Buzzer

Introduction

Some appliances often buzz when in an electric state , this is actually from a buzzer, and the annoying bell at school is but a larger buzzer. There are two kinds of buzzers. One is active buzzer, the other is passive buzzer. “active” and “passive” don’t mean the common power source, but a buzzer with or without internal oscillators. Active buzzer will buzz as long as you electricity it, but the frequency is fixed. Passive buzzer, buzzer without internal oscillators, will not buzz when electrified internal oscillators, it requires 2~5 kHz square wave to actuate, then wave forms in different frequency can buzz with corresponding sound.

Active buzzer

Passive buzzer

Experiment Purpose

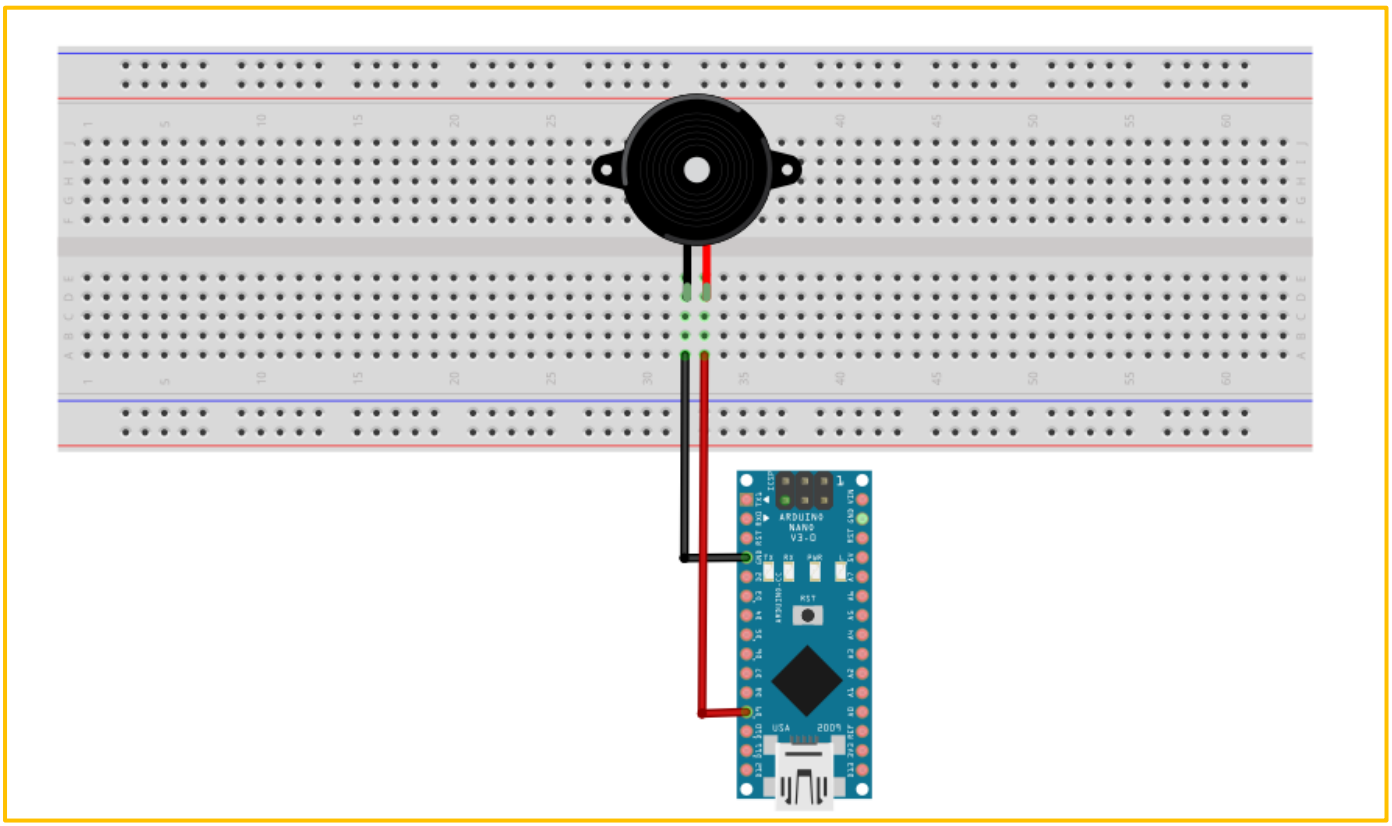
Arduino can be used to create a lot of interactive work, the most common and most commonly is the display of sound and light. We have been used LEDs in experiments before, now we drive buzzer to play sound of two frequencies. As long as the frequency matches the music score, we can hear wonderful music.

Component List

- Arduino Nano Mainboard
- Breadboard
- USB cable
- Active buzzer*1
- Several jumper wires

Wiring of Circuit

Arduino Nano	buzzer
9	+
GND	-



Notice that a buzzer has both a cathode and an anode. We can see the buzzer with two kinds of wiring, red and black, in the right physical diagram below. The connection of circuit and programming are quite simple, the program is similar to the former. Due to the control interface in the buzzer is also digital interface, high and low level from output will control the sound of the buzzer.

```
int buzzer=8;     // set buzzer out pin
void frequence_1(void)     // 1k HZ
{
   int i ;
   for(i=0;i<80;i++)
   {
      digitalWrite(buzzer,HIGH);
      delay(1);
      digitalWrite(buzzer,LOW);
      delay(1);
   }
}
void frequence_2(void)     // 500 HZ
{
   int i ;
   for(i=0;i<100;i++)
   {
      digitalWrite(buzzer,HIGH);
      delay(2);
      digitalWrite(buzzer,LOW);
      delay(2);
   }
}
void setup()
{
   pinMode(buzzer,OUTPUT);
}
void loop()
{
   frequence_1();
   delay(100);
   frequence_2();
}
```

Once the program is downloaded, we can hear the sound of two kinds of frequencies from the buzz.

Experiment Result