# *СТРОИТЕЛЬНЫЕ КОНСТРУКЦИИ*

**UDC 697.1:536.2**

## SMART WALL PANEL

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*A smart wall panel has been created with the ability to automatically connect to a previously selected blue-tooth device, voice recognition of text, displaying temperature and humidity in real time.*

It is known to use the "Smart Home" system on the Arduino UNO controller with control via an Android smartphone and the HC-05 Bluetooth module [1]. This system can be used to create a "Smart wall panel" and then the algorithm of actions will be as follows:

1. The task is to create an Arduino sketch and program for Android that would meet the necessary requirements.

From the hardware part you need:

Arduino UNO

Bluetooth модуль HC-05

2-channel relay module 5V 10A

Humidity and temperature sensor DHT-22

2. Then a sketch is created for the Arduino <u>SMARTHOUSE.ino</u>. The task is for the sketch to receive a command to turn on a certain relay and at the same time transmit the readings of the humidity and temperature sensor. To create an Android application, the AppInventor 2 program was used.
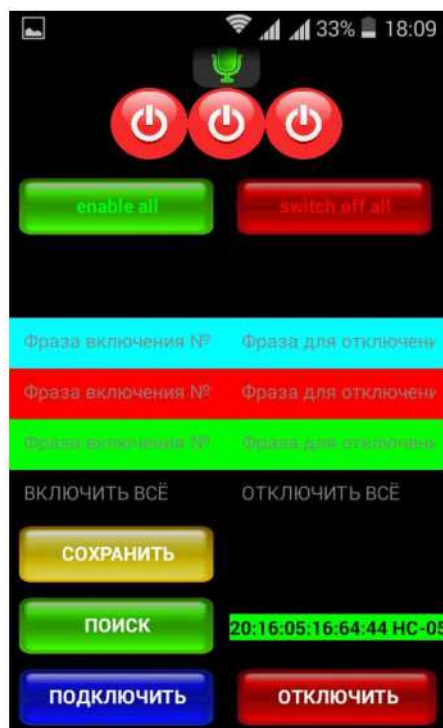
General view of the program:



**Figure 1. – Program interface**

The features of the program are: the ability to automatically connect to a previously selected bluetooth device, voice recognition of text, display of temperature and humidity in real time. Before starting to use voice commands, you need to enter the command itself into the multi-colored fields from the smartphone keyboard and press the save button (the save button also remembers the connected device).

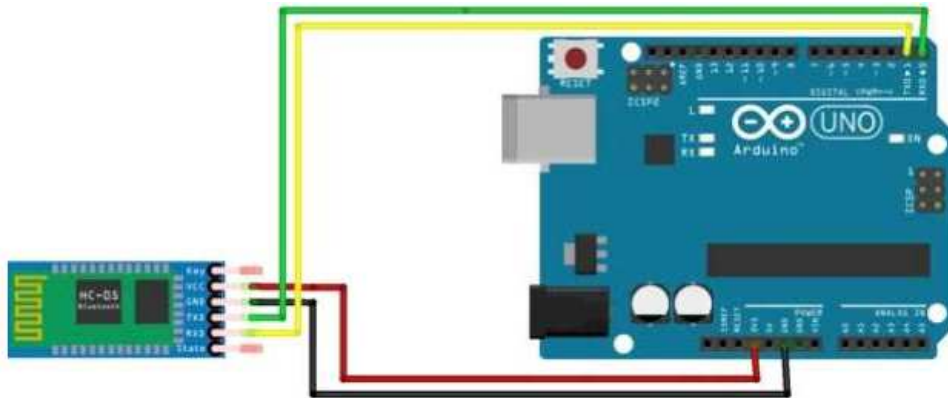This was followed by the assembly, the assembly of all components into a single system.

