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In recent years, the problem of optimising and improving postal delivery services has become increasingly important due to the growing purchasing power of consumers in developing countries. To solve this problem, companies are trying to create various software solutions that are designed to reduce the cost of logistics between destinations.

The relevance of the research topic is due to the constant development of the market and requirements for carriers against the background of improving technologies and increasing needs of postal services customers.

In order to optimise and generate revenue, large postal companies are creating their own software and various devices designed to reduce the time required to analyse parcel data and deliver it to the recipient quickly.

The software product will be a system designed to provide order delivery services to postal service users. The search for a solution is focused on a specific situation with delivery using courier services.

The system includes two applications: for customers, for couriers, and an admin panel.

The software to be developed should solve the problem of parcel logistics between addressees and provide fast service to both users and a clear and easy-to-use system for couriers and administrators.

The problem of finding the shortest path is a classic combinatorial optimisation problem that is used in various fields. In the thesis, the problem of forming an optimal route is supposed to be solved using a variable criterion, so that the route can be optimised according to the most favourable in terms of time, distance, and financial costs [1]. To create such a solution, a genetic algorithm will be used, and although the genetic algorithm does not provide an optimal route, but only an approximate one, its use is advisable due to the advantage in speed of operation [2].

The main features of the software product include the following functions: creating optimal routes for couriers; monitoring the system and quality of service; tracking the location of couriers and parcels; verifying users and parcels; selecting the optimal delivery time; selecting the delivery address of the parcel; calling a courier to create a parcel.

References:

1. Bunday D. Basic Linear Programming/ School of Mathematical Sciences, University of Bradford.1989. 145p.
2. Moklyachuk M.P. Non-smooth analysis and optimisation K.: Kyiv National Taras Shevchenko University., 2008. - 399 c.