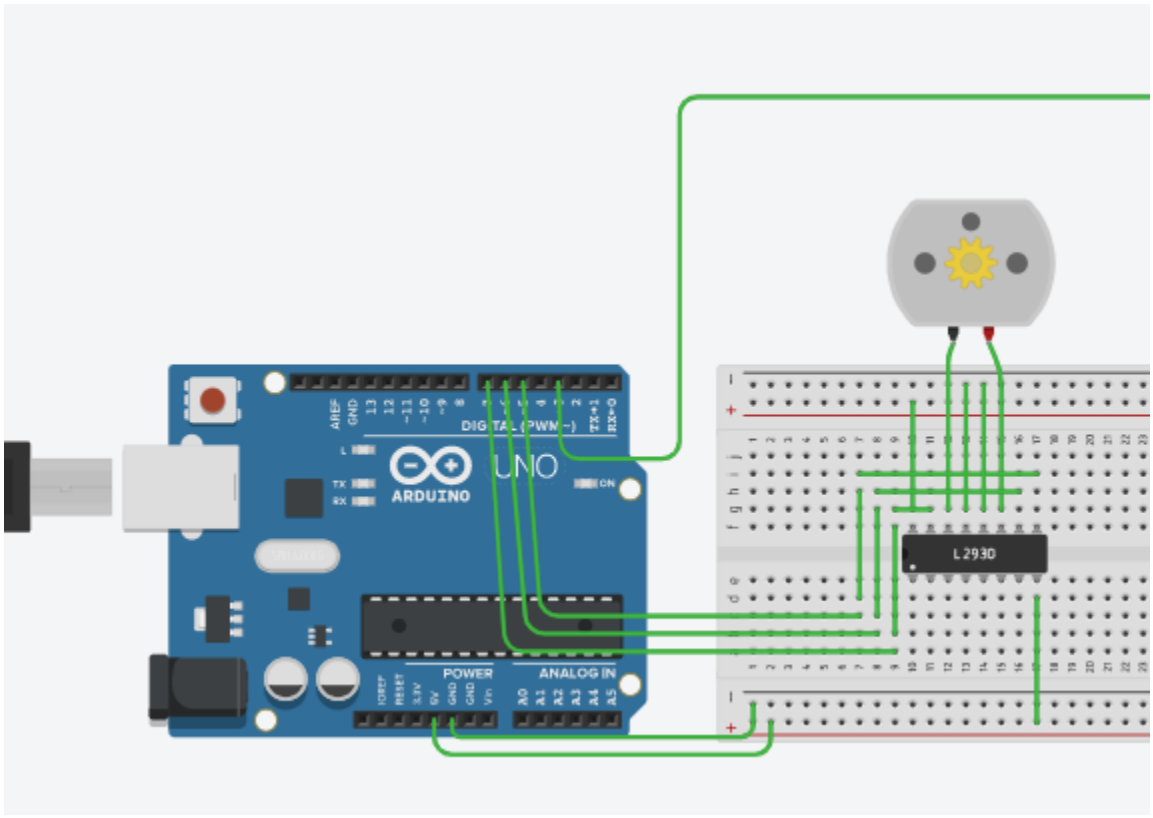


Achievements and Learnings

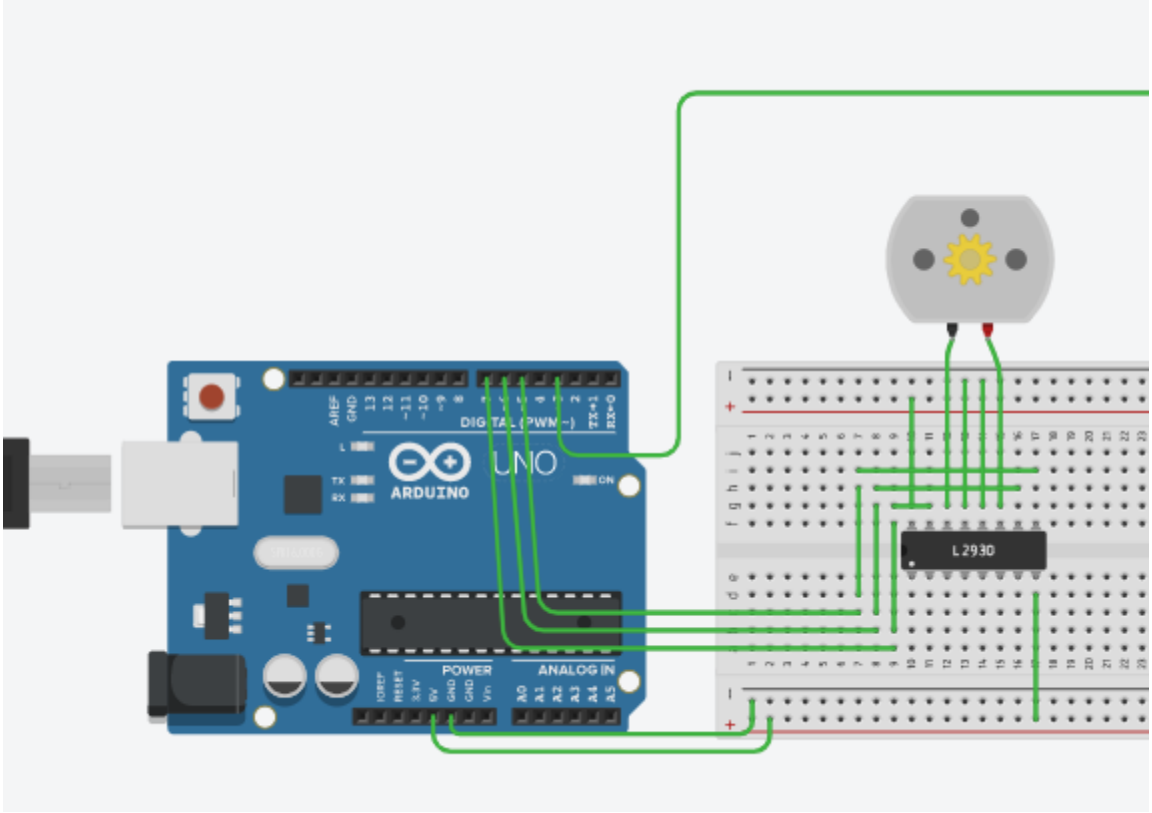
1. Learn about arduino and its coding.
2. Connection and coding of Keypad 4*4
3. How to use switch cases for ir remote conditions.

