

Digital Research Independent Software Vendor Application Note

PL/I Programming References

Several PL/I programming reference books are listed below. Some are introductory textbooks for classroom use, while others are more advanced applications guides. Although there are books now being prepared which specifically cover PL/I Subset G, the books listed below cover subsets such as PL/C and SP/k or the full IBM implementations of PL/I. The statement forms of PL/C and SP/k are generally included within the Subset G definition while full PL/I contains a number of language facilities excluded from the subset. Therefore, it is up to the reader to be aware that differences may arise even though the sample programs and definitions are substantially the same.

Each reference is followed by a short note describing the general content, which should only serve as a guideline since the books have not been reviewed in great detail. You can obtain these books through your local bookstore, where they maintain catalogs which list authors, titles, and publishers. Generally, these books will not be in stock, but can be ordered through the bookstore or directly from a regional distributor for the publisher. You may also wish to check textbook stores that serve local colleges.

Your own reference library might consist of Lynch's book (12), which covers very general aspects of computing (optional), with introductory language details provided by the Xenakis book (14). Structured programming and program formulation is given by one of the Conway books, such as (6), while additional application programming details are given in the Hughes book (9). Details of more advanced data structures are given in the Augenstein book (1). Your critique of the individual books would be greatly appreciated, and we would like to know of any additional reference material which you find useful so that we may update this list.

(1) Augenstein, M., and A. Tenenbaum: Data Structures and PL/I Programming, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1979 (643p, Hardback, Typeset).

An advanced presentation of full PL/I. This is a college textbook which presents the PL/I language through a series of progressive examples covering recursion, list processing, trees and graphs, sorting, searching, hash coding, and storage management. An extensive related bibliography is included. Emphasis is upon implementing data structures using a subset of full PL/I which nearly matches subset G. Structured programming is not emphasized.

(2) Bates, F., and M. Douglas: Programming Language/One, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1970 (419p, Paperback, Hand Typed).

A simple introduction to PL/I. This book presents fundamental elements of the full PL/I language, with some emphasis on commercial processing including structures, records, formatting and error processing. Explanations are emphasized rather than examples. Structured programming is not emphasized.

(3) Cassel, D.: PL 1: A Structured Approach, Reston Publishing, Inc., Reston, Virginia, 1978 (219p, Paperback, Typeset).

A middle level introduction to PL/I. A portion of the full PL/I language is presented with an emphasis on batch processing and commercial applications. Language elements are clearly presented, but there is no particular emphasis on program formulation or proper structuring, as the title might imply.

(4) Clark, F. J.: Introduction to PL/I Programming, Allyn and Bacon, Inc., Boston 1971 (243p, Paperback, Typeset).

A basic self study introduction to PL/I through exercises. This text presents a portion of full PL/I from a traditional card-oriented approach, starting with a discussion of binary numbers and continuing through the basic statement types to simple stream and record I/O. Structured programming is not emphasized, although commercial processing examples are given.

(5) Conway, R.: A Primer on Disciplined Programming, Winthrop Publishers, Cambridge, Mass., 1978 (419p, Paperback, Computer Typed).

A textbook used for PL/C, Cornell University's dialect of PL/I. One of three college textbooks by Conway (et. al.), covering introductory programming, with emphasis on techniques used to formulate, develop, and test programs. Includes short discussions of searching and ordering lists, accounting, string operations, and interactive systems. Emphasis is upon structured programming practices and programming mechanisms rather than extensive examples of working programs.

(6) Conway, R., and D. Gries: Primer on Structured Programming, Winthrop Publishers, Cambridge, Mass., 1976 (397p, Paperback, Computer Typed).

A book on structured programming centered around PL/C. Essentially the same content as the previous book by Conway, with perhaps more emphasis on the operation of the PL/C programming system at Cornell.

(7) Conway, R., D. Gries, and D. Wortman: Introduction to Structured Programming, Winthrop Publishers, Cambridge, Mass., 1977 (420p, Paperback, Computer Typed).

A book on structured programming using Cornell's PL/C and Toronto's SP/k systems. Again, similar to Conway's first book with the addition of sections on file processing, and language translation using compilers and interpreters.

(8) Groner, G.: PL/I Programming in Technological Applications, John Wiley & Sons, New York, 1971 (230p, Paperback, Typeset).

An introduction to engineering applications programming in PL/I. This book discusses full PL/I, with examples derived from batch processing under IBM implementations. Program formulation through flowcharting is presented, with many complete examples of scientific applications. Several examples of plot and graph generation are presented. Emphasis is upon explanations of float binary computations through complete examples. Programs are not particularly well-structured.

(9) Hughes, J. K.: PL/I Structured Programming, second edition, John Wiley & Sons, New York, 1979 (825p, Hardback, Typeset).

A comprehensive guide to general PL/I programming. This is one of the more complete presentations of the full PL/I language. Topics include structured programming, processing simple data items, record and file handling, and list processing. Emphasis is toward commercial programming using the IBM's PL/I.

(10) Hume, J. N. P., and R. C. Holt: Structured Programming using PL/I and SP/k, Reston Publishing, Inc., Reston, Virginia 1975 (340p, Paperback, Computer Typed).

An introduction to structured PL/I programming. This textbook introduces PL/I through a graduated series of subsets called SP/1 through SP/8. Each successive subset incorporates more of the full PL/I language. The text begins with basic programming concepts, and progresses through the various PL/I language constructs. Sample programs include string and array handling, list processing, and file handling. Machine language, assembly language, and compiling is also presented. Emphasis is upon structured programming.

(11) Kennedy, M., and M. B. Solomon: Structured PL/Zero Plus PL/One, Prentice-Hall, Englewood Cliffs, New Jersey, 1977 (695p, Paperback, Computer Typed).

An fairly comprehensive introduction to PL/I. This book covers the basic elements of PL/I in some detail, using PL/C for examples. IBM's PL/I Level F language is discussed briefly. The examples are not particularly exciting but most language facilities are well illustrated in simple examples.

(12) Lynch, R. E., and J. R. Rice: Computers, Their Impact and Use, Holt, Rhinehart and Winston, New York, 1978 (440p, Paperback, Typeset).

A basic introductory book to computers and PL/I. This is a college textbook intended to introduce computers to non-technical people. Half the book gives an overview of computers, their history, their impact upon society, and how they are used. Operating systems, languages and language types are discussed. The remainder discusses IBM PL/I using a variety of applications, ranging up to simple file processing. Structured programming is not emphasized.

(13) Ruston, H.: Programming with PL/I, McGraw Hill, New York, 1978 (541p, Paperback, Typeset).

A comprehensive textbook introduction to PL/I. This book presents PL/I from a batch processing viewpoint, using the full PL/I language for examples. Program construction through flowcharting is emphasized. Elements of PL/I are presented, including simple statements, control structures, arrays, strings, procedures, and file handling. Examples have a scientific orientation. Basics of error processing are discussed. Structured programming is not emphasized.

(14) Xenakis, J. J.: Structured PL/I Programming, Duxbury Press, North Scituate, Mass., 1979 (413p, Paperback, Typeset).

A comprehensive introduction to PL/I, close to Subset G. Basic programming concepts are presented, with a brief history of programming languages. Elements of full PL/I are shown, including conversion between data types, arrays, strings, and procedures. A section on "go-to-less" programming is included, followed by a game-playing section which includes a tic-tac-toe program. The book is simple in scope and easy to read.