License Information

Read this section if you want to use the programs in this book on a computer. You'll need to read the following Disclaimer of Warranty, get the programs onto your computer, and acquire a Numerical Recipes software license. (Without this license, which can be the free "immediate license" under terms described below, the book is intended as a text and reference book, for reading purposes only.)

Disclaimer of Warranty

We make no warranties, express or implied, that the programs contained in this volume are free of error, or are consistent with any particular standard of merchantability, or that they will meet your requirements for any particular application. They should not be relied on for solving a problem whose incorrect solution could result in injury to a person or loss of property. If you do use the programs in such a manner, it is at your own risk. The authors and publisher disclaim all liability for direct or consequential damages resulting from your use of the programs.

How to Get the Code onto Your Computer

Pick one of the following methods:

- You can type the programs from this book directly into your computer. In this case, the *only* kind of license available to you is the free "immediate license" (see below). You are not authorized to transfer or distribute a machine-readable copy to any other person, nor to have any other person type the programs into a computer on your behalf. We do not want to hear bug reports from you if you choose this option, because experience has shown that *virtually all* reported bugs in such cases are typing errors!
- You can download the Numerical Recipes programs electronically from the Numerical Recipes On-Line Software Store, located at `http://www.nr.com`, our Web site. They are packaged as a password-protected file, and you'll need to purchase a license to unpack them. You can get a single-screen license and password immediately, on-line, from the On-Line Store, with fees ranging from $50 (PC, Macintosh, educational institutions' UNIX) to $140 (general UNIX). Downloading the packaged software from the On-Line Store is also the way to start if you want to acquire a more general (multiscreen, site, or corporate) license.
- You can purchase media containing the programs from Cambridge University Press. Diskette versions are available in IBM-compatible format for machines running Windows 3.1, 95, or NT. CDROM versions in ISO-9660 format for PC, Macintosh, and UNIX systems are also available; these include both C and Fortran versions on a single CDROM (as well as versions in Pascal and BASIC from the first edition). Diskettes purchased from Cambridge University Press include a single-screen license for PC or Macintosh only. The CDROM is available with a single-screen license for PC or Macintosh (order ISBN 0 521 576083), or (at a slightly higher price) with a single-screen license for UNIX workstations (order ISBN 0 521 576075). Orders for media from Cambridge University Press can be placed at 800 872-7423 (North America only) or by email to orders@cup.org (North America) or trade@cup.cam.ac.uk (rest of world). Or, visit the Web sites `http://www.cup.org` (North America) or `http://www.cup.cam.ac.uk` (rest of world).

Sample page from NUMERICAL RECIPES IN C: THE ART OF SCIENTIFIC COMPUTING (ISBN 0-521-43108-5)
Copyright (C) 1988-1992 by Cambridge University Press. Programs Copyright (C) 1988-1992 by Numerical Recipes Software.
Permission is granted for internet users to make one paper copy for their own personal use. Further reproduction, or any copying of machine-readable files (including this one) to any server computer, is strictly prohibited. To order Numerical Recipes books, diskettes, or CDROMs
visit website http://www.nr.com or call 1-800-872-7423 (North America only), or send email to trade@cup.cam.ac.uk (outside North America).

Types of License Offered

Here are the types of licenses that we offer. Note that some types are automatically acquired with the purchase of media from Cambridge University Press, or of an unlocking password from the Numerical Recipes On-Line Software Store, while other types of licenses require that you communicate specifically with Numerical Recipes Software (email: orders@nr.com or fax: 781 863-1739). Our Web site `http://www.nr.com` has additional information.

- ["Immediate License"] If you are the individual owner of a copy of this book and you type one or more of its routines into your computer, we authorize you to use them on that computer for your own personal and noncommercial purposes. You are not authorized to transfer or distribute machine-readable copies to any other person, or to use the routines on more than one machine, or to distribute executable programs containing our routines. This is the only free license.
- ["Single-Screen License"] This is the most common type of low-cost license, with terms governed by our Single Screen (Shrinkwrap) License document (complete terms available through our Web site). Basically, this license lets you use Numerical Recipes routines on any one screen (PC, workstation, X-terminal, etc.). You may also, under this license, transfer pre-compiled, executable programs incorporating our routines to other, unlicensed, screens or computers, providing that (i) your application is noncommercial (i.e., does not involve the selling of your program for a fee), (ii) the programs were first developed, compiled, and successfully run on a licensed screen, and (iii) our routines are bound into the programs in such a manner that they cannot be accessed as individual routines and cannot practicably be unbound and used in other programs. That is, under this license, your program user must not be able to use our programs as part of a program library or "mix-and-match" workbench. Conditions for other types of commercial or noncommercial distribution may be found on our Web site (`http://www.nr.com`).
- ["Multi-Screen, Server, Site, and Corporate Licenses"] The terms of the Single Screen License can be extended to designated groups of machines, defined by number of screens, number of machines, locations, or ownership. Significant discounts from the corresponding single-screen prices are available when the estimated number of screens exceeds 40. Contact Numerical Recipes Software (email: orders@nr.com or fax: 781 863-1739) for details.
- ["Course Right-to-Copy License"] Instructors at accredited educational institutions who have adopted this book for a course, and who have already purchased a Single Screen License (either acquired with the purchase of media, or from the Numerical Recipes On-Line Software Store), may license the programs for use in that course as follows: Mail your name, title, and address; the course name, number, dates, and estimated enrollment; and advance payment of $5 per (estimated) student to Numerical Recipes Software, at this address: P.O. Box 243, Cambridge, MA 02238 (USA). You will receive by return mail a license authorizing you to make copies of the programs for use by your students, and/or to transfer the programs to a machine accessible to your students (but only for the duration of the course).

