

PureBasic

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Contents

1	PureBasic	1
1.1	PureBasic.guide	1
1.2	Introduction	1
1.3	avertis	2
1.4	System requirements:	3
1.5	install	3
1.6	To order PureBasic:	3
1.7	Registration form:	4
1.8	How to contact the team?	5
1.9	The thank you list:	6
1.10	PureBasic History	7

Chapter 1

PureBasic

1.1 PureBasic.guide

PureBasic V2.32
The New Age Of Programming Language
© 2001 Fantaisie Software

Introduction	Welcome...
Terms & Conditions	Legal jargon
Requirements	System needs
Installation	How to instal...
Programme Guide	Reference manual
Ordering	How to purchase?
Contact Us	Who we are?
Acknowledgements	Thank you all!
History	The changes

1.2 Introduction

Introduction :

PureBasic is a new "high level" programming language based on established "BASIC" rules. It is compatible with any other "BASIC" compiler, whether its for the Amiga or PC format. Learning PureBasic is very easy! PureBasic has been created for beginner and expert alike. Compilation time is really fast.

This software has been developed for the Amiga with the Amiga environment in mind. We have put a lot of effort into its realization to produce a fast,

reliable and system friendly language. The respect of the OS is always the watchword. You cannot write bad software with the basic command set provided. Of course, you can also add new functions to bash the hardware and utilise the Amiga's full potential if you need to.

The syntax is easy and the possibilities are huge with the "advanced" functions that have been added to this language like pointers, structures, procedures, dynamically linked lists and much more. For the experienced coder there are no problems gaining access to any of the legal OS structures or Amiga objects.

PureBasic supports the 680x0 processor and, very shortly, PowerPC. The PowerPC processor option is not yet fully implemented but it is hoped that this will be fully supported after further necessary testing. The 68000 option has been optimized to create the best code possible, however we are sure we can do even better! We will keep trying!

The main features of PureBasic:

- 68000 and 68020+ support (PowerPC support in progress).
- Built-in arrays, dynamically linked lists, complex structures, pointers and variable definitions.
- Supported types: Byte (8 bits), Word (16 bits), Long (32 bits) and also ← user defined (structures).
- Signed and unsigned support for standard types.
- Built-in string types.
- Constants, binary and hexadecimal numbers supported.
- Expression reducer by grouping constants and numeric numbers together.
- Standard arithmetic support in respect of sign priority and parenthesis: +, -, /, *, and, or, lsl, asl, lsr, asr.
- Compile 30,000 lines/min using a 68030/50 (with PoolMem installed).
- Procedure support for structured programming with local and global variables (work still in progress).
- All Standard BASIC keywords: If-Else-EndIf, Repeat-Until, etc.
- External library support to manipulate objects like IFF pictures, screens, windows, gadgets, etc.
- AmigaOS libraries fully supported as if they were BASIC keywords
- Assembler Inline
- Precompiled structures with constants files for extra fast compilation.
- Debugger to stop programme execution and trace bugs easily.
- Configurable CLI compiler.
- System friendly, easy to install and always under development.

1.3 avertis

Terms And Conditions:

This programme is provided "AS IS". Fantaisie Software are NOT responsible for any damage (or damages) attributed to PureBasic. You are warned that you use PureBasic at your own risk. No warranties are implied or given by Fantaisie Software or any representative.

The demo version of this programme may be freely distributed provided all contents, of the original archive, remain intact. You may not modify, or change, the contents of the original archive without express written consent from Fantaisie Software.

If a coverdisk is wanted, any magazine using it MUST ask permission before any demo-version is added to any media.

Fantaisie Software reserves all rights to this programme and all original archives and contents.

1.4 System requirements:

System requirements:

- AmigaOS 3.0 or better
- 1 mb of free memory

PureBasic will run on any Amiga system. If there are any problems please contact us.

1.5 install

Installation:

To install PureBasic use the 'Install' script provided or drag the 'PureBasic' sub-drawer within the 'PureBasic' drawer to wherever you want. If you have not used the supplied install script please ensure that you have made a 'PureBasic:' assignment in your 'S:user-startup' script.

Once installation has completed, just click on the PureBasic icon.

1.6 To order PureBasic:

PureBasic is a low cost shareware programme at present, but it will probably be charged as a commercial programme soon !
Of course the evolution of this software depends on the number of registrations. If this version is pirated, please consider that you will be stifling further work on this programme. Please do not use pirated software.