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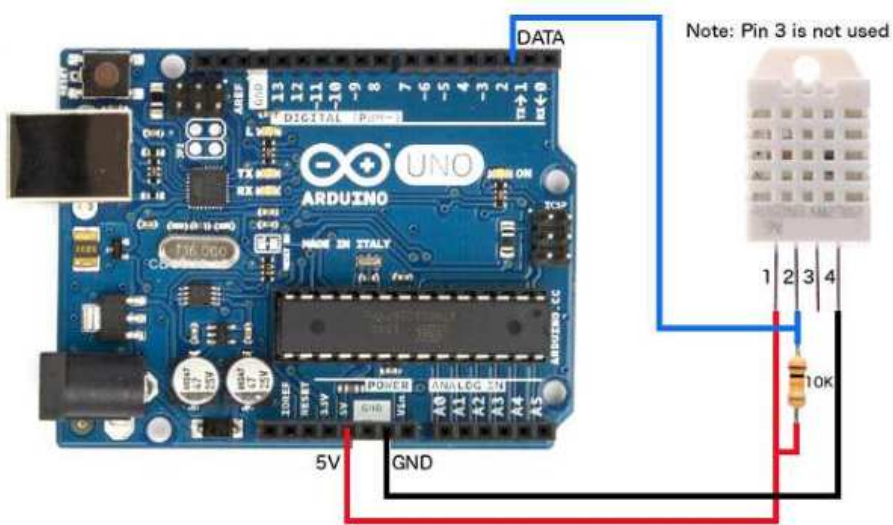
**Figure 2. − Connection of HC-05**
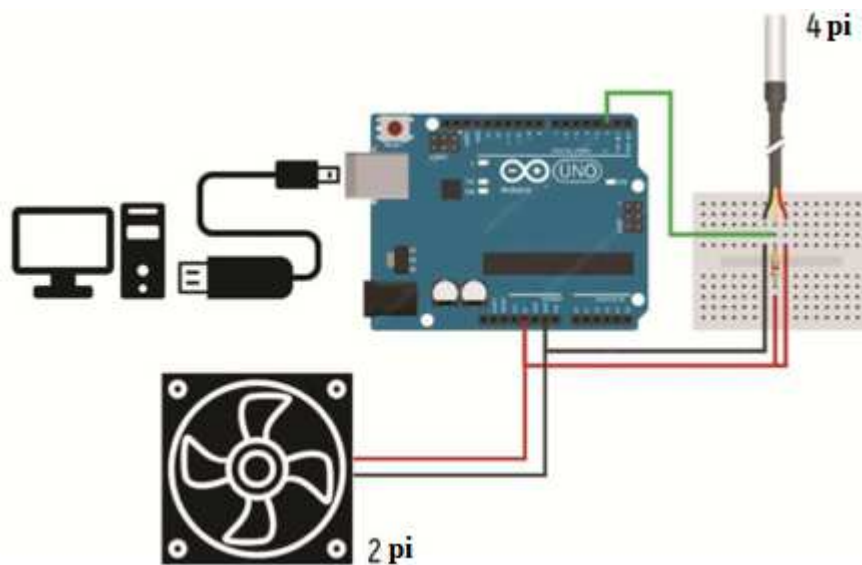


**Figure 3. − Connection of DHT-22**



**Figure 4. − Diagram of connection of temperature sensors in "Smart wall panel"**

The load is connected to pins 8, 9, 10. If suddenly something is not clear with the connection, then you can see all the pins on the sketch itself. After connecting all the components, you need to install and run my SMARTHOUSE.apk program.

After installation, Bluetooth is turned on on the smartphone and we connect to the HC-05 module, and turn on the program.
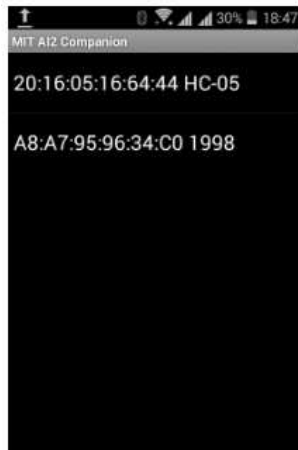


**Figure 5. − - Program interface**

As a result, we see the following picture on the smartphone screen.
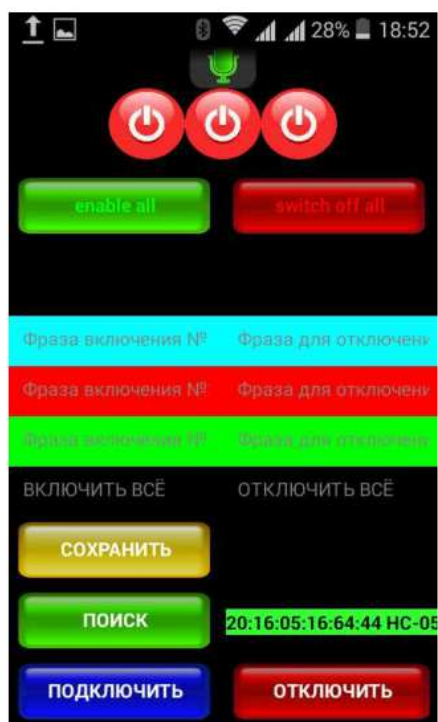


**Figure 6. − Program interface**

The use of information technology in construction allows you to create structural elements with performance characteristics (for example, "Smart wall panel").

LITERATURE

1.          [Electronic resource]. – access mode: http://arduino.by/stories/umnyy-dom-upravlenie-s-android-smartfona.