About Copyrights on Computer Programs

Like artistic or literary compositions, computer programs are protected by copyright. Generally it is an infringement for you to copy into your computer a program from a copyrighted source. (It is also not a friendly thing to do, since it deprives the program's author of compensation for his or her creative effort.) Under

Sample page from NUMERICAL RECIPES IN C: THE ART OF SCIENTIFIC COMPUTING (ISBN 0-521-43108-5)
Copyright (C) 1988-1992 by Cambridge University Press. Programs Copyright (C) 1988-1992 by Numerical Recipes Software.
Permission is granted for internet users to make one paper copy for their own personal use. Further reproduction, or any copying of machine-readable files (including this one) to any server computer, is strictly prohibited. To order Numerical Recipes books, diskettes, or CDROMs
visit website http://www.nr.com or call 1-800-872-7423 (North America only), or send email to trade@cup.cam.ac.uk (outside North America).

copyright law, all "derivative works" (modified versions, or translations into another computer language) also come under the same copyright as the original work.

Copyright does not protect ideas, but only the expression of those ideas in a particular form. In the case of a computer program, the ideas consist of the program's methodology and algorithm, including the necessary sequence of steps adopted by the programmer. The expression of those ideas is the program source code (particularly any arbitrary or stylistic choices embodied in it), its derived object code, and any other derivative works.

If you analyze the ideas contained in a program, and then express those ideas in your own completely different implementation, then that new program implementation belongs to you. That is what we have done for those programs in this book that are not entirely of our own devising. When programs in this book are said to be "based" on programs published in copyright sources, we mean that the ideas are the same. The expression of these ideas as source code is our own. We believe that no material in this book infringes on an existing copyright.

Trademarks

Several registered trademarks appear within the text of this book: Sun is a trademark of Sun Microsystems, Inc. SPARC and SPARCstation are trademarks of SPARC International, Inc. Microsoft, Windows 95, Windows NT, PowerStation, and MS are trademarks of Microsoft Corporation. DEC, VMS, Alpha AXP, and ULTRIX are trademarks of Digital Equipment Corporation. IBM is a trademark of International Business Machines Corporation. Apple and Macintosh are trademarks of Apple Computer, Inc. UNIX is a trademark licensed exclusively through X/Open Co. Ltd. IMSL is a trademark of Visual Numerics, Inc. NAG refers to proprietary computer software of Numerical Algorithms Group (USA) Inc. PostScript and Adobe Illustrator are trademarks of Adobe Systems Incorporated. Last, and no doubt least, Numerical Recipes (when identifying products) is a trademark of Numerical Recipes Software.

Attributions

The fact that ideas are legally "free as air" in no way supersedes the ethical requirement that ideas be credited to their known originators. When programs in this book are based on known sources, whether copyrighted or in the public domain, published or "handed-down," we have attempted to give proper attribution. Unfortunately, the lineage of many programs in common circulation is often unclear. We would be grateful to readers for new or corrected information regarding attributions, which we will attempt to incorporate in subsequent printings.

Sample page from NUMERICAL RECIPES IN C: THE ART OF SCIENTIFIC COMPUTING (ISBN 0-521-43108-5)
Copyright (C) 1988-1992 by Cambridge University Press. Programs Copyright (C) 1988-1992 by Numerical Recipes Software.
Permission is granted for internet users to make one paper copy for their own personal use. Further reproduction, or any copying of machine-readable files (including this one) to any server computer, is strictly prohibited. To order Numerical Recipes books, diskettes, or CDROMs
visit website http://www.nr.com or call 1-800-872-7423 (North America only), or send email to trade@cup.cam.ac.uk (outside North America).