A Practical Introduction to Pascal

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A Practical Introduction to Pascal

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to
Alleyn, Fiona
Hilary, Rebecca and Sarah

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Preface

The popularity of Pascal as a teaching language has rapidly increased, as demonstrated by Addyman's survey conducted over all European and American institutions (*Comput. Bull.*, Series 2, 8, June 1976, 31). This is due both to the desirable features of the language and to the ease of producing an efficient compiler. As an instance of the latter, the authors have investigated the full CDC CYBER compiler and found it to throughput at 1.8 times the rate of the manufacturer's Fortran compiler.

These features of the language and compilers have also been favourably regarded by system programmers and users of microprocessors. In the latter field, it is the belief of the authors that Pascal will supersede the programming language BASIC.

Specifically, undergraduates in the Department of Computer Science at Manchester University program largely in Pascal. An introductory lecture course on basic programming techniques, given at Manchester, has been taken as a basis for this book. In addition to lectures, the course consists of two kinds of practical session. The first is based on the solution of short pencil-and-paper exercises. The second requires the student to write complete programs and run them in an 'edit and go' mode on interactive computer terminals. Each chapter of the book concludes with exercises and problems suitable for these purposes. Although solutions to all of these are not presented in the book, teaching staff may obtain them by application to the authors.

The full Pascal language is presented in a practical manner, with reference to example applications. Indeed, the importance of the design of data structures as well as an algorithm to solve a problem is recognised by devoting seven chapters to this area. It is hoped that the book will be of use to first-course students and to more experienced programmers not yet familiar with Pascal.

Thus the purpose of the book is to provide an introduction to programming and not to act as a definitive reference work. The latter role is currently fulfilled by K. Jensen and N. Wirth, *Pascal-User Manual and Report* (Springer-Verlag, New York, 1975).

The stepwise refinement technique of program design and development is both used and advocated. However, specific diagrammatic representations (such as structure charts, tree diagrams, flowcharts, etc.) in combination with this book are not precluded.

The authors wish to acknowledge the assistance and encouragement of colleagues, in particular Dr C. C. Kirkham, Dr J. Rushby and Professor F. H. Sumner. They also wish to thank Miss J. Scrivens for her patient typing, and Professor D. Barron of Southampton University, for reviewing the manuscript.

The syntax diagrams which appear in the book were drawn with the assistance of the Manchester University Computer Graphics Unit. The program examples were printed on a DIABLO printer attached to the MU5 research computer.

*University of Manchester,
March 1978*

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