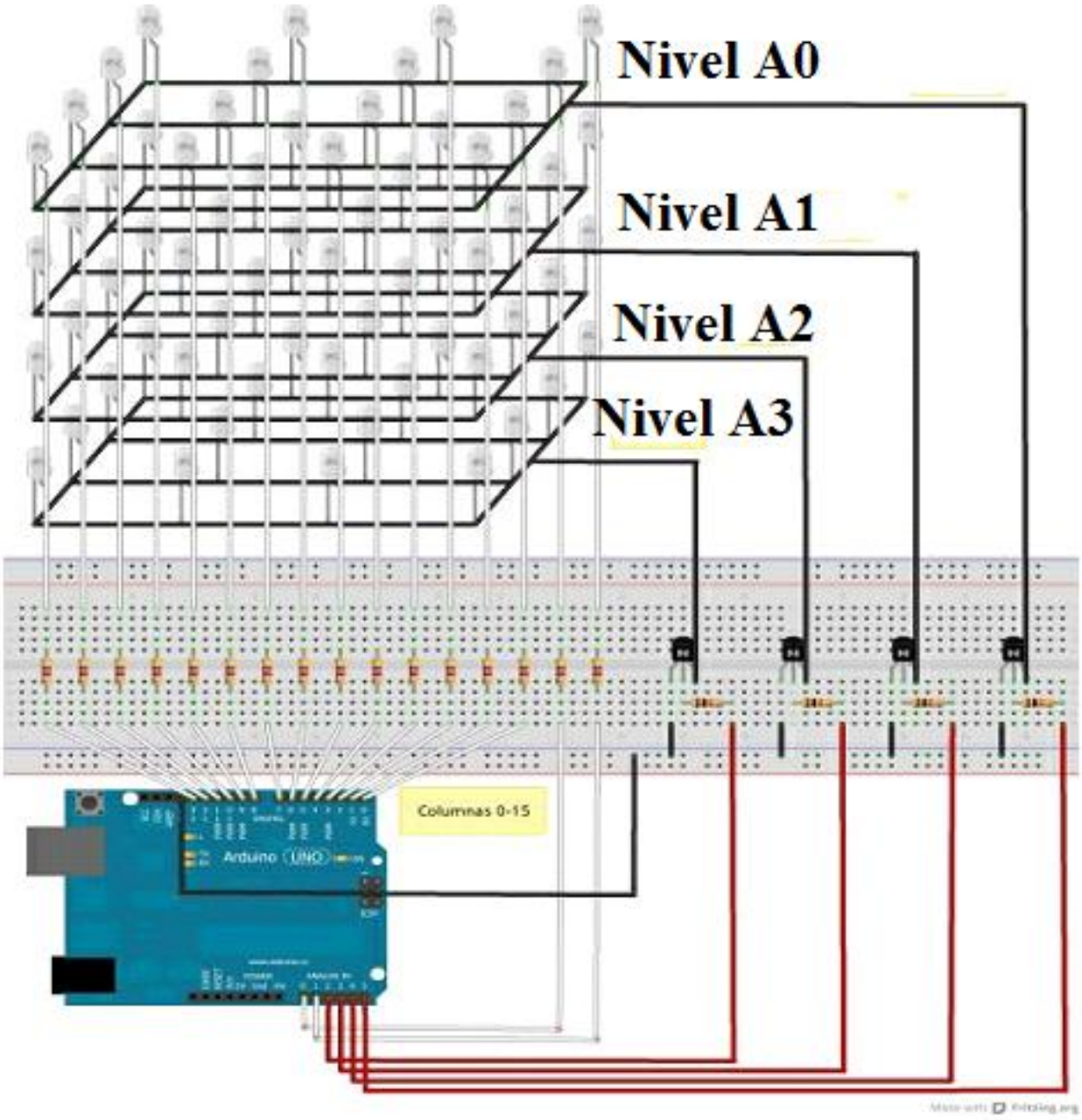
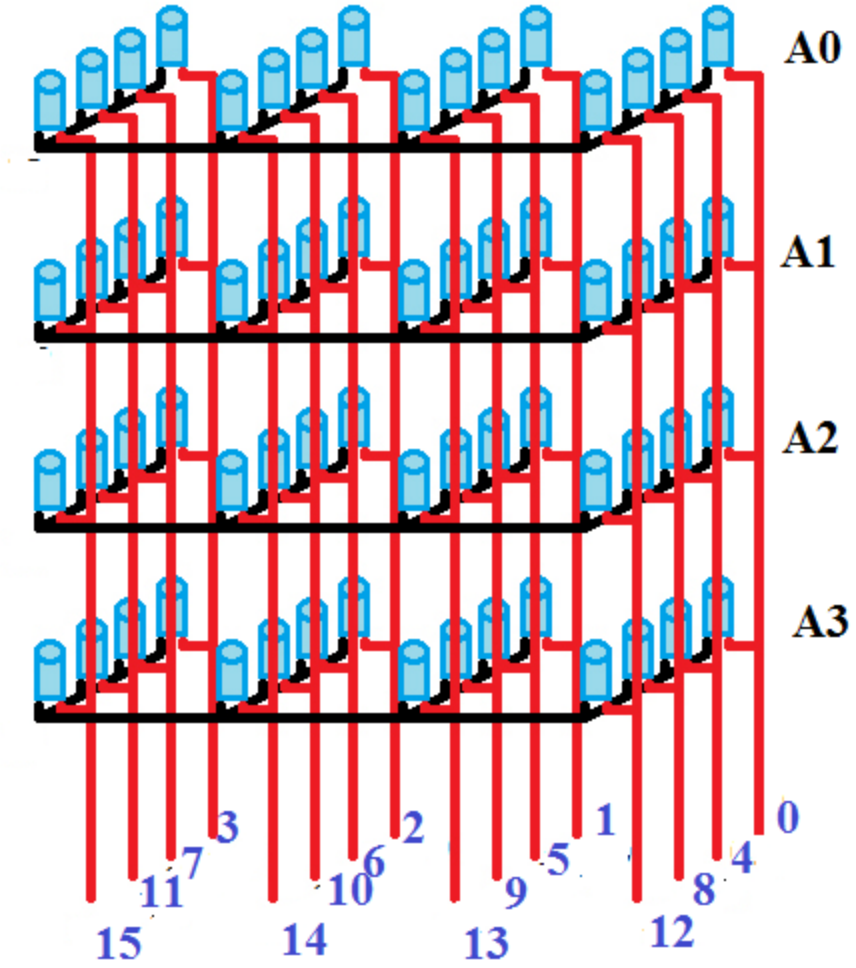

