

**GadToolBox**

**COLLABORATORS**

|               |                              |                  |                  |
|---------------|------------------------------|------------------|------------------|
|               | <i>TITLE :</i><br>GadToolBox |                  |                  |
| <i>ACTION</i> | <i>NAME</i>                  | <i>DATE</i>      | <i>SIGNATURE</i> |
| WRITTEN BY    |                              | December 6, 2024 |                  |

**REVISION HISTORY**

| NUMBER | DATE | DESCRIPTION | NAME |
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|        |      |             |      |

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# Chapter 1

## GadToolBox

### 1.1 GadToolsBox Documentation

Welcome to the GadToolsBox v2.0b User Manual.

Please select any of the topics listed below and follow up on the links as you wish.

```
@{ " Disclaimer                " link disclaimer }
@{ " Copyright and Distribution " link copyright }
@{ " Updates                   " link updates }
@{ " Introduction              " link introduction }
@{ " Requirements              " link requirements }
@{ " *Read This*               " link readthis }
@{ " Starting GadToolsBox      " link starting }
@{ " Making a Gadget           " link making }
@{ " Gadget Selection          " link selection }
@{ " Moving and Sizing Gadgets " link movesize }
@{ " The Program Menus        " link menus }
@{ " Gadget Requesters        " link requesters }
@{ " The Menu Editor           " link menueditor }
@{ " The Generated Source     " link source }
@{ " The IDCMP Handler        " link handler }
@{ " The Keyboard & Mouse     " link keyboard }
@{ " The GetFile BOOPSI Image  " link boopsi }
@{ " Font Adaptivity          " link adaptivity }
@{ " Credits                   " link credits }
@{ " Notes                     " link notes }
```

### 1.2 Disclaimer

The author cannot be held liable for the suitability or accuracy of this manual and/or the program(s) it describes. Any damage directly or indirectly caused by the use or misuse of this manual and/or the program it describes is the sole responsibility of the user her/him self.

---

## 1.3 Copyright and Distribution

GadToolsBox release 2.0b

(C) Copyright 1992-93 Jaba Development  
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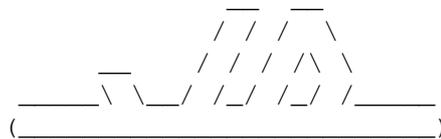
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User Manual  
 (C) Copyright 1991-93 Jaba Development

This program uses both the powerpacker.library  
 and reqtools.library (OS 2.0 version)  
 These two libraries are (c) Copyright Nico François



GadToolsBox, (C) Copyright 1991-93 Jaba Development. All rights reserved.  
 This program is GIFTWARE which means that if you like the program you  
 should reward the author with gift that, you think, matches his efforts.

This program may be freely distributed as long as all files are included  
 in the distribution without any modifications. You may \*NOT\* charge more  
 than Fred Fish does for a single library disk.

This program may \*not\* be uploaded on BBS's that claim copyrights on the  
 uploaded material.

When you use this program to design GUI(s) for either a commercial or a  
 shareware program I would appreciate a little note about this in the  
 program it's documentation.

Commercial distribution of GadToolsBox and/or it's relative files is \*NOT\*  
 allowed without written permission from the author. This also means the  
 distribution on cover disks, disk magazines etc.

I do not know how this is in other countries but here in holland and in  
 germany some PD distributors think that they can charge extra if they

translate the manual in their language and distribute that with the program.

THIS IS NOT ALLOWED! You are welcome to add a translation to this manual in the archive but you may NOT CHARGE EXTRA FOR THIS!

The source and binary output of GadToolsBox do not fall under the above mentioned rules. They fall under the rules that the person(s) who created these files make.

## 1.4 Updates

Updates are *\*not\** available through me anymore. I have had a small update service which simply took too much time to keep up. For updates you are dependant on me releasing newer versions. Please do not send me update requests anymore.

## 1.5 Introduction

GadToolsBox is a program that will save you a gigantic amount of time and anguish in creating a GadTools user interface for your programs. This program is a follow-up of my other source generator "PowerSource". It's main purpose is to let you create your user interface without having to type in the necessary code and structures yourself. This version of GadToolsBox has the following features:

- : A complete intuition/gadtools user interface
  - : Editing on many different screen resolutions
  - : Editing/Generating source on/for big autoscrolling screens
  - : All GadTools gadget kinds supported + a custom gadget
  - : GadTools menus supported
  - : Full control over the window flags and most tags
  - : Editing IntuiTexts for the window
  - : Editing, loading and saving of colors (ILBM)
  - : Fully mouse and keyboard controlled
  - : Generation of complete routines in either C, Assembly or Oberon
  - : Generation of "RAW" Assembly source (No headers necessary)
  - : Generation of "static" data
  - : Binary saving for later loading and editing
  - : The possibility to save powerpacker `__CRUNCHED!` binaries.
  - : The ability to print a status report.
  - : Multiple windows
  - : User selectable font
  - : The editing of "DRIPENS" (what gives OS 2.0 that special look)
  - : The possibility to change screen resolution while editing
  - : The possibility to edit "BevelBoxes"
  - : Editing in a user-definable grid
  - : The editing of minimal window border offsets
  - : Easy gadget alignment and spacing
  - : The generation of font-adaptable code (Thanks Sebastiano...)
  - : Multiple gadget moves, deletes, edits and copies.
  - : The generation of event-handlers.
-

-: etc. etc. etc.....

## 1.6 Requirements

GadToolsBox was programmed with DICE C v2.07.54R (Thanks Matt) on a A2500 Kickstart V37.175 Workbench V37.67 with 7 MB memory + ECS + A2630 accelerator card (50MHz!!) + 52 MB harddisk. It should however run happily on a 1 MB machine without a harddisk and special chips but at least 1.5 MB and a harddisk is suggested.

You need at least Kickstart V37++ and Workbench V37++ to run GadToolsBox. A C Compiler ( try registering DICE ) and/or an assembler with the 2.0 headers can also come in handy when you try to compile/assemble the generated source. Note however that the program can generate assembler source which does not require the headers to assemble.

The program needs the following libraries:

|                     |                                 |
|---------------------|---------------------------------|
| reqtools.library    | version 38 or better (required) |
| icon.library        | version 36 or better (required) |
| nofrag.library      | version 2 or better (required)  |
| diskfont.library    | version 36 or better (required) |
| iffparse.library    | version 37 or better (required) |
| gadtoolsbox.library | version 38 or better (required) |
| powerpacker.library | version 35 or better (optional) |

If you have the nofrag.library v2.2 please use it instead of v2.1. Version 2.2 is identical in function except that it has some bugs removed. If you also install the powerpacker.library v35++ you are able to load and/or save crunched binary files.

## 1.7 \*Read This\*

There are older versions of the powerpacker.library V35 that cause a GURU when decrunching data. This GURU occurs when you have both enforcer and mungwall running at the time the library is decrunching data.

## 1.8 Starting GadToolsBox

You can run GadToolsBox from either the Shell or the Workbench. To start GadToolsBox from the Shell you must type the following:

```
GadToolsBox [name]
```

Where "name" is an optional name of a previously created file which you want to edit. To start GadToolsBox from the Workbench you should either double-click it's icon or double-click the icon of a previously created file.

After a successful start you are presented with a screen on which a

---

little window is displayed. This window is the "drawing board" on which you design your GUI.

When you started GadToolsBox with an argument the contents of the window edited last will be displayed.

## 1.9 Making a Gadget

Making a gadget is very simple. First of all you have to select the kind of gadget you wish to make. To do this you should hold down the right mouse button and go to the Kind item under the Gadgets menu.

Now you see a list of possible gadget kinds you can choose from. Select the kind you want and release the right mouse button.

Now mouse the mouse pointer to where you want the top-left corner of the gadget to be.

Click on the left-mouse button and move the mouse while holding down the left mouse button. You see a box which is following your movements. Now move the box to the exact size you want it to be and release the left mouse button.

Now a requester pops up in which you can edit the gadget kind it's attributes. Please refer to the `@{ " Gadget Requesters " link requesters }` [↔](#) chapter for more information on this subject. For now just click on the OK gadget and you are done. You have created your first gadget with GadToolsBox.

Note that the `@{ " GETFILE " link getfile }`, `@{ " CHECKBOX " link checkbox }` [↔](#) and `@{ " MX " link mx }` gadgets have a fixed size which means that you cannot make them any size you wish.

## 1.10 Gadget Selection

To select a gadget you only have to click on it with the left mouse button.

To select multiple gadgets a method similar to the Workbench icon selection is used. While you click on the gadgets you want to select you must hold down a SHIFT key.

It is also possible to select multiple gadget by dragging a box around them. This method is similar to multi-selecting icons on the Workbench except that you have to press SHIFT to get into DragSelection mode.

This is how it works:

- a) Press and hold down a SHIFT key.
  - b) Click on the left mouse button anywhere in the window where there is no gadget located. You can release the SHIFT key now.
  - c) Drag the box so that the gadgets that you want to select are partly or completely covered by the box.
-

d) Release the left mouse button and you are done.

