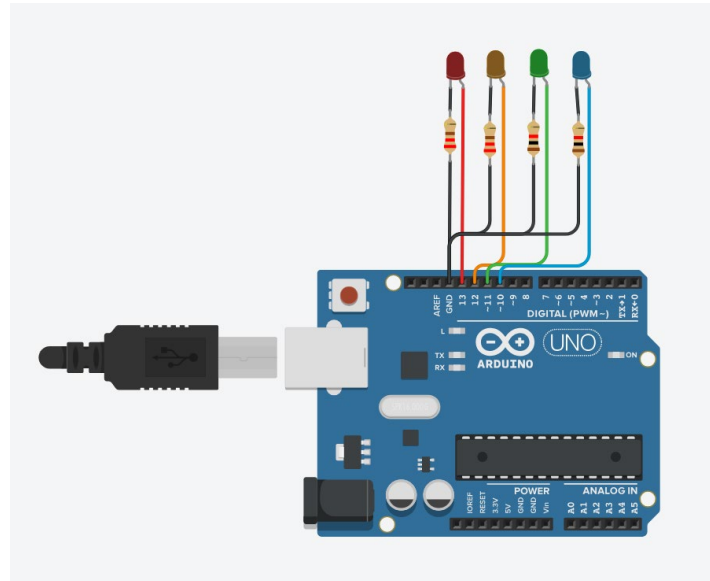


## Ex01: Semáforo



## Código

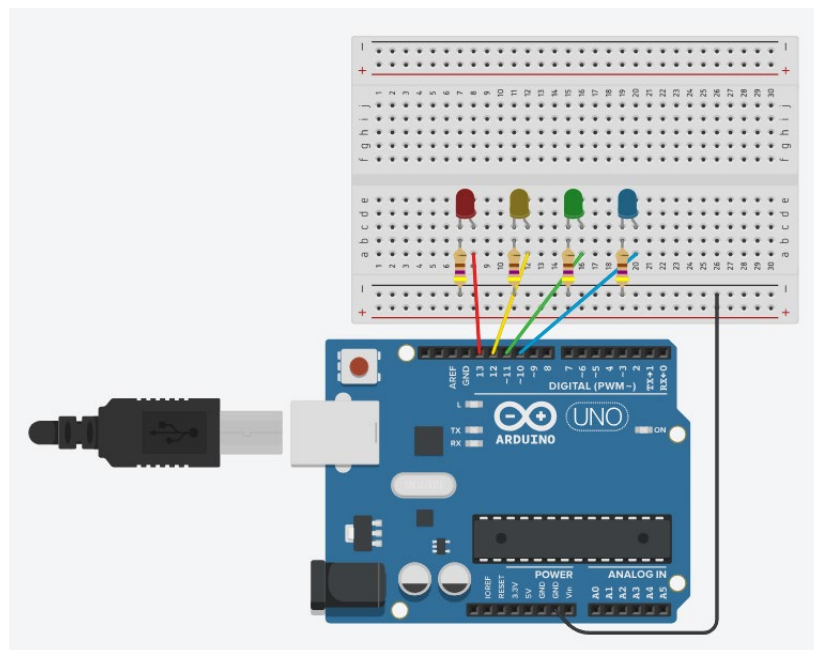
```
1  /*
2   This program blinks pin 13 of the Arduino (the
3   built-in LED)
4   */
5   int cont;
6
7
8   void setup()
9   {
10    pinMode(13, OUTPUT);
11    pinMode(12, OUTPUT);
12    pinMode(11, OUTPUT);
13    pinMode(10, OUTPUT);
14  }
15
16  void loop()
17  {
18    for (cont = 0; cont < 12; ++cont) {
19      if(cont<3){
20        digitalWrite(10, HIGH);// liga o azul
21        digitalWrite(13, HIGH);// liga o vermelho
22        delay(1000); // espera 1 segundo
23        digitalWrite(10, LOW);// apaga o azul
24        delay(1000); // espera 1 segundo
25      }
26      if(cont>3 && cont<8){
27        digitalWrite(13, LOW);// apaga o vermelho
28        digitalWrite(11, HIGH);// liga o verde
29        digitalWrite(10, HIGH);// liga o azul
30        delay(1000);
31        digitalWrite(10, LOW);// apaga o azul
32        delay(1000);
33      }
34      if(cont>8 && cont<11){
35        digitalWrite(11, LOW);// apaga o verde
36        digitalWrite(12, HIGH);// liga o amarelo
37        digitalWrite(10, HIGH);// liga o azul
38        delay(1000);
39        digitalWrite(10, LOW);// apaga o azul
40        delay(1000);
41      }
42      if(cont>=11){
43        digitalWrite(12, LOW);// apaga o amarelo
44        cont=0;
45      }
46    }
47  }
```