Registered users will receive all updates, and bugfixes for free. Any future version will be totally free !

The Windows x86 version is bundled with the Amiga version for the same price !

The demo-version of PureBasic is limited as shown below:-

- * only 4 external libraries (misc, linked list, window, screen) can be loaded

- * you can't use the external AmigaOS library support
- * no development kit for external libraries
- * maximum number of source lines: 200

Price:

USA : 60 US\$
England : 40 £
Germany : 120 DM
France : 400 FF

Payment by postal cheque (France only) or Euro cheque to this address:

Frédéric Laboureur
10, rue de Lausanne
67640 Fegersheim
France

Online payment now available at: <http://www.purebasic.com>

A full version will be sent via EMail or snail mail on immediate receipt.
Please indicate your preference.

If you want to use this order form click here then print it.
Please mail to the address shown above.

1.7 Registration form:

To: Frederic Laboureur
10, rue de Lausanne
67640 Fegersheim
France

***** PureBasic *****

I would like to purchase the full version of PureBasic.

Price per copy:

() FF400.00 () DM120.00 () £40.00 () US\$60.00

Name: _____

Address: _____

Country: _____

Phone: _____

E-Mail: _____

All requested information is considered private and personal. It will not be distributed for any reason by Fantaisie Software.

I am sending the shareware donation via (please mark as appropriate):-

- Cash, in currency as marked above. Please send my keyfile as indicated below.
- Euro cheque. The safer/cheaper method for all European people.
- Other methods? Prior approval required via EMail. (Approvals will be kept as confirmation pending receipt of the registration form).

Donations in currencies only as shown above, please. Sorry other currencies cannot be accepted.

Please send me the full programme via (please mark as required):-

- EMail (UU - MIME encoded file)
- Snail Mail : Disk (Amiga version only)
 CD-Rom (Amiga and Windows x86)

I have read the terms and conditions and agree to abide by them.

Date

Signature

Notes about PureBasic:

1.8 How to contact the team?

Please send bug reports, suggestions, improvements, examples of source coding, or if you just want to talk to us, to any of the following addresses:-

* Frédéric 'AlphaSND' Laboureur

Fred 'AlphaSND' is the founder of Fantaisie Software and the main coder for PureBasic. All suggestions, bug reports, etc. should be sent to him at either address shown below:-

s-mail: Frédéric Laboureur
10, rue de Lausanne
67640 Fegersheim
France

e-mail: alphasnd@free.fr

* Richard Andersson

Richard is a very talented coder who has helped Fred to develop the strong and powerful assembler sub-libraries needed for PureBasic. Need a new library? Get in touch with him at:-

e-mail: rzc735w@tninet.se

1.9 The thank you list:

I would like to thank the many people who have helped in this ambitious project. It would not have been possible without them!

* Frank WILLE:

For allowing the use of your excellent assemblers; "pasm," and "PhxAss!" For all your tips, and invaluable assistance, in their usage. To help us a lot about debugging PowerPC executables..

* Steffen HAEUSER:

For giving his valuable time, and assistance. For his invaluable explanations regarding aspects of PPC coding, and his very useful tips.

* Thomas RICHTER:

For creating "PoolMem." A patch that decreases the compilation time by a factor of 2-3! Many thanks for allowing it to be added to the main archive.

* Roger BEAUSOLEIL:

The first to believe in this project, and his invaluable help with the main design and layout of PureBasic.

* LES:

For editing the English Fantaisie Software Web site & and this guide. This looks much better!

* Andre BEER:

To spend time to translate all the guides into German. Big thanks.

* Francis G.LOCH:

To have corrected all the mistakes in the english guides ! Thanks again.

* Registered users:

To support really the Amiga and especially this software.

* BlitzBasic mailing list

Please send any feedback and all suggestions for future programme additions to Fantaisie Software.

