A Missing Element in Software Engineering Education

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Abstract

A system to be developed can be regarded as a machine in an environment. Software engineering is surely concerned with the machine — the computer and its programs. Is it also concerned with the environment? If so, to what extent and in what way? And, is this concern with the system's environment merely a collection of disparate specialized applications such as banking, switching, or avionics? Or does it have important aspects that transcend individual applications?

This talk argues that there are such transcendent aspects, and that we have paid too little attention to them. They center on the problems of formalizing the informal real world. The need for formalization merits a discipline in its own right. Elements of such a discipline are sketched, and it is claimed that this discipline must be an integral part of a full software engineering education.

Biography

Michael Jackson has worked in software for thirty-five years. After ten years as a consultant — involved in many aspects of program and system development — he started his own company in 1971, offering courses, project support, and tools for software developers.

He played the leading role in developing the JSP and JSD methods of program and system development, and described them in his books, Principles of Program Design (Academic Press) and System Development (Prentice-Hall). His most recent book, Software Requirements and Specifications, was published by Addison-Wesley in June, 1995.

He now works part-time in software development research at the AT&T Research Laboratories in Murray Hill, NJ, and practices as an independent consultant.