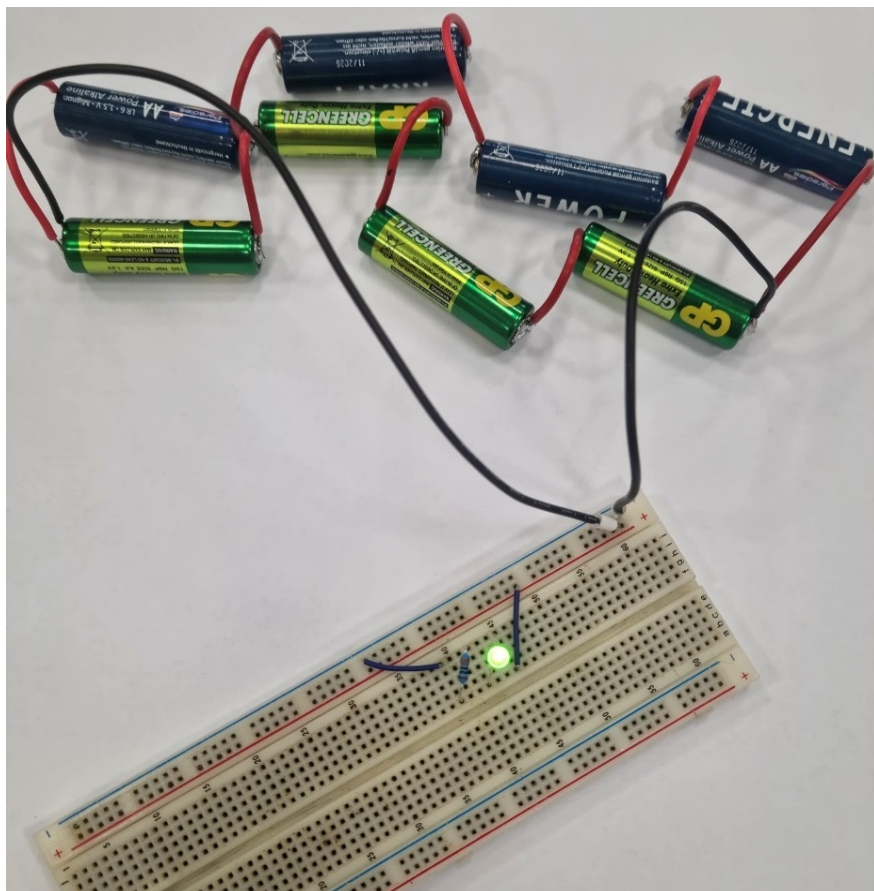


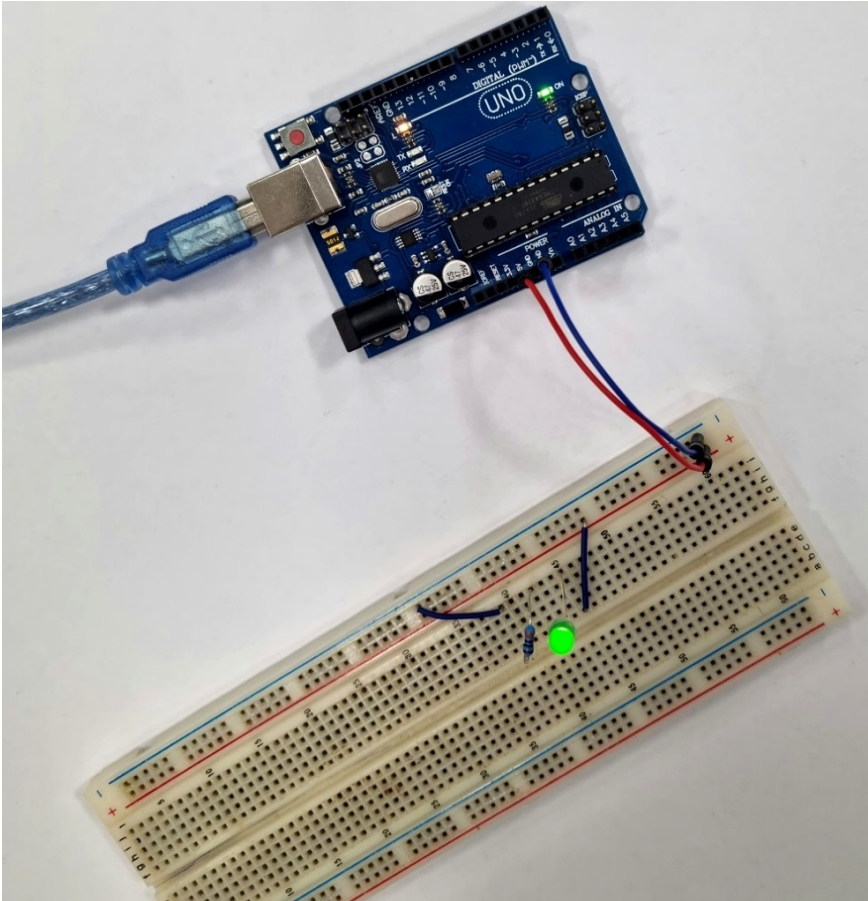
## Arduino 3 - Programy a zapojenia :)

