

**DRAFU**

**COLLABORATORS**

	<i>TITLE :</i> DRAFU		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		January 17, 2023	

**REVISION HISTORY**

NUMBER	DATE	DESCRIPTION	NAME

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# Chapter 1

## DRAFU

### 1.1 DRAFU\_Documentation

DRAFU plus V1.01 (30.12.1995)

- SHAREWARE -

© 1990-96 by Andreas Ralph Kleinert. All rights reserved.  
FWB © 1991-96 by Dipl.Ing. Ulrich Degens. All rights reserved.

A PERSISTANT SOFTWARE (PS) PRODUCT.

EMail: Andreas Kleinert (Fido 2:2457/435.10)  
(see "Where to send ..." for more addresses)

Needs Kickstart V2.04. Kickstart release 3.x compatible.  
GUI created with GadToolsBox V2.0c and Designer 1.54.

Copyrights

Distribution

Author/Correspondence

Persistent ?

The program's purpose

How to install it

How to use it

Program history

—  
\_ //  
Only \X/ Amiga makes it possible.

## 1.2 purpose

DRAFU means (D)raw (A) (Fu)ncion, which seems to be a good description of the program's abilities :

DRAFU is able to display all mathematical functions - certainly also many at the same time - on your screen.

Also there's the possibility to calculate Integrals and Zeropoints of functions.

Optionally:

The display may be saved in any of the graphics file formats, which superview.library does support.

The Evaluation version (without keyfile) does not allow saving of function description files (ending ".dfu"), which may only be created by hand until you receive your keyfile.

## 1.3 ps

Not much to say: Approximately 90% Percent of the main market for operating systems are controlled by one company.

The idea:

AMIGA is one of the computers which persistantly does not follow this trend - luckily ;-)

## 1.4 installation

Even if you use the supplied Installer-Script, you should read the following notes. If you do not own the standard Installer-Program you should read them even more carefully and follow the instructions given.

If you own a KeyFile, place it to "S:", or place it elsewhere and change the environment variable "KEYPATH" to the corresponding directory.

Needed Workbench Resources

HardDisk-Users won't perhaps have to install any additional Workbench Resources to their HardDisk.

Disk-Users will have to copy the following libraries into their "LIBS:"-Directory:

- gadtools.library V37+ (since OS V3.00 in ROM)
- asl.library V37+
- icon.library V37+ (usually in ROM)

Users of OS V2.04 or greater should also install the following libraries:

- amigaguide.library V34+

Users of OS V2.1 or greater should also install the following

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libraries:

- locale.library        V38+

## 1.5 usage

### 1.1 "First Steps" or "How to display a function !?"

-----

At first you have to select a suitable Screen-Mode and Color-Depth inside the DRAFU-ModeRequester. The best solution would perhaps be an Interlace-Mode, but you may also work in the Hires-Mode quite good.

After that you have to choose the Menu "Functions" and then "f(x)=???", where you have to select inside the FunctionRequester, which function you would edit or that you want to enter a new one. Also the value of a Step-Size and the borders of the interval, which should be displayed are to enter here.

The following things then can be done with the entered function :

- "Draw alone

(Draw and display the function, after clearing the Screen before.)

- "Add to drawing"

(Draw and display the function, WITHOUT clearing the Screen before.)

- "single/multiple x-range"

(Enter a partly-defined function.  
This is described under 1.2.)

- "Do not draw"

(Leaves the requester, but memorizes the funtion.)

After that the calculation begins and the function will be displayed.

### 1.2 Partly-defined Functions (ASWD-Functions)

-----

DRAFU also allows to display (some kinds of) partly-defined functions, in the following called ASWD-Functions.

(German : "abschnittsweise definierte Funktionen").

Please note the following :

- Select "multiple x-ranges"

---

- You now get into a second FunctionRequester, where you have to enter three (perhaps different) functions, and also a right interval-border for each function.

