuition message.

All the intuition messages pending on the window(s) are received.

The fields set by the function in the stem handle are:

- SIGNALS the signal received (including window(s) signal(s))
- IMSG the number of intuition messages received
- m.CLASS the class of the m-th intuition message (in human form, or "↔ UNKNOWN")
- m.QUALIFIER the qualifier of the m-th intuition message
- m.CODE the code of the m-th intuition message
- m.IADDR the IAddr of the m-th intuition message (DON'T PLAY WITH IT!)
- m.WINDOW the window name of the window receiving the message as defined in OpenWindow()
- m.OBJECTID the object name as defined in the surface from which the message comes
- m.COORD only for HIERARCHY objects: the x.y.x.w... coord or the item
- m.CONFIG the configuration string as defined in the surface
- m.HELP the help string as defined in the surface if the class is ↔ GADGETHELP
- m.NUMTAGS most of the objects notify the window with a IDCMPUPDATE ↔ intuition message and a taglist with attributes  
if m.CLASS is "IDCMPUPDATE" in this field there is the total ↔ number  
of the tags. The names of the tags are in m.tag.j,...,m.tag.x  
with x=m.NumTags-1. Any tags value is in m.TAgName.  
Seems so complicated, but it is very easy.

Returns 0 for success or a positive error code.

## 1.25 handlesurface

HandleSurface

Usage: res = HandleSurface(surface,handle,win)  
<surface/S>,<handleStem/V>,[win/S]

Handle a surface.

surface - the name of a surface  
 handle - a stem to pass arguments and where functions return results;  
 the fields that may be passed are:  
 wait - doesn't return until a signal or an intuition message comes  
 (default 1)  
 signals - signals to wait for  
 ctrlc - wait for ctrl-c (2\*\*12)  
 multi - win is a stem not a window name  
 win - if present only this win is handled

The fields set by the function in the stem handle are:

- signals the signal received (including window(s) signal(s))

- imsg the number of messages received  
 - m.class the class of the message (in human form, or "UNKNOWN")  
 the class is an IDCMP name or:  
   APPWINDOW - an appwindow message  
   APPICON - an appicon message  
   CXHOTKEY - hotkey was used (if hostkey defined)  
   CXDISABLE - cx was disabled in Exchange  
   CXUNABLE - cx was unable in Exchange  
   CXKILL - cx was removed in Exchange  
   CXUNIQUE - another cx with the same name was opened (if defined ← and required)  
   CXAPPEAR - "Show interface" was pressed in Exchange  
   CXDISAPPEAR - "Hide interface" was pressed in Exchange  
 - m.qualifier the qualifier of the m-th intuition message  
 - m.code the code of the m-th intuition message  
 - m.iaddr the IAddr of the m-th intuition message (DON'T PLAY WITH IT!)  
 - m.window the window name of the window receiving the message as defined in OpenWindow()  
 - m.objectid the object name as defined in the surface from which the message comes  
 - m.coord only for HIERARCHY objects: the x.y.x.w... coord or the item  
 - m.config the configuration string as defined in the surface  
 - m.help the help string as defined in the surface if the class is ← GADGETHELP  
 - m.numtags most of the objects notify the window with a IDCMPUPDATE ← intuition  
   message and a taglist with attributes  
   if m.CLASS is "IDCMPUPDATE" in this field there is the total ← number  
   of the tags. The names of the tags are in m.tag.j,...,m.tag.x  
   with x=m.NumTags-1. Any tags value is in m.TAgName.  
   Seems so complicated, but it is very easy.  
 - m.AILock  
   objectid a boolean only valid if class is APPICON or APPWINDOW and the ←  
   is not empty : the object id as a lock

Returns 0 for success or a positive error code.

## 1.26 help

help

Usage: helpString=help(funName)  
 <funName>

Returns the arguments mask string of the rxwiz.library function "funName".

