



## TO THE STUDENTS ARDUINO PLATE THROUGH BUTTON (BUTTON) AND LEDS PROGRAM USING TO MANAGE TO TEACH

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### ABSTRACT

This in the article general education in institutions complicated technical and technological issues solution to do capable students preparation in order to study to the process innovative technologies current reach issue viewed Such innovative from technologies one is this study robotics being , him common medium education of schools technology science teaching to the process apply according to collected experiences statement done Both button ( button) and LEDs program using to manage to teach directed.

### KEYWORDS

Study robotics, higher education institution, innovative education, robot, arduino, diode, button, practice board, binder wire.

### INTRODUCTION

In the world future of teachers professional and pedagogical to the activity innovative preparation, aesthetic education promotion, lesson the process efficient organize technology science your readers technical thoughts robotics tools based on to improve circle scientific studies take is going Technology science of students technical thinking in improvement creative environment create, teach content integrity improvement demand is being done. That's it point of view from the point of view common medium

education in institutions technologist science of students technical thinking development methodology to improvement separately attention is being given.

In our country digital technologies based on, general medium education institutions study process the system improvement, in particular, training in the process r o bototechnik from tools to use wide current reach through technologist in science of students technical takakkurini more improvement to the issue



last in years separately attention is being directed. " Education and the field of science development in order to continuously education system further improvement".

" In society done being increased reforms requirements full answer giver , producer release in the field surface came to competition durable , sharp to changes adapt recipient , as well as labor in the market specialists qualification being placed requirements level efficient activity driver person formation current the problem is considered In this regard Uzbekistan Republic common education State education standards technology science to his students to be placed new , more high requirements with one in line of students technical thinking of formation pedagogical conditions , mechanism , methods and technologies work exit is also separate attention is paid"

this regard technology science students technical thinking more in formation roboticist from tools using , special competencies development through thinking of activity efficiency increase current important have is

considered Robotics technician tools based on automated technical systems create and use important importance occupation is enough Ush this in the article movement ways pedestrians transition places installed traffic lights button using management , vehicles from the yes button while driving to use and computer on the keyboard buttons work principle and that's it similar button through managed parts seeing we go out

A button is a device that serves to connect two points of a ring in an electrical circuit. It is named as follows, in Uzbek - button, in English - button and in Russian - knopka.

Usage: It is used in many places. A simple example is that we use another type of button to turn on and off the light in our house. In addition, it is possible to see that the traffic lights installed at the pedestrian crossings of some roads are controlled using this button. Another example of this is the computer keyboard and the fact that a button is used instead of a key when driving (starting) some vehicles (Fig. 1).

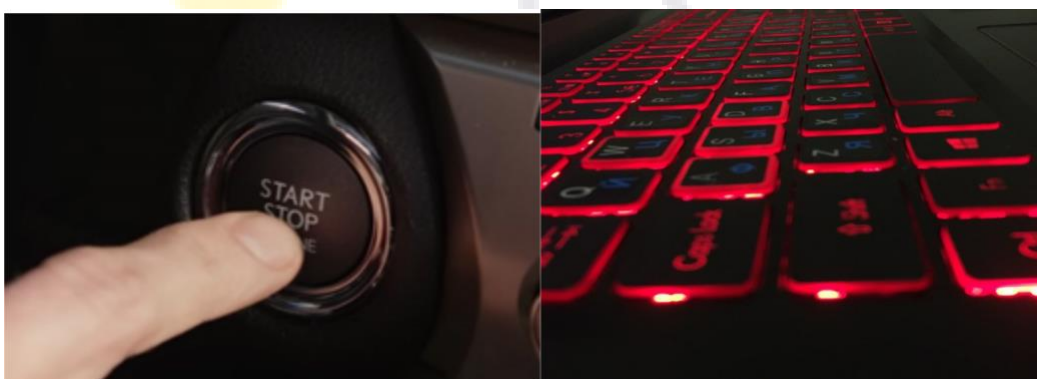


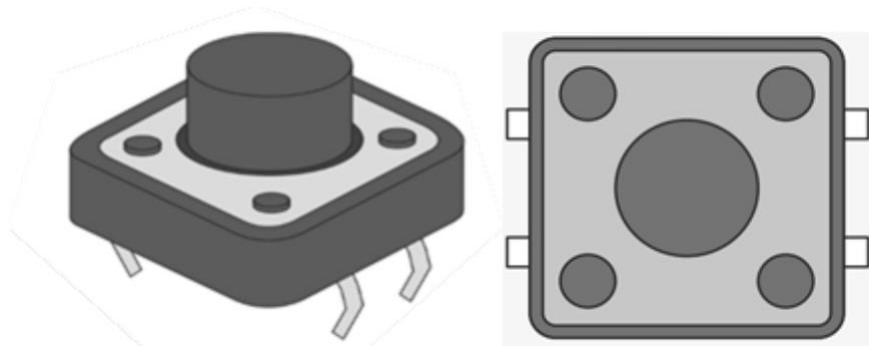
Figure 1. Some types of buttons



This is a button experience. Controlling an LED with a button When the button is pressed, we turn on the LED and turn it off when the button is released. Explore the

concept of rollback and software methods to eliminate it.

