Project:
Control of home devices by phone (application smart home)

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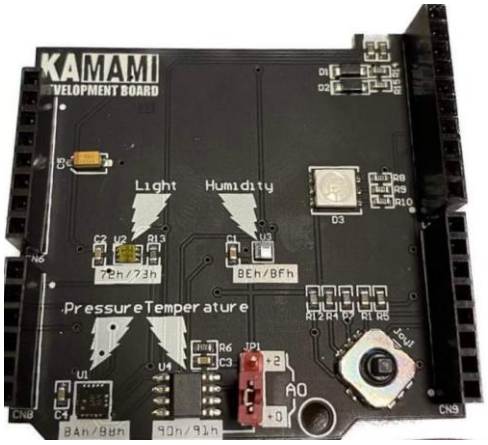
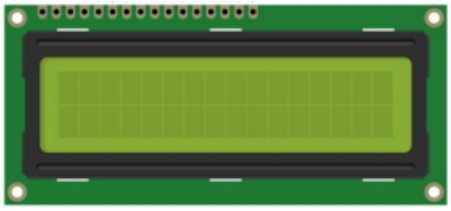
Using board: FRDM-KL05Z

Main assumption:

1. Pressure, temperature and humidity measurement using KA-NUCLEO-F411.



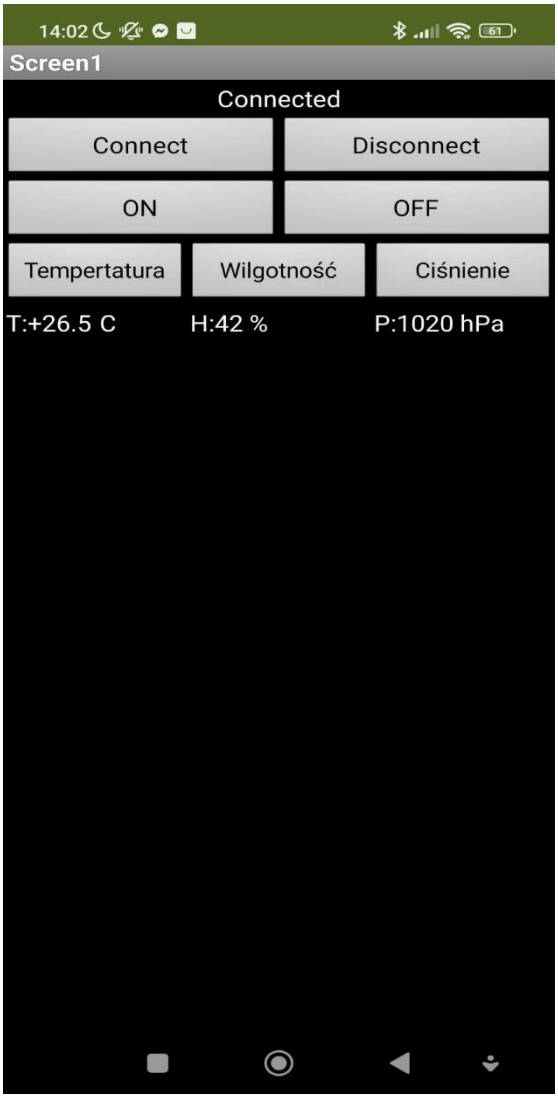
2. Displaying the results on the LCD1602 .



3. Use of bluetooth module HC-06 to send measurements to the mobile application.

4. Developing an app that connects via bluetooth and controls measurements.

Using MIT APP Inventor we created a mobile app for android, application interface:



