

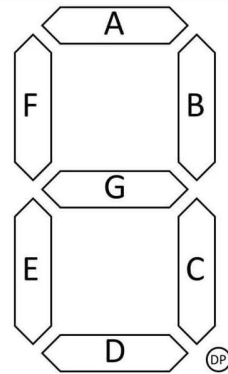
## Getallenscherf

De sketch in deze les is gemaakt door Tobias Vegter. Deze sketch laat alle cijfers op alle displays, één voor één.

## Display

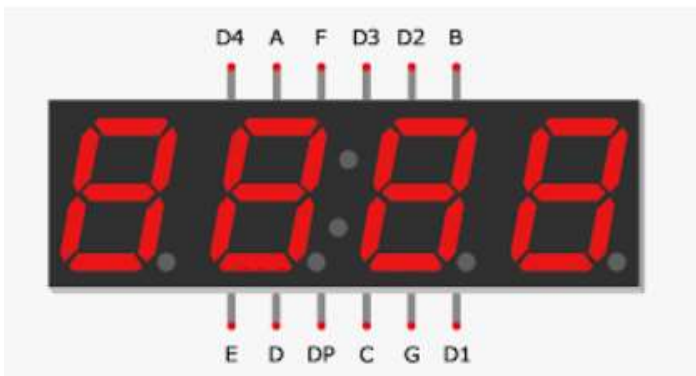
Het display is een 4x7 segment display.

