

Project 04 Button Controls LED



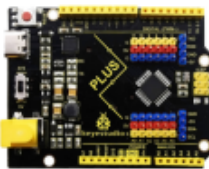
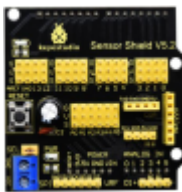




1. Description

In this lesson, we will read the output value of external device by using the input function of I/O port. Also, we will do an experiment with a button and an LED to know more about I/O.

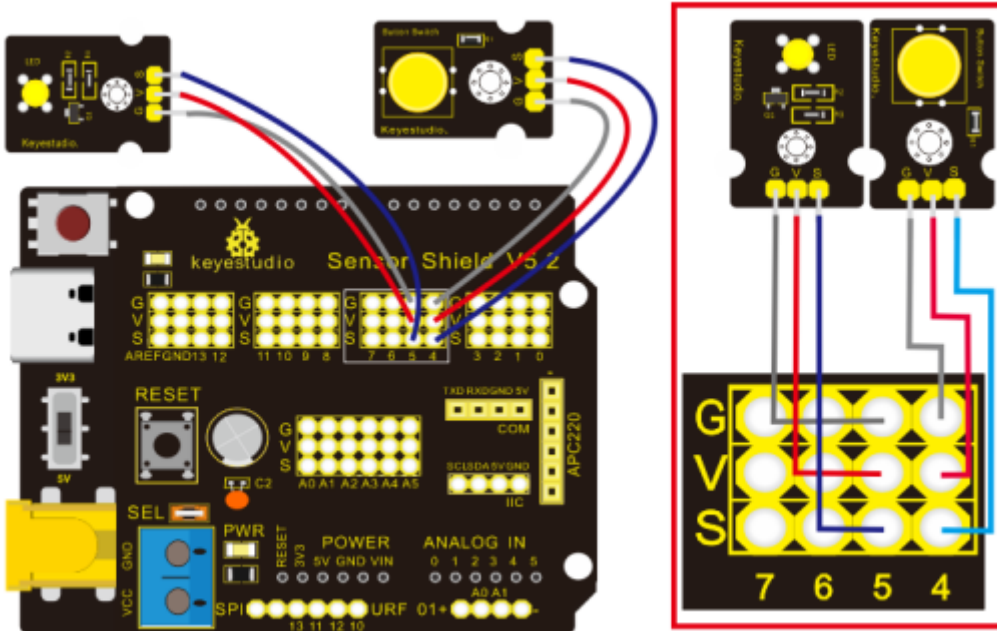
The button belongs to switch quantity (digital quantity) components. Composed of normally open contact and normally closed contact, it is similar to ordinary switch.

When the normally-open contact bears pressure, the circuit will be on state; however, when this pressure disappears, this contact will go back to be the initial state(off state).

2. Needed Components

PLUS control board*1	Expansion board*1	Yellow LED*1	Button sensor*1	USB cable*1	3Pin F-F Dupont wire*2
					