Revising the Steps

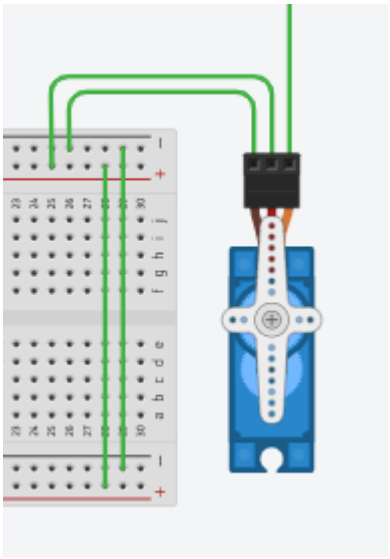
Step 1. Take electronics component from component list of tinker cad.

Name	Quantity	Component
U1	1	Arduino Uno R3
U2	1	IR sensor
U4	1	H-bridge Motor Driver
M1	1	DC Motor
D1	1	LED RGB
SERVO1	1	Micro Servo

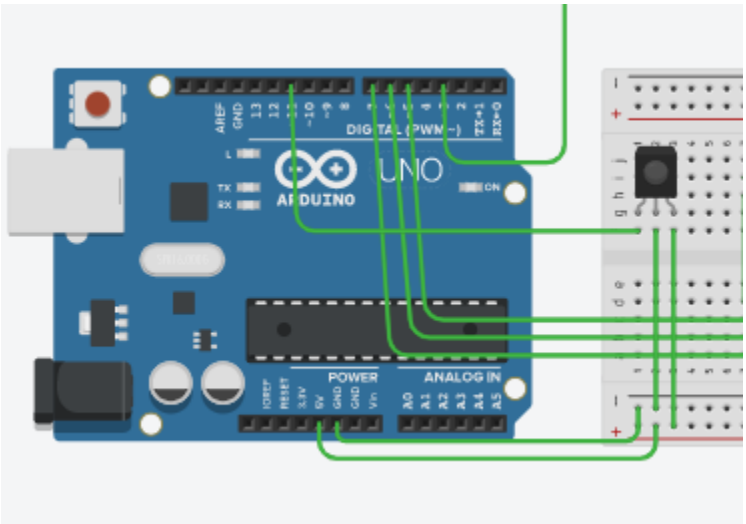
Step 2. Connect L293d and Dc motor with arduino uno.



Step 3. Now Connect one servo motor with an Arduino pwm pin.



Step 4. Connect IR receiver sensor with arduino uno digital pin.



Coding Steps -

Step 1. Import irremote library and initialize all variables for IR receiver sensor, and motor and speed pins.

```
#include <IRremote.h>


IRrecv rc(11);
decode_results results;
    int speed_pin = 5;
    int speed = 100;
    int M1A_pin = 7;
    int M1B_pin = 6;
```

Step 2. Define all connected pins in void setup.

```
void setup()
{

    Serial.begin(9600);
    rc.enableIRIn();

    pinMode(M1A_pin,OUTPUT);
    pinMode(M1B_pin,OUTPUT);
}
```

Step 3. Take condition for ir receiving values.

```
void loop()
{
  if (rc.decode(&results))
  {
```

Step 4. Define function for start dc motor and speedup, speeddown.

```
void power()
{
  analogWrite(speed_pin,speed);
  digitalWrite(M1A_pin,HIGH);
  digitalWrite(M1B_pin,LOW);
}

void speedUp(){
    Serial.println("speedUp");
    speed+=10;
    if(speed>255) speed =255;
    analogWrite(speed_pin, speed);
}

void speedDown(){
    //Serial.println("speedDown");
    speed-=10;
    if(speed<0) speed =0;
    analogWrite(speed_pin, speed);
}
```

Step 5. Use the cases for power and speed(up/down) button.

```
switch(results.value)
{
  case 0xFD00FF://power
  power();
  break;


  case 0xFD807F://vol+
  speedUp();
  break;

     case 0xFD10EF://down arrow
       speedDown();
   } break ;
```

Coming Up Next

We will make security locker with help of keypad 4*4 pad and Dc motor .