Blink an LED code (Digital pins)

```
void setup( ) {
        pinMode(12 , OUTPUT); // Initialize digital pin to OUTPUT/INPUT
}
void loop( ) {
        digitalWrite(12 , HIGH); // LED ON
        delay(1000); // delay in milliseconds
        digitalWrite(12 , LOW); // LED OFF
        delay(1000);
}
```

Reading from LDR, LPG and IR sensor (Analog pins)

```
void setup( ) {
        pinMode(A1 , INPUT); // Initialize Analog pin to INPUT
        Serial.begin( 9600 ); // Initialize serial communication (Baud rate)
}
void loop( ) {
        int store = analogRead(A1); // Read values from pin A1
        Serial.println(store); // Print data on the Serial monitor
        delay(100); // delay in milliseconds
}
```

Ultrasonic sensor code

```
const int trigPin = 12;
const int echoPin = 11;
void setup() {
        pinMode(trigPin , OUTPUT); // Set trigger pin to OUTPUT
        pinMode(echoPin , INPUT);  // Set Echo pin to INPUT
        Serial.begin(9600);
}
void loop( ) {
        float duration,cm;
        digitalWrite(trigPin, LOW);
        delayMicroseconds(2);
        digitalWrite(trigPin, HIGH);
        delayMicroseconds(10);
        digitalWrite(trigPin, LOW);
        duration = pulseIn(echoPin, HIGH);
        cm = duration / 29 / 2;
        Serial.println(cm);
        delay(100);
}
```

LED, buzzer intensity variation code *(Works only on PWM (~) pins in arduino)*

```
void setup( ) {
        pinMode(9 , OUTPUT);
}
void loop( ) {
        analogWrite(9 , 255); // The 2nd parameter value can be varied from 0 - 255 (intensity)
        delay(1000);
        analogWrite(9, 120);
        delay(1000);
}
```

LM35 - Temperature sensor code

```
void setup( ) {
        pinMode(A2, INPUT);
        Serial.begin( 9600 );
}
void loop( ) {
        float temp = ( 5 * analogRead(A2) * 100.0) / 1023;
        Serial.println(temp);
        delay(1000);
}
```

Servo motor

```
#include  <Servo.h>
Servo myServo;
void setup( ) {
        myServo.attach(9); // Attach Servo to PWM pin
}
void loop( ) {
        myServo.write(60);  // Move servo motor to 60 degree)
}
```

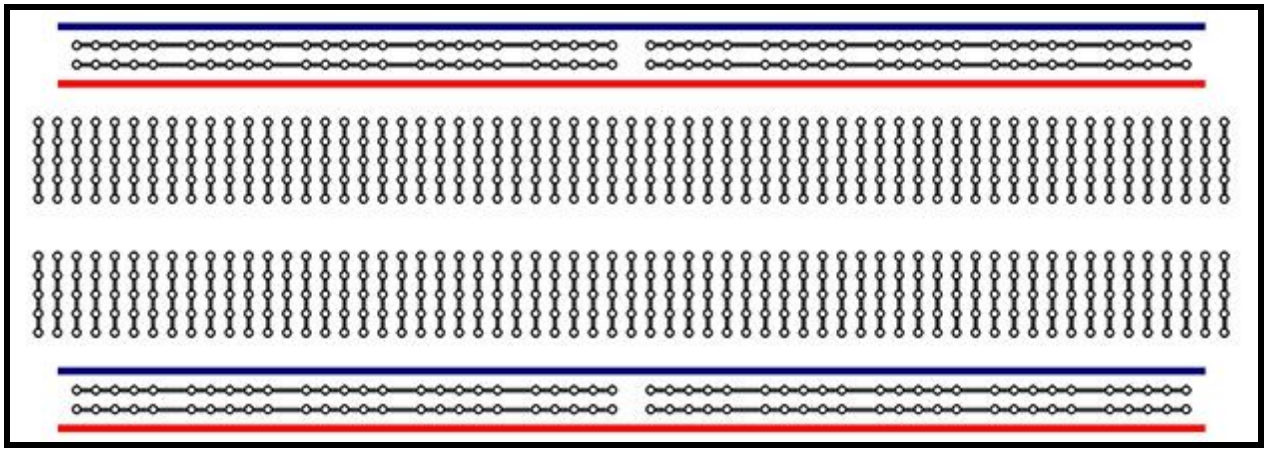
DC motor

```
void setup( ) {
        pinMode(9 , OUTPUT);   // EN pin to any PWM pin
        pinMode(10 , OUTPUT); // IN1 pin to digital Pin
        pinMode(11 , OUTPUT); // IN2 pin to digital Pin
}
void loop( ) {
        analogWrite(9 , 255); // Vary 255 between 0 - 255 to change speed of motor
        digitalWrite(10 , HIGH);  // Make motor rotate
        digitalWrite(11 , LOW);
        delay(1000);
        digitalWrite(10 , LOW);   // Rotate in reverse direction
        digitalWrite(11 , HIGH);
        delay(1000);              // Make both pins LOW to stop motor rotation
}
```