Ex02:

Tabela

Instrução	Binário	Valor em Hexa	Resul
AND(A,B)	0 1 00	0x4	0
OR(A,B)	1 0 01	0x9	1
SOMA(A,B)	1 0 11	0xB	1
NOT(A)	0 1 10	0x6	1
AND(B,A)	1 1 00	0xC	1

Arduino



Código

```

1  int entrada1 = 0;
2  int entrada2 = 0;
3  int saida;
4  int opcode;
5  int vail = 0;
6  int led1 = 13;
7  int led2 = 12;
8  int led3 = 11;
9  int led4 = 10;
10
11
12 void setup() {
13     Serial.begin(9600);
14     pinMode(led1,OUTPUT);
15     pinMode(led2,OUTPUT);
16     pinMode(led3,OUTPUT);
17     pinMode(led4,OUTPUT);
18 }
19
20 void loop() {
21     if (Serial.available() > 0) {
22         entrada1 = Serial.parseInt();
23         entrada2 = Serial.parseInt();
24         opcode = Serial.parseInt();
25
26         Serial.print("entrada1= ");
27         Serial.print(entrada1);
28         Serial.println();
29         Serial.print("entrada2= ");
30         Serial.print(entrada2);
31         Serial.println();
32
33         if(opcode==0){
34             saida = portaand(entrada1,entrada2);
35             Serial.print("and= ");
36             Serial.print(saida);
37             Serial.println();
38         }
39
40         if(opcode==1){
41             saida = portaor(entrada1,entrada2);
42             Serial.print("or= ");
43             Serial.print(saida);
44             Serial.println();
45         }
46
47         if(opcode==2){
48             saida = portanot(entrada1);
49             Serial.print("not a= ");
50             Serial.print(saida);
51             Serial.println();
52         }
53
54         if(opcode==3){
55
56             saida = soma(entrada1,entrada2);
57             Serial.print("soma= ");
58             Serial.print(saida);
59             Serial.println();
60             Serial.print("vail= ");
61             Serial.print(vail);

