Interpreting Beyond Syntactics: A Semiotic Learning Model for Computer Programming Languages

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ABSTRACT

In the information systems field there are numerous programming languages that can be used in specifying the behavior of concurrent and distributed systems. In the literature it has been argued that a lack of pragmatic and semantic consideration decreases the effectiveness of such specifications. In other words, to simply understand the syntactic features of a programming language alone does not provide an adequate foundation for students, programmers and designers to learn or to create robust and efficient programs. As a result, this paper will present a fresh approach for both teaching and understanding programming languages. The approach presented in this paper uses semiotics as a theoretical lens for identifying the important issues that transcend syntax issues alone and creates an organized conceptual model that will force instructors to facilitate a deeper understanding of programming constructs to their students.

Keywords: Programming Instruction, Conceptual Model, Semiotics, Language Construct Analysis