

ABSTRACT

The thesis is presented in 87 pages. It contains 2 appendixes and bibliography of 22 references. 12 figures and 5 table are given in the thesis.

Topic relevance. We have quite an acute problem of the automated system of verification of Ukrainian texts. Working with texts - an important part of people of many professions. Word Processing, preparation of various types of documents are a significant part of the work carried out today on the PC. The structure of documents prepared on a PC may include text data, tables, mathematical formulas, graphics etc. The main goal of any text editor is to ensure optimal conditions for the user to create and document processing. To create the necessary conditions for Ukrainian-language audiences editor must fully support the Ukrainian language. As one of the most important aspects when writing documentation is writing her literacy and adherence to the rules of the Ukrainian language, verification is an integral text editor. Its main task is to check and text errors and correct them in time.

Thesis connection to scientific programs, plans, and topics. The thesis was prepared according to the scientific research plan of the Applied Mathematics Department of the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute.”

Research goal and objectives. The goal of this thesis is to create a software product that is essentially an automated verification subsystem Ukrainian texts to improve efficiency of businesses that deal with a lot of text documents, such as publishers.

To accomplish this goal, the following objectives were reached:

- examine existing practical and theoretical solutions and conduct comparative analysis;
- justify the choice of method;
- examine in detail the algorithms using the selected method, their advantages and disadvantages;
- justify the choice of algorithm used method;

- modify the selected algorithm to eliminate its main drawbacks;
- modified and compare existing algorithms;
- implement a software algorithm chosen;
- to verify the software designed to work with real texts.

Object of research is the classification of species and types of texts, methods and models formalize texts existing algorithms verification of texts existing tools and systems verification text.

Subject of research is mathematical models and algorithms for verification text, text verification techniques, methods comparison words, the method of "distance Lowenstein," Wagner-Fisher algorithm, algorithm Hirshberha.

Methods of research. To solve the task, the following methods were used: Method "Lowenstein distance" (to determine the differences between the two measures strings); Hirshberha method algorithm (for editorial search warrant); methods of the theory of algorithms and programming (for program implementation methods).

Scientific contribution consists of the following:

- improved Hirshberha algorithm which uses a mathematical model of "distance Lowenstein," which reduces the required amount of RAM in the performance verification of Ukrainian texts.

Practical value of obtained results. Developed subsystem based Hirshberha algorithm can be used in many areas where there is a need for documentation. Since the document Ukraine is carried out mainly in Ukrainian and touches almost all spheres of human activity, subsystem verification of Ukrainian texts has a wide range of applications.

Approbation of the thesis results. Basic ideas and results of the research were presented at the IX Scientific Conference of Masters and PhD students «Applied mathematics and computing - PMC-2017». Thesis "Verification of Ukrainian texts based on the mathematical model ««Lowenstein distance»»».

Publications. Thesis results are published in 2 scientific works: in 2 papers in proceedings of scientific conferences.

Keywords: verification, verification of texts Levenshtein distance algorithm
Wagner-Fisher algorithm Hirshberha.