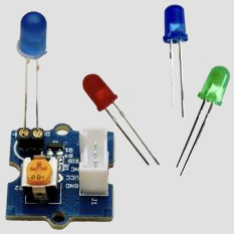
LED-Modules are actuators that can be controlled both with binary values and with pulse-width modulation (PWM):

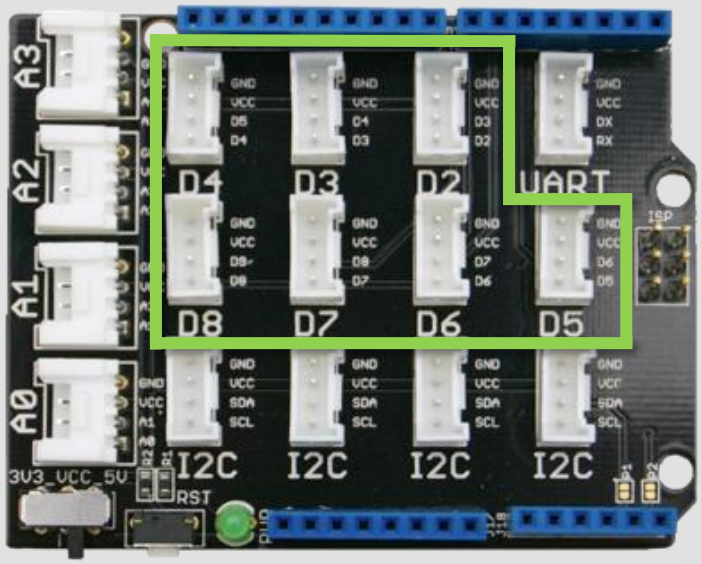


Colored changeable LEDs

Pay attention to correct polarity:

Connector cable

LED modules are connected to the digital outputs (*digital input/output D2, D3, …, D8*—bordered green in the picture):



To turn LEDs on or off, the following block of the “Arduino” category is used in Snap4Arduino:

The status to be sent (*on* or *off*), the pin to which the LED is connected, and the number of the Arduino board used are entered here.

To control the brightness of an LED, in Snap4Arduino the following block from the "Arduino" category is used:

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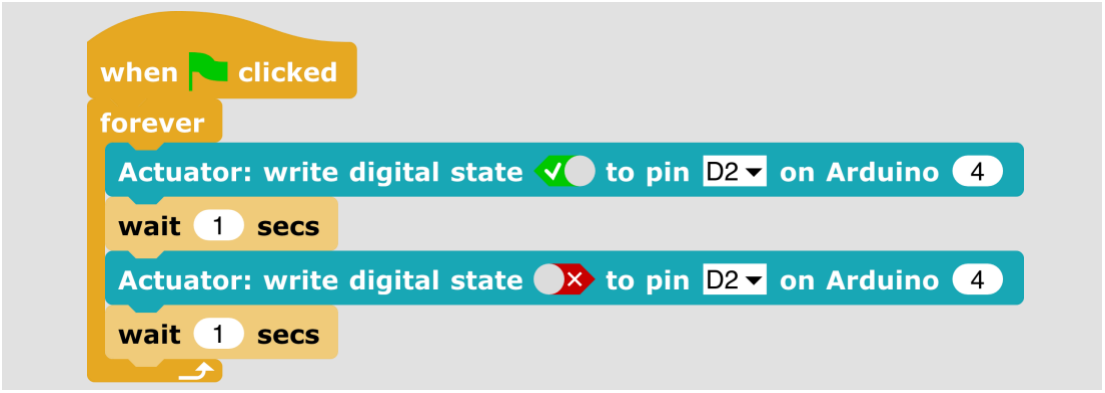
The brightness value to be transmitted (between *0* and *255*), the pin to which the LED is connected, and the number of the Arduino board used are entered here.

Note: such a pseudo analog control only works on special PWM pins (D3, D5, D6).

Tasks:

1) Connect an LED to pin D2 of your Arduino.
   a) Let the LED light up and then switch it off again.
   b) What does the following program do?



2) Write a program that alternately turns two LEDs on and off.
3) Write a program that makes an LED light up brighter every second.
4) For which exemplary applications can the LEDs be used?

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