

ABSTRACT

Explanatory note size – 130 pages, contains 48 illustrations, 42 tables, 6 applications, 32 references.

Topicality. Examines the problem of creating mobile application interfaces enabling user interaction with Arduino via Bluetooth, shows the main features of existing solutions, their advantages and disadvantages. The need for the development of complex software that will allow creating a graphical user interface for interaction with Arduino via Bluetooth and providing a convenient software interface on the microcontroller side has been identified.

The aim of the study. The main target is to improve tools for creating mobile application interfaces enabling user interaction with Arduino via Bluetooth.

The object of research: software for creating interfaces enabling user interaction with Arduino via Bluetooth.

The subject of research: methods, tools and technologies of software development for creating interfaces enabling user interaction with Arduino via Bluetooth.

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

- analyze existing solutions;
- develop an interaction protocol via Bluetooth;
- develop a software library for Arduino;
- design a mobile application according to official standards.

The scientific novelty of the results of the master's dissertation is that the approach to creating multifunctional interfaces for mobile applications enabling user interaction with Arduino via Bluetooth has been further developed. The result was achieved by developing a universal interface designer.

The practical value of the obtained results is that a tool was proposed for the first time in the form of a mobile application for creating multifunctional interfaces enabling user interaction with Arduino via Bluetooth.

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 V International Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies (SoftTech-2023)".

Publications. The scientific provisions of the dissertation were published in the Inter-branch scientific and technological digest "Adaptive automatic control systems": Kliuba M. A., Likhouzova T. A. Software tools for creating interfaces for interaction with Arduino via Bluetooth // Inter-branch scientific and technological digest «Adaptive systems of automatic control» № 2(43), 2023, p. 3-11.

Keywords: INTERFACE DESIGNER, MOBILE APPLICATION, ANDROID, ARDUINO, BLUETOOTH.