

Ghronos 2.0

Christopher C. Stump

13th March 2005

Contents

1	Requirements	5
2	Features	5
3	Known bugs	5
4	Installation	7
4.1	Palm OS	7
4.2	Window CE	7
4.3	Web browser	7
4.4	Windows desktop	7
5	Usage instructions	8
5.1	Ghronos usage in a nutshell	8
5.2	Setting the clocks	8
5.3	Starting the clocks and switching between players	8
5.4	Pausing Ghronos	8
5.5	Sound settings	9
5.6	Playing modes	9
5.7	Move counting	9
5.8	Resetting	9
5.9	Configuring timing styles	9
5.10	Miscellaneous	10
6	Notes to the user	11
7	Notes to the developer	11
7.1	How to create a new timing style	11
7.2	How to add custom state labels to your timing style	12
7.3	How to add custom clocks to your timing style	12
8	To do	12
9	Change log	13
9.1	version 2.0 (3/12/05)	13
9.2	version 1.7 (5/24/03)	13
9.3	version 1.6 (4/13/03)	13
9.4	version 1.5 (1/25/03)	13
9.5	version 1.2 (8/3/02)	14
9.6	version 1.1 (7/2/02)	14
9.7	version 1.0 (6/5/02)	14

10 Contributors	15
10.1 Christopher C. Stump (chris@thestump.net)	15
10.2 Darryl Lee (lee@darryl.com)	15
10.3 Lars-Ake Aspelin	15
10.4 Matt Kulikosky (mvk20@erols.com)	15
10.5 Eric Norige (thelema@swbell.net)	15
10.6 Friedemann Wolpert (apslive@gmx.net)	15
11 Licensing	16
11.1 GNU GENERAL PUBLIC LICENSE Version 2, June 1991	16

Abstract

Ghronos is an open source gaming clock. The program provides a timing device for chess, go, scrabble, boggle and any other game which requires a clock. Ghronos is being modeled after the very popular Chronos (TM) game clock. The most up-to-date version of Ghronos, its source code, and the accompanying documentation can always be found at <http://ghronos.sourceforge.net>

1 Requirements

Ghronos requires another program named SuperWaba (<http://www.superwaba.com.br>). Therefore, you must install SuperWaba before you can use Ghronos. A copy of the preferred version of SuperWaba should have been included in your Ghronos download. Of course you need a device to run Ghronos on. This device can be a Palm OS or Pocket PC PDA, a Java-enabled web browser, or a Windows desktop. Theoretically Ghronos should run anywhere that SuperWaba runs so it very well may work on other platforms.

2 Features

- Color
- Pausable
- Optional sound
- Persistent settings
- Auto-pause on exit
- Highly configurable
- Hard button control
- Selectable timing styles
- Optional player handicaps
- Large, easy to read display
- Built-in timing style descriptions
- Sequential and per player move counting

3 Known bugs

1. Sound does not work under Pocket PC.
2. Under Pocket PC, if you try to quit the application while configuring a timing style, the application will hang. Avoid this bug by returning to the main Ghronos window before exiting the application.

Since there are so many PDA hardware configurations and because SuperWaba runs under so many different environments, Ghronos is bound to not work on every SuperWaba enabled device. If Ghronos is not usable on your device please submit a bug report at <http://ghronos.sourceforge.net>. Odds are that I simply do not have access to your model device, so I could not test on that

platform. If you are willing to help with testing, please include your email address in the bug report so I can contact you. Volunteering your device and time for testing expands Ghronos' usability and gets the application working for you.

4 Installation

Before installing a new version of Ghronos, you must delete any previous versions of Ghronos that may be on your device! After unzipping the Ghronos archive, follow the instructions below depending on which device you wish to use Ghronos upon.

4.1 Palm OS

1. If your device runs Palm OS 2, 3, or 4 then install the .prc files in the OS2_3_4 directory. If your device runs Palm OS 5 then install the .prc files in the OS5_or_16bpp_only directory. If you your device has problems with auto resetting (some Zire models) then install the .prc files in the PalmOS_AutoReset directory.
2. Install all of the .pdb files

4.2 Window CE

1. Enter the directory that relates to the version of Windows CE your device runs (in most cases, Pocket PC).
2. Enter the directory that relates to the architecture of your device (in most cases, ARM)
3. Copy both .CAB files to your device
4. Install the SuperWaba .CAB
5. Install the Ghronos .CAB

4.3 Web browser

1. Open ghronos.html in a Java-enabled web browser

4.4 Windows desktop

1. Move the SuperWaba directory to C:\
2. Double-click Ghronos.bat to run Ghronos on the desktop

5 Usage instructions

Ghronos is simple and easy to use. The best way to learn the application is to just play with it. However, the following sections will tell you all you need to know in order to use the full features of Ghronos. Most features of Ghronos are controlled through the menu bar. Menu bar options are not accessible while a clock is ticking. This helps prevent accidental changing of time configurations during game play. To access the menu bar during game play, you must pause the clocks.