### 1. Jednoduchý elektrický obvod s batériami



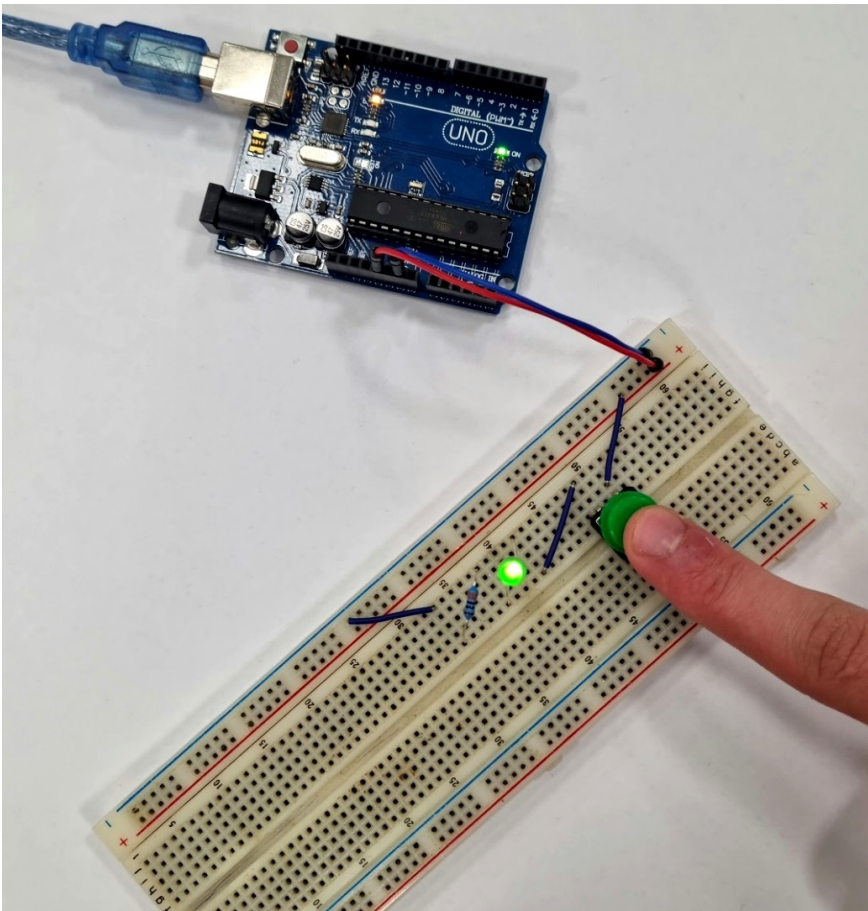
Zapojenie úlohy 1

### 2. Jednoduchý elektrický obvod napájaný z Arduina



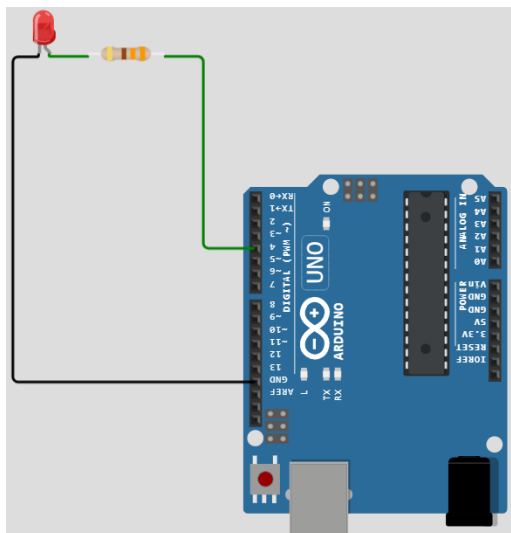
Zapojenie úlohy 2

### 3. Jednoduchý elektrický obvod napájaný z Arduina s tlačidlom



Zapojenie úlohy 3

## 4. Blikajúca LED

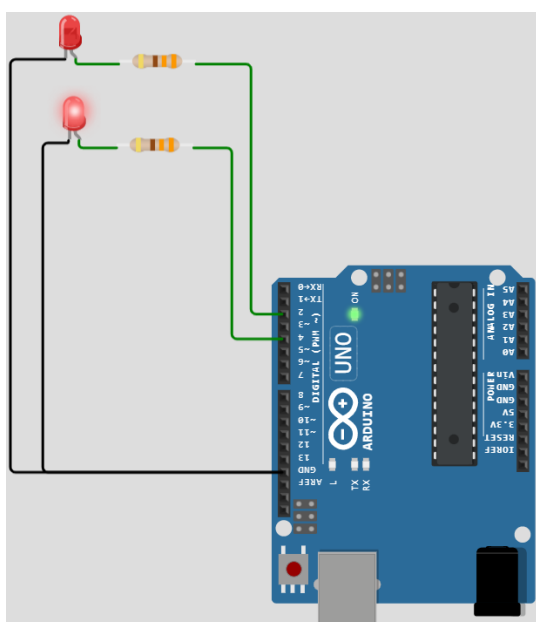


Zapojenie

```
1 void setup() {
2   // Blikajúca LED
3   pinMode(4, OUTPUT);
4 }
5
6 void loop() {
