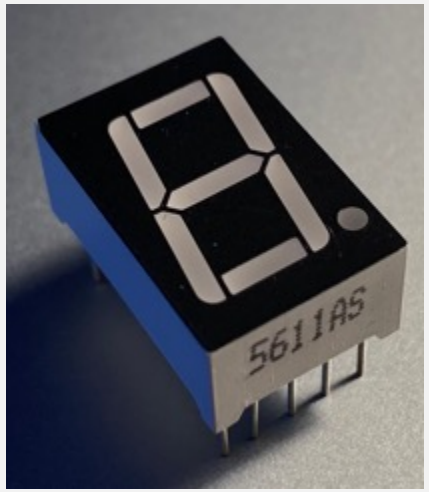
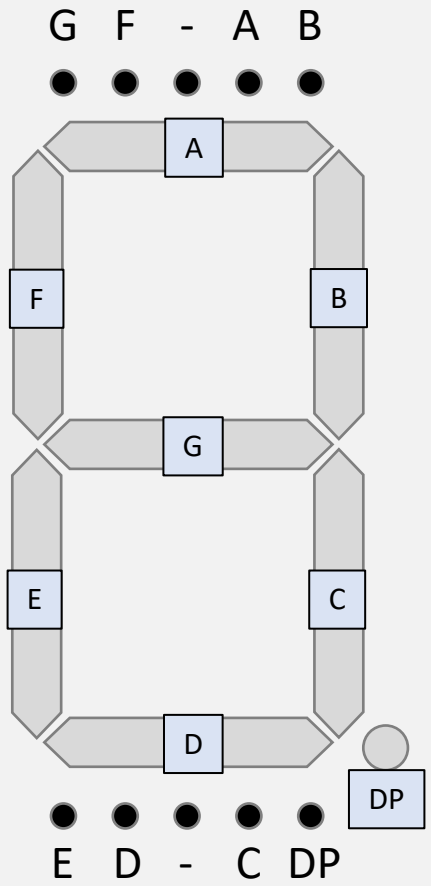
Afficheur 7 segments