The appearance of the button (button) used in the experiment is depicted in the picture below (Figure 2):



**Figure 2. Button**

Below we will get acquainted with the parts that will be needed to control the button using the program. These are:

- Arduino UNO R3 controller;
- a board for making a prototype;
- button;
- light emitting diode;
- resistance 220 Ohm;
- resistance 10 kOhm;
- Connecting wires.

In this experiment, we will use the digital signal generator D2 of the Arduino board as an input. This allows you to attach a button to the project to interact with it in real time. When using an Arduino board, pull-up and pull-down resistors are used as inputs, so that

the program loaded on the Arduino board is not in a suspended state (in which case it collects external noise and accepts arbitrary values), but has a predetermined state (0 or 1). Pull-up resistors make the input + 5 V, pull down resistors to GND. Additionally, pull-up and pull-down resistors ensure that the button does not short between +5V and ground when the button is pressed. In our experiment, we use a pull-down resistor to connect the button. The connection diagram is shown in Figure 3.

When the switch is off, the digital D2 signal current is pulled to ground through a current-limiting 10K resistor and the input pin is set LOW. When the button is pressed, the input is connected directly to 5V, most of the current flows through the closed button on the path of least resistance, creating a high level at the input. Turn on the LED when you press the button, turn it off when you release it.



```
const int LED=10; //LED 10 (D10) output to connect
```

```
void setup() {
```

Setting the result of connecting an LED as an output (OUTPUT)

```
pinMode (LED, OUTPUT);}
```

```
void loop() {
```

```
// // Turn on the LED by referring to pin 1 (HIGH).
```

```
// 1 – (HIGH) command word to turn on the LED; digitalWrite  
(LED, HIGH);
```

```
// Hold for 1 second (1000) - the (delay) command is used for this;
```

```
    Turn off the LED by referring to pin 0 (LOW);          LOW –  
    deletion order;
```

```
// digitalWrite (LED, LOW);
```

```
// // pause 1 second(1000);
```

```
delay(1000);
```

```
}
```

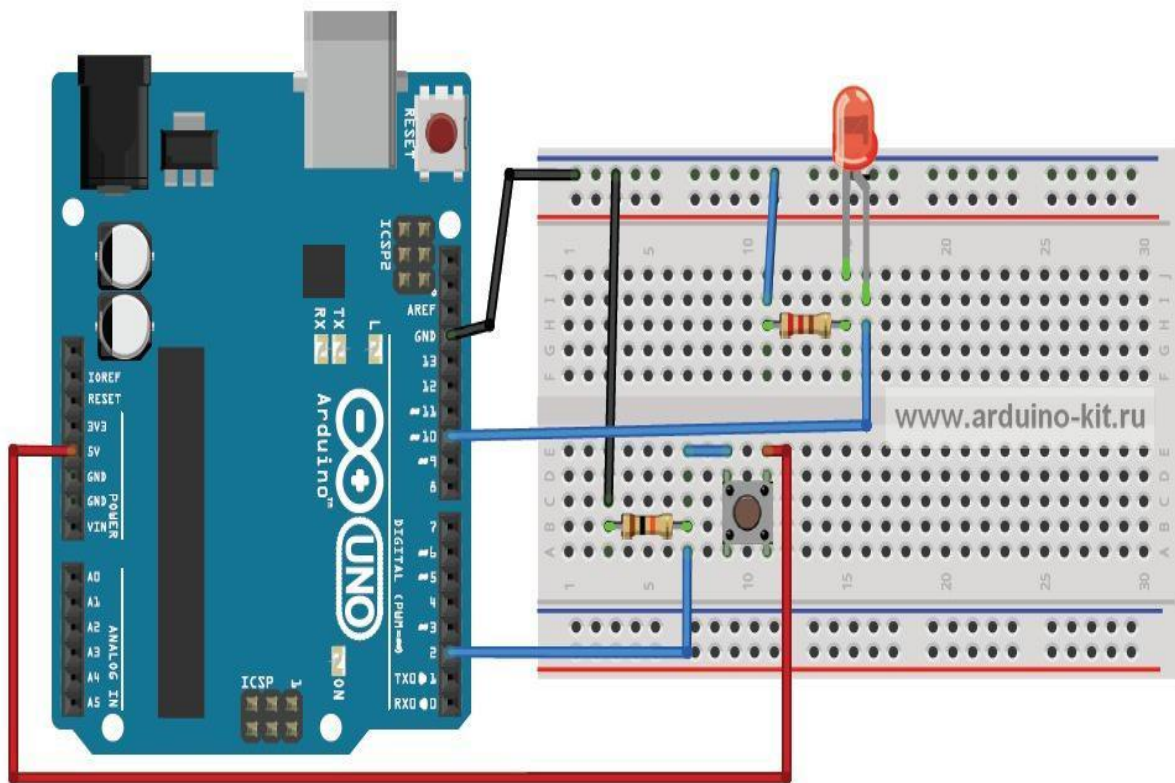


Figure 3: LED control scheme with a button.

## CONCLUSION

In conclusion, it can be noted that by teaching students how to control various devices with the help of a program, it will create a foundation for performing projects of various difficulties in the future. This leads to the achievement of new heights, the creation of inventions and discoveries that are very important for human life. Therefore, it is important to teach students how to control buttons and LEDs from the Arduino board and the parts that are used together with it.

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