Infrared receiver + NEC Coding remote control

Overview

In this project we will use an infrared receiver and remote control to turn two LEDs on and off.

Materials

Arduino Uno x 1
Infrared receiver x 1
5mm red LED light x 1
5mm green LED light x 1
NEC remote control x 1
220 Ohm resistor x 2
Breadboard x 1
DuPont wires

Product description

Product Description

The Infrared wireless remote control system consists of the Mini thin infrared remote control and 38KHz infrared receiver module, The Mini Infrared remote control has 17 function keys and works up to a distance up to 8 meters. It is ideal for indoor control of various devices. The Infrared receiver module can receive the standard 38KHz modulation of the remote control signal, and with some programming it can decode the signal from the remote control and can be used to produce a variety of remote control functions.

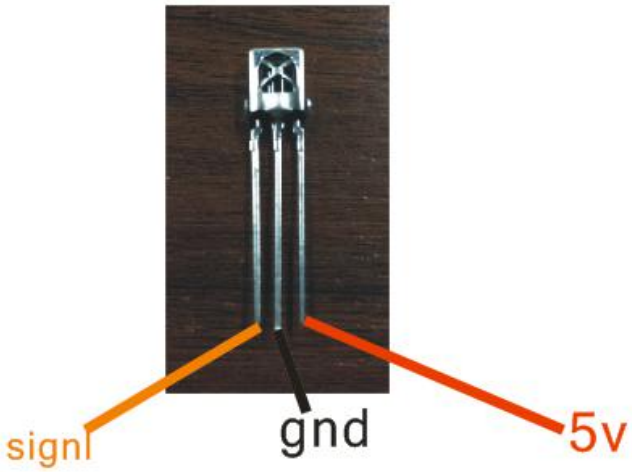
Technical Parameters:

Infrared receiver parameters:

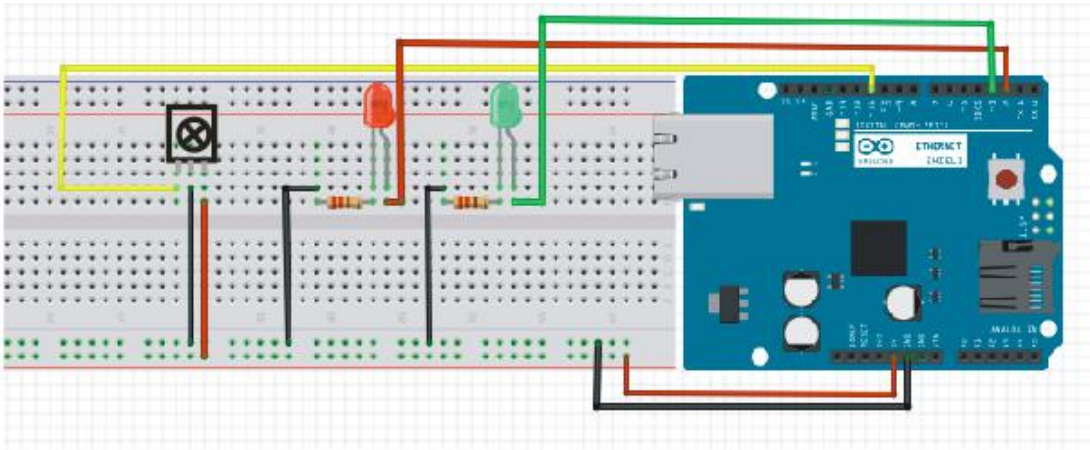
Strong anti-interference: epoxy package plus anti-jamming design
Wide working voltage: 2.7-5.5V
Low power consumption; wide angle; long distance reception
Output match TTL;
CMOS level; active low

Infrared remote control parameters:
CR2025 green button battery, capacity 160mah
Range: 8m (dependant on the surrounding environment, receiver sensitivity and other factors)
Effective angle: 60 degrees
Surface material: 0.125mmPET, effective life of 20,000 uses.
High quality and stable
Quiescent current 3-5uA, dynamic current 3-5mA.