3. Wiring Diagram



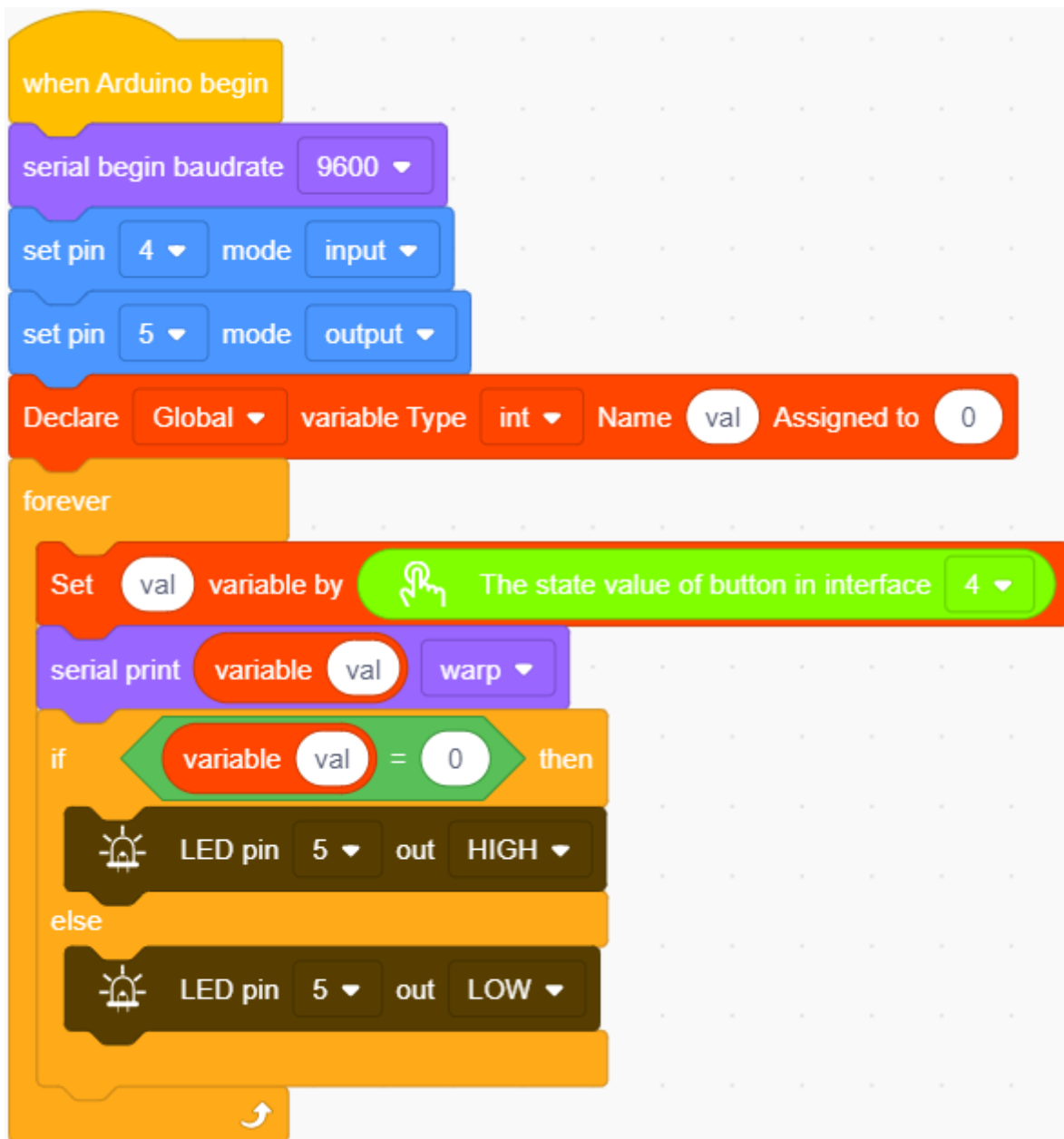
Note: The G, V, and S pins of button sensor module are separately connected to G, V, and 4 on the shield, and the G, V, and S pins of the yellow LED are linked with G, V, and 5 on the expansion board.

4. Test Code

Then, we will design the program to make LED on by pressing button placed at the ③ on the house. Comparing with previous experiments, we add a conditional judgement statement---"if" statement. The written sentences of Arduino is based on C language, therefore, the condition judgement statement of C is suitable for Arduino, like while, swich, etc.

For this lesson, we take simple "if" statement as example to demonstrate:

If button is pressed, digital 4 is low level, then we make digital 5 output high level , then LED will be on; conversely, if the button is released, digital 4 is high level, we make digital 5 output low level, then LED will go off.



5. Test Result

After the code is uploaded, LED will light on when the button is pressed, and it will go off when the button is released.