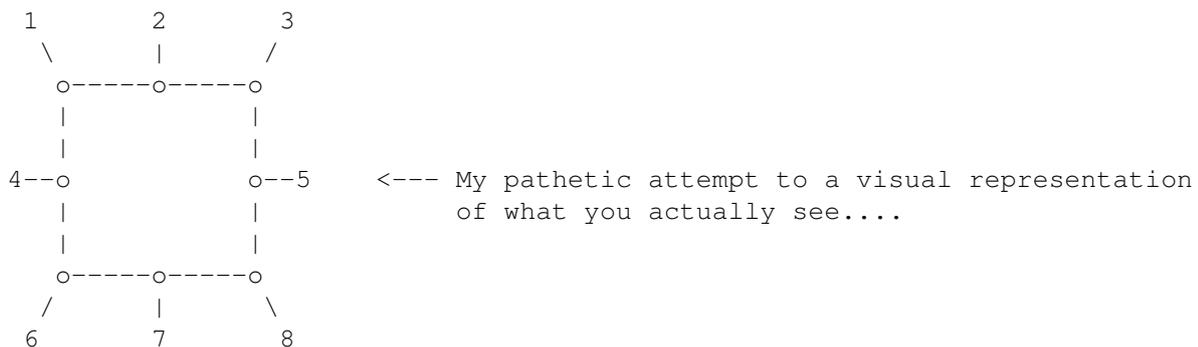
You can see when a gadget is selected when it has 8 little dots surrounding it. Please refer to the [" Moving and Sizing "](#) link [movesize](#) } chapter for information on the usage of these dots. ←

## 1.11 Moving and Sizing Gadgets

Moving and sizing gadgets is really simple. You can choose to move or size a single gadget or multiple gadgets at the same time.

To move one gadget you must click on the gadget using the left mouse button. Now while holding down the left mouse button you should move the box to it's new location. Now release the mouse button and you are done.

To size a single gadget you click on the gadget using the left mouse button. .... It's OK, you can release the mouse button now. Now you see eight small dots surrounding the gadget ( somewhat similar to what you see here: )



These dots are the points which are used to size the gadget. This is how they operate:

- 1) Size the gadget in the north-west direction.
- 2) Size the gadget in the north direction.
- 3) Size the gadget in the north-east direction.
- 4) Size the gadget in the west direction.
- 5) Size the gadget in the east direction.
- 6) Size the gadget in the south-west direction.
- 7) Size the gadget in the south direction.
- 8) Size the gadget in the south-east direction.

For example if you wish to size a gadget in the east direction you select the gadget. Click on dot number 5 and move the mouse right while holding down the mouse button. When you sized it enough you release the mouse button again.

Moving and sizing multiple gadget works similar to moving and sizing a single gadget.

## 1.12 The Program Menus

This chapter describes the function of each GadToolsBox menu. Following is a list of the menus of GadToolsBox:

### Project

```
@{ " New...           " link new }
@{ " Open...         " link open }
@{ " Save            " link save }
@{ " Save As...     " link saveas }
Generate Source
  @{ " C...          " link csource }
  @{ " Assembler... " link asmsource }
  @{ " Oberon...     " link obersource }
Preferences
  @{ " Main...       " link mainprefs }
  @{ " C Source...   " link cprefs }
  @{ " Asm Source... " link asmprefs }
@{ " Close Workbench " link closewb }
@{ " About...       " link about }
@{ " Quit...        " link quit }
```

### Gadgets

```
Kind
  @{ " GETFILE       " link getfile }
  @{ " BUTTON        " link button }
  @{ " CHECKBOX      " link checkbox }
  @{ " INTEGER       " link integer }
  @{ " LISTVIEW      " link listview }
  @{ " MX            " link mx }
  @{ " NUMBER        " link number }
  @{ " CYCLE         " link cycle }
  @{ " PALETTE       " link palette }
  @{ " SCROLLER      " link scroller }
  @{ " SLIDER        " link slider }
  @{ " STRING        " link string }
  @{ " TEXT          " link text }
@{ " Gadgets        " link gadgetsmenu }
@{ " Copy           " link copy }
@{ " Delete...     " link delete }
@{ " Edit...       " link edit }
@{ " Join          " link join }
@{ " Split         " link split }
Align
  @{ " Left         " link left }
  @{ " Right        " link right }
  @{ " Top          " link top }
  @{ " Bottom       " link bottom }
Clone
  @{ " Width        " link xsize }
  @{ " Height       " link ysize }
  @{ " Width & Height " link xysize }
Spacing
  @{ " Set X...     " link xspace }
  @{ " Set Y...     " link yspace }
Spread
```

```

    @{ " Horizontally      " link xspread }
    @{ " Vertically        " link yspread }
Transform
    @{ " MX->CYCLE        " link mxcycle }
    @{ " CYCLE->MX        " link cyclemx }
@{ " Edit TabCycle Order... " link tabcycle }
@{ " Load...              " link loadgadgets }
@{ " Save Selected...     " link selectedsave }
@{ " Save...              " link savegadgets }

Window
    @{ " New...            " link newwindow }
    @{ " Delete...         " link deletewindow }
    @{ " Other...          " link otherwindow }
    @{ " Edit Data...      " link datawindow }
    @{ " Print Info...     " link print }
    @{ " Load...          " link loadwindow }
    @{ " Save...           " link savewindow }
    @{ " Edit Flags...     " link windowflags }
    @{ " Edit IDCMP...     " link idcmp }
    @{ " Edit Tags...      " link windowtags }
    @{ " Edit Grid...      " link grid }
    @{ " Edit Offsets...   " link offsets }
Texts
    @{ " Add...            " link addtext }
    @{ " Edit...           " link edittext }
    @{ " Delete...         " link deletetext }
    @{ " Move...           " link movetext }
    @{ " Load...          " link loadtext }
    @{ " Save...           " link savetext }
BevelBoxes
    @{ " Add                " link addbox }
    @{ " Move               " link movebox }
    @{ " Size               " link sizebox }
    @{ " Delete             " link deletebox }
    @{ " Flip Recessed     " link recessed }
    @{ " Flip DropBox      " link dropbox }
    @{ " Load...           " link loadbox }
    @{ " Save...           " link savebox }

Screen
    @{ " Palette...        " link screenpalette }
    @{ " Select Font...    " link getfont }
    @{ " Edit DriPens...   " link dripens }
    @{ " Edit Tags...      " link screentags }
    @{ " Change Type...    " link screentype }

Menus
    @{ " Edit...           " link menueditor }
    @{ " Test              " link testmenu }
    @{ " Load...          " link loadmenu }
    @{ " Save...           " link savemenu }

```

## 1.13 Project/New...

This will reset the program to it's default settings and erase all windows currently in memory. When you have made changes that are not saved yet the program will inform you about this and it will offer you a safe way out.

## 1.14 Project/Open...

This will present you with a filerequester in which you must select the GUI that you wish to load. When you have made changes to the GUI in memory that have not been saved yet you will be asked if you want:

- A) Save First - First save the GUI currently in memory.
- B) Continue - Continue with the opening of a new GUI.
- C) Cancel - Abort the operation.

When the loading operation is finished you will see the window that has been edited the last time you saved the GUI.

## 1.15 Project/Save

This will save the GUI currently in memory to the name under which it was loaded. When it is a newly created GUI the name used to save it to will be "unnamed.gui".

## 1.16 Project/Save As...

This will present you with a filerequester in which you must select the name which will be used to save the GUI. Note that the name will always get the suffix ".gui" appended to it.

## 1.17 Project/Generate Source/C...

This will present you with a filerequester in which you must select the name which will be used to save the generated C source. Please refer to @{" The Generated Source " link source } chapter for more information.

## 1.18 Project/Generate Source/Assembler...

This will present you with a filerequester in which you must select the name which will be used to save the generated Assembler source. Please refer to @{" The Generated Source " link source } chapter for more information.

---

## 1.19 Project/Generate Source/Oberon...

This will present you with a `filerequester` in which you must select the name which will be used to save the generated Oberon source. Please refer to @{ " The Generated Source " link source } chapter for more information.

## 1.20 Project/Preferences/Main...

With the main preferences editor you can control options that will affect the course of the program. The following gadget are in the main preferences window:

**User Name**                      In this gadget you can type in your own name. Currently this name will only be included into the generated source.

**Icon Path**                      In this gadget you should type the path in which the GadToolsBox executable can be found. This path will be used to make a default tool for the icons of the saved GUI(s). The gadget to the right of the string gadget can be used to pop up a file-requester in which you can select the path.

**Crunch**                              This gadget allow you to turn on or off the option to let GadToolsBox crunch your saved files. When this option is on you can save upto 85% of disk space.

**Password**                              Turn on or off the protected crunching. When this option is on the program will prompt you to enter a password before it saves the file. You will need this password when you try to load the file again.  
NOTE: This option only is available when the Crunch option is on.

**Buffer**                              This gadget controls the buffer size which is used to crunch the data. You can choose from Small, Medium and Large. The biggest buffer will crunch fast but it takes up a lot of memory.  
NOTE: This option only is available when the Crunch option is on.

**Type**                                      This controls the crunch type used. You can choose from Fast, Mediocre, Good, Very Good and Best. Using Fast will crunch very fast but the resulting file will not be crunched as far as it could be. Using Best will crunch somewhat slower but the resulting file will be crunched the best way.  
NOTE: This option only is available when the Crunch option is on.

