Summary: Fifty years ago, John McCarthy and James Painter (1967) published the first paper on compiler verification [J. McCarthy and J. Painter, in: Proc. Symp. Appl. Math. 19, 33–41 (1967; Zbl 0183.19201)], in which they showed how to formally prove the correctness of a compiler that translates arithmetic expressions into code for a register-based machine. In this article, we revisit this example in a modern context, and show how such a compiler can now be calculated directly from a specification of its correctness using simple equational reasoning techniques.

MSC:
68N20 Theory of compilers and interpreters

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References:

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