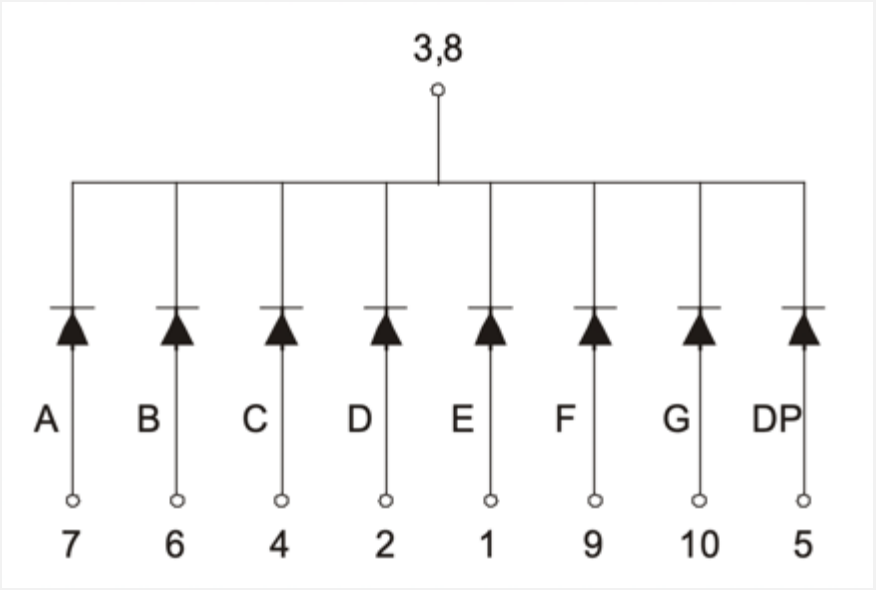
Objectifs

- Branchement de base d’un affichage 7 segments
- Programmation

7 segments à cathode commune – 5611AS

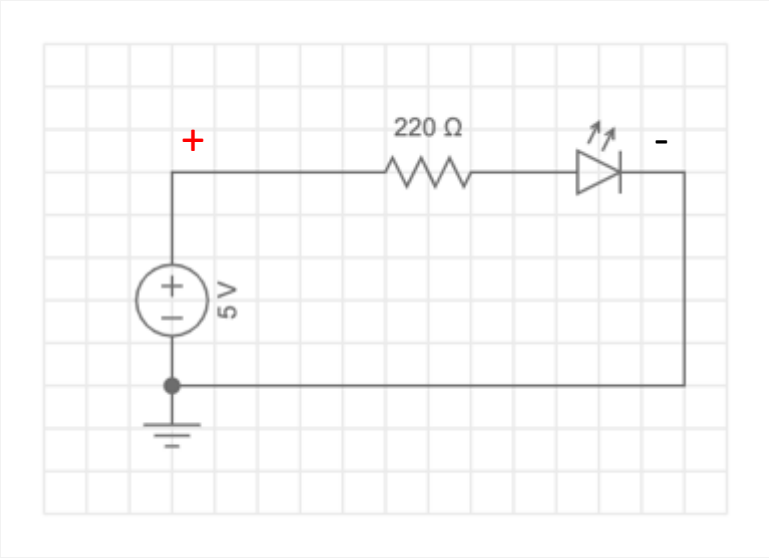


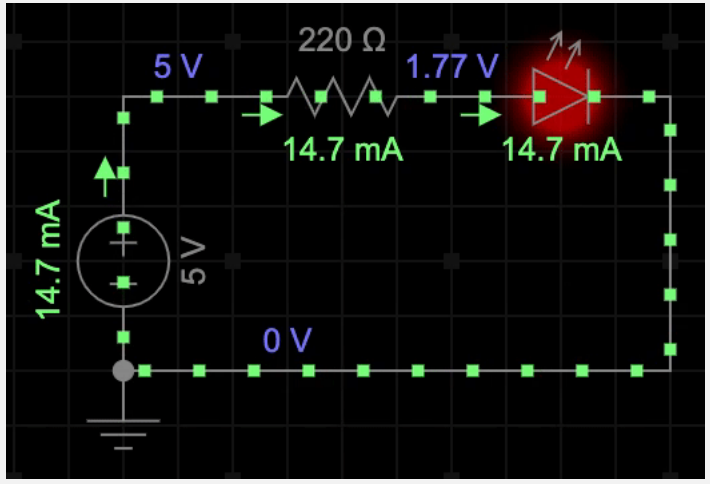




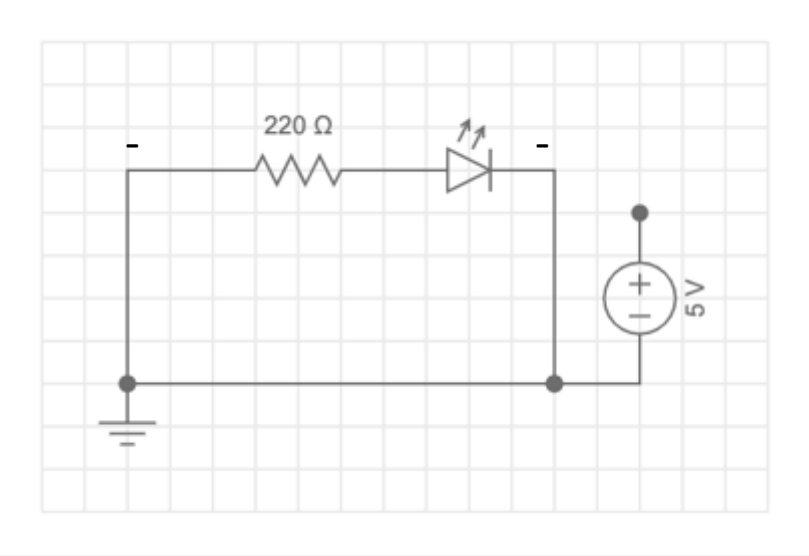
https://datasheetspdf.com/pdf-file/949036/G-NOR/GNS-5611AS/1

