THE PENGUIN
DICTIONARY OF
COMPUTERS

ANTHONY CHANDOR

WITH JOHN GRAHAM AND ROBIN WILLIAMSON

外文出版社　　**FOREIGN LANGUAGES PRESS**

THE PENGUIN DICTIONARY OF COMPUTERS

Anthony Chandor was educated at Epsom College and New College Oxford. A Fellow of the British Computer Society and a member of Council, he was for many years a member of the Examinations Board for professional qualifications. During thirty years in the computer industry he has twice been appointed by the United Nations as data processing adviser. He was a director of the National Computing Centre, a founder and managing director of Aregon International, and chairman of Mandarin Communications, the electronic publishing specialists. He is the author of a number of books, including *Choosing and Keeping Computer Staff* and, with John Graham and Robin Williamson, *Practical Systems Analysis.*

John Graham is a director of Kapiti, an international software company specializing in communications systems for banking and securities houses. He has worked for many years in communications and the computer industry developing software for a number of public service information systems. His books include *The Penguin Dictionary of Telecommunications* and *The Macmillan Directory of Technology in Global Financial Markets.*

Robin Williamson was educated at Tonbridge School and Magdalen College, Oxford, and entered the computer industry in 1963. He is managing director of Context Limited, publishers of law and government online and CD-ROM databases. A Fellow of the British Computer Society, he is on the board of the CD-ROM Standards and Practices Action Group, and author of a number of books on electronic publishing, including *Electronic Text Archiving* (Elsevier) and *The Knowledge Warehouse* (British Library).

THE PENGUIN DICTIONARY OF

COMPUTERS

T | 3 - 6 |

ANTHONY CHANDOR

WITH

JOHN GRAHAM
ROBIN WILLIAMSON

Third Edition

此为试读，需要完整PDF请访问：www.ertongbook.com

THE PENGUIN DICTIONARY OF COMPUTERS

Anthony Chandor was educated at Epsom College and New College Oxford. A Fellow of the British Computer Society and a member of Council, he was for many years a member of the Examinations Board for professional qualifications. During thirty years in the computer industry he has twice been appointed by the United Nations as data processing adviser. He was a director of the National Computing Centre, a founder and managing director of Aregon International, and chairman of Mandarin Communications, the electronic publishing specialists. He is the author of a number of books, including *Choosing and Keeping Computer Staff* and, with John Graham and Robin Williamson, *Practical Systems Analysis*.

John Graham is a director of Kapiti, an international software company specializing in communications systems for banking and securities houses. He has worked for many years in communications and the computer industry developing software for a number of public service information systems. His books include *The Penguin Dictionary of Telecommunications* and *The Macmillan Directory of Technology in Global Financial Markets*.

Robin Williamson was educated at Tonbridge School and Magdalen College, Oxford, and entered the computer industry in 1963. He is managing director of Context Limited, publishers of law and government online and CD-ROM databases. A Fellow of the British Computer Society, he is on the board of the CD-ROM Standards and Practices Action Group, and author of a number of books on electronic publishing, including *Electronic Text Archiving* (Elsevier) and *The Knowledge Warehouse* (British Library).

PREFACE TO THE FIRST EDITION

EVERY day more and more of us find that computers have become part of our daily background: magazines we read have been typeset by computers, architects have designed our houses with the help of computers, our payslips are printed by computers, we pay bills prepared by computers, using cheques marked with computer symbols, and the payments result in bank statements prepared by computers. Even more directly associated with the machines are those who use them in their day-to-day work – scientists and storekeepers, clerks and directors, soldiers and sailors, accountants and engineers – besides the growing numbers of computer personnel who are responsible for making the machines do the work. Each of us, whether layman, computer user or computer technician, will have problems with computer terminology from time to time, and it is the purpose of this book to provide a ready means of solving these problems.

Requirements of the Book

Since the early 1950s, when computers first began to be used commercially, many hundreds of everyday words have been given new meanings, and words which had a peaceful existence on their own in ordinary English dictionaries have been joined together in the computer world to make phrases which are quite unintelligible to anyone unaware of their specialist meaning. For example, neither *crippled leap-frog test* nor *graceful degradation* includes an unfamiliar word but both phrases have a specific technical meaning. In addition to the 'plain English' words, there are, of course, numbers of purely technical words which need defining in simple terms. This book provides a glossary giving as much information as possible, and the overriding aim has been helpfulness rather than deftness or lexicographical terseness. It is designed to satisfy both the layman whose association with computers is still only indirect and the technical reader already familiar with many of the terms but searching for a definition of a word used in a branch of computer technology he has not yet mastered.