## 1.27 helpcontrol

HelpControl

Usage: res = HelpControl(surface,win,0|1)

<surface/S>,<win/S>,<0|1>

Switch on/off the ability of a window from a surface to receive GADGETHELP intuition messages.

Returns 0 for succes or a positive error code.

## 1.28 lockwindow

LockWindow

Usage: res=LockWindow(surface,win)  
<surface/S>,<win/S>

Lock the window.

Returns 0 for succes or a positive error code.

## 1.29 lockwindows

LockWindows

Usage: res=LockWindows(surface)  
<surface/S>

Lock all the windows of a surface.

Returns 0 for succes or a positive error code.

## 1.30 menustatus

MenuStatus

Usage: call MenuStatus(surface,win,status)  
<surface/S>,<win/S>,<status/N>

Set or clear the menu strip of a window of a surface.

Returns 0 for succes or a positive error code.

## 1.31 onmenu

OnMenu

Usage: res = OnMenu(surface,window,menu,status)  
<surface/S>,<window/S>,<menu/S>,[status/N]

---

Able/Disable a menu.

menu is the name of the menu (yes you have to name it).  
status is 0 or 1 (1 is the default)

If the menu can't be found it returns 58 "object not found"

## 1.32 opensurface

OpenSurface

Usage: res=OpenSurface(surfaceName,objName,stem)  
<surfaceName>,<objName/V>,[stem/V]

Opens a surface and add it in the macro with objName.  
The surface is a wizard file created by StormWizard.  
objName is also a stem name where are defined the fields  
for the surface to open; if stem is passed the stem are read  
from there.

The fields are:

Catalog - the catalog to open (critical: use the cd file created  
by StormWizard and with catcomp make the catalog with  
NOOPTIM option)

PubScreenName - the default pubscreen for the windows of this surface  
FallBack - fallback to default pubscreen if the above does not exist  
default 1

Snapshot - snapshot all the windows of the surface when it is closed  
default 0

AppName - the default name of the appicon (if any) and the cx (if any)

Iconified - the initial status of the GUI; all window not "NoAutoClose"  
are iconified and an appicon is opened (if any)  
default 0

MasterWin - the name of a window ; when that window is closed  
the macro is halted

AutoClose - when the cx (if any) receives a KILL (users press "Remove"  
in Exchange) the macro is halted  
default 0

AutoIconify - when the cx (if any) receives a APPEAR (users press "Show  
Interface" in Exchange) the GUI is deiconified  
default 1

AppIcon - then name of a info file (without ".info" to be used  
as appicon; if it can be found or is "" the system tools  
default icon is used.  
this stem also add an appicon to the GUI  
default no appicon

AppIconName - overwrite AppName

CxTitle - the title of the cx, if present CxDescr must be present

CxDescr - the description of the cx, if present CxTitle must be present

CxHotKey - a valid HotKey description

CxFlags - on or more of "UNIQUE" and "NOTIFY"

Returns 0 for success or a positive error code.

If you try to create a cx that was opened with the UNIQUE flags, an error  
59 ("object name already in use") is returned.

If you try to create a cx with an invalid CxHotKey, an error 62 ("invalid hotkey description") is returned.

BUG:

The functions does not return error 62 if an invalid CxHotKey is specified (Hummm really don't know why, will be maybe fixed in next version).

## 1.33 openwindow

OpenWindow

Usage: res=OpenWindow(surface,objName,stem)  
<surface/S>,<objName/V>,[stem/V]

Opens a specific window defined in the surface and add it in the macro environment with objName.

objName is also a stem name where are defined the fields for the window to open; if stem is passed the stem are read from there.

You can specify which window is to open in 3 ways:

- specifying the id of the window as defined in StormWizard in the field "ID"
- specifying the name of the window as defined in StormWizard in the field "WindowName"
- opening the window with objName as the name of the window as defining in StormWizard.

The only needed field to set in stem is:

Gads - the num of the gadgets of the window: must be the highest gadget id of the window gadgets from StormWizard plus 1.