7   digitalWrite (4, LOW);
8   delay (1000);
9
10  digitalWrite (4, HIGH);
11  delay (1000);
12  }
```

Program

## 5. Dve blikajúce LED-ky



Zapojenie

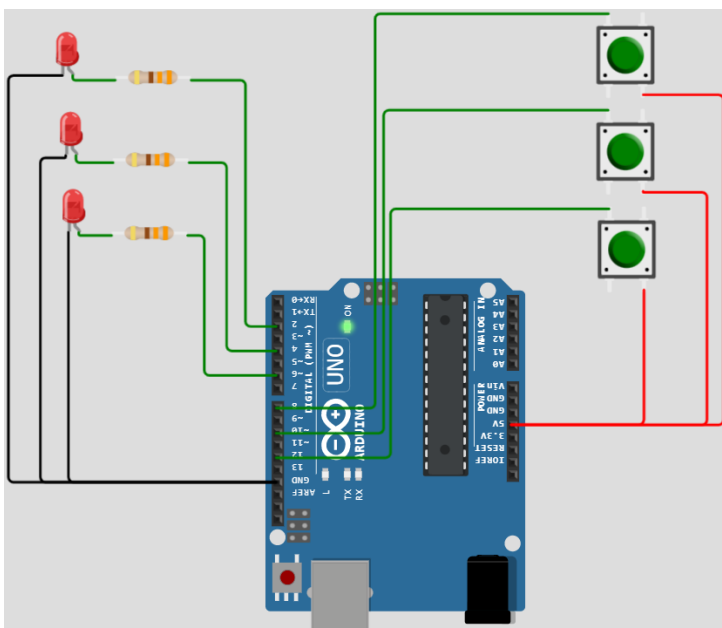
```

1 void setup() {
2   // Dve blikajúce LED
3   pinMode(2, OUTPUT);
4   pinMode(4, OUTPUT);
5   }
6
7 void loop() {
8   digitalWrite (2, HIGH);
9   digitalWrite (4, LOW);
10  delay (500);
11
12  digitalWrite(2, LOW);
13  digitalWrite(4, HIGH);
14  delay (500);
15  }

