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NP-completeness of storage allocation. (English) Zbl 0639.68007

Zesz. Nauk. Uniw. Jagielloń. 818, Pr. Inf. 3, 7-18 (1987).

The off-line version of the dynamic storage allocation problem (DSA) is investigated. A proof of its strong NP-completeness is given using a pseudopolynomial transformation from the 3-partition problem. In case of uniform block sizes a polynomial time algorithm solving DSA is presented. The problem remains NP-complete when various restrictions on block lengths (residence times) are introduced, except for instances containing only blocks of lengths 1 and 2. In the last case DSA is polynomial.

MSC:

[68N99](#) Theory of software

[68Q25](#) Analysis of algorithms and problem complexity

Cited in 4 Documents

Keywords:

[dynamic storage allocation](#); [strong NP-completeness](#)