5.1 Ghronos usage in a nutshell

1. Select player to move first
2. Select move count style
3. Select sound option
4. Select a timing style
5. Configure a delay or overtime if prompted
6. Set main playing time
7. Start game by pressing a hard button

5.2 Setting the clocks

Tap the upper half of a digit to increase its value by 1 or tap the lower half of a digit to decrease its value by 1.

5.3 Starting the clocks and switching between players

When using Ghronos on the desktop, all players use the spacebar. When using Ghronos with a PDA the calendar, address, todo, and memo buttons are used to start the clocks and to switch between players. Buttons are assigned dynamically. The player who starts the game is assigned the button s/he pressed and the adjacent button (if any). The opponent (player with the first move) is assigned the buttons on the opposite side of the page up/down/left/right button. Double presses on buttons when switching players is allowed. Once a player ends their turn by pressing one of their buttons, subsequent presses on that group of buttons are ignored until it is that player's turn again.

5.4 Pausing Ghronos

When using Ghronos on the desktop, press the left or right arrow button. When using Ghronos with a PDA, press the page up/down/left/right button to pause and unpaue during game play.

5.5 Sound settings

Ghronos has its sound turned off by default. To turn sound on/off, tap the "Toggle->Sound" option in the menu bar. When sound is enabled, a click is emitted with each player switch during game play and 3 prolonged beeps are issued to signal the end of a game when time runs out on a clock. In addition, if an overtime timing style is being used a beep will be played at the beginning of each new overtime period. Sound does not work when Ghronos is run under Pocket PC or as an Applet.

5.6 Playing modes

Ghronos defaults to a "white moves first" setting. You can change it to "black moves first" by selecting the "Toggle->First move black" menu option. Select the same option to return to a "white moves first" setting. In either case, the player with the first move is assigned the top clock.

5.7 Move counting

Ghronos defaults to a per player move count. However, you can toggle between that style and a sequential move count by selecting "Toggle->Per player moves"/"Toggle->Sequential moves." The difference is that a sequential count displays the total number of moves made in a game while a per player count displays the total number of moves made by each player (i.e. when it is black's turn, the move count will show the total number of moves that black only has made, same with white).

5.8 Resetting

The clocks can be reset to zero or reset to start by tapping the "Clocks->Reset" option in the menu bar. You will be asked to confirm your reset request. Delay, sound, and playing mode settings remain the same unless changed manually. The reset option must be selected after time runs out on a clock and a game is over.

5.9 Configuring timing styles

Select the "Clocks->Select timing style" menu option to view all of the available timing styles. A brief explanation of how a timing style works is available by selecting a style and tapping the "Info" button. Once you decide on a timing style tap the "Ok" button. Configuration dialogs for setting delay or overtime specifics will appear automatically if necessary.

Setting delays is pretty straight forward. Simply tap in your desired delay time, select which clock(s) you want the delay to apply to, and tap "Ok." Setting overtimes works the same way, except in this case you must input the number of overtime periods that you would like to have after the main time runs out

and you must input the total number of moves that a player is required to make during an overtime period. In some cases, one of the aforementioned fields may not apply to a timing style. When that is true, you will not be able to adjust that particular field or the field will not be displayed. During overtime gameplay the remaining number of moves required in that overtime ("ML") and/or the remaining overtime periods ("PL") are displayed.

5.10 Miscellaneous

- When using Ghronos on Palm OS devices, use the "home" button to exit.
- Ghronos automatically disables your PDA's auto-off feature when the program is started.
- When Ghronos is exited, it restores your previous auto-off settings. Therefore, your PDA will not shut off automatically while Ghronos is running. This prevents timing interruptions during game play.
- Program settings are saved automatically each time Ghronos exits, and automatically recalled whenever Ghronos starts.
- If you exit Ghronos during gameplay it will automatically pause.
- On a PDA, when Ghronos is used for the very first time it will pop up a dialog on the first event asking how many hard buttons are on the device. If your PDA has "calendar", "phone book", "to do", and "memo" buttons, select 4. If your device only has 2 of those buttons, select 2.

6 Notes to the user

Do you like Ghronos? Please let everyone know by posting your praise and/or giving Ghronos a rating at the site you downloaded it from. Visit <http://ghronos.sourceforge.net> to request new features, report bugs, discuss the project, make a donation, get help, or to sign up for release monitoring. I am always interested in having people beta test pre releases of Ghronos. Email chris@thestump.net if you would like to participate.

7 Notes to the developer

Ghronos is open source and has the potential to benefit greatly from developers world wide. If you wish to contribute then please visit <http://ghronos.sourceforge.net> for instructions on how to access Ghronos' CVS repository. The CVS module "ghronos" includes the source code, build file, and documentation source. You can browse the CVS repository at <http://cvs.sourceforge.net/viewcvs.py/ghronos>. In order to build Ghronos you will need a working Java development environment, the SuperWaba toolkit, and Ant. Please submit any bug fixes, code changes, or new timing styles at the sourceforge site.