1.10 PureBasic History

V2.32 (12.06.2001):

Added: ReadMemory(), WriteMemory(), SetWindowTagList()
Added: Palette: added async palette fade
Added: New commands for Chunky library
Added: Procedures can now returns strings
Added: WaitWindowEvent()
Added: CompilerIf, Else...
Added: FileSystem library
Added: Path change when running a program from the editor (no need to put ←
absolute path anymore)
Added: Editor: Auto-casing and contextual online help.
Added: Data support (new commands: Data, DataSection, EndDataSection, Read, ←
Restore)

Changed: PokeS(), now returns the number of characters 'poked' (handy)
Changed: OpenWindow() (to be compatible with other OSes)
Changed: The whole gadget library (to be compatible with other OSes)

Fixed: A compiler bug (Structure can't be redeclared a second time..)
Fixed: A member in a structure used but not initialized
Fixed: Sprite lib (debugger and priority to the end)
Fixed: a Picture bug (recompilation with optimis..)
Fixed: Screen/FontRequester(): now returns 0 when cancelled.
Fixed: ReadString(), Str()
Fixed: A lot of editor bugs

V2.00 (14.01.2001):

Windows x86 version 2.00 released and free for all Amiga users !

About the compiler:

- * Completely rewritten !
 - * Now, it's 4 to 7 times faster to compile
 - * Faster procedure handling
 - * Multi-dimensionned arrays are now supported
 - * Residents are now saved/loaded in one file
-

- * PowerPC code have been removed (nobody want it ?)
- * Some bugs have been fixed
- * The switch MC68020 have been added to the command line

About the PureLibraries:

- * Rewritten the Sprite library (50% faster) and added several commands: SaveSprites(), LoadSprites(), RemoveCookie(), FlushSprite(), SpriteHandle(), CopySprite(), GrabSprite()
- * Added 'DisableDebugger' and 'EnableDebugger' to disable the debugger for some part within a program.
- * Added the debugger support for Sprite, Joypad, Chunky and Sound libraries.
- * Added the following commands: Processor(), MMU(), FPU(), RectsHit(), Hex(), Bin().
- * Fixed some commands: ListIndex(), FontID(), DrawingFont()

About the editor:

- * Added a keyboard shortcut to close the error window.

Misc (Full version only):

- * SpriteGrabber (Allows to get sprites from a picture)
- * OpenPureBasic (C/C++ -> PureBasic convertor)

V1.60 (09.09.2000):

- * The compiler now accepts 'tab' as space character
- * Fixed some minors bugs in the compiler
- * Added 4 brand new PureLibraries:
 - Audio (to manage all the audios functions)
 - Protracker (to replay easely the Protracker modules)
 - Network (based on the TCP/IP protocol, allowing to do blazing fast internet applications or multiplayer games)
 - Memory Bank (to allocate memory easely)
- * Added 3 new functions (Misc library): MouseButtons(), GetCliArg() and NumberOfCliArgs()
- * Updated function: OptionGadget()
- * Fixed functions: FileRequester(), AddElement()
- * Fixed the Menu library (was totally corrupted since 1.50)

V1.50 (11.07.2000):

About the compiler:

- * Fixed lot of small bugs
- * Added 68020+ optimisations support
- * New optimisations for even smaller/faster code
- * A bit faster and doesn't lock the editor anymore
- * Localisation support. Errors will be now in your own langage !

About the PureLibraries:

- * Brand new library: PopupMenu, which allows to handle popupmenus very easely
- * Changes about existing functions (check the docs):
 - ChunkyToPlanar(), StartTimer(), StopTimer(), InitToolType()
 - ButtonGadget(), StringGadget(), CycleGadget(), ListViewGadget()
 - PaletteGadget(), OptionGadget()

- * Menu library has been recoded (you can use literal string for menu text now)
- * Bug fixed functions:
 - AddSprite(), ReadLong(), LoadPicture(), UseGadgetList(), Left()
 - GetToolTypeString(), WindowMouseX(), WindowMouseY()

About the editor:

- * New Structure Viewer to inspect and walk easily in available structures
- * The editor can be opened on it's own screen
- * The editor font can be changed
- * Added 'Run' feature
- * Fixed many bugs
- * Updated the docs

V1.40 (14.03.2000):

About the compiler:

- * It's now allowed to include any 680x0 asm keywords in a BASIC code.
- * Added 'Unions' support in 'Structures'
- * Updated and revised resident files (Small_AmigaOS)
- * Some bugs removed.