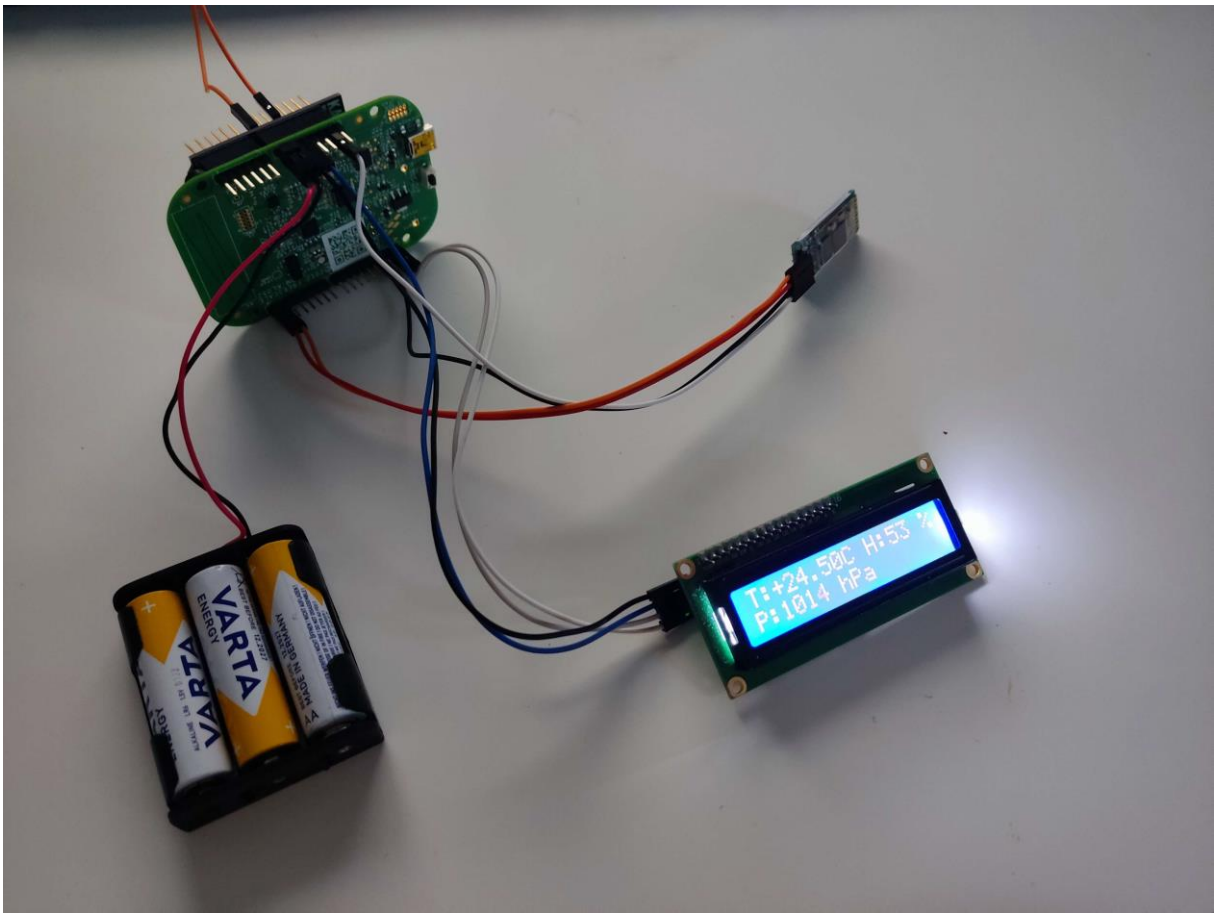
At the top of the app we see information about connection to the Bluetooth module (Connected/Disconnected)

In the second line we see two buttons. By clicking on the button on the left connect we can choose the device with which we want to connect via Bluetooth. button on the right works the same way only it disconnects us from the device.

