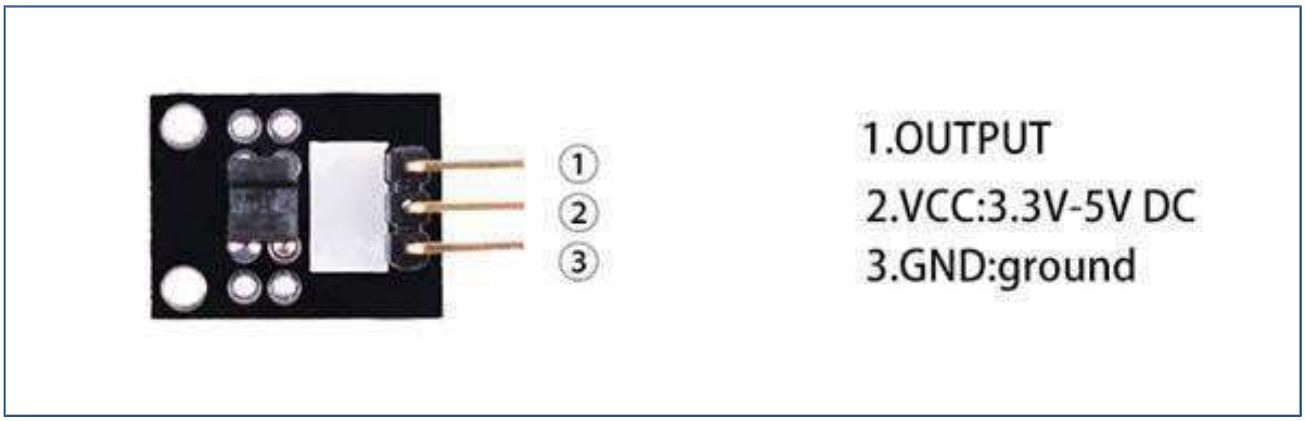
Lesson 12 Photo-Interrupter Module

Overview

In this experiment, we will learn how to use Photo-interrupter module.

Light blocking

Slotted light barrier. The middle pin connects to + 5 V supply and the pin marked`-' connects to ground. The output signal (with a 10 K ohm pull up to +5 V) is available on the pin on the right.



Component Required:

(1) x Elegoo Uno R3

(1) x USB cable

(1) x Photo-interrupter MODULE

(x) x F-M wires

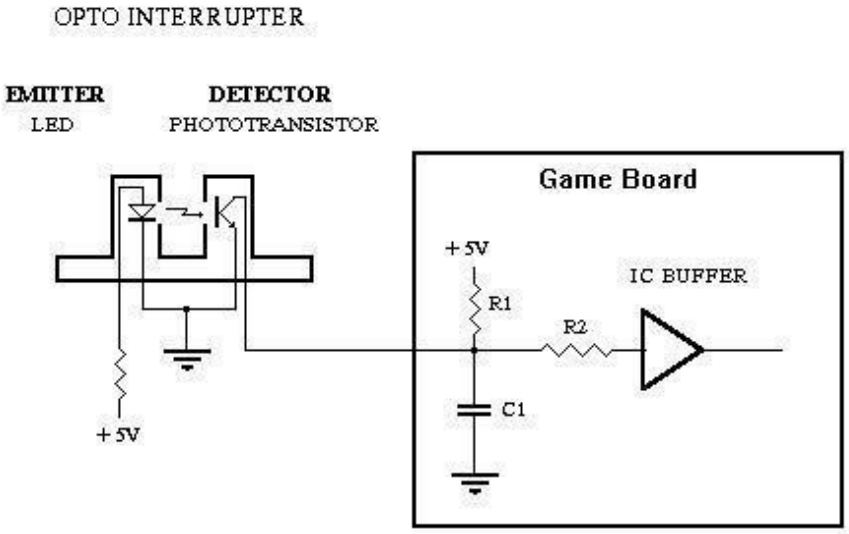
Component Introduction

Opto Interrupter Sensor:

Opto Interrupters are commonly used in many arcade games e.g. steering assembly in

Older driving games, scoring switches in Whack a Crock etc. Uninterrupted light beam will turn the phototransistor "ON" connecting the ground to the game board input. When the light beam is interrupted the phototransistor turns "OFF", the ground is disconnected from the input and the pull-up resistor R1 forces the input to go "HIGH"(5V level).