```

Program

## 6. Prevodník Poradie/Počet realizovaný pomocou jednoduchej podmienky



Zapojenie

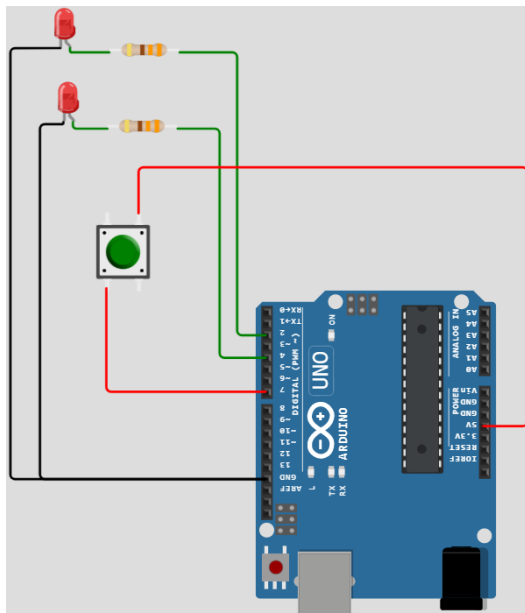
```

1  void setup() {
2      // Prevodnik Poradie tlacidla/Pocet LED
3      pinMode(2, OUTPUT);
4      pinMode(4, OUTPUT);
5      pinMode(6, OUTPUT);
6      pinMode(8, INPUT);
7      pinMode(10, INPUT);
8      pinMode(12, INPUT);
9  }
10
11 void loop() {
12     if ( digitalRead (8) == 1) {digitalWrite(2, HIGH);}
13
14     if ( digitalRead (8) == 0) {digitalWrite(2, LOW);}
15
16     if ( digitalRead (10) == 1) {digitalWrite(4, HIGH);
17     |   |   |   |   |   |   |   |   |   |   |   |   |
18     |   |   |   |   |   |   |   |   |   |   |   |   |
19     |   |   |   |   |   |   |   |   |   |   |   |   |
20     |   |   |   |   |   |   |   |   |   |   |   |   |
21     |   |   |   |   |   |   |   |   |   |   |   |   |
22     |   |   |   |   |   |   |   |   |   |   |   |   |
23     |   |   |   |   |   |   |   |   |   |   |   |   |
24     |   |   |   |   |   |   |   |   |   |   |   |   |
25     |   |   |   |   |   |   |   |   |   |   |   |   |
26     |   |   |   |   |   |   |   |   |   |   |   |   |
27     |   |   |   |   |   |   |   |   |   |   |   |   |
28     |   |   |   |   |   |   |   |   |   |   |   |   |
29     |   |   |   |   |   |   |   |   |   |   |   |   |
        digitalWrite(2, HIGH);}
30
31     if ( digitalRead (10) == 0) {digitalWrite(2, LOW);
32     |   |   |   |   |   |   |   |   |   |   |   |   |
33     |   |   |   |   |   |   |   |   |   |   |   |   |
34     |   |   |   |   |   |   |   |   |   |   |   |   |
35     |   |   |   |   |   |   |   |   |   |   |   |   |
36     |   |   |   |   |   |   |   |   |   |   |   |   |
37     |   |   |   |   |   |   |   |   |   |   |   |   |
38     |   |   |   |   |   |   |   |   |   |   |   |   |
39     |   |   |   |   |   |   |   |   |   |   |   |   |
40     |   |   |   |   |   |   |   |   |   |   |   |   |
41     |   |   |   |   |   |   |   |   |   |   |   |   |
42     |   |   |   |   |   |   |   |   |   |   |   |   |
43     |   |   |   |   |   |   |   |   |   |   |   |   |
44     |   |   |   |   |   |   |   |   |   |   |   |   |
45     |   |   |   |   |   |   |   |   |   |   |   |   |
46     |   |   |   |   |   |   |   |   |   |   |   |   |
47     |   |   |   |   |   |   |   |   |   |   |   |   |
48     |   |   |   |   |   |   |   |   |   |   |   |   |
49     |   |   |   |   |   |   |   |   |   |   |   |   |
50     |   |   |   |   |   |   |   |   |   |   |   |   |
51     |   |   |   |   |   |   |   |   |   |   |   |   |
52     |   |   |   |   |   |   |   |   |   |   |   |   |
53     |   |   |   |   |   |   |   |   |   |   |   |   |
54     |   |   |   |   |   |   |   |   |   |   |   |   |
55     |   |   |   |   |   |   |   |   |   |   |   |   |
56     |   |   |   |   |   |   |   |   |   |   |   |   |
57     |   |   |   |   |   |   |   |   |   |   |   |   |
58     |   |   |   |   |   |   |   |   |   |   |   |   |
59     |   |   |   |   |   |   |   |   |   |   |   |   |
60     |   |   |   |   |   |   |   |   |   |   |   |   |
        digitalWrite(4, LOW);}
61
62     if ( digitalRead (12) == 1) {digitalWrite(2, HIGH);
63     |   |   |   |   |   |   |   |   |   |   |   |   |
64     |   |   |   |   |   |   |   |   |   |   |   |   |
65     |   |   |   |   |   |   |   |   |   |   |   |   |
66     |   |   |   |   |   |   |   |   |   |   |   |   |
67     |   |   |   |   |   |   |   |   |   |   |   |   |
68     |   |   |   |   |   |   |   |   |   |   |   |   |
69     |   |   |   |   |   |   |   |   |   |   |   |   |
70     |   |   |   |   |   |   |   |   |   |   |   |   |
71     |   |   |   |   |   |   |   |   |   |   |   |   |
72     |   |   |   |   |   |   |   |   |   |   |   |   |
73     |   |   |   |   |   |   |   |   |   |   |   |   |
74     |   |   |   |   |   |   |   |   |   |   |   |   |
75     |   |   |   |   |   |   |   |   |   |   |   |   |
76     |   |   |   |   |   |   |   |   |   |   |   |   |
77     |   |   |   |   |   |   |   |   |   |   |   |   |
78     |   |   |   |   |   |   |   |   |   |   |   |   |
79     |   |   |   |   |   |   |   |   |   |   |   |   |
