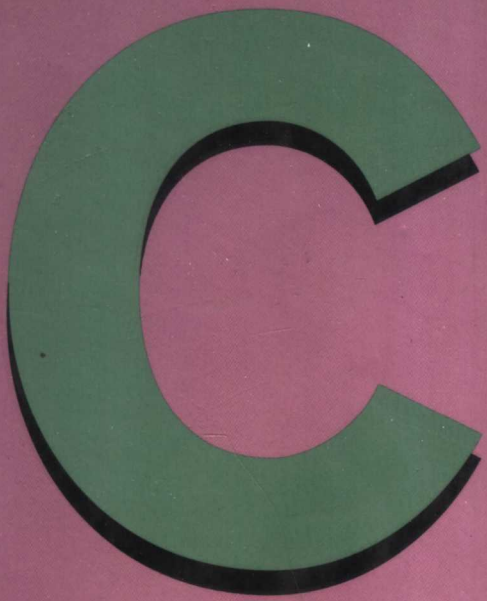
Mastering



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Preface

I have nothing to offer but blood, toil, tears and sweat.

Winston Churchill

The title of this book, *Mastering C*, with its subtitle, *A Practical Reference and Tutorial for ANSI C*, reveals the purpose I had in writing it: the book should be a concise, complete, practical reference book that can be used to master C. This book is not intended to be an introductory book for programming novices (nonprogrammers); I – and I am not alone here – do not consider C to be a suitable language with which to learn programming (a language like REXX or Pascal is a better introductory programming language). A basic assumption of C is that the programmer knows what he is doing, which cannot be said of someone new to programming. A note to my female readers: I use *he* as a generic third-person pronoun; I do not intend to imply that there are only masculine programmers; a woman, Ada Lovelace, is usually acknowledged to have been the first programmer.

I intend this book to satisfy the requirements of programmers new to C and those C programmers still mystified by the language. I would classify myself as having belonged to this second group before I started to write this book; I had attended a C course and had written several C programs, but I did not feel comfortable with the language. Many of the problems I encountered in learning the C language are mentioned in this book.

This book is divided into three parts:

- Part 1 – the C Language Elements
- Part 2 – the Standard C Library
- Part 3 – C in Practice

It is probably not possible to write a reference book on a complex programming language that can be read sequentially, and I have certainly not succeeded. In any case, research has shown that such books are not normally so read, rather, those parts of

immediate interest are read. I have tried to write this book so that the individual sections are easy to find; to avoid unnecessary jumping between sections, some important information is repeated.

From my personal experience, a major difficulty in learning a new programming language is how the elements are put together. With this in mind, an example is shown for each new concept and a worked example is provided at the end of most chapters. In the interest of keeping the book as compact as possible, the section examples are usually only code fragments, i.e., they are not executable programs. The worked examples are complete, and have been chosen to illustrate the information provided in the chapter but not to be overloaded with unnecessary detail. The solutions I offer in the worked examples are illustrative, and are not the only possible solutions nor even necessarily the best solutions; the reader is invited to produce his own (better) solution.

What is the target objective of this book? It should provide a compact reference to Standard C (ANSI and ISO) and show how the language is used.

This book does not provide information for a particular operating environment – such topics warrant a book in their own right – instead C-specific information is provided for all common hardware platforms (for example, Appendix B contains a table with both ASCII and EBCDIC codes). Similarly, unlike the authors of many programming books, I have not presented complete applications (which are not usually read anyway); rather, I have tried to provide the foundations with which such applications can be built.

At this point I would like to offer my thanks to Elke Berger, Norman Goldberg, Wolfgang Lauterbach, and Syed Mohomed for their assistance and suggestions for improvement.

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Part 2: The Standard C Library

Part 1

The C Language Elements