**Coordinates**                              This allows you to turn the coordinates on or off. The coordinates constantly display the mouse position relative to the upper left hand corner of

|                   |  |
|-------------------|--|
|                   | the window.  |
| Write Icon        | Usually GadToolsBox writes an icon to accompany the saved GUI so that you can use it from the Workbench. If you are a shell freak or you simply do not want these icons you can tell GadToolsBox not to save an icon by turning this gadget off.   |
| GZZ Adjust        | GadToolsBox allows you to edit your GUI on a GIMMEZEROZERO window. Normally when you switch from editing on a normal window to a GIMMEZEROZERO window or vice versa all gadgets, texts and borders will move. This is because on normal windows the coordinates are relative to the top-left of the window and on GIMMEZEROZERO windows they are relative to the top-left of the window *inside* the window border area. When this option is turned on GadToolsBox will automatically adjust the gadget, text and border coordinates so that they appear to be on the same location. |
| Overwrite         | When you try to save a file and the file does already exist you will be notified about this with a requester allowing you to overwrite the file or to cancel the operation. When this option is turned on GadToolsBox will not put up the requester. Instead it will overwrite the file immediatly. USE WITH CARE.   |
| ASL FileRequester | Some people do not seem to like the ReqTools filerequester. I cannot imagine why but turning on this option will tell GadToolsBox to use the ASL filerequester instead of the ReqTools one.  |
| Font Adaptive     | This option affects both the main program and all source generators. When this option is turned on it tells the source generators to generate source that will automatically adapt to the used font. Please refer to @{" The Generate Source " link source } ↔ chapter and the @{" Font Adaptivity " link adaptivity } chapter for ↔ more info. When this option is turned on GadToolsBox will only allow you to use the topaz 8 font for editing your GUI for reasons explained in the above mentined chapters.   |
| Close Workbench   | When this option is turned on GadToolsBox will attempt to close the Workbench at startup.  |
| Use PubScreen     | When this option is on and you are editing a GUI for the workbench or the default public screen the edit windows will appear on that screen. In other words -: GadToolsBox will not use it's own screen in this case.  |
| Save              | This will save your settings to the GadToolsBox  |

---

|        |  |
|--------|--|
|        | preferences directory.                             |
| Use    | This will activate the preferences in the program. |
| Cancel | This aborts the operation.                         |

## 1.21 Project/Preferences/C Source...

This option allows you to control certain aspects of the C source generator. You will see the following gadgets in the requester:

|                        |  |
|------------------------|--|
| Static                 | Normally all data generated by GadToolsBox will be exported so that it can be accessed from other modules. When this option is on the data generated by GadToolsBox will not be exported.  |
| Generate OpenFont      | When this option is on and you are generating the source for a GUI which uses a disk based font GadToolsBox will also include the code that will open and close the used font.<br>NOTE: This option is not available when the<br>@{ " Font Adaptive " link mainprefs } option is on ←                                |
| Use System Font        | When this option is on the generated source will adapt to the system default font. When this option is off the generated source will use the screen font to adapt to.<br>NOTE: This option is only available when the<br>@{ " Font Adaptive " link mainprefs } option is on ←  |
| Include Pragmas        | Some C compilers, SAS & Manx, use pragmas to create inline calls to the system libraries. When this option is on the generated source will include the necessary pragma headers.   |
| Aztec C                | The Manx compiler needs a special type-cast to correctly initialize the TagItem arrays that GadToolsBox generates. When this option is turned on GadToolsBox will use that type-cast so that the source will also compile using the Manx compiler.   |
| Generate IDCMP Handler | This option allows you to tell GadToolsBox to also generate an IDCMP handler. Please refer to<br>@{ " The IDCMP Handler " link handler } chapter for more ←<br>info.   |
| Generate Templates     | This option, when switched on, tells GadToolsBox to generate a templates file which contains a set of empty routines that the IDCMP Handler can call. You should use this file as a reference or to fill in with your own code. This option is only available when the "Generate IDCMP Handler" option is turned on. |

---

|        |  |
|--------|--|
| Save   | This will save your settings to the GadToolsBox preferences directory. |
| Use    | This will activate the preferences in the program.                     |
| Cancel | This aborts the operation.   |

## 1.22 Project/Preferences/Asm Source...

This option allows you to control certain aspects of the assembly source generator. You will see the following gadgets in the requester:

|                   |  |
|-------------------|--|
| Static            | Normally all data generated by GadToolsBox will be exported so that it can be accessed from other modules. When this option is on the data generated by GadToolsBox will not be exported.  |
| Raw Source        | Normally the generated source will need the OS 2.0 headers to assemble. With this option turned on you are able to assemble to generated source without using the headers.   |
| Generate OpenFont | When this option is on and you are generating the source for a GUI which uses a disk based font GadToolsBox will also include the code that will open and close the used font.<br>NOTE: This option is not available when the<br>@{ " Font Adaptive " link mainprefs } option is on ↔<br>. |
| Use System Font   | When this option is on the generated source will adapt to the system default font. When this option is off the generated source will use the screen font to adapt to.<br>NOTE: This option is only available when the<br>@{ " Font Adaptive " link mainprefs } option is on ↔<br>.         |
| Use amiga.lib     | When this option is on all system calls will be externally referenced from the amiga.lib using the _LVOxxxx references. When this is off the source will contain equates that define the offsets of the system calls.  |
| Save              | This will save your settings to the GadToolsBox preferences directory.   |
| Use               | This will activate the preferences in the program.   |
| Cancel            | This aborts the operation.   |

---

## 1.23 Project/Close Workbench

This menu can also be called "Open Workbench" depending on whether the Workbench screen is open or closed.

This will try to close/open the Workbench screen. Closing the Workbench will only succeed if there are no programs running that have a lock or a window on the Workbench screen. This also means that when you started GadToolsBox from the shell you cannot close the Workbench screen because the shell is a program which has its window on the Workbench screen.

## 1.24 Project/About...

This will open a requester with some information in it concerning the version, copyright and author of GadToolsBox.

## 1.25 Project/Quit...

You guessed it. This will quit the program. When there were changes made that were not saved yet the program will present you with the following choices:

- |               |                                |
|---------------|--------------------------------|
| A) Save First | First save the GUI, then quit. |
| B) Quit       | Go ahead and quit.             |
| C) Cancel     | Do not quit.                   |

## 1.26 Gadgets/Gadgets

During the editing the gadgets are not actually on the editing window. They are created, refreshed and removed again for the sake of speed and the selection method. There may however come a time when you want to test the actual gadgets. This is where this menu item comes in.

When it is checked the actual gadgets are placed in the window. You can click on them like you would normally. No editing is possible.

When this item is not checked the program is in the editing mode which means that you can move, size, delete etc. the gadgets.

## 1.27 Gadgets/Copy

This will make a copy of all the @{" selected " link selection } gadgets. All you have to do

is placing them at the correct location. To do this you must move the mouse pointer until you reach the correct location and press the left mouse button.

---

The copied gadgets will have the exact same attributes as their originals except for the source label.

Please refer to @{" The Gadget Requesters " link requesters } chapter or more information. ↔

## 1.28 Gadgets/Delete...

This will pop up a requester which verify's if you really want to delete the gadgets. When you select "Delete" in that requester all @{" selected " link selection } gadgets will be erased from memory.

Please be carefull because you cannot get back what you delete!

## 1.29 Gadgets/Edit...

This will pop up the requester for each @{" selected " link selection } gadget. ↔  
Please refer  
to @{" The Gadget Requesters " link requesters } chapter for more information.

## 1.30 Gadgets/Join

This will Join @{" LISTVIEW " link listview } gadgets with @{" STRING " link string } gadgets. When you have @{" selected " link selection }, for example, three LISTVIEW gadgets and two STRING gadgets ↔ and you select this item the first two LISTVIEW gadgets will be joined with the selected string gadgets.

The advantage of joining is that the selection made in the LISTVIEW will automatically be copied into the STRING gadget. A disadvantage is that the gadtools.library will force the STRING gadget directly underneath the LISTVIEW and it forces the STRING gadget to be of the same width as the LISTVIEW gadget.

## 1.31 Gadgets/Split

This is the oposite of @{" Join " link join }. This will split up all @{" selected " link selection } gadgets again. ↔

## 1.32 Gadgets/Align/Left

This asks you to click on the gadget that has the left-edge that you want to align to. When you click on the gadget all @{" selected " link selection ↔ } gadgets will inherit the left-edge coordinate of the clicked gadget.

### 1.33 Gadgets/Align/Right

This asks you to click on the gadget that has the right-edge that you want to align to. When you click on the gadget all @{" selected " link selection ↔ } gadgets will inherit the right-edge coordinate of the clicked gadget.

NOTE: This might not always work when you align to the right-edge of a @{" PALETTE " link palette } gadget. The gadtools.library sizes this ↔ gadget so that it fits within the area specified which makes it possible that the gadget is actually smaller than specified.

### 1.34 Gadgets/Align/Top

This asks you to click on the gadget that has the top-edge that you want to align to. When you click on the gadget all @{" selected " link selection ↔ } gadgets will inherit the top-edge coordinate of the clicked gadget.

### 1.35 Gadgets/Align/Bottom

This asks you to click on the gadget that has the bottom-edge that you want to align to. When you click on the gadget all @{" selected " link selection ↔ } gadgets will inherit the bottom-edge coordinate of the clicked gadget.