About the PureLibraries:

- * 4 brand new PureLibraries have been added:
 - AmigaSprite
 - Joypad
 - Sprite
 - Timer
- * 5 new commands added in existing PureLibraries:
 - Requester: EasyRequester()
 - BitMap : ShowBackBitMap()
 - Screen : CreateDualPlayfield(), RemoveDualPlayField()
 - Palette : LoadPalette()
- * Some changes:
 - ShowBitmap() is now faster and doesn't perform anymore a VWait() ↔ automatically.
 - 'Stop' has been renamed to 'CallDebugger'
 - The bitmaps are now opened in 'Interleaved' mode. All the functions has ↔ been rewritten to support this new and faster feature.
- * Some bugs has been removed in the 'Sound' library.

About the editor:

- * Added the cut/copy/paste feature
- * Automatic indent
- * A requester has been added when saving a source code on a file which already ↔ exists.
- * All the documentation has been updated in the 3 langages !
- * Some memory problems have been resolved.

V1.30 (24.01.2000):

About the compiler:

- * Even more smaller and optimized compiled executables!
 - * Compare operands can be reversed (<= or =< and >= or =>).
-

- * Any bad keyword on the line is now signalled.
- * PowerPC executables output works really (See PPC_Example drawer).
- * Many useless PowerPC libraries have been removed (faster compilation).
- * Possibility to use Ascii constants: "value = 'A'" is like "value = 65".
- * Procedure support is now finished. It includes strings as parameters and can return a value.
- * Possibility to omit the '=' statement: "a+1" is like "a=a+1". Works for any type of expression on any types.
- * AmigaOS support completed (All Rom3.1 Includes converted and functions calls under PureBasic are perfect).
- * Faster compilation due to a nearly complete rewrite of the compiler engine.
- * Much faster include file routine.
- * Reduced memory consumption and no need for PoolMem anymore.
- * Many little bugs fixes (like always).

About the PureLibraries:

- * Added a brand new chunky library with very fast chunky2planar routine.
- * Optimized and bug fixed the linkedlist library.
- * New commands: FindString(), ChangeCurrentElement().
- * Bug fixed commands: Mid(), StripLead(), InitScreen(), InitTagList(), ↵ BusyPointer() and ActivateGadget().
- * Changed commands name: DPrint() -> PrintText().
- * Updated the docs.

About the Editor:

- * Boopsi (ie: realtime) slider bars added.
- * 'NoCli Output' option added.
- * Preferences for each file can now be saved.
- * Some bugs fixed.

V1.20 (30.11.1999):

- * The integrated editor is now finished !
 - * You can use any AmigaOS external library directly in your source, as it was PureBasic command ! There is no limits. You can add your libraries very easely with a GUI based convertor.
 - * Added 3 new libraries: Amiga, Sound & Sort. Read the help for more infos.
 - * Added many new functions:
 - LinkedList: ClearList(), PreviousElement(), InsertElement()
 - File : MakeDirectory(), RenameFile(), DeleteFile() WriteStringN()
 - Window : ChangeIDCMP(), BevelBox()
 - String : Mid(), Val(), FindString(), StripTrail(), StripHead()
 - Misc : PrintNumberN(), Peek(), Poke()
 - * Warning ! 3 Functions has been changed for better logic:
 - NPrint() -> PrintN()
 - PrintNum() -> PrintNumber()
 - WriteString -> Doesn't write a end of line character anymore. Please use WriteStringN() to do it.
 - * Changed: to get a label address, use '?' instead of '@'
 - * The Debugger has been updated and bug fixed. Much better now.
 - * Updated the doc file to build your own custom PureLibraries. Easier :).
 - * Optimized several functions in size/speed.
 - * Many bugs fixes.
-

V1.10 (27.10.1999) :

- * Added 3 PureBasic libraries: Commodity, ToolType and String.
- * Much faster source file loading.
- * Full German and French support (Help file and reference manual).
- * Fixed lot of bugs (like always).
- * PPC support continued but still not finished.
- * GoldED plugin to highlight PureBasic keywords and specific datas by Julian ←
Kinraid.
- * Dedicated editor is now under construction (50% finished).
- * Much better archive layout, with a cool installer script.
- * And more.

V1.02 (12.09.1999) :

- * Forget to include 2 files for the PPC compilation. Now it should work :).
- * Fixed some bugs.
- * Added the Reference.guide completely revised by LES. Again, big thanks.

V1.01 (05.09.1999) :

- * Create real PowerPC WarpOS executable. PowerPC support still in progress.
- * Added the main guide (this guide !) revised by LES. Thank you !

V1.00 (01.09.1999) :

- * First major release.
-