Dit is de codering van de segmenten

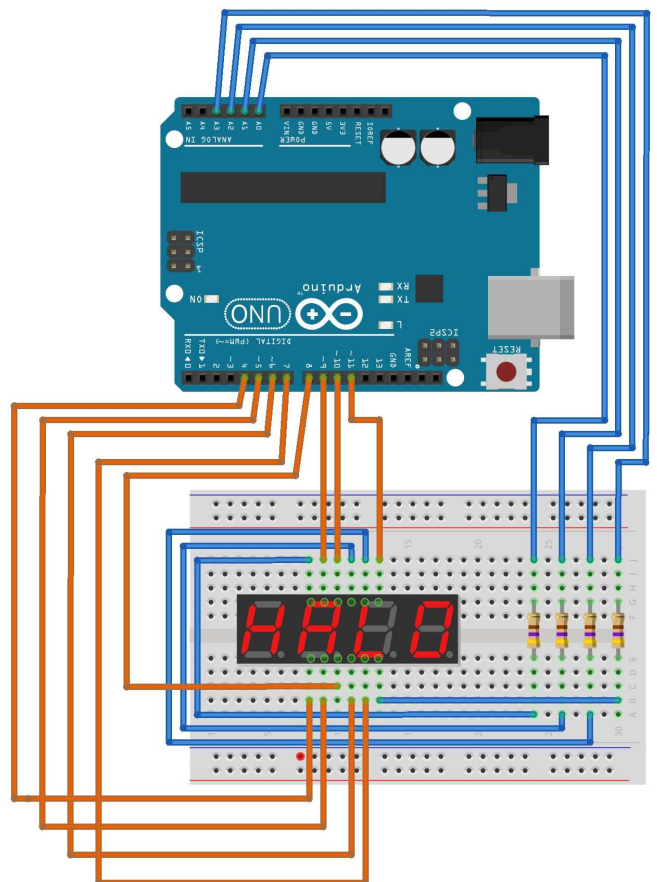


## De schakeling

Arduino	A0	9	10	A1	A2	11
4x7 segment	D4	A	F	D3	D2	B



4x7 segment	E	D	DP	C	G	D1
Arduino	4	5	8	6	7	A3



fritzing

## De code

```
int Delay = 500;
int led_dp = 8;
int led_b = 11;
int led_f = 10;
int led_g = 7;
int led_c = 6;
int led_a = 9;
int led_d = 5;
int led_e = 4;
int led_1 = A0;
int led_2 = A1;
int led_3 = A2;
int led_4 = A3;

void setup ()
{
  pinMode(led_a, OUTPUT);
  pinMode(led_b, OUTPUT);
  pinMode(led_c, OUTPUT);
  pinMode(led_d, OUTPUT);
  pinMode(led_e, OUTPUT);
  pinMode(led_f, OUTPUT);
  pinMode(led_g, OUTPUT);
  pinMode(led_dp, OUTPUT);
  pinMode(led_1, OUTPUT);
  pinMode(led_2, OUTPUT);
  pinMode(led_3, OUTPUT);
  pinMode(led_4, OUTPUT);
  digitalWrite(led_1, HIGH);
  digitalWrite(led_2, HIGH);
  digitalWrite(led_3, HIGH);
  digitalWrite(led_4, HIGH);
}

void loop (){
  digitalWrite(led_2, HIGH);
  digitalWrite(led_3, HIGH);
  digitalWrite(led_4, HIGH);
  digitalWrite(led_1, LOW);
  loop_segment();

  digitalWrite(led_1, HIGH);
  digitalWrite(led_3, HIGH);
  digitalWrite(led_4, HIGH);
  digitalWrite(led_2, LOW);
  loop_segment();

  digitalWrite(led_2, HIGH);
  digitalWrite(led_1, HIGH);
  digitalWrite(led_4, HIGH);
  digitalWrite(led_3, LOW);
  loop_segment();

  digitalWrite(led_1, HIGH);
  digitalWrite(led_2, HIGH);
  digitalWrite(led_3, HIGH);
  digitalWrite(led_4, LOW);
  loop_segment();
```

```
}  
  
void loop_segment()  
{  
  nummer_0();  
  delay(Delay);  
  nummer_1();  
  delay(Delay);  
  nummer_2();  
  delay(Delay);  
  nummer_3();  
  delay(Delay);  
  nummer_4();  
  delay(Delay);  
  nummer_5();  
  delay(Delay);  
  nummer_6();  
  delay(Delay);  
  nummer_7();  
  delay(Delay);  
  nummer_8();  
  delay(Delay);  
  nummer_9();  
  delay(Delay);  
  
}  
  
void nummer_1()  
{  
  
  digitalWrite(led_a, LOW);  
  digitalWrite(led_b, HIGH);  
  digitalWrite(led_c, HIGH);  
  digitalWrite(led_d, LOW);  
  digitalWrite(led_e, LOW);  
  digitalWrite(led_f, LOW);  
  digitalWrite(led_g, LOW);  
  digitalWrite(led_dp, HIGH);  
}  
  
void nummer_2()  
{  
  digitalWrite(led_a, HIGH);  
  digitalWrite(led_b, HIGH);  
  digitalWrite(led_c, LOW);  
  digitalWrite(led_d, HIGH);  
  digitalWrite(led_e, HIGH);  
  digitalWrite(led_f, LOW);  
  digitalWrite(led_g, HIGH);  
  digitalWrite(led_dp, HIGH);  
}  
  
void nummer_3()  
{  
  digitalWrite(led_a, HIGH);  
  digitalWrite(led_b, HIGH);  
  digitalWrite(led_c, HIGH);  
  digitalWrite(led_d, HIGH);  
  digitalWrite(led_e, LOW);  
  digitalWrite(led_f, LOW);  
  digitalWrite(led_g, HIGH);  
  digitalWrite(led_dp, HIGH);  
}
```

```
}  
  
void nummer_4()  
{  
  digitalWrite(led_a, LOW);  
  digitalWrite(led_b, HIGH);  
  digitalWrite(led_c, HIGH);  
  digitalWrite(led_d, LOW);  
  digitalWrite(led_e, LOW);  
  digitalWrite(led_f, HIGH);  
  digitalWrite(led_g, HIGH);  
  digitalWrite(led_dp, HIGH);  
}
```

```
void nummer_5()  
{  
  digitalWrite(led_a, HIGH);  
  digitalWrite(led_b, LOW);  
  digitalWrite(led_c, HIGH);  
  digitalWrite(led_d, HIGH);  
  digitalWrite(led_e, LOW);  
  digitalWrite(led_f, HIGH);  
  digitalWrite(led_g, HIGH);  
  digitalWrite(led_dp, HIGH);  
}
```

```
void nummer_6()  
{  
  digitalWrite(led_a, HIGH);  
  digitalWrite(led_b, LOW);  
  digitalWrite(led_c, HIGH);  
  digitalWrite(led_d, HIGH);  
  digitalWrite(led_e, HIGH);  
  digitalWrite(led_f, HIGH);  
  digitalWrite(led_g, HIGH);  
  digitalWrite(led_dp, HIGH);  
}
```

```
void nummer_7()  
{  
  digitalWrite(led_a, HIGH);  
  digitalWrite(led_b, HIGH);  
  digitalWrite(led_c, HIGH);  
  digitalWrite(led_d, LOW);  
  digitalWrite(led_e, LOW);  
  digitalWrite(led_f, LOW);  
  digitalWrite(led_g, LOW);  
  digitalWrite(led_dp, HIGH);  
}
```

```
void nummer_8()  
{  
  digitalWrite(led_a, HIGH);  
  digitalWrite(led_b, HIGH);  
  digitalWrite(led_c, HIGH);  
  digitalWrite(led_d, HIGH);  
  digitalWrite(led_e, HIGH);  
  digitalWrite(led_f, HIGH);  
  digitalWrite(led_g, HIGH);  
  digitalWrite(led_dp, HIGH);  
}
```

```
void nummer_9()
{
  digitalWrite(led_a, HIGH);
  digitalWrite(led_b, HIGH);
  digitalWrite(led_c, HIGH);
  digitalWrite(led_d, HIGH);
  digitalWrite(led_e, LOW);
  digitalWrite(led_f, HIGH);
  digitalWrite(led_g, HIGH);
  digitalWrite(led_dp, HIGH);
}
```

```
void nummer_0()
{
  digitalWrite(led_a, HIGH);
  digitalWrite(led_b, HIGH);
  digitalWrite(led_c, HIGH);
  digitalWrite(led_d, HIGH);
  digitalWrite(led_e, HIGH);
  digitalWrite(led_f, HIGH);
  digitalWrite(led_g, LOW);
  digitalWrite(led_dp, HIGH);
}
```

## Uitdaging

- 1 – Laat op de displays het getal “1402” zien.
- 2 – Laat de displays om en om de getallen “1402” en “8598” zien.
- 3 – Laat de displays tellen van “0000” tot “9999” (moeilijk).

## Cijfers en letters

In een volgende les gaan we ook letters gebruiken en misschien wel een lichtkrant maken.