COMMUNICATIONS OF THE ACM *A Publication of the Association for Computing Machinery*

1133 AVENUE OF THE AMERICAS NEW YORK, NEW YORK 10036 212 265-6300

Reply to:
David Gries
Programming Languages Editor
Computer Science Dept.
Cornell University
Ithaca, N.Y. 14850

October 4, 1972

Ben Schneiderman
State University of New York
at Stonybrook
Stony Brook, New York 11790

Dear Prof. Schneiderman:

I enclose a copy of your report entitled, "Flowchart Techniques for Structured Programming" together with a referee's report. I regret that on the basis of this report and my own opinion, we cannot accept it for publication in CACM at this time.

Sincerely,

David Gries

David Gries
Programming Languages Editor

DG:mjr
Enclosures(2)

Referee's Report on

FLOWCHART TECHNIQUES FOR STRUCTURED PROGRAMMING

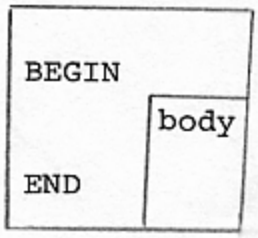
My first thought was to write a referees report which would by its sarcastic nature be funny. For example, I thought of writing that it was a sound, useful theory, but it wasn't practical because it would be difficult to design flowcharting templates to be manufactured and sold.

I guess, however, that it is best to come right out and say that I feel the best thing the authors could do is collect all copies of this technical report and burn them, before anybody reads them. My opinion is that it shows the inexperience and ignorance of the authors with respect to programming in general, and their misunderstanding of so-called structured programming.

To say that

```
BEGIN
   body
END
```

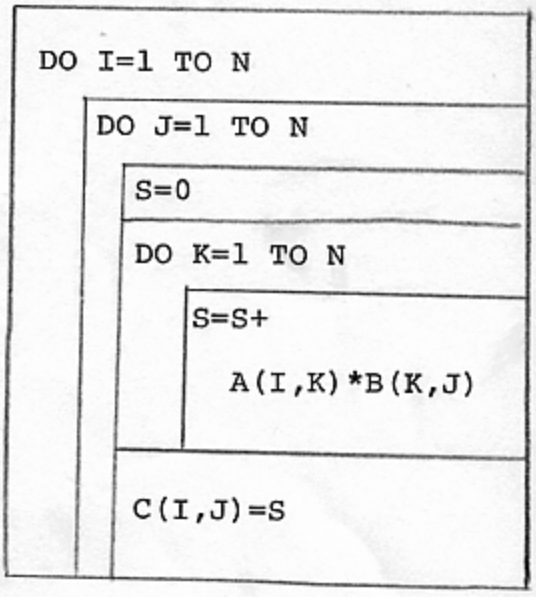
should be written as



is ridiculous. Even more ridiculous is having to write

```
DO I=1 TO N
  DO J=1 TO N
     S=0
     DO K=1 TO N
        S=S+
          A(I,K)*B(K,J)
     END
     C(I,J)=S
  END
END
```

as



The authors mention that "the ease with which a structured flowchart can be translated into a structured program is pleasantly surprising". My retort is "yes, just erase those silly boxes!"

Flowcharts are a crutch we have invented to try to understand programs written in a confusing style. This was due to our ignorance of the programming process and what was needed -- after all, programming is only 20-30 years old. So-called "structured programming" helps to limit us to, as Dijkstra calls them, "intellectually manageable" programs, in which case flowcharts are completely useless and in fact a hindrance to programming. They shouldn't be used.

I shudder at the thought of further explorations revolving about the context-free nature of this [flowchart] language.