

ABSTRACT

Explanatory note size – 88 pages, contains 4 illustrations, 13 tables, 2 applications, 50 references.

Topicality. The paper examines the problem of automated cryptocurrency trading, particularly in the application of scalping strategies, which require high-speed data processing and execution of trading operations. The main features of existing solutions are highlighted, including automatic transaction execution and market data analysis. At the same time, several shortcomings have been identified, such as delays in transaction processing, risks of losses due to price fluctuations, and insufficient optimization of scalping strategies for automated trading. The need for the development of open-source software has been identified, which would improve existing approaches, enhance the efficiency of transaction execution, reduce risks of losses, and provide flexibility in using scalping strategies.

The aim of the study. The main target is to increase the speed of trading operations by implementing a new scalping method for automated cryptocurrency trading.

The object of research: approaches and processes for developing software for automated cryptocurrency trading.

the processes of development, modification, analysis, quality assurance, implementation, and maintenance of software for an automated scalping strategy in the cryptocurrency market.

To achieve this goal, the **following tasks** were formulated:

- analysis of existing solutions for automated cryptocurrency trading using scalping strategies;
- development of a scalping method for automated trading;
- development of a software solution for automated trading with the implemented scalping method;
- evaluation of the efficiency of the proposed method and software.

The scientific novelty of the results of the master's dissertation is that a software solution for automated cryptocurrency trading has been proposed, which, unlike existing solutions, ensures increased efficiency of transaction execution and reduced risks of losses due to trading delays. This result was achieved through the creation of an open-source solution for implementing scalping strategies and the improvement of the scalping method.

The practical value of the obtained results is that the developed software integrates scalping methods within a single application, ensuring the automatic execution of trading operations with minimal delays.

Relationship with working with scientific programs, plans, topics. The work was performed at the Department of Informatics and Software Engineering of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute" in the framework of the topic "Methods and technologies of high-performance computing and big data processing". State registration number 0117U000924.

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