```

```

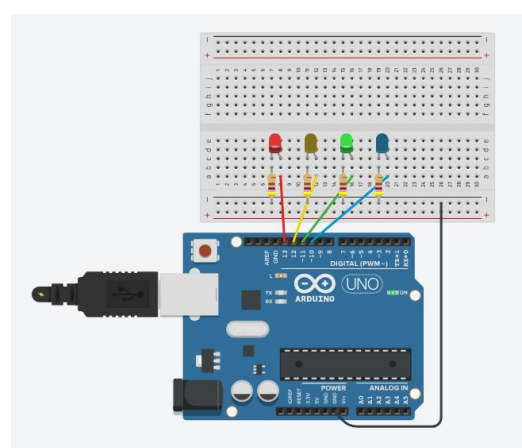
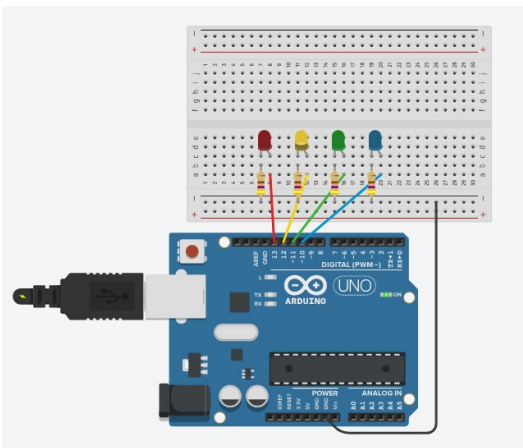
62     Serial.println();
63 }
64
65     digitalWrite(led4, vai1);
66     digitalWrite(led3, saida);
67     digitalWrite(led2, entrada2);
68     digitalWrite(led1, entrada1);
69 }
70 }
71
72 int portaxor(int a, int b)
73 {
74     return(a^b);
75 }
76
77 int portaor(int a, int b)
78 {
79     return(a|b);
80 }
81
82 int portaand(int a, int b)
83 {
84     return(a&b);
85 }
86
87 int portanot(int a)
88 {
89     return(a^1);
90 }
91
92 int soma(int a, int b){
93     saida = portaxor(a,b);
94     vai1 = portaand(a,b);
95     return saida;
96 }
97
98 int mostra ()
99 {
100     if (entrada1 == 1){
101         digitalWrite(led1,1);
102     }else{ digitalWrite(led1,0);}
103     if (entrada2 == 1){
104         digitalWrite(led2,1);
105     }else{ digitalWrite(led2,0);}
106     if (saida == 1){
107         digitalWrite(led3,1);
108     }else{ digitalWrite(led3,0);}
109     if (vai1 == 1){
110         digitalWrite(led4,1);
111     }else{ digitalWrite(led4,0);}
112 }
113
114

```

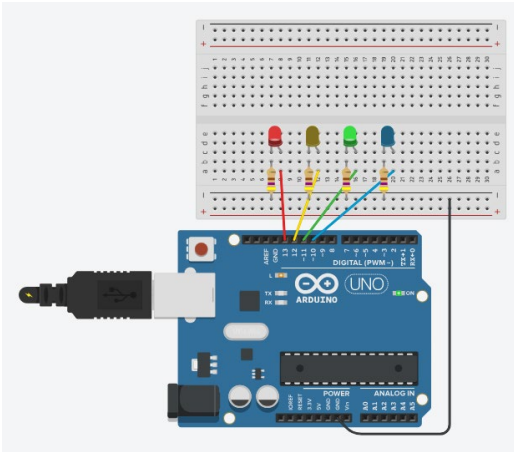
## Execução

0 1 0

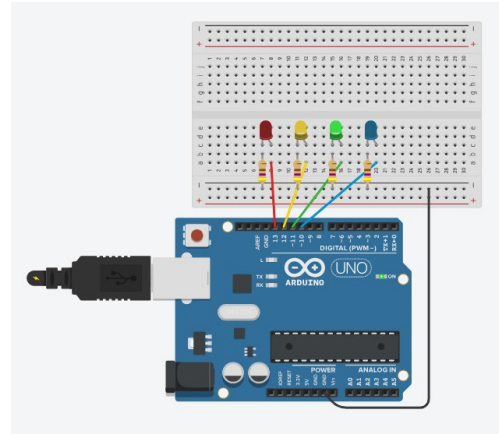
1 0 1



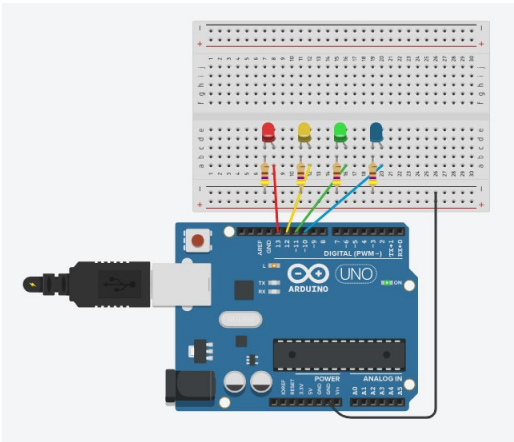
103



012



110



113