To cater for these main categories of reader the following primary guide-lines are necessary:

For the layman:

Basic words must be explained in simple English and not in terms of each other.

Basic concepts must be explained at some length if necessary.

Advanced words must be extensively cross-referenced to make it . possible to follow a word through a series of entries.

For the technical user:

Specialist words and jargon in common use must be included as well as the more generally recognized terms.

Some subjects (such as *Law and Computers* and *Audit of Computer Systems*) must be given a more discursive treatment than the conventional entries.

Structure of the Book

To meet these requirements the book has been organized in the following way. First there is a general article called *Introduction to Computers* for all readers to whom the subject of computers is entirely new. This explains very simply what computers are and how they are used, and sets the background for the rest of the book. It is followed by conventional dictionary entries for technical words and phrases, and widely used jargon expressions. The power and pervasiveness of the acronym are also recognized and those in common use (such as *PERT* and *ALGOL*) are included. Interspersed with the definitions, in the same alphabetical sequence, are seventy general articles dealing concisely with a specific topic which requires more generous treatment than can be given in a conventional definition. Each topic has been selected to satisfy the requirements of the different categories of reader and is written at an appropriate technical level. For example, the article on *Programming* is written in simple language for the layman, as it is unlikely that an experienced programmer would need to refer to so general a heading. The article on *Information Retrieval Techniques*, however, is written for the informed reader, as it is improbable that a complete beginner will be looking up this subject.

Not all the articles are on strictly technical subjects. In the same way that, for example, an accountant may use this book to refer to the article on *Systems Analysis*, a computer professional may wish to inform himself generally on some aspect of accounting for which a computer

is to be used – perhaps *Discounted Cash Flow* or *Budgetary Control.* Several such activities in which computers are commonly used are described in the book, and they are there to provide a background reference for the young computer technician. Similarly certain subjects related to the use of computers are described, such as *Allocation, Forecasting* and *Model Building.*

At the end of this preface, on page 11, there is a list of the general articles indicating the category of reader for whom the article is intended. Those shown as suitable for the man-in-the-street provide a background of information as simply as possible, and assume no prior knowledge other than that obtained from the *Introduction to Computers* on page 14. The articles shown as 'technical' will provide useful information for those starting a career in computers, for scientists and engineers using computers directly in their daily work, and, it is hoped, may provide agreeable browsing for computer personnel who are already established.

There is detailed cross-referencing throughout the book, and in any definition all those words themselves defined elsewhere in the book are printed in italics the first time they are used. In general the natural lead word of a phrase is taken to be the master word even if it is an adjective qualifying a noun – for example, *bufferred computer* appears under the letter B and *overflow bucket* under O. With some terms it is not easy to see which the 'natural' lead word is, and for these a cross-reference is given under the appropriate words: for example, *machine-spoilt work time* appears under the letter M but there is also a reference from *work time, machine-spoilt.* Each definition is given in an attempt to explain the actual usage rather than to suggest any standard; various admirable attempts have been made to bring order to the anarchistic plethora of overlapping and conflicting usages of technical terms, but the terms are still used with a variety of meanings in different contexts and this book therefore explains each term with no attempt to give 'preferred' definitions only. The entry under *background processing* is not untypical: three different meanings and two of them directly contradictory, but all three in general use. Where appropriate the definitions include synonyms, antonyms, directly related words and, where this would help to expand the definition, a reference to one of the general articles.