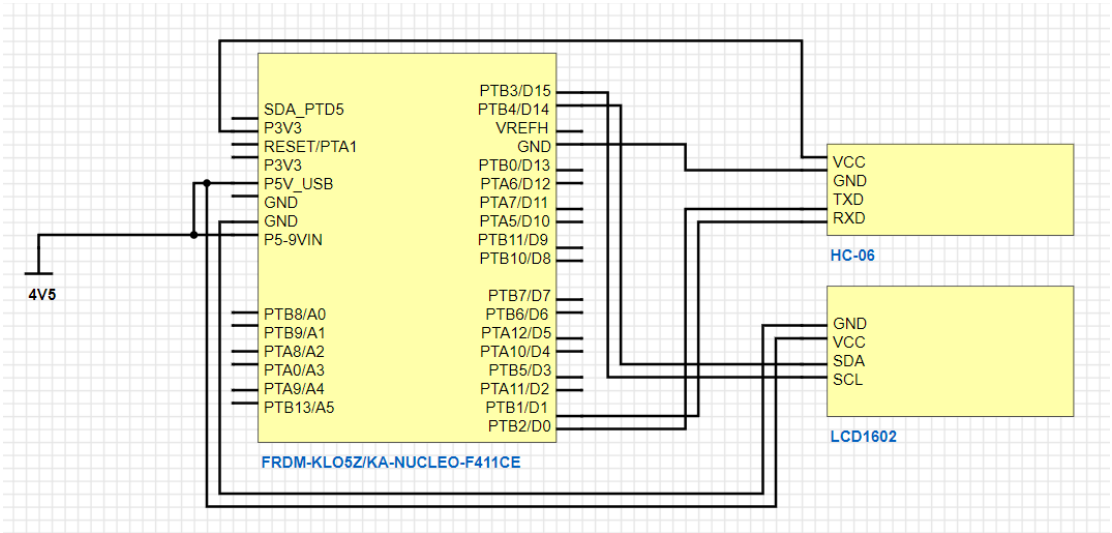
In the next line we created two buttons to check the connection between the application, the bluetooth module and the board and used them to change the state of the LED on the board.

The last three buttons are responsible for temperature, humidity and pressure measurements. When we click one of the buttons, underneath it will be sent to us through the bluetooth module information about the result received.

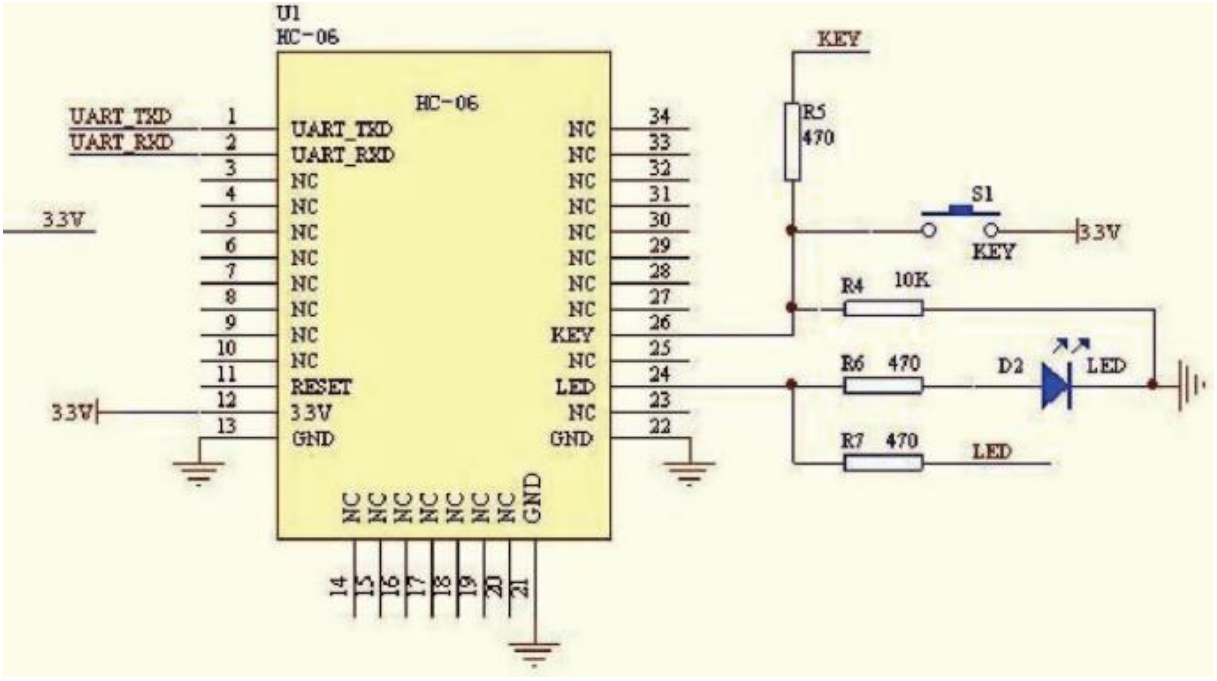
The measurements also appear on LCD dispalay:



Circuit schematic:



HC-06 schematic:



LCD1602 schematic: