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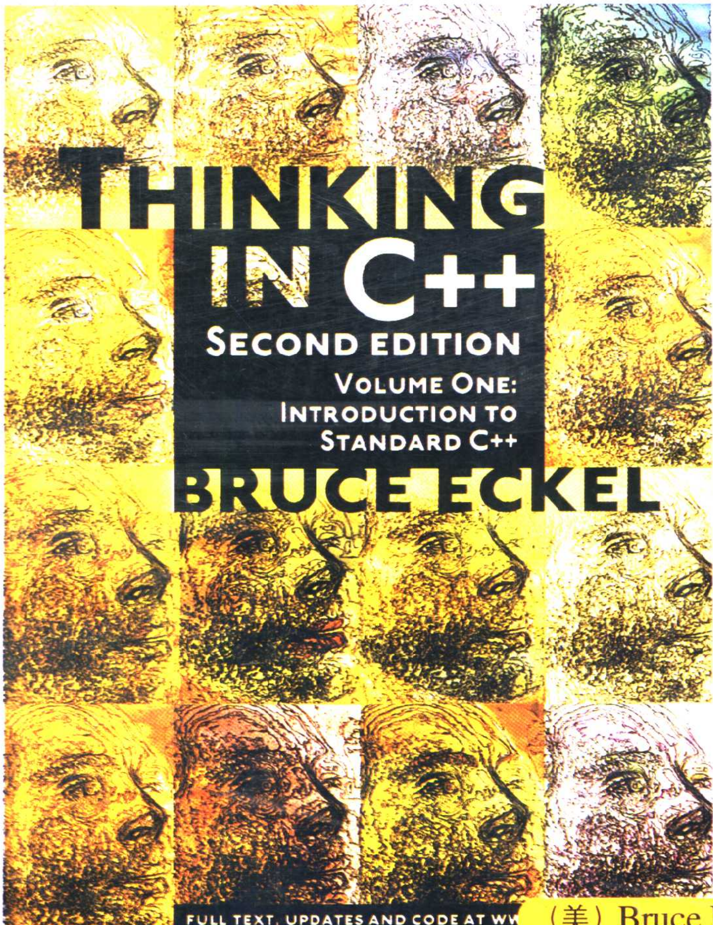
C++ 编程思想

（英文版 · 第2版）



THINKING IN C++

SECOND EDITION

VOLUME ONE: INTRODUCTION TO STANDARD C++

BRUCE ECKEL

FULL TEXT, UPDATES AND CODE AT WW

附赠 CD-ROM

（美）Bruce Eckel 著

机械工业出版社
China Machine Press

Prentice Hall

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出版者的话

文艺复兴以降，源远流长的科学精神和逐步形成的学术规范，使西方国家在自然科学的各个领域取得了垄断性的优势；也正是这样的传统，使美国在信息技术发展的六十多年间名家辈出、独领风骚。在商业化的进程中，美国的产业界与教育界越来越紧密地结合，计算机学科中的许多泰山北斗同时身处科研和教学的最前线，由此而产生的经典科学著作，不仅擘划了研究的范畴，还揭橥了学术的源变，既遵循学术规范，又自有学者个性，其价值并不会因年月的流逝而减退。

近年，在全球信息化大潮的推动下，我国的计算机产业发展迅猛，对专业人才的需求日益迫切。这对计算机教育界和出版界都既是机遇，也是挑战；而专业教材的建设在教育战略上显得举足轻重。在我国信息技术发展时间较短、从业人员较少的现状下，美国等发达国家在其计算机科学发展的几十年间积淀的经典教材仍有许多值得借鉴之处。因此，引进一批国外优秀计算机教材将对我国计算机教育事业的发展起积极的推动作用，也是与世界接轨、建设真正的世界一流大学的必由之路。

机械工业出版社华章图文信息有限公司较早意识到“出版要为教育服务”。自1998年始，华章公司就将工作重点放在了遴选、移译国外优秀教材上。经过几年的不懈努力，我们与Prentice Hall，Addison-Wesley，McGraw-Hill，Morgan Kaufmann等世界著名出版公司建立了良好的合作关系，从它们现有的数百种教材中甄选出Tanenbaum，Stroustrup，Kernighan，Jim Gray等大师名家的一批经典作品，以“计算机科学丛书”为总称出版，供读者学习、研究及庋藏。大理石纹理的封面，也正体现了这套丛书的品位和格调。