Haslemere, 1970   ANTHONY CHANDOR

PREFACE TO THE SECOND EDITION

THE vigour and dynamism of the computer industry continues to be reflected in its words and phrases and the pace of growth of the industry is still matched by the speed at which new phrases become established. Men and women associated with computers are as quick to adopt new phrases to describe new techniques and advances in technology as they are ingenious in inventing the processes which require such labels. It has been pleasantly noticeable during the years since the compilation of the first edition of this dictionary that, in general, it is the imaginative phrase which establishes itself rather than its pedestrian equivalent: such words as 'de-updating' still emerge, but phrases like 'deadly embrace', 'menu selection' and 'slave store' find swift acceptance; computer people would clearly rather use a compelling phrase than mangle an already tortured word. One notable failure has been an improvement on the somewhat sinister phrase 'computer people' (the even less agreeable 'liveware' having been mercifully rejected). Perhaps a user of this dictionary has already observed the use of a suitable phrase? Over the past few years I have been most grateful for suggestions for inclusion of new words from readers all over the world, and look forward to receiving many more. If one such suggestion allows a replacement for 'computer people' without leading inexorably to 'informatician' a great advance will have been made!

Haslemere, 1977   **ANTHONY CHANDOR**

8

PREFACE TO THE THIRD EDITION

IN the eight years which have passed since the second edition two great changes have taken place: the practice of distributed computing, with terminals used not only for data collection but also for local processing; and the introduction of personal computers, which have done so much to remove myths that the use of a computer is an arcane skill reserved for the initiated and twice-blessed. Each of these changes has generated its own new words, while at the same time rendering many others obsolete. The new ones have been collected and now appear in this new edition – *card cage* and *daughterboard, game chip* and *telesoftware*. The obsolete ones have not been removed: it is the task of this dictionary to explain words which might be found in books and articles, not to act as an arbiter of correct usage. Often, therefore, the tense has been changed in the definition, and general articles on such objects as *paper tapes* have been shortened and new general articles on, for example, *network architecture* and *microcomputers* have appeared.

There still seems to be no satisfactory single word for 'computer people'. Perhaps as more and more people treat computing as part of their daily lives, there is less and less need for a special word. How very fortunate!

Haslemere, 1985   ANTHONY CHANDOR

ACKNOWLEDGEMENTS

LIST OF GENERAL ARTICLES

As explained in the preface, the following topics are dealt with at greater length than conventional definitions. They are grouped below according to whether they are more suitable for the layman or the technical reader and, except for *Introduction to Computers*, appear in the main text within the alphabetical sequence.

Articles for the layman

Introduction to Computers

Analog computers
Central processors
Computer personnel
Data processing department
   organization
Digital computers

Hybrid computers
Input devices
Output devices
Programming
Punched cards
Storage devices
Systems analysis

Articles for the technical reader

ALGOL
Allocation
Auditing computer systems

BASIC
Boolean algebra
Budgetary control

Character recognition
Check digits
COBOL
Communications devices
Control totals

Cost analysis systems
Critical Path Method

Data base management systems
Data preparation
Data processing standards
Debugging
Decision tables
Discounted cash flow
Documentation – systems
Documentation – programming
Dump and restart

A NOTE ON SPELLING

THROUGHOUT this book, a programme of events is distinguished from a computer program by the convenient – and generally recognized – difference in spelling, and a similar distinction between analogue and analog computer and disc and magnetic disk has been adopted.

See references are denoted by an arrow: ◊

See also references are denoted by a double arrow: ◊◊

INTRODUCTION TO COMPUTERS

The purpose of a computer

A computer is a tool. A tool operates by taking raw material and converting it into a product by means of a device which performs a process. The process is determined by people. To take an analogy from everyday life: a blunt pencil (raw material) is converted into a sharp pencil (product) by means of a penknife performing the process of sharpening, as determined by a schoolboy. The device – the penknife – can of course be turned to several other uses, such as extracting stones from horses' hooves, or carving initials on a desk. But its scope is basically limited to one type of process and one type of material.

In all essentials, computers are tools, and in describing them we can consider each of the functions of any tool: the raw material, the product, the device, the process and the people.

The raw material

First, the raw material: facts (or *data*). A fact is a thing or event known to exist or have happened: something which can be described in precise, measurable terms. A fact may be an amount of £13 as written on a cheque; a line on an architect's plan; a measurement in a scientific experiment; a membership number; an address; an item on an invoice; a forecast in a plan. An individual fact, on its own, does nothing more than provide the single piece of information it represents.

The product

The product that a computer generates from this raw material is *information*. By the relation of facts of the same type or different types, something useful is obtained. In isolation, a cheque for £13 is of little interest to the bank manager: related to an overdraft of £88 and an agreed maximum of £100 for Mr Smith, the isolated fact becomes

14