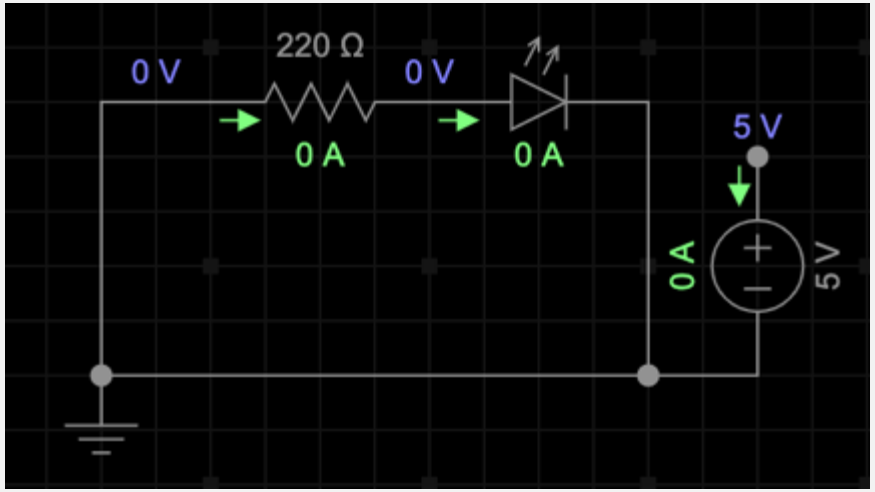
Allumer un segment - Équivalent à une DEL