Principle



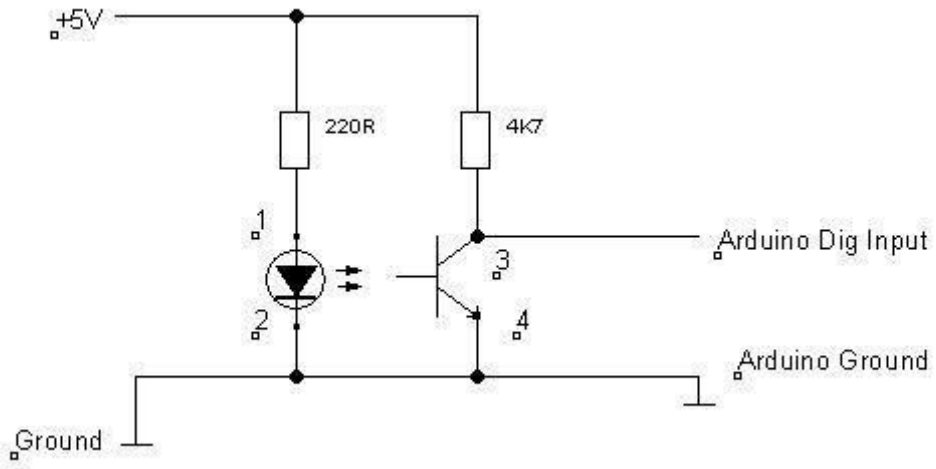
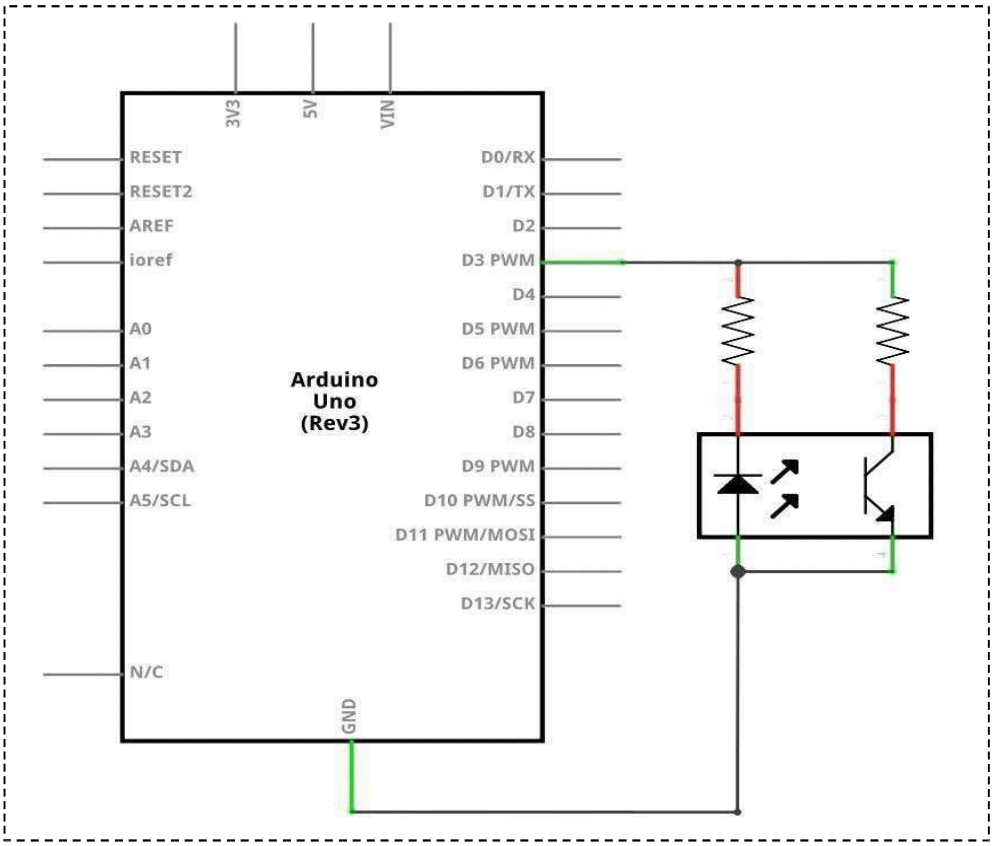


