Debate continues on algebraic notation

Editor:

T. S. Berman’s letter (IEEE Micro, Nov. 1981, p. 3) has caused me considerable difficulties, and I am still not sure I understand what he is saying. What is a “proper” expression of an algorithm? If an assembly language text is one, is not the corresponding text in my notation one, too? What qualifies as “direct conversion” into machine code? Does anything in my notation make conversion less direct than conversion of the same program written in an assembly language? What is the “fullest abstraction” of an algorithm? If “the algebraic representation” offers no new insight, and causes the loss of “much of the expressive power one can obtain from an assembly language,” it is only the structural aspects of Pascal which give that language its “expressive ability”?

Berman says, “The ability to reference [refer to?] addresses or subroutines by name is not provided.” That is true of the first implementations, but clearly such a facility need not disturb anything which has been provided. “It is also not clear that the algebraic representation can be put in one-to-one correspondence with the machine code”: A complete listing of exactly this one-to-one correspondence for four microprocessors appears at the end of Chapter 3 of my book. I am sorry I suggested three- and four-letter identifiers as abbreviations in a few cases—pairs of hexadecimal digits would have been better.

“The algebraic notation does not appear to be a viable [?] replacement for [alternative to?] assembly language”: I know hundreds of productive programmers who think otherwise. “Elimination of ad hoc [?] representations such as this should be an important function of organizations like the IEEE”: This strikes me as ambiguous. I hope it means only that IEEE and its working groups should endeavor to make activities like mine unnecessary.

You may like to know that my notation has been dismissed by a British colleague as “just another lot of mnemonics.” However, all other letters I have received on this subject have been both encouraging and constructive—and I have had more from the United States than anywhere else.