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Program Comprehension: A Strategy for the Bewildered

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Here is a not uncommon scenario in many workplaces. A neophyte SAS programmer is assigned to maintain, debug, or enhance an application. The atmosphere is sink or swim, the system is complex, the code is sophisticated, the documentation is scant, and the programmer is bewildered. Questions slowly take shape. "What, exactly, am I supposed to do?" "What part(s) of the application need my attention?" "Will a change to program X affect program Y?" And, most critically, "where do I start?"

What the poor programmer needs is a strategy for comprehending the program, then finding the "sweet spots" in the code as efficiently as possible.

This paper presents a generalized approach for programmers, particularly SAS "newbies", to develop an understanding of how applications work. It also shows how to translate this comprehension into effective coding. The paper identifies and discusses the rationale for questions the programmer should ask about: task definition, program-level code, supporting code, system design and specification documents, and required domain knowledge.

Beginning SAS programmers should come away with a better understanding of how to correctly frame the programming problem and effectively gather the resources needed to obtain a solution. They will also come to believe that the coding of, say, a DATA step is usually simple, but the real art of programming is learning *what* to code, and *why*.

Materials related to this paper can be found in <http://www.aimsco.com/pdf>.