80     |   |   |   |   |   |   |   |   |   |   |   |   |
81     |   |   |   |   |   |   |   |   |   |   |   |   |
82     |   |   |   |   |   |   |   |   |   |   |   |   |
83     |   |   |   |   |   |   |   |   |   |   |   |   |
84     |   |   |   |   |   |   |   |   |   |   |   |   |
85     |   |   |   |   |   |   |   |   |   |   |   |   |
86     |   |   |   |   |   |   |   |   |   |   |   |   |
87     |   |   |   |   |   |   |   |   |   |   |   |   |
88     |   |   |   |   |   |   |   |   |   |   |   |   |
89     |   |   |   |   |   |   |   |   |   |   |   |   |
90     |   |   |   |   |   |   |   |   |   |   |   |   |
91     |   |   |   |   |   |   |   |   |   |   |   |   |
92     |   |   |   |   |   |   |   |   |   |   |   |   |
93     |   |   |   |   |   |   |   |   |   |   |   |   |
94     |   |   |   |   |   |   |   |   |   |   |   |   |
95     |   |   |   |   |   |   |   |   |   |   |   |   |
96     |   |   |   |   |   |   |   |   |   |   |   |   |
97     |   |   |   |   |   |   |   |   |   |   |   |   |
98     |   |   |   |   |   |   |   |   |   |   |   |   |
99     |   |   |   |   |   |   |   |   |   |   |   |   |
100    |   |   |   |   |   |   |   |   |   |   |   |   |
        digitalWrite(4, HIGH);
        digitalWrite(6, HIGH);}
101
102    if ( digitalRead (12) == 0) {digitalWrite(2, LOW);
103    |   |   |   |   |   |   |   |   |   |   |   |   |
104    |   |   |   |   |   |   |   |   |   |   |   |   |
105    |   |   |   |   |   |   |   |   |   |   |   |   |
106    |   |   |   |   |   |   |   |   |   |   |   |   |
107    |   |   |   |   |   |   |   |   |   |   |   |   |
108    |   |   |   |   |   |   |   |   |   |   |   |   |
109    |   |   |   |   |   |   |   |   |   |   |   |   |
110    |   |   |   |   |   |   |   |   |   |   |   |   |
111    |   |   |   |   |   |   |   |   |   |   |   |   |
112    |   |   |   |   |   |   |   |   |   |   |   |   |
113    |   |   |   |   |   |   |   |   |   |   |   |   |
114    |   |   |   |   |   |   |   |   |   |   |   |   |
115    |   |   |   |   |   |   |   |   |   |   |   |   |
116    |   |   |   |   |   |   |   |   |   |   |   |   |
117    |   |   |   |   |   |   |   |   |   |   |   |   |
118    |   |   |   |   |   |   |   |   |   |   |   |   |
119    |   |   |   |   |   |   |   |   |   |   |   |   |
120    |   |   |   |   |   |   |   |   |   |   |   |   |
121    |   |   |   |   |   |   |   |   |   |   |   |   |
122    |   |   |   |   |   |   |   |   |   |   |   |   |
123    |   |   |   |   |   |   |   |   |   |   |   |   |
124    |   |   |   |   |   |   |   |   |   |   |   |   |
125    |   |   |   |   |   |   |   |   |   |   |   |   |
126    |   |   |   |   |   |   |   |   |   |   |   |   |
127    |   |   |   |   |   |   |   |   |   |   |   |   |
128    |   |   |   |   |   |   |   |   |   |   |   |   |
129    |   |   |   |   |   |   |   |   |   |   |   |   |
130    |   |   |   |   |   |   |   |   |   |   |   |   |
131    |   |   |   |   |   |   |   |   |   |   |   |   |
132    |   |   |   |   |   |   |   |   |   |   |   |   |
133    |   |   |   |   |   |   |   |   |   |   |   |   |
134    |   |   |   |   |   |   |   |   |   |   |   |   |
135    |   |   |   |   |   |   |   |   |   |   |   |   |
136    |   |   |   |   |   |   |   |   |   |   |   |   |
137    |   |   |   |   |   |   |   |   |   |   |   |   |
138    |   |   |   |   |   |   |   |   |   |   |   |   |
139    |   |   |   |   |   |   |   |   |   |   |   |   |
140    |   |   |   |   |   |   |   |   |   |   |   |   |
141    |   |   |   |   |   |   |   |   |   |   |   |   |
142    |   |   |   |   |   |   |   |   |   |   |   |   |
143    |   |   |   |   |   |   |   |   |   |   |   |   |
144    |   |   |   |   |   |   |   |   |   |   |   |   |
145    |   |   |   |   |   |   |   |   |   |   |   |   |
146    |   |   |   |   |   |   |   |   |   |   |   |   |
147    |   |   |   |   |   |   |   |   |   |   |   |   |
148    |   |   |   |   |   |   |   |   |   |   |   |   |
149    |   |   |   |   |   |   |   |   |   |   |   |   |
150    |   |   |   |   |   |   |   |   |   |   |   |   |
        digitalWrite(6, LOW);}
151    }

