<<标准C程序设计>>

图书基本信息

书名：<<标准C程序设计>>

13位ISBN编号：9787302197959

10位ISBN编号：7302197954

出版时间：2009-5

出版时间：(印)巴拉古路萨米 清华大学出版社 (2009-05出版)

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页数：543

前言

About the AuthorE Balagurusamy, former Vice Chancellor, Anna University, Chennai, is currently Member, Union Public Service Commission, New Delhi. He is a teacher, trainer, and consultant. in the fields of information TechnologV and Management. He holds an ME (Hons) in Electri.y and Management. He holds an ME (Hons) in Electrical Engineering and Ph.D. in Systems Engineering from the indian institute of Technology,Roorkee. His areas of interest include Object-Oriented Software Engineering, Electronic.ect-Oriented Software Engineering, ElectronicBusiness, Technology Management, Business Process Re-engineering, and Total QualityManagement.A prolific writer, he has authored a large number of research papers and several books.His best selling books, among others, include:. Programming in C#. Programming in Java, 3/e. Object-Oriented Programming with C++, 3/e.ect-Oriented Programming with C++, 3/e. Programming in BASIC, 3/e. Numerical Methods. Reliability Engineeringy EngineeringA recipient of numerous honours and awards, he has been listed in the Directory of Who'sWho of intellectuals and in the Directory of Distinguished Leaders in Education.Preface to the FourthEditionCis a powerful, flexible, portable and elegantly structured programming language. SinceC combines the features of high-level language with the elements of the assembler, it issuitable for both systems and applications programming. It is undoubtedly the most widelyJ .terns and applications programming. It is undoubtedly the most widelyused general-purpose language today.Since its standardization in 1989, C has undergone a series of changes and improvements.fi,,,n,n,,,m 1'l - if',, - 1in order to enhance the usefulness of the language. The version that incorDorates the newo or porates the newfeatures is now referred to as C99. The fourth edition of ANSI C has been thoroughly revisedand enlarged not only to incorporate the numerous suggestions received both from teachersand students across the country but also to highlight the enhancements and new featuresadded by C99.J u99.Organization of the bookThe book starts with an overview of C, which talks about the history of C, basic structure ofC programs and their execution. The second chapter discusses how to declare the constants,variables and data types. The third chapter describes the built-in operators and how to buildypes. The third chapter describes the built-in operators and how to build.. expressions using them. The fourth chapter details the input and output operations. Deci.1.111..1 .1.1 ~ fry n j ~ 11if.Ill 1sion making and branching is discussed in the fifth chapter, which talks about the if-else,o and branching is discussed in the fifth chapter, which talks about the if-else,switch and goto statements. Further, decision making and looping is discussed in Chapter.1.11. 111 - "l^111,n 1llJsix. which covers while. do and for fooDs. Arrays and ordered arrangement of data elements, which covers while, do and for loops. Arrays and ordered arrangement of data elements.are important to any programming language and have been covered in chapters seven andeight. Strings are also covered in Chapter eight. Chapters nine and ten are on functions,structures and unions. Pointers, perhaps the most difficult part of C to understand, iscovered in Chapter eleven in the most user-friendly manner. Chapters twelve and thirteenare on file management and dynamic memory allocation respectively. Chapter fourteen dealswith the preprocessor, and finally Chapter 15 is on developing a C program, which provides..,l,11. I - 11,Inm 11'l .1 1an insight on how to Droceed with develODment of a Drogram. The above organization would.lit on how to proceed with development of a program. The above organization wouldhelp the students in understanding C better if followed appropriately.Xii PrefaceNew to the editionThe content has been revised keeping the updates which have taken placed in the field of Cprogramming and the present day syllabus needs. As always, the concept of 'learning byexample' has been stressed throughout the book. Each major feature of the language istreated in depth followed by a complete program example to illustrate its use. The sampleprograms are meant to be both simple and educational. Two new projects are added at theend of the book for students to go through and try on their own.Each chapter includes a section at the beginning to introduce the topic in a proper perspective. It also provides a quick look into the features that are discussed in the chapter.Wherever necessary, pictorial descriptions of concepts are included to improve clarity and tofacilitate better understanding. Language tips and other special considerations are highlighted as notes wherever essential. In order to make the book more user-friendly, we haveincorporated the following key features.O Codes with comments are provided throughout the book to illustrate how the various features of the language are put together to accomplish specified tasks.O SuPPlementrrry imp~rrtion abed notes that complement but stand apart from thegeneral text have been included in boxes.O Guidelines for developing efficient C programs are given in the last chapter, togetherwith a list of some common mistookes that a less experienced C programmer couldmake.O Cause steadies at the end of the chapters illustrate common ways C features are puttogether and also show real-life applications.O The Joest Remember section at the end of the chapters lists out helpful hints andpossible problem areas.O Numerous chapter-end questions and exercises provide ample opportunities to thereaders to review the concepts learned and to practice their applications.O Progrrrmming projects discussed in the appendix give insight on how to integratethe various features of C when handling large programs.Supplementary MntertulWith this revision we have tried to enhance the online learning center too. The supplementary material would include the following:For the instructorQ Solutions to the debugging exercisesFor the StudentQ Exclusive project for implementation with code, step-by-step description and usermanualQ Code for the two projects (given in the book)U Two mini projectsQ Reading material on CThis book is designed for all those who wish to be C programmers, regardless of their pastknowledge and experience in programming. It explains in a simple and easy-to-understandstyle the what, why and how of programming with ANSI C.

