

[PDF] C++ Primer Plus (5th Edition)

Stephen Prata - pdf download free book



Books Details:

Title: C++ Primer Plus (5th Edition)
Author: Stephen Prata
Released: 2004-11-25
Language:
Pages: 1224
ISBN: 0672326973
ISBN13: 978-0672326974
ASIN: 0672326973

[CLICK HERE FOR DOWNLOAD](#)

pdf, mobi, epub, azw, kindle

Description:

About the Author

Stephen Prata teaches astronomy, physics, and computer science at the College of Marin in Kentfield, California. He received his B.S. from the California Institute of Technology and his Ph.D. from the University of California, Berkeley. Stephen has authored or coauthored more than a dozen books for The Waite Group. He wrote The Waite Group's *New C Primer Plus*, which received the Computer Press Association's 1990 Best How-to Computer Book Award, and The Waite Group's *C++ Primer Plus*, nominated for the Computer Press Association's Best How-to Computer Book Award in

1991.

Excerpt. © Reprinted by permission. All rights reserved. Introduction: C++ Primer Plus
Introduction Preface to the Fifth Edition

Learning C++ is an adventure of discovery, particularly because the language accommodates several programming paradigms, including object-oriented programming, generic programming, and the traditional procedural programming. C++ was a moving target as the language added new features, but now, with the ISO/ANSI C++ Standard, Second Edition (2003), in place, the language has stabilized. Contemporary compilers support most or all of the features mandated by the standard, and programmers have had time to get used to applying these features. The fifth edition of this book, *C++ Primer Plus*, reflects the ISO/ANSI standard and describes this matured version of C++.

C++ Primer Plus discusses the basic C language and presents C++ features, making this book self-contained. It presents C++ fundamentals and illustrates them with short, to-the-point programs that are easy to copy and experiment with. You'll learn about input/output (I/O), how to make programs perform repetitive tasks and make choices, the many ways to handle data, and how to use functions. You'll learn about the many features C++ has added to C, including the following:

- Classes and objects
- Inheritance
- Polymorphism, virtual functions, and runtime type identification (RTTI)
- Function overloading
- Reference variables
- Generic, or type-independent, programming, as provided by templates and the Standard Template Library (STL)
- The exception mechanism for handling error conditions
- Namespaces for managing names of functions, classes, and variables

The Primer Approach

C++ Primer Plus brings several virtues to the task of presenting all this material. It builds on the primer tradition begun by *C Primer Plus* nearly two decades ago and embraces its successful philosophy:

- A primer should be an easy-to-use, friendly guide.
- A primer doesn't assume that you are already familiar with all relevant programming concepts.
- A primer emphasizes hands-on learning with brief, easily typed examples that develop your understanding, a concept or two at a time.
- A primer clarifies concepts with illustrations.
- A primer provides questions and exercises to let you test your understanding, making the book suitable for self-learning or for the classroom.

Following these principles, the book helps you understand this rich language and how to use it. For example:

- It provides conceptual guidance about when to use particular features, such as using public inheritance to model what are known as *is-a* relationships.
- It illustrates common C++ programming idioms and techniques.
- It provides a variety of sidebars, including tips, cautions, things to remember, compatibility notes, and real-world notes.

The author and editors of this book do our best to keep the presentation to-the-point, simple, and fun. Our goal is that by the end of the book, you'll be able to write solid, effective programs and enjoy yourself doing so.

Sample Code Used in This Book

This book provides an abundance of sample code, most of it in the form of complete programs. Like the previous editions, this book practices generic C++ so that it is not tied to any particular kind of computer, operating system, or compiler. Thus, the examples were tested on a Windows XP system, a Macintosh OS X system, and a Linux system. Only a few programs were affected by compiler non-conformance issues. Compiler compliance with the C++ standard has improved since the previous edition of this book first appeared.

The sample code for the complete programs described in this book is available on the Sams website, at <http://www.sampublishing.com>. Enter this book's ISBN (without the hyphens) in the Search box and click Search. When the book's title is displayed, click the title to go to a page where you can download the code. You also can find solutions to selected programming exercises at this site.

How This Book Is Organized

This book is divided into 17 chapters and 10 appendixes, summarized here.