Other important fields are:

AppWindow - icon can be dropped in the window, that will receive a handle message of class APPWINDOW

NoWindow - the window is not open but only initialized any object in the window can be used

NoAutoOpen - this window is not to be opened when the gui is deiconified

NoAutoClose - this window is not to be iconified when the gui is

All the other window attributes are optional.

Returns 0 for succes or a positive error code.

## 1.34 setstacks

SetStacks

Usage: res=SetStacks(surface,dStack,sStack)  
<surface/S>,[dStack/N],[sStack/N]

Due the way windows are drawn and attributes of objects of windows are set, there may happen that crtitical stacks sitution occurs. This functions set the dStack (the stack used for the drawing process of wizard.library) and sStack (the stack used by rxwiz in stack swap).

Returns 0 for succes or a positive error code.

## 1.35 setsurfaceattrs

SetSurfaceAttrs{plain}

Usage: res = SetSurfaceAttrs(surface,stem)  
<surface/S>, [stem/V]

Sets attributes" of a surface.

The attribute that can be set are:

Snapshot - snapshot the surface when it is closed

Iconified - iconfy the surface

AppIconName - new name of the app icon

Returns 0 for succes or a positive error code.

## 1.36 setwindowattrs

SetWindowAttrs

Usage: res = SetWindowAttrs(surface,win,stem)  
<surface/S>, <win/V>, [stem/V]

Sets attributes of a window.

If given the attributes are read from stem, otherwise from win.

Returns 0 for succes or a positive error code.

## 1.37 setwizattrs

SetWizAttrs

Usage: res = SetWizAttrs(surface,win,obj,stem)  
<surface/S>, <win/S>, <obj/S>, <stem/V>

Set attributes from an object in a window from a surface.

You must set stem with the fields of the attributes to set.

See Object Attributes for a list of the attribute.

Returns 0 for succes or a positive error code.

## 1.38 snapshot

snapshot

Usage: res=SnapShot(surface)  
<surface/S>

Snapshot the surface.  
Snapshot applies only on closed windows.

Returns 0 for succes or a positive error code.

## 1.39 unlockwindow

UnlockWindow

Usage: res=UnlockWindow(surface,win)  
<surface/S>,<win/S>

Unlock a window locked by LockWindow().  
If the window was not locked, just does nothing.

Returns 0 or a positive error code.

## 1.40 unlockwindows

UnlockWindows

Usage: res=UnlockWindows(surface)  
<surface/S>

Unlock all the windows of a surface locked by LockWindows().

Returns 0 or a positive error code.

## 1.41 surfacesignal

SurfaceSignal

Usage: sig=SurfaceSignal(surface)  
<surface/S>

Returns the signal of a surface.  
The signal to Wait for is sig.

Any event on this surface can be trapped waiting for this  
signal with rmh.library/Wait .

---

## 1.42 windowsignal

WindowSignal OBSOLETE

Usage: sig=WindowSignal(surface,win)  
<surface/S>,<win/S>

Returns the window Intuition port signal.  
The signal to Wait for is sig.

(WARNING: IN THIS VERSION OF THE LIBRARY ALL THE WINDOWS OF A SURFACE HAS THE SAME SIGNAL)

## 1.43 wizeasyrequest

WizEasyRequest

Usage: res=WizEasyRequest(surface,win,reqID,var,text)  
<surface/S>,<win/S>,<reqID/N>,[var/S],[text]

Open the wizard requester with id 'reqID'.  
The requester is open in the same window screen.  
The window is locked.  
The gadget number pressed by the user is returned in 'var' is specified;  
last right gadget has value 0.  
Text is an optional text used iff you put a '%s' in the text of the  
requester in StormWizard.  
This function is critical: bad text set in StormWizard can cause a  
lot of troubles.

DON'T USE MORE THAN ONE '%s' IN THE REQUESTER TEXT IN StormWizard.

Returns 0 for succes or a positive error code.

