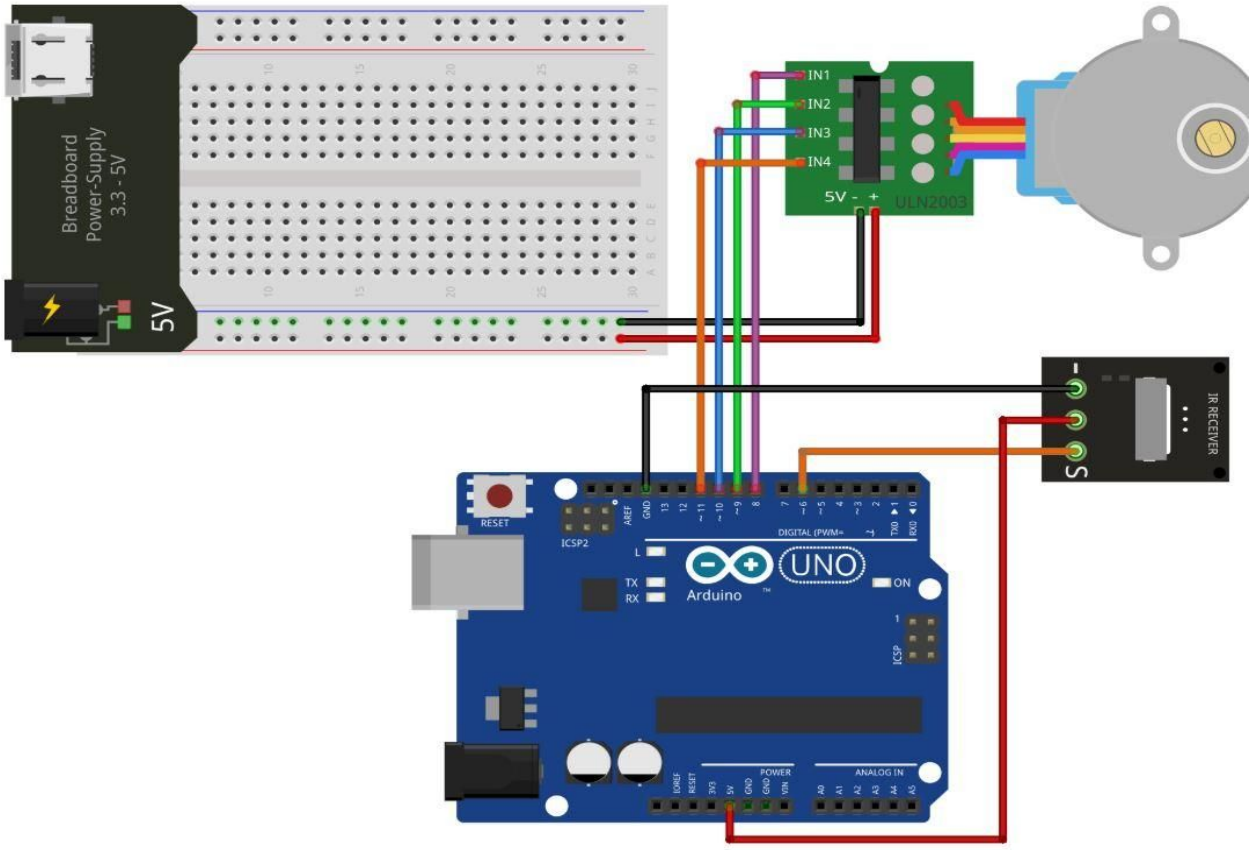
Exercise 6: Step motor with remote control

A *step motor* (or *stepper motor)* is an electric motor that divides a full circular rotation into a number of equal parts, or *steps*, and rotates according to the number of steps you program. In this exercise, you'll program a step motor to respond to inputs from a bluetooth remote control. This is the same technology that powers garage-door openers, camera lenses, and automated curtains.

Step 1: Assemble the Arduino and breadboard.



Parts needed:

Arduino board

Bread board

1 IR receiver

1 step motor

1 motor driver

9 jumper wires

Step 2: Program the Arduino.

REMOTE_STEP | Arduino 1.8.8 (Windows Store 1.8.19.0)

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REMOTE_STEP §

```
#include "Stepper.h"
#include "IRremote.h"


#define STEPS  32                                   /*----- Variables, Pins -----*/
int  Steps2Take;                                    // Number of steps per revolution of Internal shaft
int receiver = 6;                                       // 2048 = 1 Revolution
                                                    // Signal Pin of IR receiver to Arduino Digital Pin 6

                                                        /*-----( Declare objects )-----*/
                                                     // Setup of proper sequencing for Motor Driver Pins
                                                    // In1, In2, In3, In4 in the sequence 1-3-2-4
Stepper small_stepper(STEPS, 8, 10, 9, 11);
IRrecv irrecv(receiver);                                // create instance of 'irrecv'
decode_results results;                                // create instance of 'decode_results'
void setup()
{
  irrecv.enableIRIn();                                  // Start the receiver
}
void loop()
{
if (irrecv.decode(&results))                           // have we received an IR signal?
{
    switch(results.value)
    {
      case 0x3D9AE3F7: // 2 button pressed
                      small_stepper.setSpeed(500);                    //Max seems to be 700
                      Steps2Take  =  2048;                  // Rotate CW
                      small_stepper.step(Steps2Take);
                      delay(2000);
                      break;

      case 0x6182021B:                                      // 3 button pressed
                      small_stepper.setSpeed(500);
                      Steps2Take  =  -2048;                  // Rotate CCW
                      small_stepper.step(Steps2Take);
                      delay(2000);
                      break;
                      }
    irrecv.resume();                                        // receive the next value
 } }                                                           /* --end main loop -- */
```