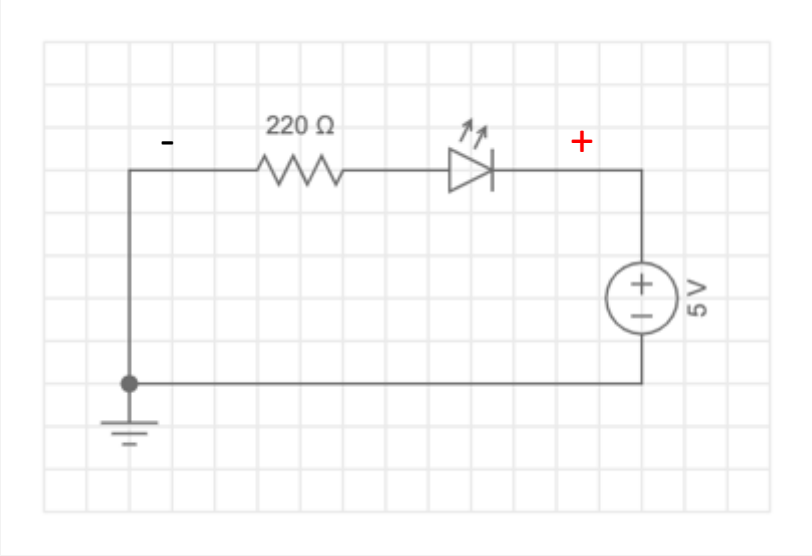


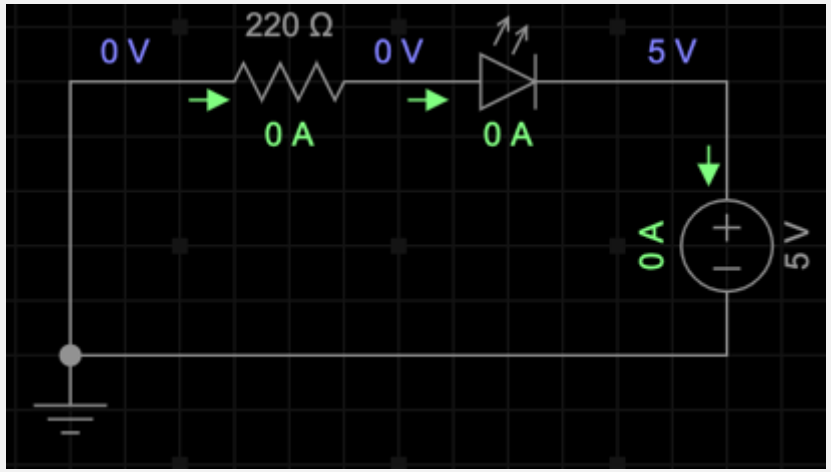
Segment éteint - Équivalent à une DEL



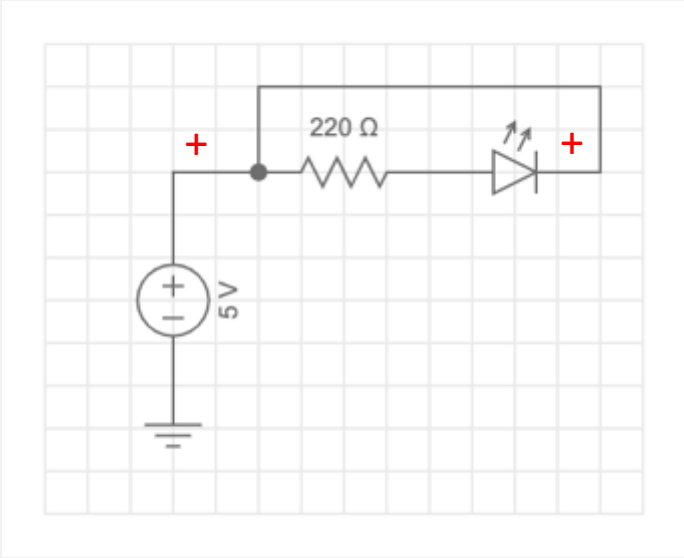


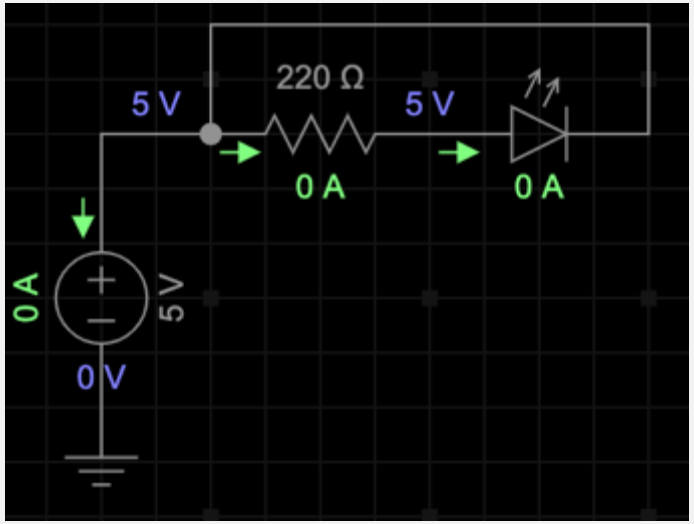
Digit éteint - Segment éteint - Équivalent à une DEL