“计算机科学丛书”的出版工作得到了国内外学者的鼎力襄助，国内的专家不仅提供了中肯的选题指导，还不辞劳苦地担任了翻译和审校的工作；而原书的作者也相当关注其作品在中国的传播，有的还专诚为其书的中译本作序。迄今，“计算机科学丛书”已经出版了近百个品种，这些书籍在读者中树立了良好的口碑，并被许多高校采用为正式教材和参考书籍，为进一步推广与发展打下了坚实的基础。

[illegible]

随着学科建设的初步完善和教材改革的逐渐深化，教育界对国外计算机教材的需求和应用都步入一个新的阶段。为此，华章公司将加大引进教材的力度，在“华章教育”的总规划之下出版三个系列的计算机教材：针对本科生的核心课程，剔抉外版菁华而成“国外经典教材”系列；对影印版的教材，则单独开辟出“经典原版书库”；定位在高级教程和专业参考的“计算机科学丛书”还将保持原来的风格，继续出版新的品种。为了保证这三套丛书的权威性，同时也为了更好地为学校和老师们服务，华章公司聘请了中国科学院、北京大学、清华大学、国防科技大学、复旦大学、上海交通大学、南京大学、浙江大学、中国科技大学、哈尔滨工业大学、西安交通大学、中国人民大学、北京航空航天大学、北京邮电大学、中山大学、解放军理工大学、郑州大学、湖北工学院、中国国家信息安全测评认证中心等国内重点大学和科研机构在计算机的各个领域的著名学者组成“专家指导委员会”，为我们提供选题意见和出版监督。

“经典原版书库”是响应教育部提出的使用原版国外教材的号召，为国内高校的计算机教学度身订造的。在广泛地征求并听取丛书的“专家指导委员会”的意见后，我们最终选定了这30多种篇幅内容适度、讲解鞭辟入里的教材，其中的大部分已经被M.I.T.、Stanford、U.C. Berkley、C.M.U.等世界名牌大学采用。丛书不仅涵盖了程序设计、数据结构、操作系统、计算机体系结构、数据库、编译原理、软件工程、图形学、通信与网络、离散数学等国内大学计算机专业普遍开设的核心课程，而且各具特色——有的出自语言设计者之手、有的历三十年而不衰、有的已被全世界的几百所高校采用。在这些圆熟通博的名师大作的指引之下，读者必将在计算机科学的宫殿中由登堂而入室。

权威的作者、经典的教材、一流的译者、严格的审校、精细的编辑，这些因素使我们的图书有了质量的保证，但我们的目标是尽善尽美，而反馈的意见正是我们达到这一终极目标的重要帮助。教材的出版只是我们的后续服务的起点。华章公司欢迎老师和读者对我们的工作提出建议或给予指正，我们的联系方法如下：

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Winner, Software Development Magazine's 1996 Jolt Award for Best Book of the Year

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This is stuff a programmer can really use. IEEE Computer

A refreshing departure. PJ Plauger, Embedded Systems Programming magazine

...Eckel succeeds ... it's so readable. Unix World

Should definitely be your first buy. C Gazette

A fantastic reference for C++! Michael Brandt, Senior Analyst/Programmer, Sydney, Australia

On our project at HRB Systems we call your book "The Answer Book". It is our C++ Bible for the project. Curt Snyder, HRB Systems

Your book is really great, and I can't thank you enough for making it available for free on the web. It's one of the most thorough and useful references for C++ I've seen. Russell Davis

... the only book out there that even comes close to being actually readable when trying to learn the ropes of C++ (and the basics of good object oriented programming in general). Gunther Schulz, KawaiiSoft

I love the examples in your book. There's stuff there that I never would have thought of (and some things that I didn't know you could do)! Rich Herrick, Senior Associate Software Engineer, Lockheed-Martin Federal Systems, Owego, NY

It's an amazing book. Any questions I have I refer to this online book. Helped in every case. I'm simply happy to have access to a book of this caliber. Wes Kells, Comp Eng. Student, SLC Kingston.