## 1.44 guidelines

I suggest to:

- to set NoAutoClose in a window if it is  
really required, e.g. the window is a popup window  
that appears for special events
- always leave the library to handle iconify deiconify
- always set AutoClose in the surface and trap the halt  
in the macro via a  
...  
signal on halt
- ...  
halt:  
exit  
...
- define a Master window and trap the halt as above

The suggested cycle for the gui is

```

you only have the gui to handle:
...
handle.wait = 1
res = HandleSurface(name, "HANDLE")
if res~=0 then call error(res)
do i=0 to handle.imsg-1
  select
    when handle.i.class== ...
  ...
end
...

you have to handle other signals driven events
...
ss=SurfaceSignal(name)
recv=wait(or(other,ss))
if and(recv,ss)~=0 then call handle()
...

handle:
handle.wait = 0
res = HandleSurface(name, "HANDLE")
if res~=0 then call error(res)
do i=0 to handle.imsg-1
  select
    when handle.i.class== ...
  ...
end
...

```

## 1.45 object attributes

Type is the type of the attribute:

- N numeric
- B boolean
- D any data
- V stem

Action tells in which context the attribute can be used:

- N the attribute is notified by the object via IDCMPUPDATE
- S the attribute can be set via SetRxWizAttrs()
- G the attribute can be read via GetRxWizAttr()

Name	Type	Action
<hr/>		
All gadgets		
- GAID	N	N
- CLASSID	N	G
- DISABLED	B	SG
- PRIORITY	N	G
- MINWIDTH	N	G

- MINHEIGHT	N	G
VGroup, HGroup		
- PAGE	N	NSG
Button		
- LABEL	D	S
String		
STRING	D	NSG
ChecBox		
- CHECKED	B	NSG
MX		
- ACTIVE	N	NSG
Label		
- LINES	D	G
Integer		
- INTEGER	N	NSG
Sroller		
- TOP	N	NSG
- VISIBLE	N	SG
- TOTAL	N	SG
Arrow		
- STEP	N	S
Listview, Multilistview		
- TOP	N	SG
- SELECTED	N	NSG
- DOUBLECLICK	B	N
- LIST	V	S
- VISIBLE	N	S
Toggle		
- CHECKED	N	NSG
- LABEL	D	SG
Colorfield		
- PEN	N	S
Args		
- TEXT	D	S
- PEN	N	S
Gauge		
- TOTAL	N	S
- CURRENT	N	S
- FORMAT	N	S
Cycle		
- ACTIVE	N	NSG
- LABELS	D	S

Date			
- DAY	N	S	SG
- MONTH	N	S	
- YEAR	N	S	
ImageToggle			
- CHECKED	N		NSG
ImagePopUp			
- SELECTED	B	N	
- LABELS	D	S	
TextPopup			
- SELECTED	B	N	
- LABELS	D	S	
VectorPopup			
- SELECTED	B	N	
- LABELS	D	S	
Palette			
- SELECTED	N		NSG
Hierarchy			
- IMAGEWIDTH	N	S	
- TOP	N	SG	
- LIST	V	S	
- VISIBLE	N	S	
- SELECTED	N	NSG	
- DOUBLECLICK	B	N	
Slider			
- LEVEL	N		NSG
- MIN	N	SG	
- MAX	N	SG	
StringField			
- TEXT	D		NSG

**Note:**

- LABELS for Cycle, TextPopup, VectorPopup and ImagePopup  
is a string of labels separated by a newline ( d2c(10) "A"x )  
e.g. "One" || "A"x || "Two"

**LIST**

- LISTVIEWLIST  
it is a stem, from where are read all the fields in the form  
.0,...,.n until .n exists,  
.i.Sel is a flag that tells the library if the node  
is selected
- Let's suppose the name of this stem is "LIST";  
in LIST you can set the fields:

- COLUMNS/N the number of columns in the listview
- DIVIDE/B Must divide the field with a vertical line?
- HEADER the header that will be drawn at the beginning of the list in bold style

Each single field can have set the fields:

- PEN
- SPEN
- STYLE NORMAL UNDERLINED BOLD ITALIC
- JUSTIFICATION one of LEFT RIGHT CENTER

The content of each node is a string where the special character | (ascii 124) is used to split the different columns.

