264 Book reviews


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This is an unsatisfying book, at least to this reviewer. The title and preface suggest an introduction, at least, to the fundamentals of software engineering and its effectiveness in achieving change. Instead the reader is treated to what amounts to a series of descriptive discussions on a range of topics relating to software development. The topics discussed are quite well treated and the practitioner who is not widely read can undoubtedly learn much from the material presented. But, contrary to the author's stated intention, it cannot be regarded as a suitable text on software engineering for "senior-level undergraduates or graduates". It could, perhaps, serve as an elementary text on approaches to program design and development. It also provides a useful text for an active programmer wishing to review current approaches to various aspects of program development.

A review is not the place to enter at great length into a discussion as to what software engineering is or is not. The author's view that the software engineer is a programmer with a disciplined and method-based approach to program design and creation is not acceptable. Neither is his suggestion that programmers and software engineers are concerned with the development of small and large programs (the distinction is not defined), respectively. Nor, most certainly, is his analogy that a
programmer corresponds to a technician, a software engineer to an electrical engineer and a computer scientist to a physicist. The real distinction lies in that the programmer is involved with the realisation of a specific computer application, in some aspect of program development or evolution. The software engineer, on the other hand, is primarily concerned with the processes, methods, tools and so on used by programmers and others in such development, in the management of a large development project where process issues dominate or in the study of the underlying theory.

The author's style is informal with a frequent expression of opinion and suggestions of you could or you might rather than judgement or recommendation. One must acknowledge his candor in not being decisive but this attitude is not helpful to someone studying the book in order to learn and apply.

This is an itsy bitsy book that contains much useful, well-described, material that does not, however, hang together to provide a coherent thesis, or even introductory text, on software engineering. One suspects that the author has not read or mixed widely in the software engineering community and is reflecting aspects of the work of a very limited number of people. This is substantiated by the very incomplete bibliography that contains no references to the various software engineering journals, to the Proceedings of the ICSE conferences or of the CASE and Process workshops for example. His list of references is woefully inadequate with names like Balzer, Boehm, Belady, Cheatham, Curtis, Hoare, Howden, Cliff Jones, Lehman, Musa, Osterweil, Riddle, Stenning, Turski, Zave, to cite just a few, totally absent. All these individuals have published contributions that must be considered basic to the current state of software engineering and even an introductory text should take cognisance of, at least, some of the concepts introduced by them.

What then does this text achieve. It lays great stress on the inevitability of change and the implications of this on planning and execution of development and implementation. This fundamental fact and how it may be tackled deserves wide attention and that alone makes the book a useful addition to the reference works on the subject. There is much else of interest to the beginner programmer or to the more experienced who wish to obtain a bird's eye view of aspects of software engineering technology. But it is not sufficiently wide or comprehensive to constitute a software engineering text or even to an introduction to its basic concepts.

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This slim volume is advertised, on the back cover, as providing a clear and detailed introduction to the concepts of parallel processing. The book has two distinct parts: an introduction to parallel processing (pages 1-100), and a description of the