Path-oriented Program Analysis

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This book presents a unique method for decomposing a computer program along its execution paths, for simplifying the subprograms so produced, and for recomposing a program from its subprograms. This method enables us to divide and conquer the complexity involved in understanding the computation performed by a program by decomposing it into a set of subprograms and then simplifying them to the furthest extent possible. The resulting simplified subprograms are generally more understandable than the original program as a whole. The method may also be used to simplify a piece of source code by following the path-oriented method of decomposition, simplification, and recomposition. The analysis may be carried out in such a way that the derivation of the analysis result constitutes a correctness proof. The method can be applied to any source code (or portion thereof) that prescribes the computation to be performed in terms of assignment statements, conditional statements, and loop constructs, regardless of the language or paradigm used. EAN/ISBN : 9780511368349 Publisher(s): Cambridge University Press Discussed keywords: Softwareentwicklung Format: ePub/PDF Author(s): Huang, J. C.

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