Procedure of software choosing for computer networks

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We consider a procedure of software synthesis which puts in order a set of program modules realizing a number of operations. The description of this set of program modules is defined as transversals of a family of algorithmic features of the program. Greedy algorithm is used to find the greatest by weight partial transversal of the family of algorithmic features of the program. A similar approach is applied to reliability evaluation (probability of connectivity of the random graph represented by random matroid) of the software. A model of reliability of a communication network of program modules is offered. Presence of the developed combinatorial methods allows to create a constructive basis for automation of the software synthesis.

Keywords: *software, algorithmic features, a transversal, matroid, partial transversal, reliability evaluation, random matroid, reliability model.*

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