

Letters to the Editor

More on Programming Decision Tables

EDITOR:

My article on "Programming Decision Tables in FORTRAN, COBOL or ALGOL" [*Comm. ACM* 9, 1 (Jan. 1966), 31-35] concerned itself with those cases where it was desirable, if not mandatory, to examine all possible combinations of conditions. There are cases where only a few of these combinations are meaningful, and all of the remainder are meaningless and should lead to a single action, which could be a diagnostic.

It has occurred to me that the method of my article can easily be extended to cover such cases. To illustrate, consider Table 3 of the article, and let us assume that the only columns of this table worth considering are those identified by JUMP = 1, 5, 7, 8; all others should produce only a diagnostic.

Now, store these four values of JUMP in a single-dimension array or table, which we might identify as ITAB3; for any unknown value of JUMP, do a table lookup to see if the value is in the table. If it is, the subscript can be used as the branching variable in a GO TO statement; if not, the program goes to a specified place.

In the FORTRAN language, it could be implemented:

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DO 2 5 J = 1, 4
IF (JUMP - ITAB3(J)) 25, 27, 25
25 CONTINUE
26 Statement initiating action needed for cases outside the
decision table.
27 GO TO (N1, N2, N3, N4), J

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In the above, statement; 26 is the first statement of the action to be taken if the value of JUMP is not found in the table. N1, N2, N3 and N4 are the statement numbers to which control is to be transferred if JUMP = 1, 5, 7 or 8.

Implementation of this table lookup concept can easily be extended to COBOL OR ALGOL by anyone familiar with these languages.

A reader has called my attention to an apparent error in the left-hand column of page 33. A reader might well think that there were only M statements, when actually 2^M statements are required. It probably would have been clearer if I had written NP where $P = 2^M$.

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A Short Critique on Communications' Contents Page

EDITOR:

With our present-day concentration on the long-range goals of automated information retrieval, we may be overlooking some of the simpler things we could do to help the information user who hasn't time to wait for the millenium-the man who wants to consult today's journal today. We aren't doing much for him. He turns to the Contents page of a journal and finds that, to conserve space, titles have been set in six- or eight-point type and crowded together with only a hairline rule between them, while all about this beleaguered area is beset by encroaching lists of officers and circulation information. When he does find the contents amid all

this extraneous (to his purposes) material he often finds the titles uninformative.

Everyone is aware of the demands made upon our bursting technical publications, but wouldn't a suggestion that we decrease the type size used in the articles themselves be hooted down by most editorial boards? Yet, it is no less short-sighted to shrink our most important access point to the journal to the point of unreadability in a mistaken belief that we are wasting space if we use more than a single page for Contents-cum-everything-else.

The masthead, lists of personnel, circulation information, cypher, and so on, are certainly important enough to rate a page to themselves. We do this information no justice when we squeeze it to minuscule size, either. I realize that economics rears its ugly head here, but perhaps we should make some sacrifices for our readers. In the case of the *Communications*, perhaps you might give thought to placing the Contents on the front cover, even though this would entail the loss of your attractive cover illustrations.

As for the titles of papers, the *Communications* has gone a long way toward eliminating non-indicative headings; perhaps some of our other journals will profit, from your example if only you will make your Contents page readable.

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The Science of Datalogy

EDITOR:

This is to advocate that the following new words, denoting various aspects of our subject, be considered for general adoption (the stress is shown by an accent):

datalogy, the science of the nature and use of data,
datum&tics, that part of datalogy which deals with the processing of data by automatic means,
datamaton, an automatic device for processing data.

In this terminology much of what is now referred to as "data processing" would be datamatics. In many cases this will be a gain in clarity because the new word includes the important aspect of data representations, while the old one does not. Datalogy might be a suitable replacement for "computer science."

The objection that possibly one of these words has already been used as a proper name of some activity may be answered partly by saying that of course the subject of datamatics is written with a lower case d, partly by remembering that the word "electronics" is used doubly in this way without inconvenience.

What also speaks for these words is that they will transfer gracefully into many other languages. We have been using them extensively in my local environment for the last few months and have found them a great help.

Finally I wish to mention that datamatics and datamaton (Danish: datamatik and datamat) are due to Paul Lindgreen and Per Brinch Hansen, while datalogy (Danish: datalogi) is my own invention.

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