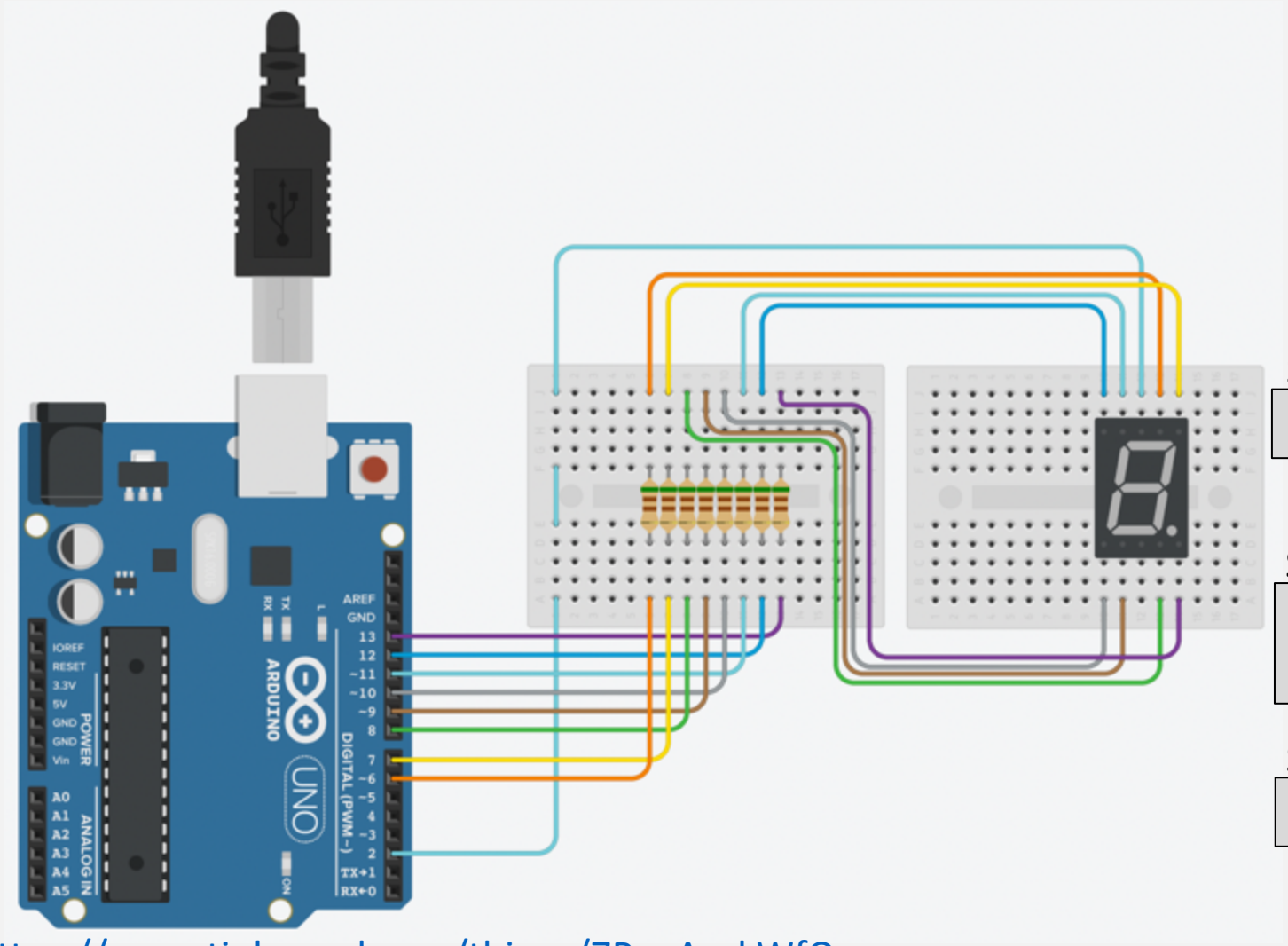


Digit éteint - Segment éteint - Équivalent à une DEL





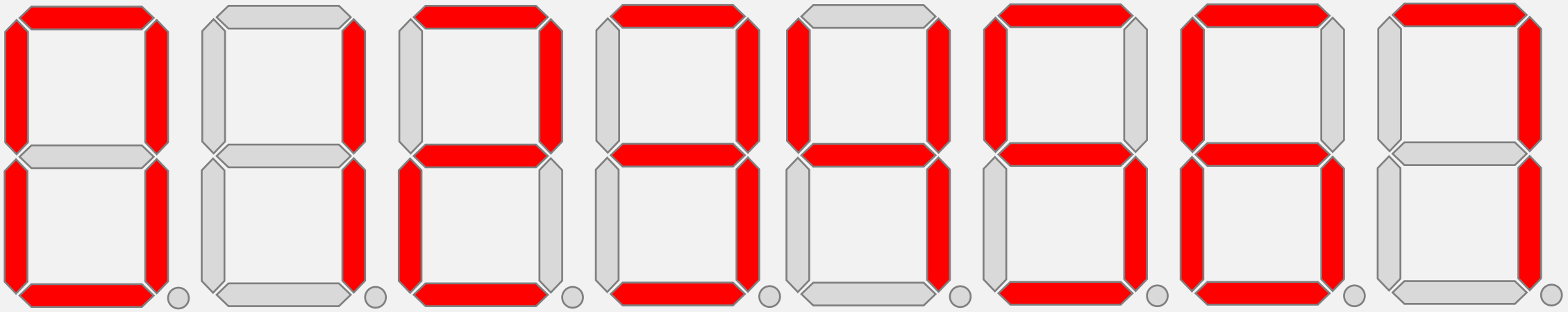
Programme de test

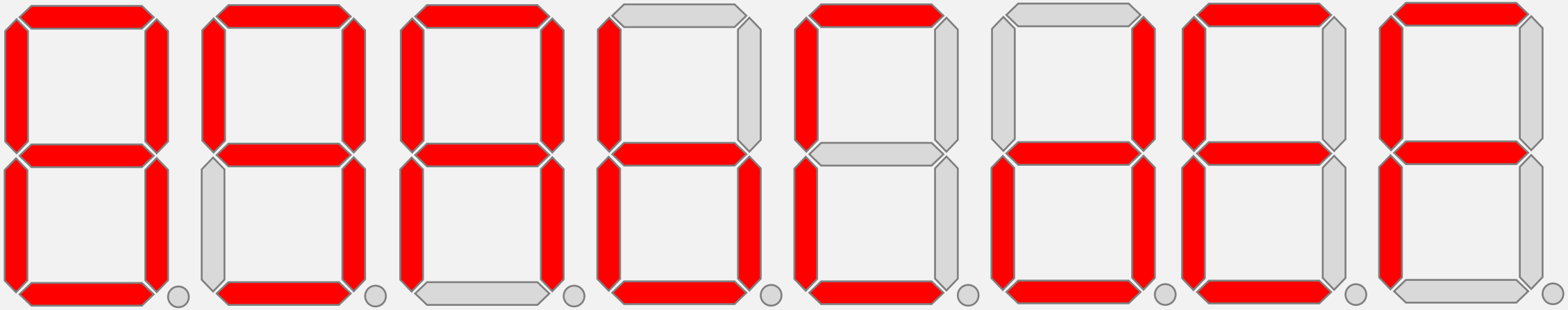



```
void reset();

int segmentCourant = 0;

void setup() {
  pinMode(2, OUTPUT);
  for (size_t pin = 6; pin <= 13; ++pin) {
    pinMode(pin, OUTPUT);
  }

  digitalWrite(2, HIGH);