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内容概要

本书旨在教授读者如何使用C语言进行程序设计。
全书贯彻了“用示例学习”的概念。
在深入介绍了C语言的每个特性之后，给出了一个完整的示例程序，用于演示说明其应用。
每章末尾的“案例学习”不仅介绍了把C语言的特性集成在一起的常用方法，而且还显示了它在实际生活中的应用。
最后一章介绍了开发高效、无错误的C程序的一些指导原则。

本书在前一版的基础上增加介绍了C99的一些新特性，并增加了不少复习题和项目设计题，而且在附录IV中给出了4个完整的应用程序开发示例，使得本书的实际应用性更强。

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书籍目录

章节摘录

插图：Use the size of operator to determine the size of a linked list. When using memory allocation functions malloc and calloc，test for a NULL pointer return value.Print appropriate message if the memory allocation fails.Never call memory allocation functions with a zero size. Release the dynamically allocated memory when it is no longer required to avoid any possible“ memory leak".Using free function to release the memory not allocated dynamically with malloc or calloc is an error.Use of a invalid pointer with free may cause problems and，sometimes，system crash.Using a pointer after its memory has been released is an error. It is anerrortoassignthe return value from ma Hoc or calloc to anything other than a pointer.It is a logic error to set a pointer to NULL before the node has been released.The node is irretrieva6ly lost.It is an error to declare a self-referential structure without a structure tag. It is an error to release individually the elements of an array created with Calloc. It is a logic error to fail to set the link filed in the last node to null.1.Insertion in a Sorted ListThe task of inserting a value into the current location in a sorted linked list involves two operations：1.Finding the node before which the new node has to be inserted .We call this node as ‘ Key node ’.2.Creating a new node with the value to be inserted and inserting the new node by manipulating pointers appropriately.In order to illustrate the process of insertion，we use a sorted linked list created by th I create function discussed in Exemple 13.3.Figure 13.11 shows a complete program tha l creates a list （using sorted input data）and then inserts a given value into the correct plan using function insert.

编辑推荐

《标准C程序设计》第3版融入了过去10年中采用本书的学生和老师的很多反馈意见。
本版的特点包括：l 基于最新的C语言标准。
l 在本书的最后给出了4个完整的应用程序开发示例。
l 扩展讨论了C的指针。
l 每章后面的“ 谨记 ”一节给出了很有用的编程提示以及可能容易出错的问题。
l 20多个真实的开发案例，展示了C程序的设计过程。
l 80多个程序设计范例，向读者阐述了良好程序设计的基本原则。
l 还有200多个复习题和150多个项目设计题。
总之，本书的语言简洁易懂，示例非常丰富且具有很强的实际指导意义，是一本很好的C语言程序设计的教材。