NOTE: This might not always work when you align to the bottom-edge of a @{" LISTVIEW " link listview } gadget. The gadtools.library sizes this ↔ gadget so that it fits within the area specified which makes it possible that the gadget is actually smaller than specified.

### 1.36 Gadgets/Clone/Width

This will ask you to click on the gadget that has the width that you want to clone. When you click on the desired gadget all @{" selected " link ↔ selection } gadgets will get the same width as the clicked gadget.

### 1.37 Gadgets/Clone/Height

This will ask you to click on the gadget that has the height that you want to clone. When you click on the desired gadget all @{" selected " link ↔ selection } gadgets will get the same height as the clicked gadget.

### 1.38 Gadgets/Clone/Width & Height

This will ask you to click on the gadget that has the dimensions that you want to clone. When you click on the desired gadget all @{" selected " link ↔ selection } gadgets will get the same dimensions as the clicked gadget.

### 1.39 Gadgets/Spacing/Set X...

A small requester will popup when you select this option. In this requester you can enter the horizontal spacing value that you need. The value that you enter here is the space in pixels that you want between the gadgets. When the value is entered the space between the @{" selected " link selection } ↔ gadgets will be set.

### 1.40 Gadgets/Spacing/Set Y...

A small requester will popup when you select this option. In this requester you can enter the vertical spacing value that you need. The value that you enter here is the space in pixels that you want between the gadgets. When the value is entered the space between the @{" selected " link selection } ↔ gadgets will be set.

### 1.41 Gadgets/Spread/Horizontally

When you select this option you will see a vertical line in the window which you can move with the mouse. This line is used to set the first coordinate of the area in which the @{" selected " link selection } ↔ gadgets are spread. Move the line to the correct place and press the left mouse button.

Now a second line appears which is used to set the second coordinate of the spread area. Move this line to the correct place and also press the left mouse button.

Now the gadgets are evenly spread out between the two lines.

You can also use this routine to center a single gadget between the two lines.

---

## 1.42 Gadgets/Spread/Vertically

When you select this option you will see a horizontal line in the window which you can move with the mouse. This line is used to set the first coordinate of the area in which the @{" selected " link selection } gadgets are spread. Move the line to the correct place and press the left mouse button.

Now a second line appears which is used to set the second coordinate of the spread area. Move this line to the correct place and also press the left mouse button.

Now the gadgets are evenly spread out between the two lines.

You can also use this routine to center a single gadget between the two lines.

## 1.43 Gadgets/Transform/MX->CYCLE

This routine will convert all @{" selected " link selection } @{" MX " link mx } gadgets into @{" CYCLE " link cycle } gadgets.

## 1.44 Gadgets/Transform/CYCLE->MX

This routine will convert all @{" selected " link selection } @{" CYCLE " link cycle } gadgets into @{" MX " link mx } gadgets.

## 1.45 Gadgets/Edit TabCycle Order...

This will popup a requester with the following gadgets:

GadgetText: GadgetLabel: In this gadget all the @{" STRING " link string } and @{" INTEGER " link integer } gadgets are listed

Top This will put the gadget at the top of the cycle list.

Bottom This will put the gadget at the bottom of the cycle list.

Up This will move the gadget one place up in the cycle list.

Down This will move the gadget one place down in the cycle list.

OK Confirm and set the order.

Cancel

Cancel the operation.

Changing the TabCycle order of the gadgets prevents the random selection of the next/previous string/integer gadget when the user presses TAB or SHIFT-TAB in a string or integer gadget.

## 1.46 Gadgets/Load...

This will put up a filerequester in which you can select the name of a previously saved gadgets file.

If there are already gadgets in the window GadToolsBox will ask if the loaded gadgets should be appended to the existing ones or if they should replace them.

## 1.47 Gadgets/Save Selected...

This will put up a filerequester in which you can select the name to which all @{" selected " link selection } gadgets will be saved.

## 1.48 Gadgets/Save...

The same as @{" Save Selected... " link selectedsave } except that now all ↵ gadgets are saved.

## 1.49 Window/New...

This will open up a blank new edit window in which you can edit another GUI. This will allow you to create all the windows you need.

## 1.50 Window/Delete...

A selection window will pop up in which all the windows that currently are in memory are listed. Just select the window that you want to delete by double-clicking it or by clicking on it and then on OK.

## 1.51 Window/Other...

A selection window will pop up in which all the windows that currently are in memory are listed. Just select the window that you want to edit by double-clicking it or by clicking on it and then on OK.

---

## 1.52 Window/Edit Data...

This opens a window in which you can edit some data concerning the window. The following gadgets are in the window:

Project Name                      Here you must type in the name of the window. This name must be unique. This name will be used to built the various source code labels.

Start ID From                      When you plan to share your IDCMP port with other windows in might be a good idea to let the gadget ID's start at a high number so that they do not interfere with the gadgets in the other window. This gadget allows you to set the number at which the gadget ID's begin to count.

The following gadgets Min X, Min Y, Max X and Max Y are used to set the minimum and maximum window dimensions. They are only available for windows which have a size gadget.

OK                                      This will confirm your changes.

Cancel                                  This will abort the changes.

## 1.53 Window/Print Info...

This will write some information about the currently active window to the printer.

## 1.54 Window/Load...

A FileRequester opens in which you can select the name of a previously saved window file. The loaded window will be appended to the already existing ones.

## 1.55 Window/Save...

This will open the window selection requester in which you should select the window you want to save by double-clicking on it or by clicking on it and then on OK.

Now a FileRequester opens in which you can select the name to save the window to.

## 1.56 Window/Edit Flags...

A window will open in which all intuition window flags are listed. You can select the flags by checking them.

NOTE: Only the SIZEGADGET, CLOSEGADGET, DRAGBAR, CLOSEWINDOW, SIZEBBRIGHT and SIZEBBOTTOM flags are actually used in the program during the editing. All the other flags that are turned on will only occur in the generated source.

## 1.57 Window/Edit IDCMP...

A window will open in which all intuition IDCMP flags are listed. You can select the flags by checking them.

NOTE: None of the IDCMP flags are actually used withing GadToolsBox. The flags will only turn up in the generated source.

The three highlighted flags of in this window must be checked if you want the IDCMP handler to generate calls to these routines.

## 1.58 Window/Edit Tags...

This will open up a window in which you can edit some of the window attributes. In the window you will find the following gadgets:

|             |   |
|-------------|---|
| InnerWidth  | When this gadget is checked the generated source will open the window using the WA_InnerWidth tag instead of the WA_Width tag. This tag is useful to always open a window with the same inner-dimensions no matter what the screen font is.   |
| InnerHeight | When this gadget is checked the generated source will open the window using the WA_InnerHeight tag instead of the WA_Height tag. This tag is useful to always open a window with the same inner-dimensions no matter what the screen font is. |
| MouseQueue  | This enables you to set the maximum # of MOUSEMOVE messages that will be pending at your message port at one time.  |
| RptQueue    | The same as MouseQueue only this time the maximum # of RAWKEY/VANILLAKEY messages can be set.   |
| AutoAdjust  | When this gadget is checked intuition will automatically adjust the window position and dimensions to force it to fit on the screen.  |
| FallBack    | When your window is supposed to open on a specific screen and that screen is not available it will automatically open on the default public screen when this gadget is checked.   |

---

|             |  |
|-------------|--|
| Prefs Zoom  | These two options are only available when the window does not have a sizing gadget. It will add a zoom gadget to let the user iconify the window. The iconified dimensions are the same as the system preferences windows. When Prefs Zoom is selected the iconified window will automatically shift to the top-left corner of the screen. With Pos. Zoom the window position will not be affected |
| Pos. Zoom   |  |
| WindowTitle | Type the window it's title in here.  |
| ScreenTitle | You can type an alternate screen title in here. This will be the title of the screen when the window is active.  |
| OK          | Confirm the attributes.  |
| Cancel      | Cancel the operation.  |

## 1.59 Window/Edit Grid...

This will open a window in which you can edit the grid size. The grid, which is invisible, is used to let the gadgets, boxes and texts to be moved and sized with a specific amount of pixels at the time. The grid window has the following gadgets in it:

|             |   |
|-------------|---|
| Grid X size | In here you can type the horizontal grid size. You are not allowed to go below 2 and over 100 here. |
| Grid Y size | In here you can type the vertical grid size. You are not allowed to go below 2 and over 100 here.   |
| Grid on     | When you check this gadget the grid is active.  |
| OK          | Confirm the grid.   |
| Cancel      | Cancel the operation.   |

## 1.60 Window/Edit Offsets...

This will open a window in which you can edit the minimal window border offsets. The border offsets are the closest you can put your gadgets and boxes to the window borders. In the window you see the following gadgets:

|               |  |
|---------------|--|
| Horiz. Offset | Here you can type the horizontal border offset in pixels. This is the offset from the left and right window borders. |
| Vert. Offset  | Here you can type the vertical border offset in pixels. This is the offset from the top and bottom window borders.   |

---

|            |   |
|------------|---|
| Offsets On | When this gadget is checked the offsets are active. |
| OK         | Confirm the offsets.                                |
| Cancel     | Cancel the operation.                               |

## 1.61 Window/Texts/Add...

This will open up the IntuiText editor in which you can edit a new text. You will see the following gadgets in the IntuiText editor:

|   |   |
|---|---|
| Text                                    | Type the text that you want in here.  |
| JAM1<br>JAM2<br>COMPLEMENT<br>INVERSVID | These four gadgets determine the draw mode that is used to render the text.         |
| FrontPen                                | With this gadget you can set the color which is used to render the text.            |
| BackPen                                 | With this gadget you can set the color which is used to render the text background. |
| OK                                      | Confirm the text.   |
| Cancel                                  | Cancel the operation.   |

After the text is edited you will see that the text is following the movements you make with your mouse. Now position the text where you want it and click on the left mouse button to confirm it's place.