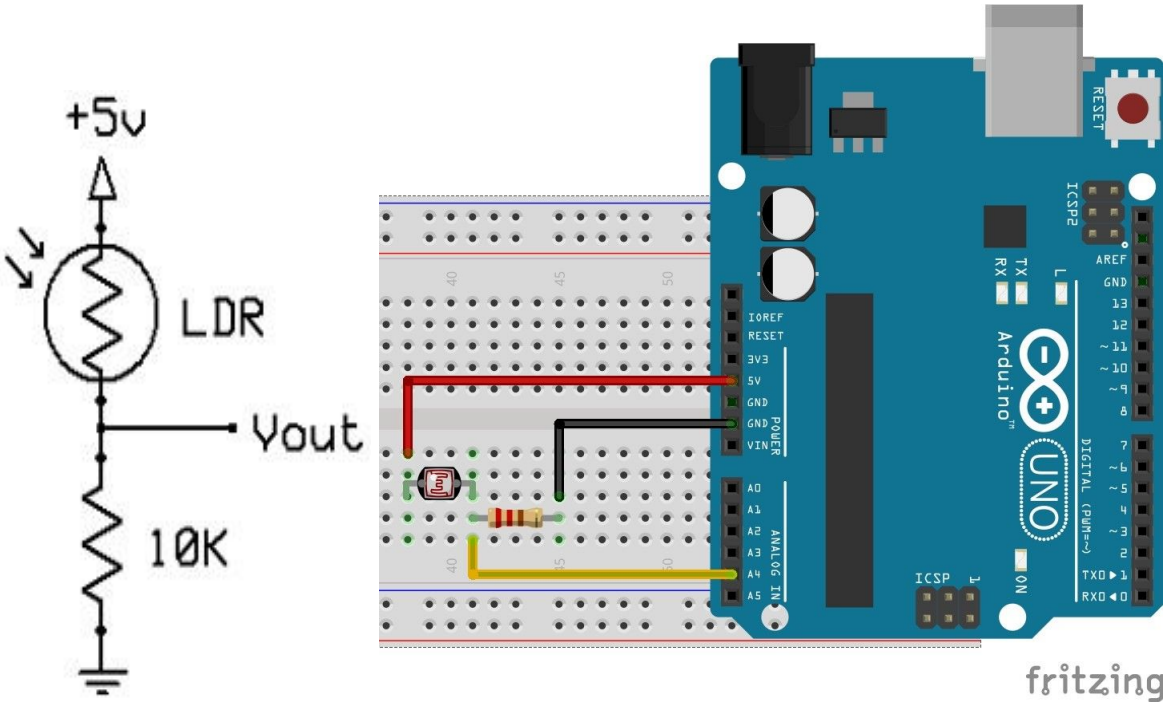
How to open Arduino IDE?