  for (size_t pin = 6; pin <= 13; ++pin) {
    digitalWrite(pin, LOW);
  }
}

void loop() {
  digitalWrite(segmentCourant + 6, HIGH);
  digitalWrite(2, LOW);

  delay(500);

  digitalWrite(segmentCourant + 6, LOW);
  digitalWrite(2, HIGH);
  segmentCourant = (segmentCourant + 1) % 8;
}
```

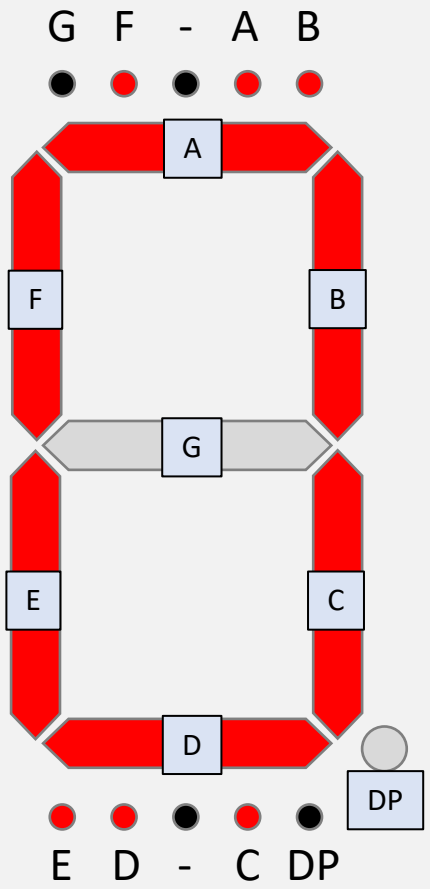
https://www.tinkercad.com/things/7PynAsakWfQ