This is quite the same like in the following mathematic term :

$$f(x) = \begin{cases} / \\ | f_1(x) = ??? & \text{for } x < 1.\text{Border} \\ | \\ | f_2(x) = ??? & \text{for } 1.\text{Border} < x < 2.\text{Border} \\ | \\ | f_3(x) = ??? & \text{for } 2.\text{Border} < x < 3.\text{Border} (= \text{Max.}) \\ \backslash \end{cases}$$

Certainly ASWD-Functions may later be selected within the normal FMemoRequester and then be edited in the FunctionRequester.

### 1.3 More information :

#### ----- Zooming of rectangles on the Screen : -----

After selection of the Sub-Menu "Zoom" (second Menu), you may zoom parts of the currently displayed functions on the Screen as follows :

What you have to do is quite the same like a simple sizing of a Intuition-Window.

Just move the Mouse-Pointer to the left, upper corner of the rectangle to be zoomed.

Then press the left mouse-button and keep it pressed.

Now move the Pointer to the right, lower border of the rectangle and stop pressing the button after this.

While doing this, the currently chosen rectangle is constanly shown as a kind of a "Line-Window", so that you perhaps always see, which part you would zoom, when releasing the mouse-button.

Note : The stepsize for the function is only updated, if the specific menu-point is not set to "By hand".

#### ----- The Speed of Drawing in the "By hand"-Mode : -----

If you think, that the drawing-speed of DRAFU is not high enough, you may change the precision of drawing, which means the "Step-Size", because normally this is set to 0.1 for each new function, which actually a very high value.

two times faster with 0.2,

three times faster with 0.3,

four times faster with 0.4 and so on !!!

Reading of drawn values :

---

-----

Well, it is not always easy to see only by the eye (no big glasses ...), at which point, e.g. a Null-Value exists, or e.g. two functions are crossing.

What to do ? Just zoom the critical part and then select the Sub-Menu "Cursor".

According to each move of the Mouse-Pointer then in the Titlebar of the Info-Window the exact X- and Y-Values (no pixel-values !) are displayed. Pressing of the left mouse-button exits from this feature.

#### Integrating Functions :

-----

DRAFU also gives you the possibility, to integrate functions. This may be already entered functions (from the FMemoRequester) or other functions (static, not memorized).

ASWD-Functions cannot be integrated yet.

A graphical display of the calculated data is also not yet possible. Also the results are not memorized.

#### Zeropoints of Functions :

-----

DRAFU further gives you the possibility, to search intervals of functions for zeropoints.

For this one of the currently displayed functions from the FMemoRequester is selected and an interval is specified via the Zoom-Function.

ASWD-Functions cannot be examined yet.

A graphical display of the calculated data is also not yet possible. Also the results are not memorized.

#### Saving of Screens (IFF-Support) :

-----

With superview.library being installed, DRAFU is able to save any single window in one of the graphics file formats, which superview library allows to write.

superview.library is not needed to run the program as such.

#### Saving and Loading of Memo-Lists :

-----

Saving of a Memo-List allows to "conserve" all currently entered functions inside the FMemoRequester.

Loading of a Memo-List allows to "restaurate" functions, which have been saved before (or edited as an ASCII-File).

Loading of a Memo-List also results in a "re-drawing" of those functions.



Things like Screen-Width or color-selection are not stored inside the the saved Memo-List, because of functional reasons.  
Just set those "by hand" and then select the Sub-Menu "Draw Again".

Also the last set intervals for the X- and Y-Axis are not saved.  
Loaded Memo-List would just be drawn into the current one.

If you like to create such "load-ready" Memo-Files by hand or use them for other purposes, just look into the additional documentation-file "DRAFU\_special.doc", where the format of ".dfu"-files is described.

#### Hardcopies :

-----

If you want to print a HardCopy directly from the screen, without saving it as an IFF-ILBM-File and using a special tool, just select the Sub-Menu "Hardcopy".

If a printer is "on-line", you'll get a fine HardCopy of the current screen within about 1-2 Minutes (depending on the printer's speed).

Note : The HardCopy is just a "copy" of the Screen.