1. Start your netbook, login as Jed-i user (Password: jed-i).
2. Open the terminal with Ctrl + Alt + T
3. Type the command: sh ard.sh
4. Type the code (given in next page). It should take you a few minutes.
5. Load the code into the Arduino with Ctrl + U

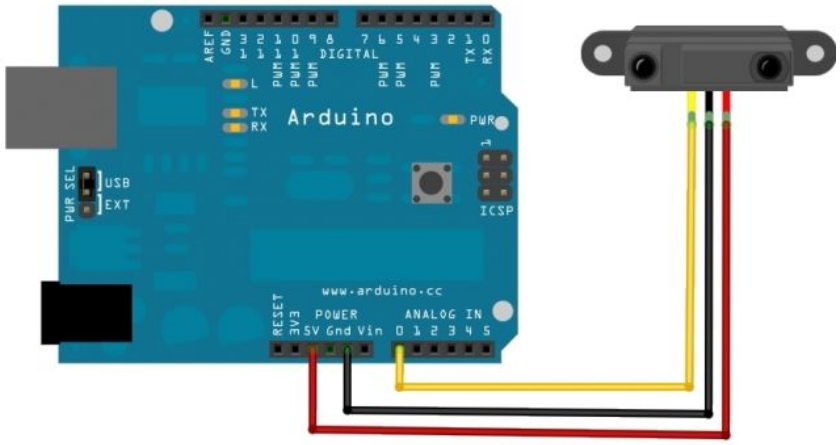
Breadboard connections



