

ABSTRACT

Explanatory note size – 131 pages, contains 10 illustrations, 66 tables, 4 applications, 16 references.

Topicality. The use of voice control in operating systems significantly expands the capabilities of users for convenient use of personal computers but requires further research to improve the effectiveness of their implementation approaches. This work examines the problem of developing and improving software to increase its usage variability.

The aim of the study. The main goal is to enhance the variability of software usage for executing voice commands in the Windows operating system, with the possibility of flexible customization of user commands.

The object of research: software solutions for setting up and executing voice commands in the Windows operating system.

The subject of research: methods, models, and tools for representing and transforming knowledge about software for setting up and executing voice commands in the Windows operating system.

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

- analysis of existing solutions;
- identification of shortcomings in analogs and opportunities for improvement;
- definition of architectural design;
- implementation and prototyping of the software solution;
- testing of the proposed software solution.

The scientific novelty the result of the work is the improvement of existing approaches to creating voice assistants and the development of corresponding software, which will provide the possibility of flexible configuration of voice commands and can be used in practice.

The practical value of this work is the software for setting up and executing voice commands in the Windows operating system based on speech recognition, which can be used by average operating system users for convenient operation during work with a personal computer.

Relationship with working with scientific programs, plans, topics. Work was performed at the Department of Informatics and Software Engineering of the National Technical University of Ukraine «Kyiv Polytechnic Institute. Igor Sikorsky».

Approbation. The scientific provisions of the dissertation were tested at the fifth Scientific and Practical Conference "SoftTech-2023" and published in the conference proceedings.

Keywords: OPERATING SYSTEM, VOICE CONTROL, PLATFORM, APPLE SIRI, MICROSOFT CORTANA, AMAZON ALEXA, SAMSUNG BIXBY, .NET, C#, PYTHON, NUMPY, TENSORFLOW, WPF, SPEECH RECOGNITION, USER, VOICE ASSISTANT, RIDER, PYCHARM, ARCHITECTURE, NEURAL NETWORK.