To save the life of your printer (or at least make it a little bit longer), please set the Background-Color to "white" before selecting "HardCopy".

#### Protection of the Display :

-----

The last-drawn Function are conserved as long, as you select a Menu which causes the old Display to become "overwritten".

When drawing new Functions via "Add-Draw", the Screen will be conserved.

#### Grid-Lines :

-----

Don't you really like the "Grid-Lines", which are drawn by DRAFU when displaying functions on the screen ?

If you do not like those "support-lines", because you only need the graphical "look" of a function, you may turn this "Grid-Lines" simply off.

Look into the Menu "Display".

#### X-Marks / Y-Marks :

-----

The Number of Marks at the X-Achsis or (also) the Y-Axis are changeable. Select the "X-Marken" or "Y-Marken".

A requester pops up, in which you see the old values, which can be modified for you own purposes.

Please remember, that too many or too less marks would perhaps destroy the display (a GURU may not appear, but one never know ... do one ?)

#### Advantages in speed (the second) :

-----

If you are interested in speeding up the calculation and drawing of the functions, just put the screen of DRAFU into the background for a while.

You also may reduce the Color-Depth (less DMA-Accesses).

#### Behaviour when changing Colors :

-----

Changed colors are only displayed after the next "write-access" to the Screen, e.g. when drawing a new function (also "Draw Again").

Only when changing the Background-Color the screen will be immediately cleared.

This is because DRAFU does not change color-values in registers, but DRAFU-internal values.

So the menus keep readable and the 3-D-Effect stays there (first four Color-Registers).

#### Loading and Saving the Preferences in "DRAFU.config" :

-----

A "DRAFU.config"-File, which is to be loaded, either at startup-time (automatically) or later by the user, has to be present in the directories "S:" or "ENV:" or in the current directory (in this order). Only there it can be found by DRAFU.

Saving always is done to "S:DRAFU.config", to prevent unnecessary confusion.

The preferences done in the "DRAFU.config"-File, may be changed later by editing the file with a Text-Editor.

See point 1.5 (below) for more and detailed information.

#### Screen destroyed ?

-----

If a Screen has been destroyed without an action of DRAFU, then the Sub-Menu "Draw Again" will restore the old Screen-Image by drawing it all again.

#### Shorter, faster, better ?

-----

Like many other programs do, DRAFU allows you to make great use of so-called "ShortCuts", which can be used instead of mouse-based menu-selection.

Inside many menu-items you see the Amiga-Sign, followed by a single char. Pressing the Amiga-Key and this Char-Key results in an immediately selection of the corresponding menu.

(Also see 1.4, "Function-Keys" !)

---

#### 1.4 Function-Keys :

-----

DRAFUF the ESCAPE- and HELP-Key as follows :

```
ESC   : "Leave program"
HELP  : "Program Info"
```

#### 1.5 Internal Commands :

-----

DRAFUF contains a set of "internal commands", which either are used in the "DRAFUF.config"-Files, or in the Tooltypes of DRAFUF, also in the Tooltypes of Memo-Files (Files with extension ".dfu"). Also all of these commands are available via AREXX, when DRAFUF already has been started.

AREXX has a higher priority than the Tooltypes, which just have a higher Priority than the entries of the "DRAFUF.config"-File. The "DRAFUF.config"-File so mostly contains Default-Entries.

Below you find a listing of all those commands. The flag-combinations behind them show you, by which way ("C"=Config-File, "T"=Tooltypes, "A"=AREXX) you can reach the specific command.