```

Program

## 7. Prepínanie svietenia LED pomocou úplnej podmienky



Zapojenie

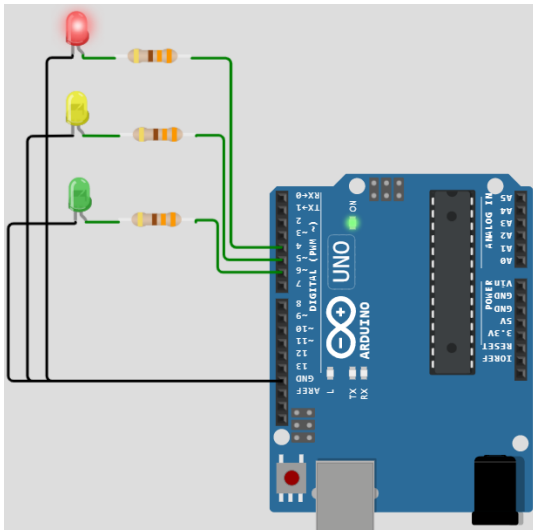
```

1 void setup() {
2   // Použitie podmienky
3   pinMode(2, OUTPUT);
4   pinMode(4, OUTPUT);
5   pinMode(7, INPUT);
6 }
7
8 void loop() {
9   if (digitalRead(7) == 1)
10  {
11    digitalWrite (2, HIGH);
12    digitalWrite (4, LOW);
13  }
14  else
15  {
16    digitalWrite (2, LOW);
17    digitalWrite (4, HIGH);
18  }
19  | | | | | }