7.1 How to create a new timing style

Timing styles are the essence of Ghronos, and are fairly easy to create and integrate by doing the following:

1. Create a new class which extends `TimingStyle` or one of its subtypes.
2. Add a "public static final String" named `NAME` to your class whose value is a descriptive name for the timing style.
3. Add a reference to the `NAME` in point 2 to the end of the `STYLES` array found in the `TimingFactory` class.
4. Add a return statement for your timing style to the end of the switch block in `TimingFactory.getTimingStyle`.
5. Add a "public static final byte" named `ID` to your class whose value is the index of the `NAME` mentioned in point 3 plus 1.
6. Make sure that the `getID` method of your class returns the `ID` mentioned in point 5
7. Override `Object.toString` and have it return the `NAME` mentioned in point 2

Your timing style should then be accessible in the timing style selection dialog and will be used during game play when selected.

7.2 How to add custom state labels to your timing style

Some timing styles require special labeling during usage. Custom labels are easy to integrate by doing the following:

1. Extend the StateLabel class or one of its subtypes
2. Activate your label by calling Mediator.replaceState in the onRegister method of your timing style
3. Deactivate your label by calling Mediator.replaceState with a new StateLabel object in the onUnRegister method of your timing style

Your custom label will then be activated when your timing style is selected and deactivated when it is unselected.

7.3 How to add custom clocks to your timing style

Some timing styles require special clocks during usage. Custom clocks are easy to integrate by doing the following:

1. Extend the Clock class or one of its subtypes
2. Activate your clock by calling Mediator.replaceClock in the onRegister method of your timing style
3. Deactivate your clock by calling Mediator.replaceState with a new DecreaseClock object in the onUnRegister method of your timing style

Your custom clock will then be activated when your timing style is selected and deactivated when it is unselected.

8 To do

1. Tournament chess timing
2. Configurable player names
3. Other Chronos (TM) timing styles

9 Change log

9.1 version 2.0 (3/12/05)

- Rewritten & redesigned for use with the SuperWaba platform
- Split source code into packages
- Reformatted documentation and notes using L^AT_EX
- Added color support
- Added auto-pause-on-exit
- Added Boggle timing style
- Added Scrabble timing style
- Added support for 2 button devices
- Added popup information about timing styles
- Collapsed reset options into 1 menu bar option

9.2 version 1.7 (5/24/03)

- Major code revisions
- Reset to start option
- Persistent storage of settings when application exits

9.3 version 1.6 (4/13/03)

- Added hard button control of clocks
- Moved pausing control to page up/page down buttons
- Removed pausing radio button

9.4 version 1.5 (1/25/03)

- Added select timing style dialog
- Made Fischer timing a selectable timing style
- Removed "set delay" as a menu option
- Changed "chess mode" to "white moves first"
- Added "black moves first" option

- Removed "neutral" settings
- Added overtime configuration dialog
- Added sequential move counting
- Added per player move counting
- Added Canadian Byo-Yomi timing
- Added Japanese Byo-Yomi timing
- Added Delay timing

9.5 version 1.2 (8/3/02)

- Changed delay type to true Fischer-style chess delay
- Menu now shows when the title bar is tapped
- Improved interface (larger, more noticable colons)

9.6 version 1.1 (7/2/02)

- Automatic handling of PDA auto-off. On start-up, Ghronos disables the auto-off feature, but it restores the previous settings on program exit.
- Added a "reset clocks" confirmation dialog
- Added a program icon

9.7 version 1.0 (6/5/02)

- Initial release

10 Contributors

10.1 Christopher C. Stump (chris@thestump.net)

- Original author
- Package/program maintainer

10.2 Darryl Lee (lee@darryl.com)

- Beta tested v1.7
- Beta tested v2.0
- Suggested auto-pause-on-exit and popup timing style information features

10.3 Lars-Ake Aspelin

- Beta tested v2.0

10.4 Matt Kulikosky (mvk20@erols.com)

- Beta tested v1.5

10.5 Eric Norige (thelema@swbell.net)

- Introduced Jump compiler options (v1.6)
- Updated Clock.canSetTime method (v1.7)

10.6 Friedemann Wolpert (apslive@gmx.net)

- Added menu show on title tap (v1.2)

11 Licensing

Ghronos is a cost free, open source program protected by the GNU GPL v.2 . So, you can copy the program, modify it, redistribute it, etc. freely as long as you give credit to the original author. See the complete GPL in the next section

11.1 GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation’s software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author’s protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors’ reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent

this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such

an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for non-commercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geo-

graphical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible

use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items—whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989 Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.