Command-Listing :

```
"LOAD=<FileName>"           ; Load FMemo-List           [ C T A ]
"SAVE=<FileName>"           ; Save FMemo-List           [   A ]
"HARDCOPY=<0..6>"           ; Make a HardCopy           [   A ]
"SAVE_ILBM=<FileName>"      ; Screenshot (IFF-ILBM)     [   A ]
"SAVE_ACBM=<FileName>"      ; Screenshot (IFF-ACBM)     [   A ]
"X_MARKS=<Number>"          ; Set new X-Mark Number     [ C T A ]
"Y_MARKS=<Number>"          ; Set new Y-Mark Number     [ C T A ]
"QUIT"                      ; Quit DRAFUF                [   A ]
"GITTER=<ON/OFF>"           ; Gitter-Status             [ C T A ]
"AUTOSTEP=<HAND/PRECISE/FAST>" ; Stepsize-Status           [ C T A ]
"SCALA=<DECIMAL/SCIENTIFIC/ ; Scaling-Status             [ C T A ]
    EFFICIENCY/LOG10>"
"Y_AUTORANGE=<ON/OFF>"      ; Y-Autorange-Status        [ C T A ]
"BACK_COLOR=<ColorNumber>"  ; Background-Color          [ C T A ]
"AXIS_COLOR=<ColorNumber>"  ; Axis-Color                 [ C T A ]
"DRAW_COLOR=<ColorNumber>"  ; Default-Draw-Color        [ C T A ]
"MODE=<Name Width Height D.>" ; Display-Mode (see below)  [ C T A ]
"DOUBLEAXIS=<ON/OFF>"       ; Double-Axis-Status        [ C T A ]
"ZOOMREQUEST=<ON/OFF>"     ; Requester after Zoom      [ C T A ]
```

THE QUOTATION MARKS ONLY HAVE TO BE USED WITH THE AREXX-COMMANDS !  
(AND WITH THE "MODE"-COMMAND)

#### 1.6 The use from Workbech :

-----

### 1.6.1 : ".dfu"-Files on the Workbench

---

Each DRAFU-Memo-File (with the ".dfu"-extension) automatically gets a Workbench-Icon.  
 When clicking on such an Icon on the Workbench, automatically loading of DRAFU is the result.  
 You'll only have specify a Screen-Mode, then the loaded functions of the Memo-List will be displayed.

### 1.6.2 : Autoloading on the Workbench

---

Another possibility consists of an additional ToolType for DRAFU itself, which would look as follows :

```
LOAD=<FileName[.dfu]>
```

(The extension ".dfu" need not be written here.)  
 When starting DRAFU, this File then will always be loaded automatically.  
 You still only have to specify a Screen-Mode.

### 1.6.3 : More Tooltypes

---

Tooltype	Possible Parameters	Meaning
MODE=	<Name Width Height Depth>	(see Point 1.7)

### 1.7 CLI-/Shell-Start :

---

Use the following Commandline-Syntax for starts of DRAFU from the CLI/Shell :

```
DRAFU [-Mode=<Mode>] [<FileName[.dfu]>]
```

When starting from CLI you have the possibility to specify a single DRAFU-Memo-File (this needs to have extension ".dfu", which nevertheless need not be specified).  
 After Starting DRAFU this way, this file is automatically loaded.  
 You only need to display a suitable Screen-Mode and then directly the loaded Memo-List will be displayed.

But you also may specify this Screen-Mode at command-line level.  
 Please note, that first the Mode (optional) and then the File-Name (optional) has to be specified.

For possible Modes under OS V2.04 / V2.1 / V3.00+ please run your Screen-Mode Preferences.

For example:

---

```
"PAL:LowRes 320 256 <Depth: 2..8>"
"PAL:LowRes Interlace 320 512 <Depth: 2..8>"
"PAL:HighRes 640 256 <Depth: 2..8>"
"PAL:HighRes Interlace 640 512 <Depth: 2..8>"
```

Examples :

1.       DRAFU "-Mode=PAL:HighRes 640 256 2"
 

Starts DRAFU in HIRES-Mode with 4 Colors.
2.       DRAFU MemoPad.dfu
 

Starts DRAFU and loads the File MemoPad.dfu.  
The Screen-ModeRequester pops up then.
3.       DRAFU "-Mode=PAL:HighRes 640 256 2 " MemoPad.dfu
 

Starts DRAFU in HIRES-Mode with 4 Colors.  
and loads the File MemoPad.dfu.  
The Screen-ModeRequester does NOT pop up then.