## 1.62 Window/Texts/Edit...

When there are more than one texts available in the window a text selection window will pop up from which you must select a text. The following gadgets are in the text selector:

|        |   |
|--------|---|
| Texts  | This is the list of available texts. To select one you either double-click it or you click on it once and then on OK. |
| OK     | Confirm the choosen text.   |
| Cancel | Cancel the operation.   |

When you have selected the text the `@{ " IntuiText editor " link addtext }` pops up in which you can edit the text.

### 1.63 Window/Texts/Delete...

If there is more than one text available in the window the `@{ " text selector " ↔ link edittext }` opens in which you must select the text. After you selected the text that needs to be deleted it is gone.

When only one text is available it is deleted right away.

### 1.64 Window/Texts/Move...

If there is more than one text available in the window the `@{ " text selector " ↔ link edittext }` opens in which you must select the text.

Now you see the text following the movements you make with your mouse. Now move the text to it's new position and click on the left mouse button to confirm it's new place.

### 1.65 Window/Texts/Load...

This will open up a `filerequester` in which you can select the name of a previously saved text file.

After the loading is done you will see the texts that where in the file on your window.

### 1.66 Window/Texts/Save...

This will open up a `filerequester` in which you must select a name which will be used to save the texts in the window.

### 1.67 Window/BevelBoxes/Add

You will be asked to click at the top-left position where you want the box to be. After that you must drag the box until it is the correct size and release the left mouse button again.

### 1.68 Window/BevelBoxes/Move

You will be asked to click in the box that you want to move. Just click in the box with the left mouse button.

Now move the box to it's new position and release the left mouse button to confirm it's place.

---

## 1.69 Window/BevelBoxes/Size

You will be asked to click in the box that you want to re-size. Just click in the box with the left mouse button.

Now move the mouse to re-size the box and release the left mouse button to confirm it's new dimensions.

## 1.70 Window/BevelBoxes/Delete

You will be asked to click in the box that you want to delete. Just click in the box with the left mouse button and it is gone.

## 1.71 Window/BevelBoxes/Flip Recessed

By default all created boxes appear raised. To make it appear recessed you select this item and click in the box.

When the box was already recessed it will become raised again.

## 1.72 Window/BevelBoxes/Flip DropBox

This will convert a normal or recessed box into an Icon DropBox. The usage of an Icon DropBox is described in the User Interface Style Guide.

If the box was already an Icon DropBox it will become a normal box again.

## 1.73 Window/BevelBoxes/Load...

This will open up a filerequester in which you can select the name of a previously saved BevelBox file.

After the loading is done you will see the boxes that where in the file on your window.

## 1.74 Window/BevelBoxes/Save...

This will open up a filerequester in which you must select a name which will be used to save the boxes in the window.

---

## 1.75 Screen/Palette...

This will open up the palette editor for you to change the screen colors. In the palette editor you will see the following gadgets:

|                  |   |
|------------------|---|
| Red, Green, Blue | With these three sliders you can adjust the red, green and blue intensities of the selected color.  |
| Load...          | This will open up a filerequester in which you can an IFF-ILBM file from which you want to load it's colors.                                    |
| Save...          | This will open up a filerequester in which you can select a name. This name will be used to save the current palette under as an IFF-ILBM file. |
| Reset            | Delete all changes made sofar and reset the palette to what it was when you first entered the palette editor.                                   |
| Palette          | This is the color selection gadget. In here you can select the color that you wish to edit.   |
| OK               | Confirm the palette.  |
| Cancel           | Cancel the operation.   |

NOTE: Under Kickstart 3.0 the palette editor has a problem. Although it shows more than 32 colors on a screen with more than 5 planes it will only edit the first 32.

## 1.76 Screen/Select Font...

This will open up the Font Selector in which you can select the new font.

The windows in your GUI will automatically be adapted to the new font so that the windows still look like they should.

## 1.77 Screen/Edit DriPens...

This will open the DriPen editor. The DriPens are an array of pen numbers which are used to create the OS 2.0 new look.

The following gadgets are in the DriPen Editor:

|      |  |
|------|--|
| Pens | In this cycle gadget you can select the pen to edit. Currently the following pens are supported: |
|      | DETAILPEN<br>1.3 compatible DetailPen.   |
|      | BLOCKPEN   |

1.3 compatible BlockPen.

TEXTPEN

Used for rendering gadget texts and the window titles.

SHINEPEN

Used to render the light-side of the gadget and window borders.

SHADOWPEN

Used to render the dark-side of the gadget and window borders.

FILLPEN

Used to render the background of a selected gadget and the window borders when it is active.

FILLTEXTPEN

Used to render the gadget texts of selected gadgets and window titles of active windows.

BACKGROUNDPEN

Used to render the background of un-selected gadgets.

HIGHLIGHTTEXTPEN

Used to render the texts of gadgets with the Highlight switch on.

NOTE: The following three pens are only available under 3.0.

BARDETAILPEN

Used to render the text of the NewLook menus.

BARBLOCKPEN

Used to render the background of the NewLook menus.

BARTRIMPEN

Used to render the line below the menu bar.

|         |  |
|---------|--|
| Palette | With this gadget you can change the actual DriPen. |
| OK      | Confirm the DriPens.                               |
| Cancel  | Cancel the operation.                              |

## 1.78 Screen/Edit Tags...

In the Screen Tags editor you will find the following gadgets.

|      |   |
|------|---|
| Type | This gadget will allow you to change the screen type you are working for. The following types are |
|------|---|

---

supported:

#### CUSTOMSCREEN

The generated source will contain the screen tags and data. The windows will use this screen to open on.

#### WBENCHSCREEN

The generated source will not contain the screen tags and data. The windows will use the WBench screen to open on.

#### PUBLICSCREEN

The generated source will not contain the screen tags and data. The windows will use the default public screen to open on.

|        |  |
|--------|--|
| Title  | In this gadget you can type the title of the screen. This is the title which will be displayed when there are no windows active which have their own screen title. |
| OK     | Confirm the tags.  |
| Cancel | Cancel the operation.  |

## 1.79 Screen/Change Type...

This will open the ReqTools screen mode requester. In the screen mode requester you can change all important stuff concerning the screen.

When you are running using the workbench or default public screen this option is still available. Visually it will not have any effect but when you switch to not using the workbench or default public screen the changes will be clear.

THE VGA AND A2024 MODES MAY ONLY BE USED WITH VGA/MULTISYNC OR A2024 MONITORS! USAGE OF THESE DISPLAY MODES ON A STANDARD RGB MONITOR MAY RESULT IN SERIOUS DAMAGE TO THE MONITOR.

## 1.80 Menus/Test

This will setup the created menus for you to take a look at them. When the message "TESTING MENUS! ESC TO QUIT..." appears in the screen title you can browse to the menus like you normally do.

Pressing on ESC will continue the program.

## 1.81 Menus/Load...

This will open up a filerequester in which you can select the name of a previously saved menu file.

After the loading is done the menus are attached to your window.

## 1.82 Menus/Save...

This will open up a filerequester in which you must select a name which will be used to save the menus of the window.

## 1.83 Gadget Requesters

Please select any of the gadget kinds you see listed below.

```
@{ " GETFILE  " link getfile }
@{ "  BUTTON  " link button  }
@{ " CHECKBOX " link checkbox }
@{ " INTEGER  " link integer  }
@{ " LISTVIEW " link listview }
@{ "  MX      " link mx       }
@{ " NUMBER   " link number   }
@{ "  CYCLE   " link cycle    }
@{ " PALETTE  " link palette  }
@{ " SCROLLER " link scroller }
@{ " SLIDER   " link slider   }
@{ " STRING   " link string   }
@{ "  TEXT    " link text     }
```

## 1.84 GETFILE

This is currently the only custom gadget that is supported by GadToolsBox.

It is ment to be used in conjunction with a `@{ " STRING " link string } gadget to ↔ enable the user to select a file/dir/volume name. When this gadget is selected the program should open a filerequester in which the file/dir/volume can be selected. As a result the selected name should be copied into the STRING gadget.`

The attribute requester of this gadget kind allows you to edit the following attributes:

|       |   |
|-------|---|
| Label | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source. |
|-------|---|

|          |   |
|----------|---|
| Disabled | When this option is on the created gadget will be |
|----------|---|

created disabled. NOTE: This gadget kind does not support the enabling/disabling by a call to `GT_SetGadgetAttrs()`.

|        |                         |
|--------|-------------------------|
| OK     | Confirm the attributes. |
| Cancel | Cancel the operation.   |

## 1.85 BUTTON

This gadget kind, also known as action gadget, is ment to trigger a program action. The action it is supposed to trigger is usually described in the gadget it's text.