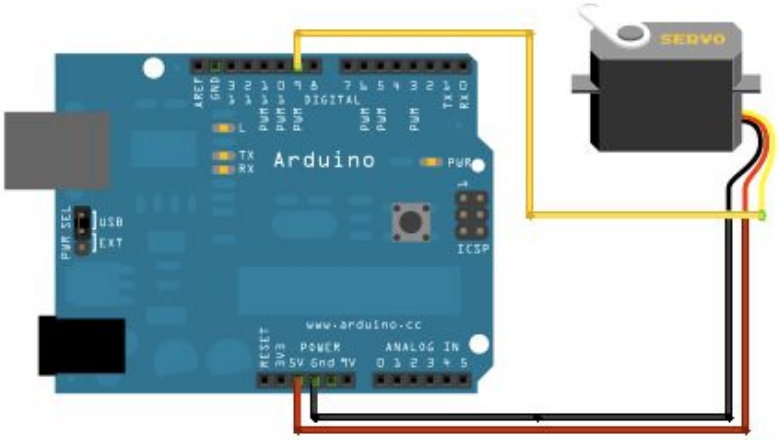
LDR to Arduino connections



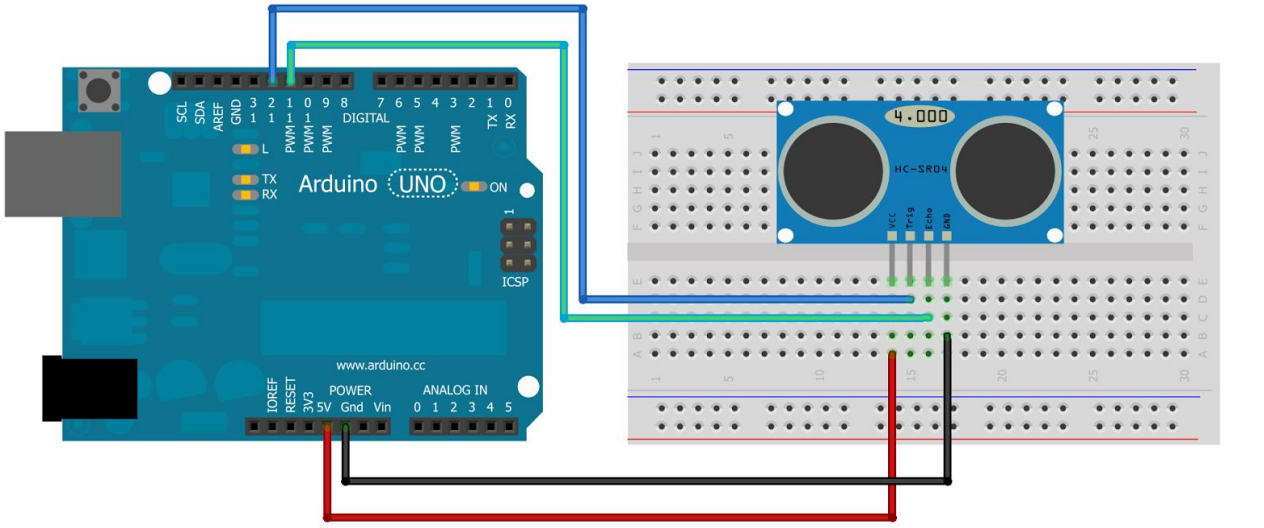
Sharp IR sensor connection



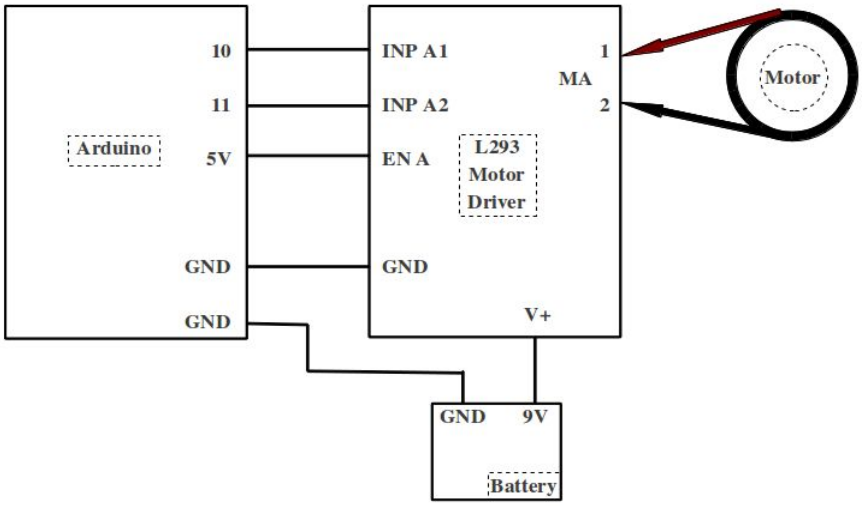
Servo motor connection



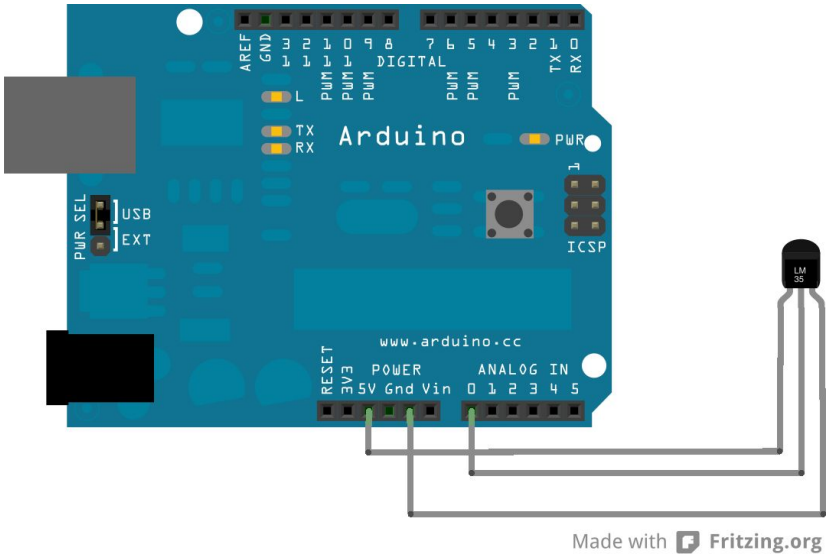
Ultrasonic sensor connection



DC motor connection



LM35 connection



Gas sensor connection