HARRY KATZAN JR

Invitation to PASCAL

The programming language PASCAL was devised in 1968 and has become, particularly since the publication of the Revised Report in 1973, increasingly popular in the Computer Science departments of Universities where such attributes as its fast compilation, good diagnostics, efficient object code, and, above all, the portability of its compiler have been particularly appreciated, in addition to its more obviously computer-science oriented features such as the set and pointer types.

Not surprisingly, interest in Pascal has been awakened among non-computer scientists, including both converts from FORTRAN (who were quite unmoved by Algol 60 scientists, including both converts from FORTRAN) and converts from BASIC who want the greater power of Pascal; because of the latter group, Pascal is rapidly becoming the language for microcomputers.

Not unexpectedly, there has been an accompanying boom in books on Pascal during the past two or three years, so much so that anyone now wishing to write a book on the subject should be expected to demonstrate an originality of approach or a superiority of quality in order to justify their efforts.

Regrettably, however, I could not recommend the volume now under review, even if it is only the first of a three-volume set, to be followed by 'Intermediate Pascal' and 'Advanced Pascal', and covers a subset of the language, omitting records, sets and pointers as well as restricting itself to a subset of I/O facilities (i.e., the procedures read (in) and write (in) and the function of applied to the standard files input and output).

The text appears in upper case instead of the small a font. Poor printing results in capital O instead of zero (five times), whereas I would have found the use of a smaller font, and whereas I would have found the over-use of upper case makes it look awkwardly large.

Throughout the text string quotes are printed as balanced pairs, although only the opening quote is shown as part of the character set — a practice which makes nonsense of the convention for including a quote in a string!

Errors of fact

On p. 26.14, 'is given as an example of a real number although this is not only at variance with the Report but with the syntax diagram of Figure 2.5 (p. 24).

On p. 28 the semicolons are missing from the first compound statement.

In Table 5.3 (p. 92 the natural logarithm function is given the identifier 'LN' instead of the 'IN' of the Report.9

On p. 132 it is stated that

\[ \text{ARRAY} \left[ \text{index} \right] \text{OF} \]

\[ \ldots \text{ARRAY} \left[ \text{index} \right] \text{OF} \]

component

... can be abbreviated in PASCAL as:

[ARRAY [index, index, ..., index] OF component]

but an array of arrays is quite different from a multi-dimensional array.

In particular, the former allows slicing, the latter does not.

On p. 152 there is a missing semicolon from the BNF syntax of the REPEA'I statement.

On p. 188 it is stated that, since 'The VAR option may not be used in the formal parameter list of a function definition' side-effects are limited. This is wrong, since non-local variables may have their values changed by the call of a function.10

On p. 195 it is stated that the use of type identifiers to shorten the procedure heading is a matter of convention. In fact the Report requires that type identifiers must be used in the procedure heading.

Finally, I did not find that the introduction of BNF at a late stage in the book added anything to the 'tramline' syntax diagrams used from the beginning, nor did the 'structograms' make the meaning of the control structures any clearer. Fortunately, the price is on the high side for the first of a three-volume set when there are many comprehensive one-volume works on this topic at a comparable price, or for much less in paperback form; I hope that this fact alone will prevent its becoming widely read. To parody learned counsel in the 'Lady Chatterley' case, 'Is this a book you would like your students to read?' For my part, the answer is an unequivocal 'No'.

DAVID J. CAIRNS

Do not be misled by the title of this book — it is meant for the control engineer thinking of implementing a control strategy involving microprocessors and, as such, the emphasis is upon control theory with a small proportion given over to the introduction of microprocessors.

Nevertheless, the book is very informative and, as an introduction to the subject, it would be ideal for the more dedicated reader. Since the material for the book comes from a course on digital control at the Technion, Israel Institute of Technology to final-year engineers, it is well prepared with a couple of interesting design examples.

Though I enjoyed reviewing this book, it must be said that it is not a book to read from cover to cover, but rather a book to which one would have liked to have seen an explanation of how microprocessors interface with equipment and each other, along with a discussion on software development.

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9. ibid., A (p. 106).

10. ibid., A (p. 117).

References


2.bid. 1 (p. 9).

3. loc. cit.

4. ibid., 2 (p. 12).

5. loc. cit.

6. ibid., 5A (p. 34).

7. ibid., 9A (p. 57).

8. ibid., D (p. 111).

9. ibid., A (p. 106).

10. ibid., 11B (p. 79).

11. ibid., D (p. 117).

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Digital Control Using Microprocessors


Book Reviews

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