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USING THE BLYNK PLATFORM FOR REMOTE CONTROL OF THE SMART HOME

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The integration of modern technologies into everyday life is becoming the norm, and automation and intelligent home management remain among the most common solutions [1]. One of the simple and at the same time innovative ways to control a smart home is the use of the Blynk platform, which turns a smartphone into a control panel. With Blynk [2], the owner can quickly send commands to adjust lighting, heating or weather monitoring systems.

To configure Blynk, an ESP-32 microcontroller (Fig. 1) was chosen, based on the popular dual-core ESP32 chipset [3], with a variable clock frequency from 80 MHz to 240 MHz. Designed for portable and autonomous electronics and Internet of Things applications, the module is designed in a miniature 25.5mm x 18mm package, features on-board Flash memory, 40MHz quartz and a PCB antenna to provide excellent RF performance. ESP32 has a rich peripheral, including such interfaces as UART, SPI, I²C.

Figure 1 – ESP32 microcontroller

The ESP-32 microcontroller not only simplifies the management of smart home systems, but also opens up opportunities for creating automatic scenarios. For example, the system can regulate heating depending on the outside temperature, which significantly increases indoor comfort.

Blynk's multi-functional platform has gained recognition for its flexibility and versatility, as it can work on a variety of devices, including smartphones,

tablets and computers (Figure 2). You can control your home systems at any time and from any place, which provides additional convenience in everyday life. With support for both mobile and desktop platforms, users can easily transition from smartphone to desktop without losing functionality.

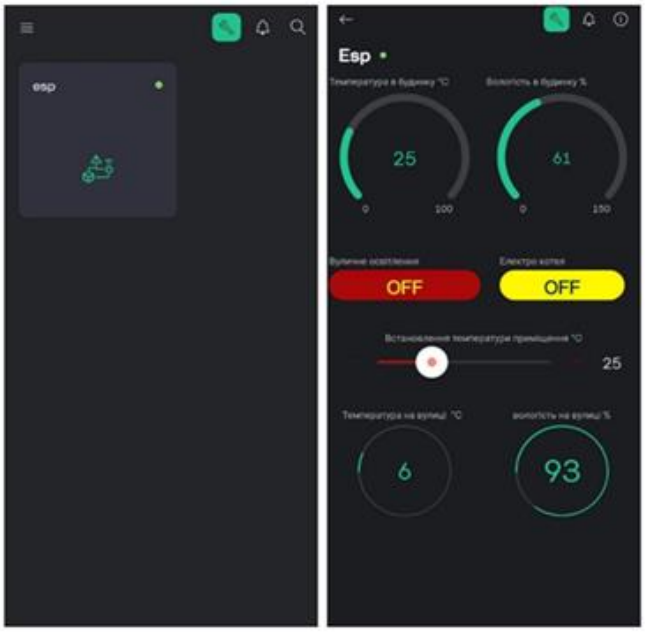

Figure 2 – Demonstration of Blynk

Using the Blynk platform with the ESP-32 microcontroller opens up new opportunities for smart home automation. The convenience of management, the possibility of creating automatic scenarios and the accessibility of the interface make this platform an ideal solution for the modern user. In addition to increasing comfort, such technologies also contribute to energy efficiency, which is critically important in modern conditions. Thanks to the ability to optimize energy consumption, users can not only reduce utility costs, but also contribute to the preservation of the environment. As a result, the integration of Blynk and ESP-32 becomes not just a trend, but a necessity for those who seek to modernize their home, making it more comfortable and economical.

References

1. Skidan V.V. Smart home: analysis of lighting control system / V.V. Skidan, D. G. Saveliev. Science, education, technology and society in the conditions of globalization: a collection of theses of reports of the international scientific and practical conference (Bila Tserkva, June 10, 2023) – Bila Tserkva: TSFEND, 2023. Part 2. 55 p. 29-31. https://stud.knutd.edu.ua/bitstream/123456789/24438/1/Skidan_V.pdf
2. Low-code IoT cloud platform with user experience at its core. [Electronic resource] URL: https://blynk.io/
3. ESP32 microcontroller [Electronic resource] URL: https://itmaster.biz.ua/directory/microcontrollers/esp32.html