You are an invaluable resource and I greatly appreciate your books, email list etc... It seems every project I have worked on has been successful because of your insights. Justin Voshell

This is the book I have been looking for on C++. Thomas A. Fink, Managing Director, Trepp, LLC

Your books are authoritative yet easy to read. To my colleagues I call you the K&R of C++. Mark Orlassino, Senior Design Engineer, Harmon Industries, Inc., Hauppauge, NY

When I first started learning C++, your book "Thinking in C++" was my shining guide light in a dark tunnel. It has been my endeavor to improve my C++ skills whenever possible, and to that effect, "Thinking in C++" has given me the strong foundation for my continuous improvement. Peter Tran, Senior Systems Analyst (IM), Compaq Computer Corporation

This book is the best general reference in my on-going quest to master C++. Most books explain some topics thoroughly but are deficient in others. "Thinking in C++" 2/E does not pass the buck to another book. When I have questions it has answers. Thomas Michel

I have a whole mountain of books and none of them make sense nor do they explain things properly. I have been dying for a good template and STL book. Then I decided to read your material and I was amazed. What you did was show how to write C++ with templates and STL without bogging down with details. What you did was what I expected of the C++ community, the next generation of C++ authors. As an author I AM IMPRESSED at your writing and explanation skills. You covered topics that nobody has properly covered before. Your approach is one from a person who has actually sat down and went through the material in detail. And then you questioned the sanity of the situation and what would be the problem areas. On my bookshelf, it will definitely be one of the necessary books, right beside Petzold. Christian Gross, consultant/mentor cgross@eusoft.com

I think your book is very, very, VERY good. I have compared it to others in the bookstore, and have found that your book actually teaches me basic C++ fundamentals while I learn the STL... a very nice experience to learn about both at once, hand-in-hand. I think your book is laid out very well, and explains things in an easy-to-understand fashion. Jeff Meininger, Software Developer, boxybutgood.com

Your book is the best by far of any I've seen. Please get it right so that we can all have an excellent and "reliable" reference work! And please hurry! We are desperate for a work of this quality! Steve Strickland, Live Minds (a Puzzle business)

(On Usenet) Unlike most other C++ authors, Eckel has made a career of teaching C++ and Java classes ONLY. He's had the benefit of a GREAT deal of novice feedback, and the books reflect that. His books are not just about writing in C++/Java, but understanding the intent of the languages and the mindset that goes with thinking in them. Eckel's also the best technical writer I've read since Jeff Duntemann. Very clear and easy to read. Don't be put off by the apparent large size of his books. Either can be read in *less* than 21 days. :-} Randy Crawford, MRJ Technology Solutions, Fairfax VA

Your work is greatly appreciated and I thank you for helping me understand both C++ and Java better. Barry Wallin, Math/Computer Science Teacher, Rosemount High School, Rosemount, MN

I would like to thank you for your book "Thinking in C++" which is, with no doubt, the best book I ever read about this subject. Riccardo Tarli - SW Engineer - R&D TXT Ingegneria Informatica - Italy

I have been reading both of your books, Thinking In Java and Thinking In C++. Each of these books is easily the best in its category. Ratnakarprasad H. Tiwari, Mumbai, India

... the "Debugging Hints" section is so valuable, I'm tempted to print it and keep it with me at all times. I think this section should be a mandatory part of any introductory class after the first one or two programming problems. Fred Ballard, Synectics Inc.

Your book is really a treasure trove of C++ knowledge. I feel like you give a good overview and then explain the nuts and bolts. Raymond Pickles, Antenna Section, Radar Division, U.S. Naval Research Laboratory, Washington DC

As an Internal Medicine Specialist and Computer Scientist I spend a great deal of time trying to extract information from books and journals. My experience is that a good author is one who makes difficult concepts accessible, a great one makes it look almost easy. On this score you are certainly one of my top three technical writers. Keep up the good work. Dr. Declan O'Kane, Leicester, England

For my second-level C++ course, "Thinking in C++" is my constant reference and companion, and I urge my students to consult it regularly. I refer to the chapter on Operator Overloading constantly. The examples/code alone are worth the cost of the book many times over. So many books and development environments are predicated on the assumption that the only application for a programming language is for a Windows environment; it's great to find and use a book which concentrates on C++ so we can prepare our students for careers in fields like embedded systems, networking, etc., which require real depth of understanding. Robert Chase, Professor, Sweet Briar College

I think it's a fantastic intro to C++, especially for longtime dabblers like me – I often know "how," but rarely "why," and TIC2 is a godsend. Tony Likhite, System Administrator/DBA, Together Networks

After reading the first 80 pages of this book, I have a better understanding of oop then I've gotten out of the ton of books I've accumulated on the subject. Thanks... Rick Schneewind

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