Cousot, Patrick; Cousot, Radhia
A language independent proof of the soundness and completeness of generalized Hoare logic. (English) [Zbl 0676.68004]

For generalized Hoare logic (GHL), a formal system for proving invariance properties of programs was introduced in papers of L. Lamport [Acta Inf. 14, 21-37 (1980; Zbl 0416.68032)] and L. Lamport, F. B. Schneider [ACM Trans. Program. Lang. Syst. 6, 281-296 (1984; Zbl 0536.68017)]. The authors first give a rigorous definition essentially independent of any programming language. Then they describe a corresponding semantic, introduce a suitable consequence relation, and prove for the provability relation of GHL its soundness as well as its (relative) completeness with respect to that consequence relation.

Reviewer: S. Gottwald

MSC:
68N01 General topics in the theory of software
68Q60 Specification and verification (program logics, model checking, etc.)
03B70 Logic in computer science

Keywords:
program verification; reasoning about programs; Hoare logic

Full Text: DOI

References:
[5] Cousot, P.; Cousot, R., Reasoning about program invariance proof methods, ()

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