

ABSTRACT

The thesis is presented in 72 pages. It contains 2 appendixes and bibliography of 27 references. 33 figures are given in the thesis.

This thesis is devoted to the design, programming and testing of the conceptual solution of the electronic document management system (DMS) using the blockchain technology.

In the work a comparative analysis of existing DMSs is made, a review of consensus algorithms is carried out, PoW consensus algorithm is chosen for implementation based on criteria of speed and scalability of the system, a mathematical model of the problem is designed, in which the essence of the "document" and possible operations with it are described.

Based on the mathematical model, combined software architecture is developed which includes the standard client-server application and the blockchain based application.

The program solution is successfully tested on “CloudMade UKRAINE” LTD tasks. The results of the thesis are planned to be used in further scientific and practical research.

Keywords: electronic document flow, document management system, the blockchain, consensus algorithms.