

## ABSTRACT

The thesis is presented in 51 pages. It contains 2 appendixes and bibliography of 13 references. 29 figures and 4 tables are given in the thesis.

The goal of the thesis is to develop mathematical and software tools for solving the problem of analyzing the attendance of the institution using the method of regression analysis.

In the thesis, existing solutions are analyzed, such as the least squares method, the matrix method and the method of gradient descent. They are compared in terms of the accuracy of obtained results, algorithm efficiency and the adaptability of the methods to use in the analyzing the attendance of the institution system. In the thesis, the the method of gradient descent is used to solve the task.

The automated system implementing the chosen method is developed. The developed system is tested.

Keywords: attendance, multi-factor linear regression, gradient descent, Web application.