0515筆記_薛皓陽

Source Code

https://github.com/sun92122/NTNU-Arduino-2023-Spring/tree/main/0515

視覺暫留

藉由 LED 的閃爍判斷自己視覺暫留的時間（或稱臨界融合頻率） 上課的 24 位同學的數據如下，平均為 12.67 豪秒，標準差為 1.70 豪秒

HW01_code

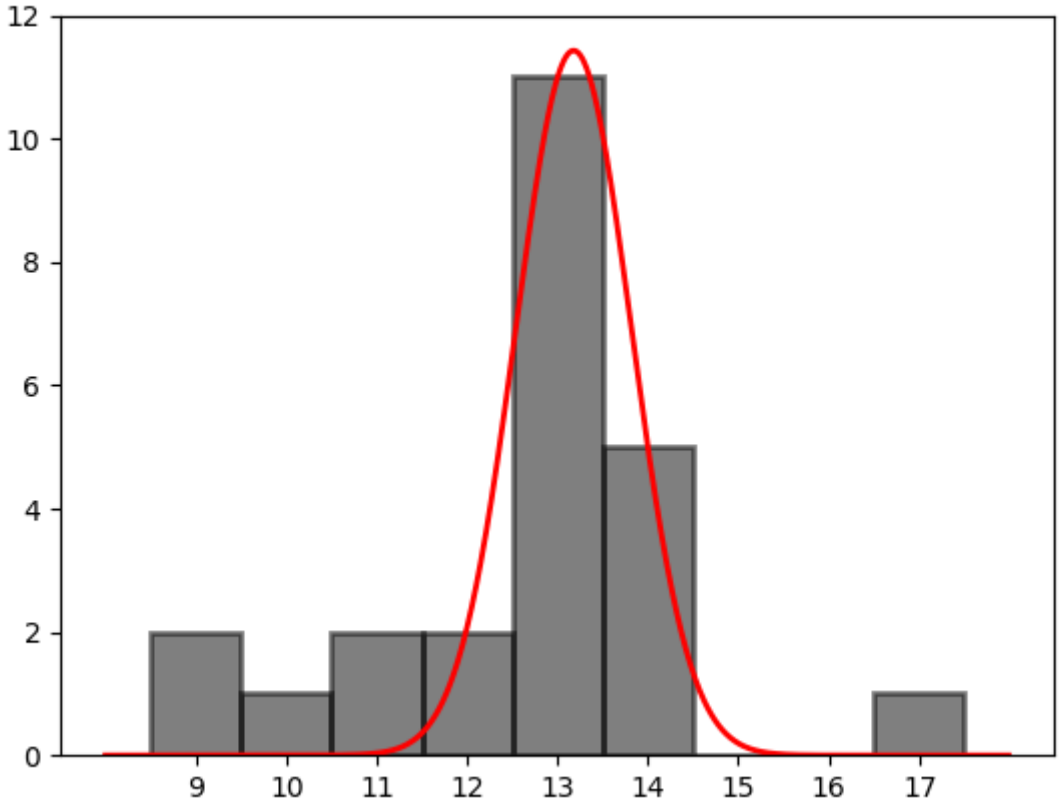
```
void setup()
{
  pinMode(LED_BUILTIN, OUTPUT);
}

void loop()
{
  digitalWrite(LED_BUILTIN, HIGH);
  delay(13);
  digitalWrite(LED_BUILTIN, LOW);
  delay(13);
}
```

全班同學視覺暫留時間數據（單位：豪秒）

第一排	第二排	第三排	第四排	第五排
X	9	X	X	X
13	14	X	14	13
14	11	X	13	X
X	12	13	13	13
X	10	11	X	X
X	9	X	13	X
X	13	13	12	17
X	13	X	13	14
X	14	X	X	X

全班同學視覺暫留時間數據統計（單位：豪秒）

時間	9	10	11	12	13	14	15	16	17
人數	2	1	2	2	11	5	0	0	1



$y = 11.43042 \exp(-\dfrac{1}{2}(\dfrac{(x - 13.17844) ^ 2}{0.6381478 ^ 2}))$

蜂鳴器

將 LED 的輸出改接到蜂鳴器，可以發出不同頻率的聲音 每秒閃爍 100 次的光多數人已經無法分辨，但是每秒跳動數千次的聲音多數人還是可以分辨 即人體各感官的解析度不同

小星星_code

https://github.com/sun92122/NTNU-Arduino-2023-Spring/blob/main/0515/MyTone.ino

```
#define C 262
#define D 294
#define E 330
#define F 349
#define G 392
#define A 440
#define B 494
#define BEAT 480

void setup()
```

```
{

}

void loop()
{
  noTone(8);

  tone(8, C, BEAT);
  delay(BEAT);
  tone(8, C, BEAT);
  delay(BEAT);
  tone(8, G, BEAT);
  delay(BEAT);
  tone(8, G, BEAT);
  delay(BEAT);
  tone(8, A, BEAT);
  delay(BEAT);
  tone(8, A, BEAT);
  delay(BEAT);
  tone(8, G, BEAT*2);
  delay(BEAT*2);
  tone(8, F, BEAT);
  delay(BEAT);
  tone(8, F, BEAT);
  delay(BEAT);
  tone(8, E, BEAT);
  delay(BEAT);
  tone(8, E, BEAT);
  delay(BEAT);
  tone(8, D, BEAT);
  delay(BEAT);
  tone(8, D, BEAT);
  delay(BEAT);
  tone(8, C, BEAT*2);
  delay(BEAT*2);
  tone(8, G, BEAT);
  delay(BEAT);
  tone(8, G, BEAT);
  delay(BEAT);
  tone(8, F, BEAT);
  delay(BEAT);
  tone(8, F, BEAT);
  delay(BEAT);
  tone(8, E, BEAT);
  delay(BEAT);
  tone(8, E, BEAT);
  delay(BEAT);
  tone(8, D, BEAT*2);
  delay(BEAT*2);
  tone(8, G, BEAT);
  delay(BEAT);
  tone(8, G, BEAT);
  delay(BEAT);
```

```
    tone(8, F, BEAT);
    delay(BEAT);
    tone(8, F, BEAT);
    delay(BEAT);
    tone(8, E, BEAT);
    delay(BEAT);
    tone(8, E, BEAT);
    delay(BEAT);
    tone(8, D, BEAT*2);
    delay(BEAT*2);
    tone(8, C, BEAT);
    delay(BEAT);
    tone(8, C, BEAT);
    delay(BEAT);
    tone(8, G, BEAT);
    delay(BEAT);
    tone(8, G, BEAT);
    delay(BEAT);
    tone(8, A, BEAT);
    delay(BEAT);
    tone(8, A, BEAT);
    delay(BEAT);
    tone(8, G, BEAT*2);
    delay(BEAT*2);
    tone(8, F, BEAT);
    delay(BEAT);
    tone(8, F, BEAT);
    delay(BEAT);
    tone(8, E, BEAT);
    delay(BEAT);
    tone(8, E, BEAT);
    delay(BEAT);
    tone(8, D, BEAT);
    delay(BEAT);
    tone(8, D, BEAT);
    delay(BEAT);
    tone(8, C, BEAT*2);
    delay(BEAT*2);
    delay(BEAT);
    delay(BEAT);
}
```

Song_code

https://github.com/sun92122/NTNU-Arduino-2023-Spring/blob/main/0515/NeverGonnaGiveYouUp.ino

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基本最小（BareMinimum）程式碼

https://github.com/sun92122/NTNU-Arduino-2023-Spring/blob/main/0515/Mysketch.ino

```

```

```
void setup()
{

}

void loop()
{

}
```