#### 1.8 Using the ARexx-Interface of DRAFU :

-----

At first start DRAFU with a Screen-Mode and - maybe - a FileName  
(see 1.4, CLI-/Shell-Start).  
This is also possible inside the ARexx-Script.

After that you may send commands to DRAFU's ARexx-Port "DRAFU.rx".  
All available commands are described under 1.5 (internal commands).  
Syntax is as follows :

```
address 'DRAFU.rx' "Command with quotation marks"
```

The ARexx-Script has to be written in the following format (generally) :

```
Run "DRAFU -Mode=PAL:HighRes 640 256 4"

wait 2

address 'DRAFU.rx' "LOAD=MemoPad.dfu"
```

Please look into the special ARexx-DemoScript with the name  
"DRAFU\_ARexxDemo.rx" !

=====

= EXAMPLES :

=====

At the end there's a little nice example :

1. Select "f(x)=???" (second Menu)
-

2. Enter "x^2" as Function
3. Enter "0.5" as "Step-Size"
4. Enter "-20" as "lower X-Border"
5. Enter "20" as "higher X-Border"
6. Enter "-20" as "lower Y-Border"
7. Enter "20" as "higher Y-Border"

Then you'll see a quite nice standard-function (simple, eh ?).

## 1.6 history

DRAFU plus

-----

V1.01 (30.12.95):

- saving was not possible due to bug in V1.00.  
Fixed now, but disable as an "evaluation restriction"  
(files may be created by hand, but for saving you need a keyfile)
- installer script did create an unnecessary entry in user-startup
- "grid-lines" menu was not mutual exclusive
- fixed small spelling bug in german gui catalog
- menus now are "check"ed correctly
- compiler messed up some menu command keys within "settings"

V1.00 (28.12.95):

- the first, completely-rewritten non-DEMO Shareware version since a long time
- GUI and program code have been completely rewritten by using the "Designer". OS V37 is now needed and nearly everything has changed (beginning with the GuideFile, over localization und finally upto AGA and full superview-library support).
- SHAREWARE

V0.83 (22.10.94):

- internal version

V0.82 (23.02.93):

- the second DEMO version of DRAFU plus

V0.80 :

- the first DEMO version of DRAFU plus

DRAFU (without the "plus")

-----

V2.02c:

- versionen upto V2.02c had been OS1.2/1.3 versions with a primitive function parser and and simple GUI (Shareware)

## 1.7 correspondence

```

|         You may reach me the following way.
|         Send bug-reports, money or whatever to:
|-----|
|
|                 Persistant Software
|
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| Any snail mail to the old address will still be routed.
|
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|                        +49-271-22838
|
|                 Weekdays after 17.00h.
|
|                 When calling via phone you may leave a message,
|                 if I'm not available.
|-----|

```

```

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        Andreas_Kleinert@t-online.de                c
        Andreas.Kleinert@gm-box.mediaserve.de       d

```

The function parser (FWB routinen) have been written by Dipl.Ing. Ulrich Degens, who granted permission to use these with DRAFU. He is no longer actually directly involved with the program, but concerning further questions about FWB you may contact him under the following adress:

```

Dipl.Inform. Ulrich Degens
Hamburger Strasse 43
D-44135 Dortmund
Germany

```

## 1.8 distribution

Copyright

The program DRAFU in this version and its documentation files are (C)opyright 1990-96 by Andreas R. Kleinert. All rights reserved.

The FWB routinen are (C)opyright 1991-96 by Dipl.Ing. Ulrich Degens. All rights reserved.

The right of using this program is granted to you by paying the

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This does concern the current version and possible updates, which  
may as well be Shareware.

Together with the registration you also receive your personal KEYFILE.

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The Distribution of Keyfiles is FORBIDDEN.

The following only applies to the unregistered evaluation (EL)  
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The Installer script icon is (C) by Roman Patzner (taken from the SuperView distribution, originally from "RomIcons").

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