The attribute requester of this gadget kind allows you to edit the following attributes:

|            |   |
|------------|---|
| Text       | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words. When the gadget should open up a requester with more options the text should end with an ellipsis. E.g. "...". |
| Label      | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.   |
| Place      | This gadget enables you to determine where the text should be rendered.   |
| Underscore | When this gadget is checked the character from the text that is preceeded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget.  |
| Disabled   | When this option is on the created gadget will be created disabled.   |
| OK         | Confirm the attributes.   |
| Cancel     | Cancel the operation.   |

## 1.86 CHECKBOX

This gadget kind is switch which can be toggled on or of. This kind is normally used to switch on or off program options.

The attribute requester of this gadget kind allows you to edit the following attributes:

|      |  |
|------|--|
| Text | In here the text of the gadget can be typed. The |
|------|--|

---

---

|            |   |
|------------|---|
|            | text usually describes the gadget function in one to three words.   |
| Label      | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.                                 |
| Place      | This gadget enables you to determine where the text should be rendered.   |
| Underscore | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget. |
| Disabled   | When this option is on the created gadget will be created disabled.   |
| Highlabel  | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPEN color from the screen @{" DriPens " link dripens }.  |
| Checked    | By default the created gadget is off. When you turn this option on the gadget will be created "checked".  |
| OK         | Confirm the attributes.   |
| Cancel     | Cancel the operation.   |

## 1.87 INTEGER

This gadget kind is normally used to obtain numeric values from the user.

The attribute requester of this gadget kind allows you to edit the following attributes:

|            |   |
|------------|---|
| Text       | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.  |
| Label      | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.                                 |
| Place      | This gadget enables you to determine where the text should be rendered.   |
| Underscore | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget. |

---

|                            |   |
|----------------------------|---|
| Disabled                   | When this option is on the created gadget will be created disabled.   |
| Highlabel                  | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPEN color from the screen @{" DriPens " link dripens }.  |
| ExitHelp                   | When this gadget is checked and the user presses the HELP key while the created gadget is active your program will receive a special message at the the window port telling you about the quest for help. You can identify this special message when the Code field of the IntuiMessage is 0x5F. Normally you display some information as to the usage of the gadget when you receive such a message. |
| TabCycle<br>gadgets are in | Normally all @{" STRING " link string } and INTEGER ↔ the @{" TABCYCLE " link tabcycle } list. This list makes ↔ sure that the next/previous STRING or INTEGER gadget is activated when TAB/SHIFT-TAB is pressed in the gadget. When you turn this gadget off the created gadget will not be included in this list.   |
| Placement                  | With this gadget you can set the place where the numbers should appear in the gadget.   |
| MaxChars                   | In this gadget you can set the maximum number of digits that can be entered in this gadget.   |
| Number                     | Normally the gadget is created with 0 as it's initial value. Here you can enter the value that you want it to default to.   |
| OK                         | Confirm the attributes.   |
| Cancel                     | Cancel the operation.   |

## 1.88 LISTVIEW

This gadget kind is normally used to display a list of textual names. This list can either be a list of names from which one can be selected or a list of names for information purposes.

The attribute requester of this gadget kind allows you to edit the following attributes:

|       |  |
|-------|--|
| Text  | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words. |
| Label | In here the source-code name of the gadget should be entered. The source code name is important to                 |

|              |  |
|--------------|--|
|              | recognize the gadget later on in the generated source.   |
| Place        | This gadget enables you to determine where the text should be rendered.  |
| Underscore   | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget.  |
| Read Only    | When you switch this on the created gadget will be "read only" which means that the names in the list cannot be selected.  |
| Highlabel    | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPEN color from the screen @{" DriPens " link dripens }.   |
| ShowSelected | With this option turned on the name you select will be shown in a little box below the actual gadget. NOTE: Under Kickstart 3.0 this has been changed! Under 3.0 the selected entry it's background color will change. You can also tell it to copy the selected name into a @{" joined " link join } ←<br>@{" STRING " link string }<br>gadget. |
| Spacing      | In this gadget you can enter the number of pixels that is used as spacing between the list names.  |
| Scr. Width   | In this gadget you can enter the width of the @{" SCROLLER " link scroller } gadget in pixels.   |
| List         | This entry list allows you to enter and edit names that occur in the created gadget. With Add you  |
| Add          | add a new name to the list. With Del you can   |
| Del          | delete a name from the list. With Up and Down you  |
| Up           | change a name it's position in the list.   |
| Down         |  |
| OK           | Confirm the attributes.  |
| Cancel       | Cancel the operation.  |

## 1.89 MX

This gadget kind is used to let the user select one out of several possibilities.

The attribute requester of this gadget kind allows you to edit the following attributes:

|       |   |
|-------|---|
| Label | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated |
|-------|---|

---

---

|            |  |
|------------|--|
|            | source.  |
| Place      | This gadget enables you to determine where the text should be rendered.  |
| Underscore | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget.  |
| Spacing    | In this gadget you can enter the number of pixels that is used as spacing between the options.   |
| Active     | This gadget enables you to set the option that is active when the gadget is created.   |
| List       | This entry list allows you to enter and edit names that occur in the created gadget. With Add you add a new name to the list. With Del you can delete a name from the list. With Up and Down you change a name its position in the list. |
| Add        |  |
| Del        |  |
| Up         |  |
| Down       |  |
| OK         | Confirm the attributes.  |
| Cancel     | Cancel the operation.  |

## 1.90 NUMBER

This is a read only gadget which is meant to be used to display a numerical value. It has an informative function.

The attribute requester of this gadget kind allows you to edit the following attributes:

|         |   |
|---------|---|
| Text    | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.  |
| Label   | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source. |
| Place   | This gadget enables you to determine where the text should be rendered.   |
| Border  | When checked the created gadget will have a recessed border drawn around it.  |
| Default | By default the gadget displays 0. In here you can change the value that the created gadget will default to.   |
| OK      | Confirm the attributes.   |

---

Cancel Cancel the operation.

## 1.91 CYCLE

This gadget kind is used to let the user select one out of several possibilities.

The attribute requester of this gadget kind allows you to edit the following attributes:

|                                  |   |
|----------------------------------|---|
| Text                             | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.  |
| Label                            | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.   |
| Place                            | This gadget enables you to determine where the text should be rendered.   |
| Underscore                       | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget.   |
| Disabled                         | When this option is on the created gadget will be created disabled.   |
| Highlabel                        | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPEN color from the screen @{ " DriPens " link dripens }.   |
| Active                           | This gadget enables you to set the option that is active when the gadget is created.  |
| List<br>Add<br>Del<br>Up<br>Down | This entry list allows you to enter and edit names that occur in the created gadget. With Add you add a new name to the list. With Del you can delete a name from the list. With Up and Down you change a name it's position in the list. |
| OK                               | Confirm the attributes.   |
| Cancel                           | Cancel the operation.   |

## 1.92 PALETTE

This gadget kind normally is used to let the user select a color from a set palette.

---

The attribute requester of this gadget kind allows you to edit the following attributes:

|            |  |
|------------|--|
| Text       | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.   |
| Label      | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.  |
| Place      | This gadget enables you to determine where the text should be rendered.  |
| Underscore | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget.  |
| Disabled   | When this option is on the created gadget will be created disabled.  |
| Highlabel  | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPEN color from the screen @{" DriPens " link dripens }.   |
| Width      | When this gadget is checked the created gadget will have an indicator to the left. The indicator is used to display the currently selected color. The size of the indicator can be changed in the @{" INTEGER " link integer } gadget.   |
| Height     | When this gadget is checked the created gadget will have an indicator on top. The indicator is used to display the currently selected color. The size of the indicator can be changed in the INTEGER gadget.   |
| Depth      | The depth allows you to control the amount of colors that are displayed in the created gadget. <p style="margin-left: 40px;">1 = 2 colors<br/>2 = 4 colors<br/>.....<br/>8 = 256 colors</p> <p style="margin-left: 40px;">NOTE: Currently only a value between 1 and 8 is allowed.</p> |
| Color      | In this gadget you can enter the color that is active in the created gadget.   |
| Offset     | There may be times that you only want to have a portion of the available colors in the palette gadget. This gadget and the Depth gadget can make   |

this happen. If you want to have the 2nd and 3rd color on a 4 color screen you do the following:

```
Set Depth to 1
Set Offset to 1
```

This way you'll get the gadget you want.

|        |                         |
|--------|-------------------------|
| OK     | Confirm the attributes. |
| Cancel | Cancel the operation.   |

## 1.93 SCROLLER

This gadget kind is used to adjust the positions of a view. For example scrolling the text up and down in a text editor.

The attribute requester of this gadget kind allows you to edit the following attributes:

|            |   |
|------------|---|
| Text       | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.  |
| Label      | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.                                 |
| Place      | This gadget enables you to determine where the text should be rendered.   |
| Underscore | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget. |
| Disabled   | When this option is on the created gadget will be created disabled.   |
| Highlabel  | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPEN color from the screen @{" DriPens " link dripens }.  |
| Immediate  | When this option is on your window will receive a message at the moment the user clicks on the gadget.  |
| RelVerify  | When checked your window will receive a message when the user releases the left mouse button while the pointer is still over the gadget.  |
| Freedom    | With this gadget you can set the direction in which the SCROLLER is adjustable.   |

---

|         |   |
|---------|---|
| Top     | Enter the top position visible in the area the SCROLLER represents in here.   |
| Total   | Enter the total number of positions that the SCROLLER represents in here.   |
| Visible | Enter the number of visible positions that the SCROLLER represents in here.   |
| Arrows  | When checked the created SCROLLER will have arrows to accompany it. In the gadget on the right you can adjust the size of the arrows. |
| OK      | Confirm the attributes.   |
| Cancel  | Cancel the operation.   |

## 1.94 SLIDER

This gadget kind is used to select a value within a fixed range. For instance the red, green and blue intensities of a palette editor.