#### EXAMPLE

```
list.Columns=2
list.header = "This is|a listview"
list.0="One|1";list.0.style="UNDERLINED BOLD"
list.1="Two|2";list.1.pen=1
set.LISTVIEWLIST="LIST"
res=SetWizAttrs("SURFACE", "WINDOW", "LISTOBJECT", "SET")
```

#### HIEARARCHY

- HIERARCHYLIST  
it is a stem, from where are read all the fields in the form .0,...n until .n exists
- .i.List (i=0,...,n) is a flag that tells the library if the node is a sub tree; if so, it's nodes are read from the new stem .i
- .i.Sel is a flag that tells the library if the node is opened

The same fields of LISTVIEWLIST are used.

## 1.46 Window Attributes

Attributes that can be passed to OpenWindow(), SetWindowAttrs() and ← GetWindowAttr().

Type is the type of the attribute:

- N numeric
- B boolean
- D any data
- V stem

Action tells in which contest the attribute can be use:

- C the attribute can be used when the window is created
- G the attribute can be read via GetRxWindowAttr()
- S the attribute can be set via SetRxWindowAttrs()

Name	Type	Action	
- ID	N	C	see OpenWindow
- WinName	D	C	,

- gads	N	C	" "
- AppWindow	B	C	" "
- NoAutOopen	B	CS	" "
- NoAutoClose	B	CS	" "
- NoWindow	B	C	" "
- pubscreen	D	C	
- fallback	B	C	fallback to surface pubscreen
- title	D	CSG	
- idcmp	D	CSG	see IDCMP
- left	N	CSG	
- top	N	CSG	
- width	N	CSG	
- height	N	CSG	
- MinWidth	N	CSG	
- MinHeight	N	CSG	
- MaxWidth	N	CSG	
- MaxHeight	N	CSG	
- DetailPen	N	C	
- BlockPen	N	C	
- ScreenTitle	D	CSG	
- sizegadget	B	C	
- dragbar	B	C	
- depthgadget	B	C	
- closegadget	B	C	
- sizebright	B	C	
- sizebbottom	B	C	
- smartrefresh	B	C	
- simplerefresh	B	C	
- backdrop	B	C	
- reportmouse	B	C	
- gimmezerozero	B	C	
- borderless	B	C	
- activate	B	C	
- rmbtrap	B	CS	
- nocarerefresh	B	C	
- newlookmenus	B	C	
- menuhelp	B	C	
- pointerdelay	B	C	
- busypointer	B	C	
- autoadjust	B	C	
- innerwidth	N	C	
- innerheight	N	C	
- mousequeue	N	C	
- rptqueue	N	C	
- notifydepth	B	C	
- helpgroup	N	C	
- help	B	S	

## 1.47 idcmp

They are received as a message class in string form.

They are passed to a window in 2 forms:

- numeric just the value as an integer
- human a string made of one or more of the following words

separated by space(s)

- SIZEVERIFY
- NEWSIZE
- REFRESHWINDOW
- MOUSEBUTTONS
- MOUSEMOVE
- GADGETDOWN
- GADGETUP
- REQSET
- MENUPICK
- CLOSEWINDOW
- RAWKEY
- REQVERIFY
- REQCLEAR
- MENUVERIFY
- NEWPREFS
- DISKINSERTED
- DISKREMOVED
- WBENCHMESSAGE
- ACTIVEWINDOW
- INACTIVEWINDOW"
- DELTAMOVE
- VANILLAKEY
- INTUITICKS
- IDCMPUPDATE
- MENUHELP
- CHANGEWINDOW
- GADGETHELP

## 1.48 thanks

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