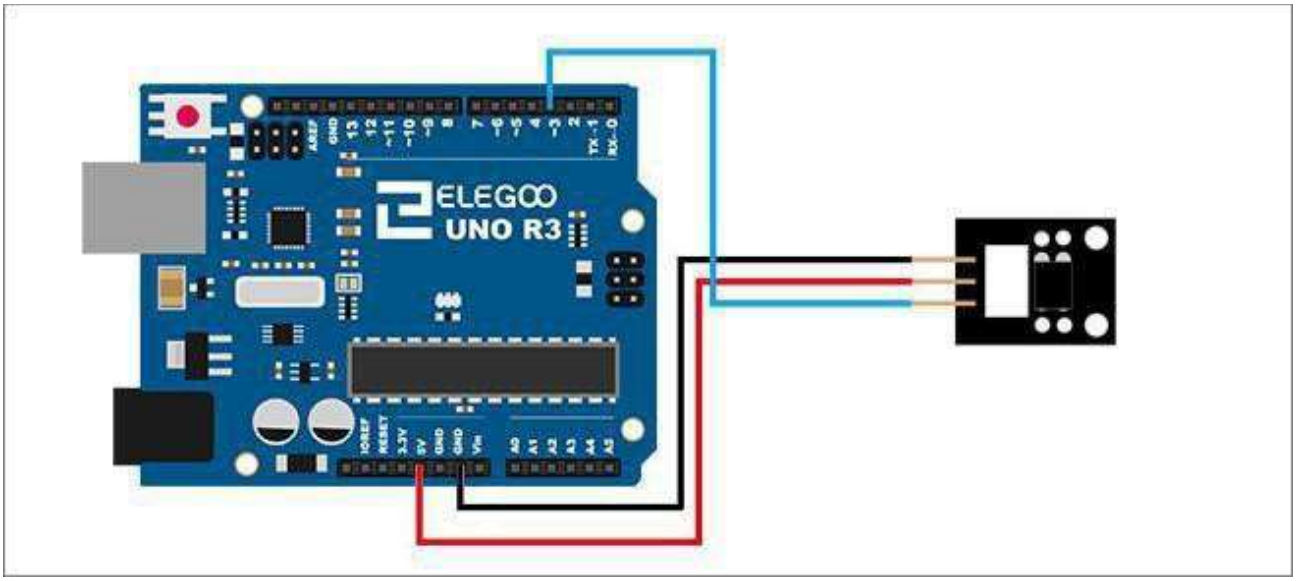
Photo-interrupter module and number 13 port have the built-in LED simple circuit. To produce a switch flasher, we can use connect the digital port 13 to the built-in LED and connect the Photo-interrupter MODULE S port to number 3 port of Elegoo Uno board. When the switch sensing, LED twinkle light to the switch signal.

