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THE APPLICATION OF ARDUINO HARDWARE PLATFORM IN EVERYDAY LIFE

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According to the “Medici effect,” a term coined by Frans Johansson, innovation comes from diverse industries, cultures, and disciplines when they all intersect, bringing ideas from one field into another [1]. What might happen if you combine computer science, electronics and everyday life?

One day I found out about Arduino. So, the next question is “What is Arduino?”

Arduino is an open-source electronics platform based on easy-to-use hardware and software [2]. It's intended for anyone making interactive projects. Arduino boards are able to read inputs – light on a sensor, a finger on a button, or a Twitter message – and turn it into an output – activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board [3].

To do so you use the Arduino programming language, Arduino Software (IDE) and the hardware that consists of a microcontroller with other electronic components which can be programmed using the software to do almost any task. For that you can use a lot of open source frameworks for which you can find a lot of helpful communities on the Web. [4].

The simplicity of the Arduino language makes it very easy for almost everyone who has an interest in electronics or software design.

Now, we are moving to my project. I decided to make an automatic trash bin. I took a trash bin, a soap dish, a cap of a can, a clip and Arduino board with peripherals (Fig. 1).



Fig. 1. Basic components

After that I connected all components according to the scheme (Fig. 2). The circuit consisted of a motion sensor for motion detection, a servomotor, that helps to open the trash bin lid power supply block for 5v-12 for stand-alone work, an Arduino board for control and a resistor to limit current.

The basic idea is simple: when you bring your hand to the motion sensor the trash bin opens. Actually we need set the time during which the lid will be kept opened. Let it be 5 seconds. After that it will close.

With the help of Arduino IDE I developed the algorithm using C++. After that with the help of USB cable I loaded the program into the board. The results you can see in the Fig. 3.

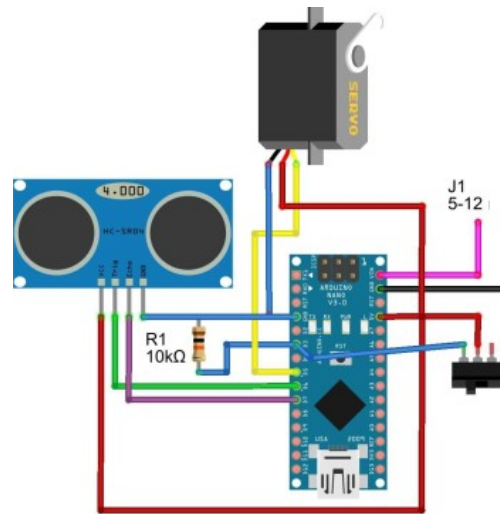


Fig. 2. The scheme



Fig. 3. The automatic trash can

References

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