```

Program

## 8. Semafor



Zapojenie

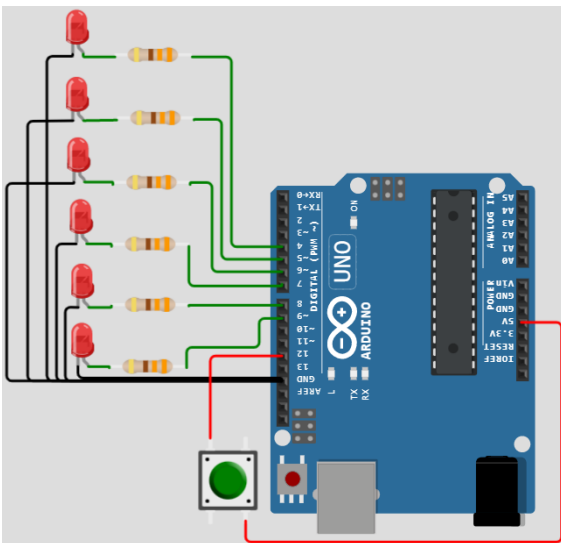
```

1 void setup() {
2   // Semafor
3   pinMode(4, OUTPUT);
4   pinMode(5, OUTPUT);
5   pinMode(6, OUTPUT);
6   }
7
8 void loop() {
9   digitalWrite (4, HIGH);
10  delay (1000);
11  digitalWrite (4, LOW);
12  delay (1000);
13  digitalWrite (5, HIGH);
14  delay (1000);
15  digitalWrite (5, LOW);
16  delay (1000);
17  digitalWrite (6, HIGH);
18  delay (1000);
19  digitalWrite (6, LOW);
20  delay (1000);
21  digitalWrite (5, HIGH);
22  delay (1000);
23  digitalWrite (5, LOW);
24  delay (1000);
25  }

```

Program

## 9. Bežiacie svetlo



Zapojenie

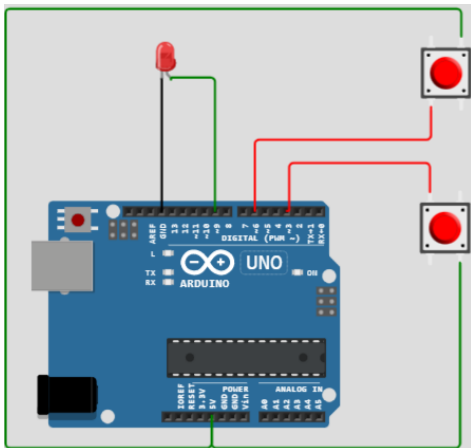
```

1 void setup() {
2   // Beziace_svetlo
3   pinMode(4, OUTPUT); pinMode(5, OUTPUT); pinMode(6, OUTPUT);
4   pinMode(7, OUTPUT); pinMode(8, OUTPUT); pinMode(9, OUTPUT);
5   pinMode(12, INPUT);
6   | | | | | }
7
8 void loop() {
9   digitalWrite (4, HIGH); delay (15);
10  if (digitalRead(12) == 1) { delay (1000);}
11  digitalWrite (4, LOW); delay (15); digitalWrite (5, HIGH); delay (15);
12  if (digitalRead(12) == 1) { delay (1000);}
13  digitalWrite (5, LOW); delay (15); digitalWrite (6, HIGH); delay (15);
14  if (digitalRead(12) == 1) { delay (1000);}
15  digitalWrite (6, LOW); delay (15); digitalWrite (7, HIGH); delay (15);
16  if (digitalRead(12) == 1) { delay (1000);}
17  digitalWrite (7, LOW); delay (15); digitalWrite (8, HIGH); delay (15);
18  if (digitalRead(12) == 1) { delay (1000);}
19  digitalWrite (8, LOW); delay (15); digitalWrite (9, HIGH); delay (15);
20  if (digitalRead(12) == 1) { delay (1000);}
21  digitalWrite (9, LOW); delay (15);
22  | | | | | }