Chapter 1: Getting Started

Chapter 1 relates how Bjarne Stroustrup created the C++ programming language by adding object-oriented programming support to the C language. You'll learn the distinctions between procedural languages, such as C, and object-oriented languages, such as C++. You'll read about the joint ANSI/ISO work to develop a C++ standard. This chapter discusses the mechanics of creating a C++ program, outlining the approach for several current C++ compilers. Finally, it describes the conventions used in this book.

Chapter 2: Setting Out to C++

Chapter 2 guides you through the process of creating simple C++ programs. You'll learn about the role of the `main()` function and about some of the kinds of statements that C++ programs use. You'll use the predefined `cout` and `cin` objects for program output and input, and you'll learn about creating and using variables. Finally, you'll be introduced to functions, C++'s programming modules.

Chapter 3: Dealing with Data

C++ provides built-in types for storing two kinds of data: integers (numbers with no fractional parts) and floating-point numbers (numbers with fractional parts). To meet the diverse requirements of programmers, C++ offers several types in each category. Chapter 3 discusses those types, including creating variables and writing constants of various types. You'll also learn how C++ handles implicit and explicit conversions from one type to another.

Chapter 4: Compound Types

C++ lets you construct more elaborate types from the basic built-in types. The most advanced form is the class, discussed in Chapters 9 through 13. Chapter 4 discusses other forms, including arrays, which hold several values of a single type; structures, which hold several values of unlike types; and pointers, which identify locations in memory. You'll also learn how to create and store text strings and to handle text I/O by using C-style character arrays and the C++ string class. Finally, you'll learn some of the ways C++ handles memory allocation, including using the `new` and `delete` operators for managing memory explicitly.

Chapter 5: Loops and Relational Expressions

Programs often must perform repetitive actions, and C++ provides three looping structures for that purpose: the `for` loop, the `while` loop, and the `do while` loop. Such loops must know when they should terminate, and the C++ relational operators enable you to create tests to guide such loops. In Chapter 5 you learn how to create loops that read and process input character-by-character. Finally, you'll learn how to create two-dimensional arrays and how to use nested loops to process them.

Chapter 6: Branching Statements and Logical Operators

Programs can behave intelligently if they can tailor their behavior to circumstances. In Chapter 6 you'll learn how to control program flow by using the `if`, `if else`, and `switch` statements and the conditional operator. You'll learn how to use logical operators to help express decision-making tests. Also, you'll meet the `cctype` library of functions for evaluating character relations, such as testing whether a character is a digit or a nonprinting character. Finally, you'll get an introductory view of file I/O.

Chapter 7: Functions: C++'s Programming Modules

Functions are the basic building blocks of C++ programming. Chapter 7 concentrates on features

that C++ functions share with C functions. In particular, you'll review the general format of a function definition and examine how function prototypes increase the reliability of programs. Also, you'll investigate how to write functions to process arrays, character strings, and structures. Next, you'll learn about recursion, which is when a function calls itself, and see how it can be used to implement a divide-and-conquer strategy. Finally, you'll meet pointers to functions, which enable you to use a function argument to tell one function to use a second function.

Chapter 8: Adventures in Functions

Chapter 8 explores the new features C++ adds to functions. You'll learn about inline functions, which can speed program execution at the cost of additional program size. You'll work with reference variables, which provide an alternative way to pass information to functions. Default arguments let a function automatically supply values for function arguments that you omit from a function call. Function overloading lets you create functions having the same name but taking different argument lists. All these features have frequent use in class design. Also, you'll learn about function templates, which allow you to specify the design of a family of related functions.

Chapter 9: Memory Models and Namespaces

Chapter 9 discusses putting together multifile programs. It examines the choices in allocating memory, looking at different methods of managing memory and at scope, linkage, and namespaces, which determine what parts of a program know about a variable.

Chapter 10: Objects and Classes

A class is a user-defined type, and an object (such as a variable) is an instance of a class. Chapter 10 introduces you to object-oriented programming and to class design. A class declaration describes the information stored in a class object and also the operations (class methods) allowed for class objects. Some parts of an object are visible to the outside world (the public portion), and some are hidden ...

-
- Title: C++ Primer Plus (5th Edition)
 - Author: Stephen Prata
 - Released: 2004-11-25
 - Language:
 - Pages: 1224
 - ISBN: 0672326973
 - ISBN13: 978-0672326974
 - ASIN: 0672326973