Infrared receiver pin layout



Wiring Diagram



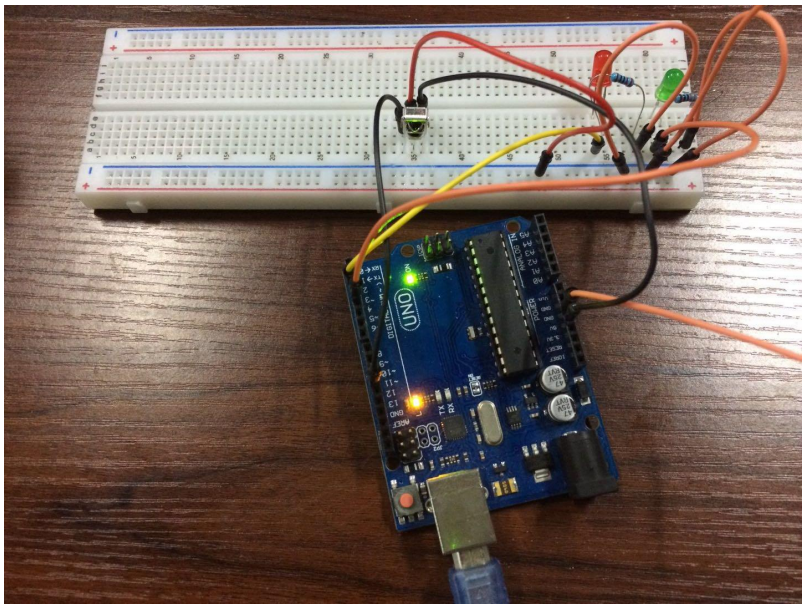
Sample code:

```
#include <IRremote.h>

int RECV_PIN = 11;

IRrecv irrecv(RECV_PIN);

decode_results results;
int a=1;
int b=1;

void setup()
{pinMode(2,OUTPUT);
pinMode(3,OUTPUT);
   Serial.begin(9600);
   irrecv.enableIRIn(); // Start the receiver
}

void loop() {
   if (irrecv.decode(&results)) {
      switch(results.value)
      {
      case 0xFF30CF:digitalWrite(2,a);a=!a;break;
      case 0xFF18E7:digitalWrite(3,b);b=!b;break;
      }
      irrecv.resume(); // Receive the next value
   }
}
```

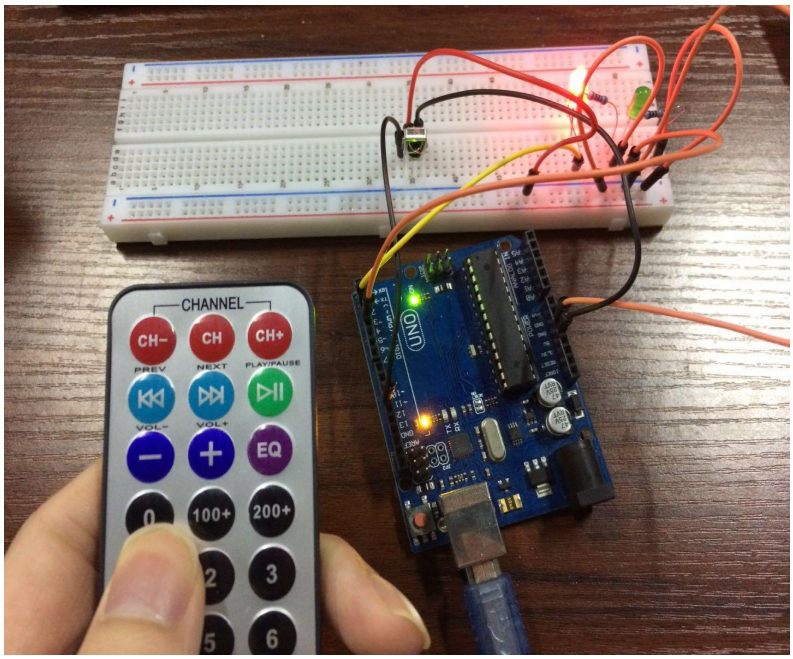
Results

The project uses button 1 and 2 of remote control to control the red LED and green led to turn on and off.
We will use the red LED in the demonstration (it's the same mechanism with the green LED by pressing key 2)

The red light is off before pressing key 1, as shown below:



The red LED turns on when you press key 1, as shown as below:



The red LED turns off when you press key 1 again.