Affichage des chiffres de 0 à F



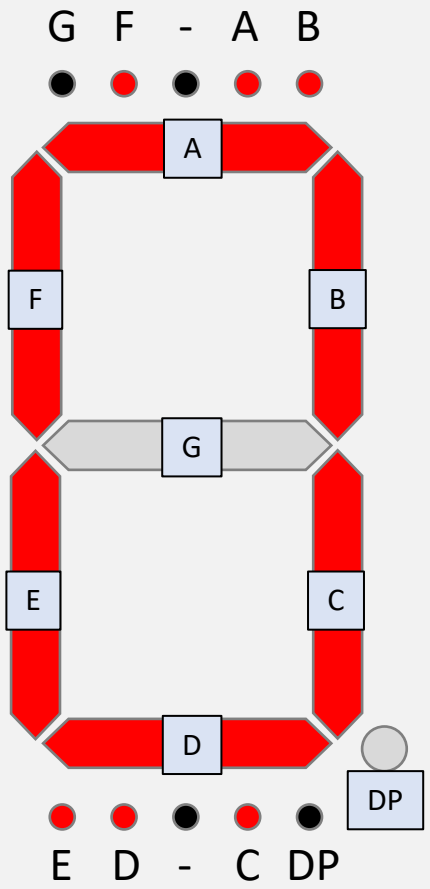


Représentation du 0



A	B	C	D	E	F	G	DP

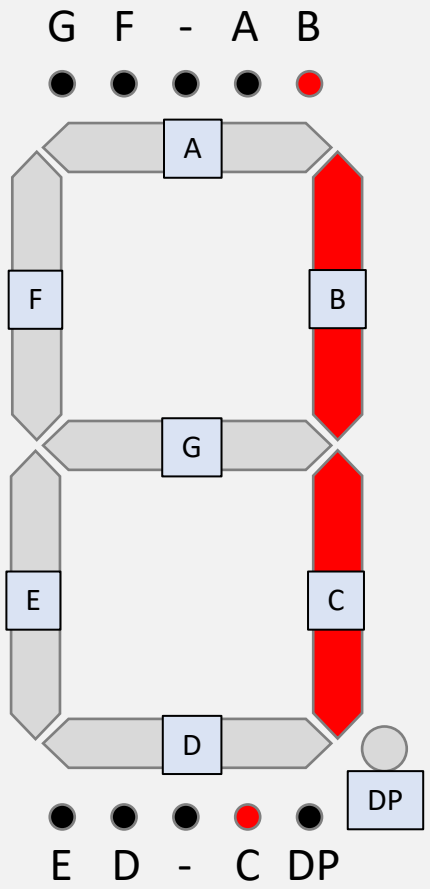
Représentation du 0



A	B	C	D	E	F	G	DP
1	1	1	1	1	1	0	0

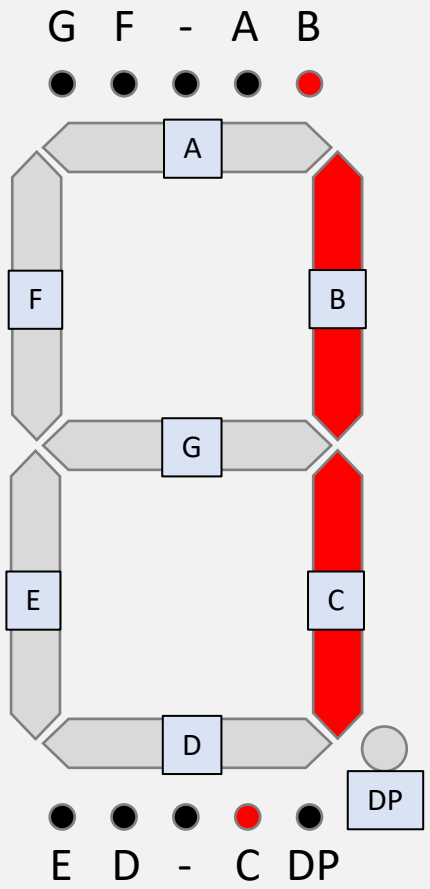
⇒ 0b11111100

Représentation du 1



A	B	C	D	E	F	G	DP

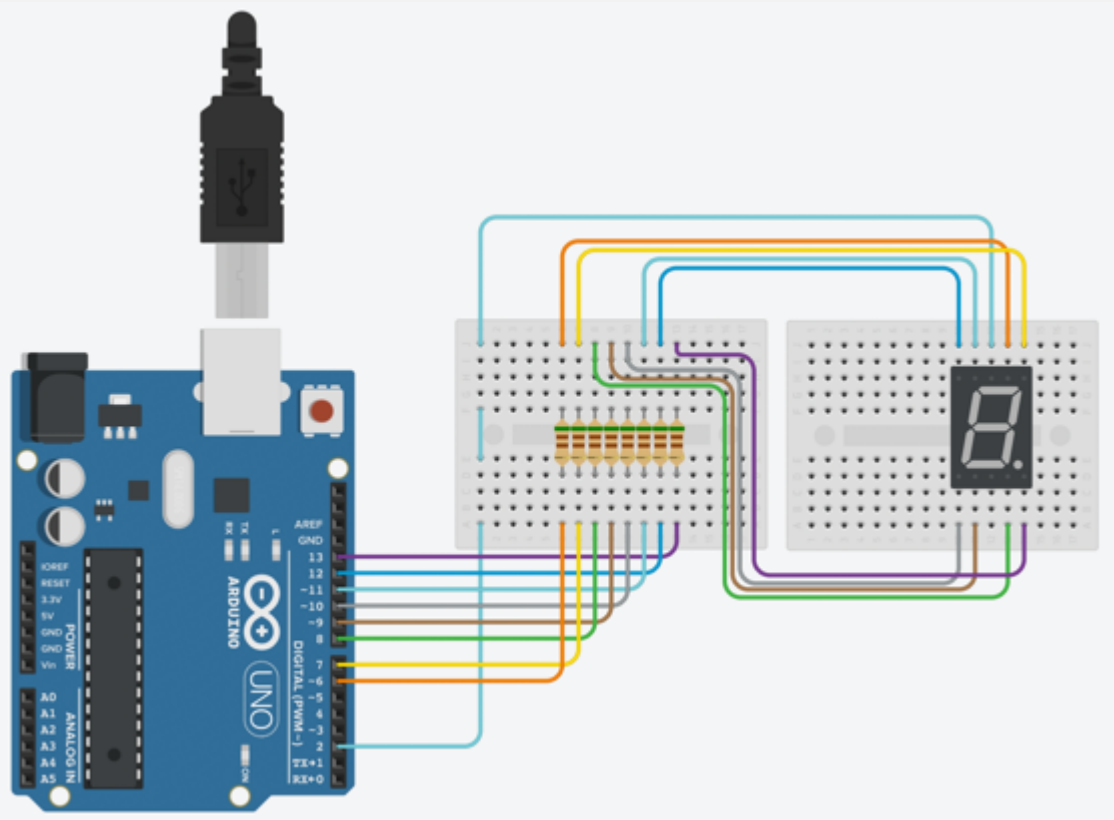
Représentation du 1



A	B	C	D	E	F	G	DP
0	1	1	0	0	0	0	0

⇒ 0b01100000

Affichage des chiffres de 0 à 1



S D
- +

S D
+ -
- -

S D
- +
+ +

```
byte segments[] = {
  0b11111100,
  0b01100000
};

int valeurCourante = 0;
void setup() {
  pinMode(2, OUTPUT);
  for (size_t pin = 6; pin <= 13; ++pin) {
    pinMode(pin, OUTPUT);
  }
  digitalWrite(2, HIGH);
  for (size_t pin = 6; pin <= 13; ++pin) {
    digitalWrite(pin, LOW);
  }
}

void loop() {
  byte valeursSegments = segments[valeurCourante];
  for (int i = 0; i < 8; ++i) {
    digitalWrite(i + 6,
                 (valeursSegments >> (7 - i)) & 1 ? HIGH : LOW);
  }
  digitalWrite(2, LOW);

  delay(500);

  digitalWrite(2, HIGH);
  valeurCourante = (valeurCourante + 1) % 2;
}
```

https://www.tinkercad.com/things/1tZqUFVHNU9

Références

- https://www.tinkercad.com/things/7PynAsakWfQ : Montage et programme de test
- https://www.tinkercad.com/things/1tZqUFVHNU9 : Montage et chiffre de 0 à 1
- https://datasheetspdf.com/pdf-file/949036/G-NOR/GNS-5611AS/1 : Datasheet du 5611AS