```

Program

## 10. Ovládanie jasu LEDky pomocou počítača



Zapojenie

```

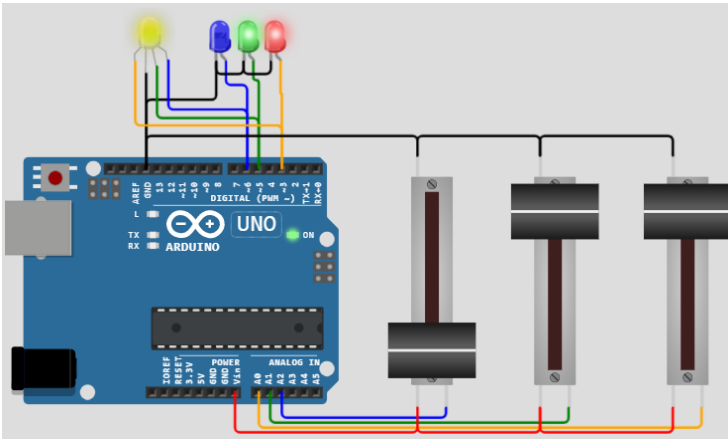
1 const int pinR = 9;
2 int Rhodnota = 0;
3
4 void setup() {
5   // ovládanie jas LEDky
6   pinMode(3, INPUT); pinMode(6, INPUT);
7   | | | | | }
8 void loop() {
9   if (digitalRead(3) == 1 && Rhodnota < 255) {Rhodnota += 1; analogWrite(pinR, Rhodnota); delay(10); }
10  if (digitalRead(6) == 1 && Rhodnota > 0) {Rhodnota -= 1; analogWrite(pinR, Rhodnota); delay(10); }
11  | | | | | }

```

Program

## 11. Zapojenie 3-farebnej LED, nastavenie farby pomocou potenciometrov



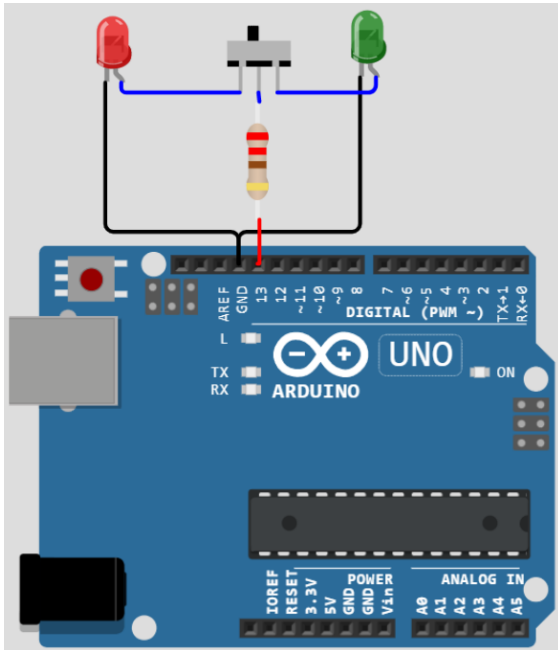


### Zapojenie

```
1  const int pinR = 3;
2  const int pinG = 5;
3  const int pinB = 6;
4
5  const int potR = A0;
6  const int potG = A1;
7  const int potB = A2;
8
9  void setup() {
10     // Demo RGB LED a potenciometre
11     pinMode(pinR, OUTPUT);
12     pinMode(pinG, OUTPUT);
13     pinMode(pinB, OUTPUT);
14     pinMode(potR, INPUT);
15     pinMode(potG, INPUT);
16     pinMode(potB, INPUT);
17 }
18
19 int readPot(int pin) {
20     return map(analogRead(pin), 0, 1023, 0, 255);
21 }
22
23 void loop() {
24     analogWrite(pinR, readPot(potR));
25     analogWrite(pinG, readPot(potG));
26     analogWrite(pinB, readPot(potB));
27 }
```

### Program

## 14. Prepínanie blikajúcich LED



Zapojenie

```

1 void setup() {
2     //Pouzitie prepinaca
3     pinMode(LED_BUILTIN, OUTPUT);
4 }
5
6 void loop() {
7     digitalWrite(LED_BUILTIN, HIGH);
8     delay(1000);
9     digitalWrite(LED_BUILTIN, LOW);
10    delay(1000);
11 }

```

Program

## 201. Vysúvanie a zasúvanie piestnice valca pomocou dvoch tlačidiel

Zapojenie

Program

## 202. Vysúvanie a zasúvanie piestnice valca pomocou jedného tlačidla

Zapojenie

Program

## 203. Zmena smeru otáčok elektrického motora tromi tlačidlami

Zapojenie

Program

## 204. Zmena smeru otáčok elektrického motora piatimi tlačidlami

Zapojenie

Program