The attribute requester of this gadget kind allows you to edit the following attributes:

|            |   |
|------------|---|
| Text       | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.  |
| Label      | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.                                 |
| Place      | This gadget enables you to determine where the text should be rendered.   |
| Underscore | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget. |
| Disabled   | When this option is on the created gadget will be created disabled.   |
| Highlabel  | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPEN color from the screen @{" DriPens " link dripens }.  |
| Immediate  | When this option is on your window will receive a message at the moment the user clicks on the gadget.  |

---

---

|           |   |
|-----------|---|
| RelVerify | When checked your window will receive a message when the user releases the left mouse button while the pointer is still over the gadget.        |
| Freedom   | With this gadget you can set the direction in which the SLIDER is adjustable.   |
| Min       | Enter the minimum level of the SLIDER in here.  |
| Max       | Enter the maximum level of the SLIDER in here.  |
| Level     | By default the position of the SLIDER is 0. In here you can enter the level that the SLIDER will have when it is created.                       |
| Length    | In this gadget you must enter the maximum amount of characters that are displayed by the level indicator.                                       |
| Format    | In here you can enter a printf() style formatting string for the level indicator. When you keep this empty there will not be a level indicator. |
| Position  | With this gadget you determine the position at which the level indicator is rendered.   |
| OK        | Confirm the attributes.   |
| Cancel    | Cancel the operation.   |

## 1.95 STRING

This gadget kind is normally used to obtain character strings from the user.

The attribute requester of this gadget kind allows you to edit the following attributes:

|            |   |
|------------|---|
| Text       | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.  |
| Label      | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated source.                                 |
| Place      | This gadget enables you to determine where the text should be rendered.   |
| Underscore | When this gadget is checked the character from the text that is preceded by a '_' sign will be underlined. The underlined character usually shows the key that also activates the gadget. |

---

|                            |   |
|----------------------------|---|
| Disabled                   | When this option is on the created gadget will be created disabled.   |
| Highlabel                  | When this gadget is checked the text will be rendered using the HIGHLIGHTTEXTPE color from the screen @{" DriPens " link dripens }.   |
| ExitHelp                   | When this gadget is checked and the user presses the HELP key while the created gadget is active your program will receive a special message at the the window port telling you about the quest for help. You can identify this special message when the Code field of the IntuiMessage is 0x5F. Normally you display some information as to the usage of the gadget when you receive such a message. |
| TabCycle<br>gadgets are in | Normally all STRING and @{" INTEGER " link integer } ↔<br>the @{" TABCYCLE " link tabcycle } list. This list makes ↔<br>sure that the<br>next/previous STRING or INTEGER gadget is<br>activated when TAB/SHIFT-TAB is pressed in the<br>gadget. When you turn this gadget off the created<br>gadget will not be included in this list.  |
| Placement                  | With this gadget you can set the place where the characters should appear in the gadget.  |
| MaxChars                   | In this gadget you can set the maximum number of characters that can be entered in this gadget.   |
| String                     | Normally the gadget is created without a string in it. Here you can enter a string that will be the contents of the created gadget.   |
| OK                         | Confirm the attributes.   |
| Cancel                     | Cancel the operation.   |

## 1.96 TEXT

This is a read only gadget which is ment to be used to display a character string. It has a informative function.

The attribute requester of this gadget kind allows you to edit the following attributes:

|       |   |
|-------|---|
| Text  | In here the text of the gadget can be typed. The text usually describes the gadget function in one to three words.                                |
| Label | In here the source-code name of the gadget should be entered. The source code name is important to recognize the gadget later on in the generated |

|          |   |
|----------|---|
|          | source.   |
| Place    | This gadget enables you to determine where the text should be rendered.   |
| Border   | When checked the created gadget will have a recessed border drawn around it.  |
| CopyText | When checked GadTools will copy the text to an internal buffer so that the program can use it again.                      |
| Default  | By default the gadget displays nothing. In here you can type in a text that will be displayed when the gadget is created. |
| OK       | Confirm the attributes.   |
| Cancel   | Cancel the operation.   |

## 1.97 The Menu Editor

The menu editor of GadToolBox allows you to edit a complete menu-strip for your windows. The working of the editor is based on a simple principle. The right-most list with an active item is always the active input list.

This means that when there is a subitem active the mutual exclude, flags etc. you change are done on that subitem.

When there is no subitem but an item active the changes are made on the item.

The following gadgets are in the Menu Editor.

|  |  |
|--|--|
| Menus, Items, SubItems                 | These three input lists are used to add and delete new entries in the menu. "Add" will add a new entry. "Del" removes the currently selected entry. "Up" and "Down" enables you to move the entries in the list. |
| DISABLED, CHECKIT, CHECKED, MENUTOGGLE | These are the menu flags which you can toggle on or off.   |
| COMMKEY                                | In here you can type the shortcut character of the (sub)item.  |
| BarLabel                               | When you click on this gadget an NM_BARLABEL item is inserted in the (sub)item list.   |
| MutEx                                  | This will enable you to set the mutual exclude of a (sub)item. You will be asked to drag-select the (sub)items   |

|        |  |
|--------|--|
|        | that need to be excluded. You drag-select by clicking the left mouse button on the (sub)item whilst holding down the right mouse button. |
| Label  | In here you can enter the source code name of the (sub)item.   |
| OK     | Confirm the menu.  |
| Cancel | Cancel the operation.  |

## 1.98 The Keyboard & Mouse

There are few keys which perform a more or less important function during editing. The following is a short description of the keys:

When you are dragging the rubberband box to add, move, copy or size one or more gadgets or when you add, move, size a bevelbox:

| Key:                      | Action:   |
|---------------------------|---|
| x                         | This key, while pressed, will block the horizontal movements of the rubber band box. The movements will be released when you release the key. |
| y                         | The same as the 'x' key only now the vertical movements are blocked.  |
| ESC or Right Mouse-Button | This will cancel the operation you are doing.   |

When you are in the edit window and there is no requester active:

| Key:      | Action:  |
|-----------|--|
| F10       | This flips the window sizing gadget on or off. This is simply a shortcut to the WFLG_SIZEGADGET flag.  |
| F7        | This will activate the old '.G' file type reader. It is the same as opening a .GUI file only now a '.G' file is expected. NOTE: Now GTB will determine automatically what file to load when selecting "Open..." from the menu. |
| a         | Select all gadgets in the edit window.   |
| Shift + a | De-select all gadgets in the edit window.  |

Shift + Left Mouse-Button                      This put's you in drag-selection mode.  
Please look at the @{" Gadget Selection " link selection } chapter for more info. ←

When you are prompted via the screen and window title to do something:

| Key:                      | Action:               |
|---------------------------|-----------------------|
| -----                     |                       |
| ESC or Right Mouse-Button | Cancel the operation. |

Double-Clicking a gadget will open it's attribute editor.

## 1.99 The GetFile BOOPSI Image

When you are using the @{" GETFILE " link getfile } gadget in your GUI you \* must\* link with the supplied object code "boopsi.o". This contains the dispatcher and initialization code that will setup and render the image.

The source code is also included so you can see how it has been done. The code is reentrant so it can be used in resident programs and libraries.

Please note that this code is \*NOT\* public domain. It is freely distributable and remains (C) Copyright 1992-1993 Jaba Development.

You are allowed to distribute it with your program no matter if it is a public domain, a freeware, a shareware or a commercial product.

## 1.100 The Generated Source

```
*****
* Currently there are three builtin source generators. C, Assembler and *
* Oberon. The next release will not have builtin source generators *
* anymore. By then all the source generators should be external to *
* create a more flexible environment. *
* *
* If you study the "gadtoolsbox.library" docs and the source to the *
* sample source generator you can also build your own. *
*****
```

The source output of GadToolsBox is divided into two separate files. The first file is a header (.h|.i) containing EXTERNS or XREF'S to the data in the generated main source and CONSTANTS for the gadget ID's and the positions of the gadgets in the Gadget Array.

The second file (.c|.s) (from here on referred to as "main file") contains all data and routines to set-up things.

From here on when I refer to <Project\_Name> I mean the name entered in the @{" Edit Data " link datawindow } requester from the Window menu and ← when I refer to



Each Project Window which has texts and/or BevelBoxes attached to it will have a routine which renders these texts and/or BevelBoxes in the window. This routine must also be called by the user program upon receiving a IDCMP\_REFRESHWINDOW message at the window port. When such a message is received this routine must be called between the GT\_BeginRefresh() and GT\_EndRefresh() calls. Here is a small example of what I mean:

```
while( 1 ) {
    WaitPort( <Project_Name>Wnd->UserPort );
    while( imsg = GT_GetIMsg( <Project_Name>Wnd->UserPort ) ) {

        Class = imsg->Class;
        GT_ReplyIMsg( imsg );

        switch ( Class ) {

            case IDCMP_REFRESHWINDOW:
                GT_BeginRefresh( Project_Name>Wnd );

                /* re-draw texts and boxes */
                <Project_Name>Render();

                GT_EndRefresh( <Project_Name>Wnd, TRUE );
                break;

            .....

        }
    }
}
```

Note that the above is automatically done by the generated IDCMP event-handler.

