

## Abstract

This thesis is performed at 50 pages, contains 2 appendices and the list of references to the sources of 13 items. The paper contains 20 figures and 2 tables.

The purpose of this thesis is the creation of mathematical software for solving the problem of finding shortest routes for ambulances.

Ambulance is selected as the object of design. The subject of design in accordance with the object is to obtain cost-effective options for moving machines with ambulance to the destination. In the work the analysis of existing solutions to this problem — systems, that find the shortest routes, is conducted and their comparison is performed .

To implement these requirements next problems are chosen: the problem of finding the shortest route and the problem of linear programming. Algorithm of Dijkstra and algorithm of Floyd-Warshell are selected to solve the problem in the work.

A software application that implements the selected methods is developed. The testing of the developed system is performed.

Key words: discrete optimization, integer programming, Dijkstra's algorithm, Floyd-Warshell algorithm, paragraphs ambulance.