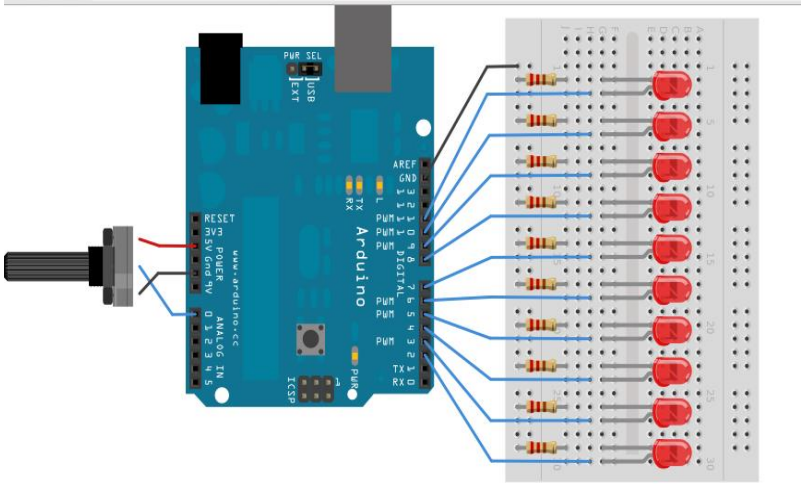
Diseña los siguientes circuitos en 123d circuits y programa el arduino para su funcionamiento:

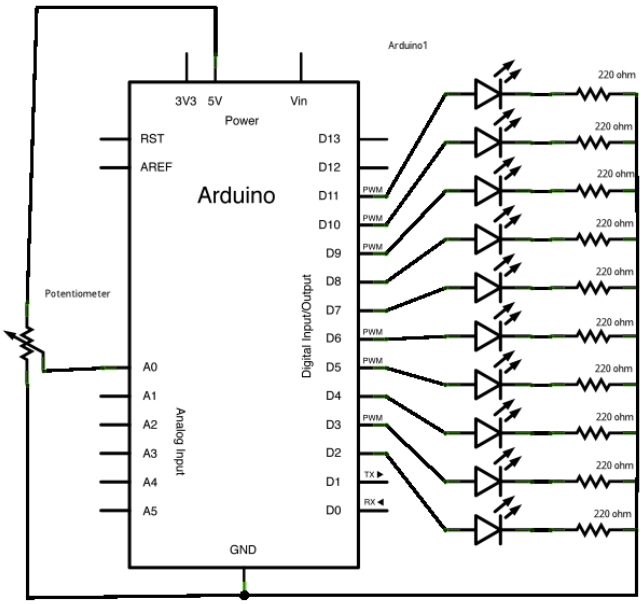
Circuito 1:



Hardware Required

- Arduino or Genuino Board
- LED bar graph display or 10 LEDs
- Potentiometer
- 10 220 ohm resistors
- hook-up wires
- breadboard

Schematic:

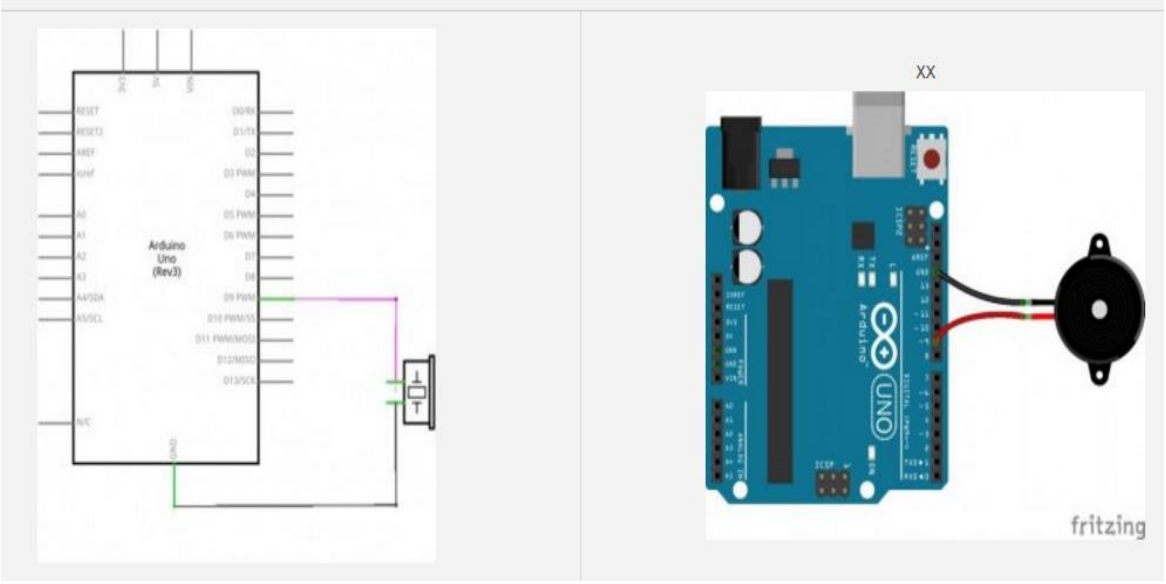


Code

```
// these constants won't change:
const int analogPin = A0;   // the pin that the potentiometer is attached to
const int ledCount = 10;    // the number of LEDs in the bar graph

int ledPins[] = {
  2, 3, 4, 5, 6, 7, 8, 9, 10, 11
};   // an array of pin numbers to which LEDs are attached


void setup() {
  // loop over the pin array and set them all to output:
  for (int thisLed = 0; thisLed < ledCount; thisLed++) {
    pinMode(ledPins[thisLed], OUTPUT);
  }
}

void loop() {
  // read the potentiometer:
  int sensorReading = analogRead(analogPin);
  // map the result to a range from 0 to the number of LEDs:
  int ledLevel = map(sensorReading, 0, 1023, 0, ledCount);
```

```
  // loop over the LED array:
  for (int thisLed = 0; thisLed < ledCount; thisLed++) {
    // if the array element's index is less than ledLevel,
    // turn the pin for this element on:
    if (thisLed < ledLevel) {
      digitalWrite(ledPins[thisLed], HIGH);
    }
    // turn off all pins higher than the ledLevel:
    else {
      digitalWrite(ledPins[thisLed], LOW);
    }
  }
}
```

Circuito 2:



Hardware Required

- Arduino or Genuino Board
- Buzzer
- hook-up wires
- breadboard

Code

```
void beep(unsigned char pausa)
   {
       analogWrite(9, 20);
       delay(pausa);                // Espera
       analogWrite(9, 0);           // Apaga
       delay(pausa);                // Espera
   }
```

```
void setup()
   {
       pinMode(9, OUTPUT);
       beep(50);
       beep(50);
       beep(50);
       delay(1000);
   }
void loop()
  {    beep(200);
  }
```