The main file also has the following globals defined which are shared by all project windows:

```
struct Screen *Scr;           A pointer to the opened/locked screen
APTR           VisualInfo;    A pointer to the visual info
```

The following globals are only generated when the file contains gadgets or menus and when the OpenFont routine is generated and when the window must have a zoom gadget:

```
struct Gadget *<Project_Name>GList;    The created gadgets
struct Menu *<Project_Name>Menus;      The created menus
WORD           <Project_Name>Zoom[4];  The window alternate positions
struct TextFont *Font;                 The opened font
```

Also generated are pointers for each project window that is in memory. Also the window title is generated as a global pointer. These pointers are generated as follows:

```
struct Window *<Project_Name>Wnd;      A pointer to the window
UBYTE           <Project_Name>Wdt;     A pointer to the window title
```

When you have generated source for the Workbench or Default Public screen

a global is generated which is a pointer to the name of the public screen to open on. It is generated as follows:

When generated for the Workbench screen:

```
UBYTE      *PubScreenName = "Workbench";
```

When generated for the Default Public screen:

```
UBYTE      *PubScreenName = NULL;
```

This will allow you to change the name of the public screen to open on with out having to hack in the generated source.

Four words are generated for each window. These words contain the window it's left and top-edge and the window it's width and height. These globals are build as follows:

```
UWORD      <Project_Name>Left;      Window left-edge
UWORD      <Project_Name>Top;       Window top-edge
UWORD      <Project_Name>Width;     Window width
UWORD      <Project_Name>Height;    Window height
```

These words should be changed by the application if the user has re-sized or re-positioned the window. This way when the window is closed and then re-opened again it will be opened the size and position it had the last time it was open. Note: When the user has changed the window you must substract the window top-border size from the window height before setting in the "<Project\_Name>Height" global. Here is a little example of what I mean:

```
int <Project_Name>ChangeWindow( void )
{
    <Project_Name>Left    = <Project_Name>Wnd->LeftEdge;
    <Project_Name>Top     = <Project_Name>Wnd->TopEdge;
    <Project_Name>Width   = <Project_Name>Wnd->Width;
    <Project_Name>Height = <Project_Name>Wnd->Height - Wnd->BorderTop;
    return( 1 );
}
```

Or when the IDCMP handler isn't generated:

```
while( 1 ) {
    WaitPort( <Project_Name>Wnd->UserPort );
    while( imsg = GT_GetIMsg( <Project_Name>Wnd->UserPort ) ) {

        Class = imsg->Class;
        GT_ReplyIMsg( imsg );

        switch ( Class ) {

            case IDCMP_CHANGEWINDOW:
                <Project_Name>Left    = <Project_Name>Wnd->LeftEdge;
                <Project_Name>Top     = <Project_Name>Wnd->TopEdge;
                <Project_Name>Width   = <Project_Name>Wnd->Width;
                <Project_Name>Height = <Project_Name>Wnd->Height -
                    <Project_Name>Wnd->BorderTop;
```

```

        break;
        .....
    }
}
}

```

Also the main file contains the Gadget Array's for each project window which are define as follows:

```
struct Gadget *<Project_Name>Gadgets[];
```

To access the pointers in this array the program generates DEFINES or EQU'S in the header file which specify the position of a certain gadget in the array. These defines are build as follows:

```
#define GDX_<Gadget_Label>
```

Be sure that the "gadtools.library", "intuition.library", "graphics.library" and "utility.library" are all open BEFORE any of the generated routines is called. When you use a diskfont and the "Generate OpenFont" switch is on in the Asm or C Preferences window the "diskfont.library" must also be opened.

For the assembler source the valid pointers to these libraries must be stored globally with the names "\_GadToolsBase", "\_IntuitionBase", "\_GfxBase", "\_UtilityBase" and "\_DiskfontBase" otherwise you get problems linking.

NOTE: When you use font adaptable source which adapts to the system font you also need to open the "diskfont.library" and store the pointer in a global called "\_DiskfontBase" for the assembly source.

## 1.101 The IDCMP Handler

```

*****
* Currently there are three builtin source generators. C, Assembler and *
* Oberon. The next release will not have builtin source generators *
* anymore. By then all the source generators should be external to *
* create a more flexible environment. *
* *
* If you study the "gadtoolsbox.library" docs and the source to the *
* sample source generator you can also build your own. *
*****

```

In version 37.157++ of GadToolsBox the C source generator will generate an IDCMP handler when wanted. This IDCMP handler is a bit experimental and it will be changed. The generated IDCMP handler will work for most people but some may not like the way it has been done.

As of version 37.157 GadToolsBox generates an IDCMP handler routine for each IDCMP flag. This handler will process all incoming IDCMP messages from the window and it will also process all gadget and menu events. GadToolsBox generates the following routine(s) for the event-handling:



None of the routines called for by the generated event-handler will be passed any arguments. You can get the IDCMP event specific data from a global copy of the arrived message. Each window in the generated file will have a copy of the IntuiMessage that arrived at the window port. The source generator will generate a struct IntuiMessage for each window and the label for those IntuiMessage is constructed as follows:

```
struct IntuiMessage <Project_Name>Msg;
```

The contents of the message that arrives at the window port will be copied into this IntuiMessage before the IDCMP specific routine is called. This way you can get the data you need from the IntuiMessage.

When you have the "Templates" option switched on the source generator will also generate a file with template routines for each routine the IDCMP event-handlers will call. The name of the generated sources is constructed as follows:

When you generate your source as "Source.c" the files generated will be called:

```
Source.c      - The main source file
Source.h      - The source header file
Source_temp.c - The template source file
```

The way the gadget and/or menu routines are called is done by setting the address of the routine in question in the UserData field of the gadget/menu. Then when the IDCMP event-handler receives a gadget/menu message the routine address is picked out of the gadget/menu structure and then called.

This is a whole lot smaller and faster than to setup a big switch/case table.

To keep things clean the source generator will not generate routines for Menus, Items with subitems, BARLABEL (sub)items, TEXT gadgets and NUMBER gadgets. These menus and gadgets never generate an IDCMP event so it's not necessary to generate routines for them.

The generated menu-event handler supports drag-selection which is the only official way to handle menu messages.

## 1.102 Font Adaptivity

When you are editing a font adaptive GUI the source generators will create source that will automatically adapt the gadget, bevel-box and window sizes and positions to the active font. The resulting source also checks to see whether or not the window will fit on the screen. If it doesn't fit anymore the topaz 8 font will be used.

GadToolsBox will allow you to use any font when designing a font adaptable GUI. Please be extra careful when you design using a large font because if you would (for example) create a SCROLLER of 10 pixels high and at run time a smaller font is active the routine that

re- calculates the gadget could make the SCROLLER to small.

In the generated source a routine called "ComputeFont()" is generated. This routine calculates the font size and it will check if the window still fit's on the screen using the font. If the window does not fit anymore this routine will automatically switch to the topaz 8 font. This routine is always static and you should never need to call this yourself.

Two kinds of adaptable source can be generated. The first kind uses the font of the screen on which the window opens and the second will use the system default font (GfxBase->DefaultFont).

Also two routines called "ComputeX()" and "ComputeY()" are generated which re-calculate the horizontal (X) and vertical (Y) values for the gadgets, bevel-boxes, windows and texts.

NOTE: You should take special care when you place fixed-size gadgets like the CheckBox, GetFile and MX gadgets. Because they have a fixed size the gadgets are not "size-adapted" with different fonts.

## 1.103 Credits

I would like to thank the following people for their many suggestions and bug reports.

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|                     |   |
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## 1.104 Notes

At this time there really isn't much to say about the program. It is a tool that will ( or at least should ) save you a lot of time in creating a GadTools user interface for your programs.

When a big font is used in the program it can happen that some requesters won't fit on the screen anymore. Intuition will automatically re-size the requester so that it will fit on the screen but some gadgets might not be reachable anymore.

When you want to save and load crunched GUI(s) you must copy the V35+ version of the powerpacker.library in your libs: directory and you must set-up T: as a logical device. To do this you must have something like this in your startup-sequence:

```
MakeDir RAM:T
Assign T: RAM:T
```

If someone wants to translate this manual into her/his language permission is hereby granted. The only thing I ask is that you send me a copy of the translation so that I can distribute it with the next release of the program.

Although this program itself does not follow all the rules described in the "User Interface Style Guide" I still strongly suggest you try to follow the rules described in that guide.

From v1.3 on GadToolsBox has an embedded version string in the "User Interface Style Guide" format. When submitting a bug-report please tell me the version of the GadToolsBox program you are using. This can be established by typing "Version GadToolsBox" in the shell. Also before you start sending me bug-reports and suggestions please read the "TODO" file first.

This is a program for programmers. A lot of things in the manual might not be clear to other Amiga users. If you plan to program the Amiga you should at least get the RKM manuals: Libraries, Devices, Includes and AutoDocs, User Interface Style Guide. Also one or two good books concerning the language you wish to learn are essential. I'm not saying this because I like to see you throwing your money away but it's almost