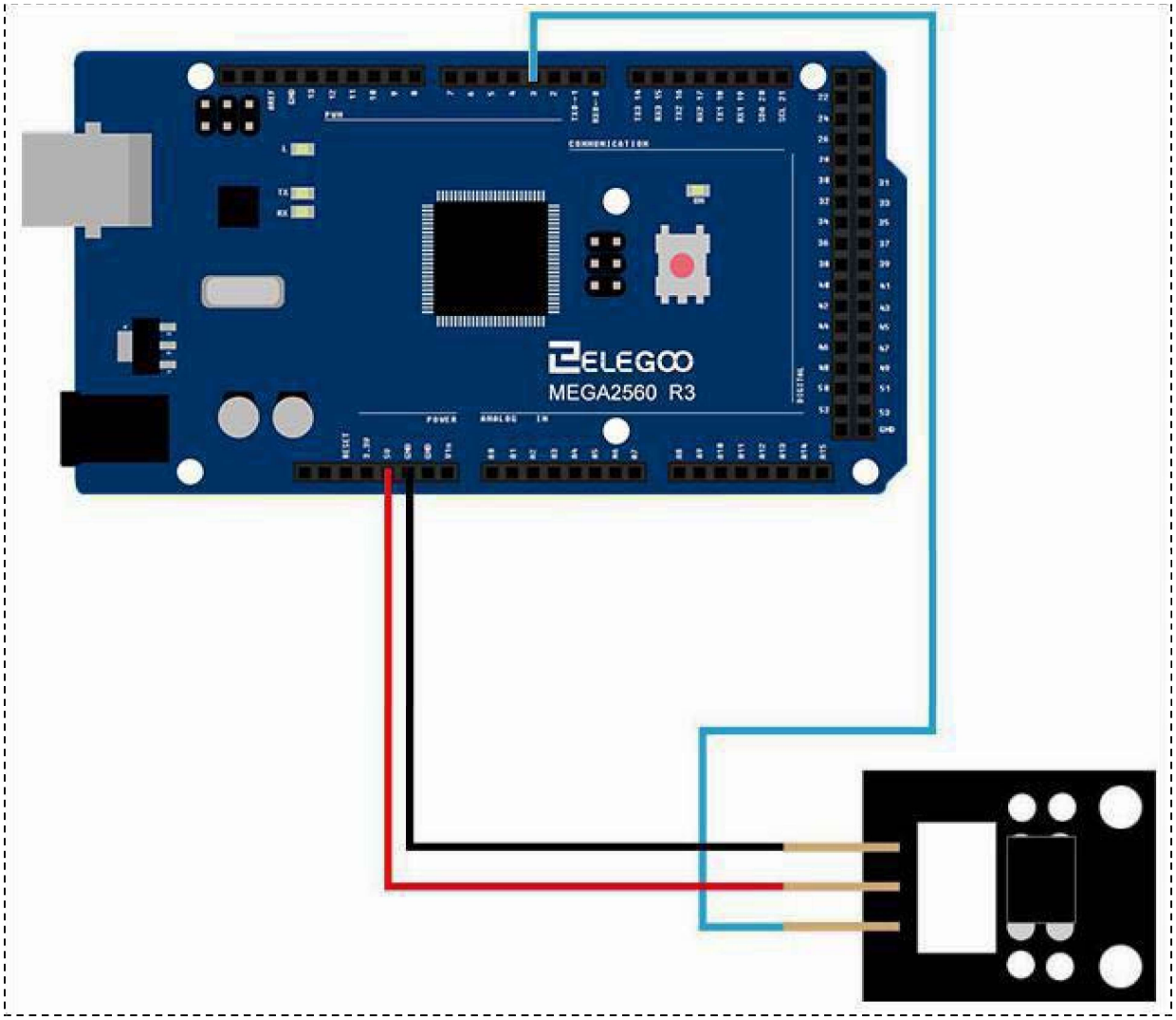
Connection

Schematic



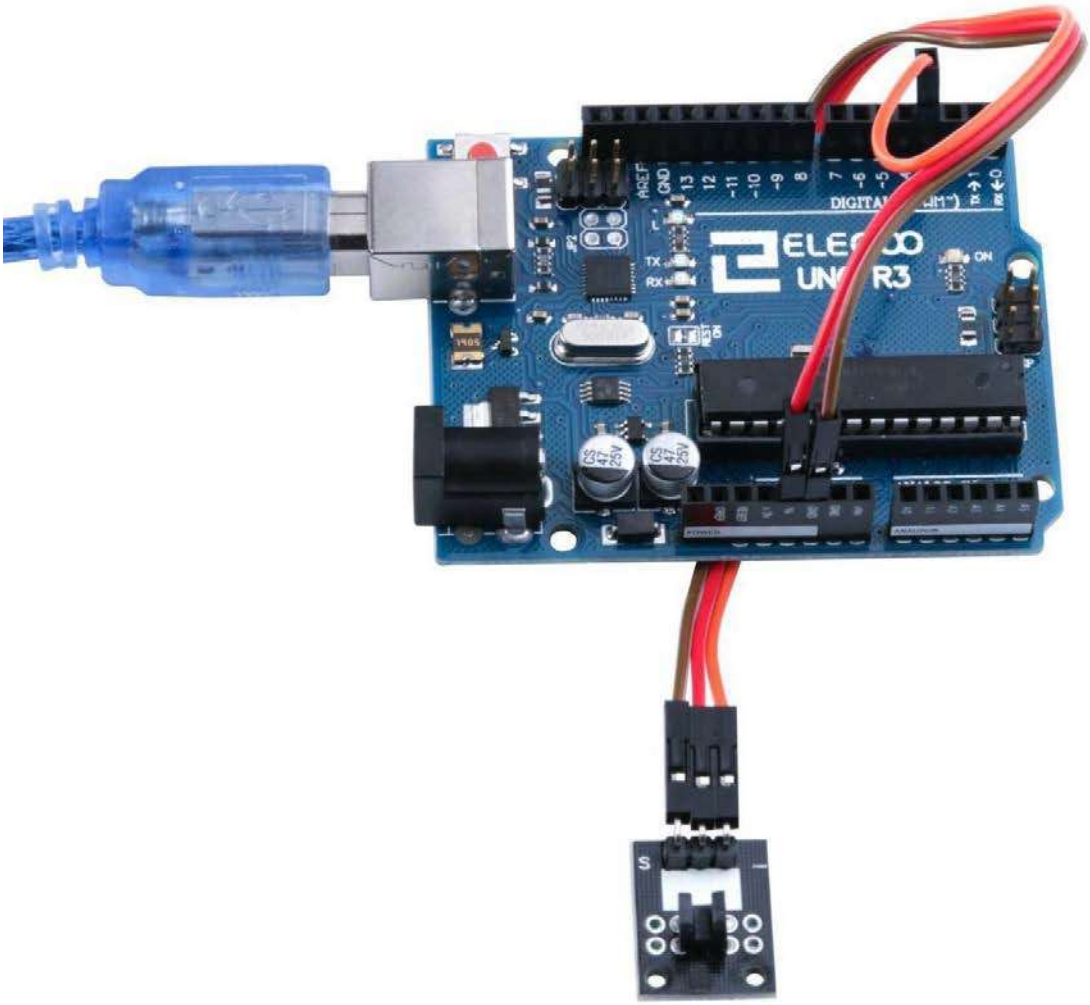
Wiring diagram





Result

After we connect the circuit as the picture, we upload the program, we sensing the opto Interrupter, the new can see the LED 13 light up and light off.


AREF
GND
13
12
~11
~10
~9
8
7
~6
~5
TX
RX
ON
R3
S