Nivel A0
Nivel A1
Nivel A2
Nivel A3
Columnas 0-15
Arduino UNO


A0
A1
A2
A3
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

3	2	1	0
7	6	5	4
11	10	9	8
15	14	13	12

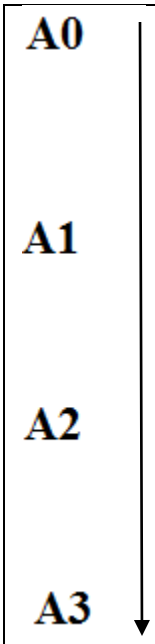
Sunt in total 16 coloane/4 straturi.

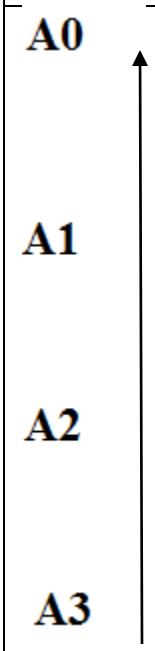
void cub_inchidere()
{
for(int i = 0; i<16; i++)
{
digitalWrite(column[i], 0);
}
	Sunt in toatal 16 coloane
	-sting toate LED-urile
	
	As fi putut sa fac astfel:
	digitalWrite(column[0], 0);
	digitalWrite(column[1], 0);
	digitalWrite(column[2], 0);
	digitalWrite(column[3], 0);
	digitalWrite(column[4], 0);
	digitalWrite(column[5], 0);
	digitalWrite(column[6], 0);
	digitalWrite(column[7], 0);
	digitalWrite(column[8], 0);
	digitalWrite(column[9], 0);
	digitalWrite(column[10], 0);
	digitalWrite(column[11], 0);
	digitalWrite(column[12], 0);
	digitalWrite(column[13], 0);
	digitalWrite(column[14], 0);
	digitalWrite(column[15], 0);

for(int i = 0; i<4; i++)
{
digitalWrite(layer[i], 0);
}
}
	Sting LED-urile de pe cele 4 straturi
	As fi putut face astfel:
	digitalWrite(layer[0], 0);
	digitalWrite(layer[1], 0);
	digitalWrite(layer[2], 0);
	digitalWrite(layer[3], 0);

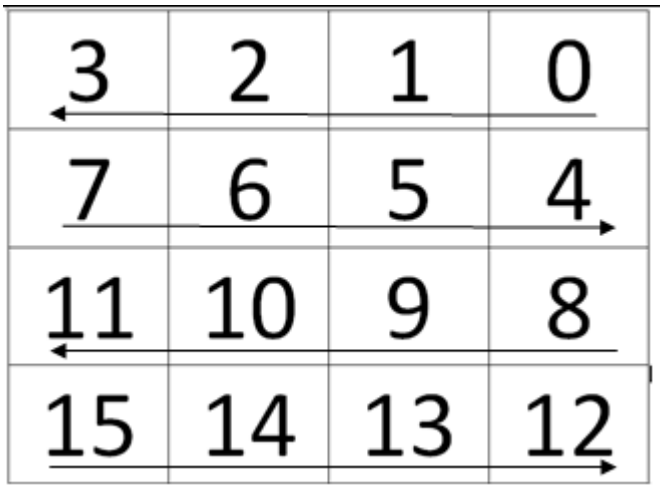
void cub_deschidere()
{
for(int i = 0; i<16; i++)
{
digitalWrite(column[i], 0);
}
	Sunt in toatal 16 coloane
	-sting toate LED-urile
	
	As fi putut sa fac astfel:
	digitalWrite(column[0], 0);
	digitalWrite(column[1], 0);
	digitalWrite(column[2], 0);
	digitalWrite(column[3], 0);
	digitalWrite(column[4], 0);
	digitalWrite(column[5], 0);
	digitalWrite(column[6], 0);
	digitalWrite(column[7], 0);
	digitalWrite(column[8], 0);
	digitalWrite(column[9], 0);
	digitalWrite(column[10], 0);
	digitalWrite(column[11], 0);
	digitalWrite(column[12], 0);
	digitalWrite(column[13], 0);
	digitalWrite(column[14], 0);
	digitalWrite(column[15], 0);

for(int i = 0; i<4; i++)
{
digitalWrite(layer[i], 1);
}
}
	Aprind LED-urile de pe cele 4 straturi
	As fi putut face astfel:
	digitalWrite(layer[0], 1);
	digitalWrite(layer[1], 1);
	digitalWrite(layer[2], 1);
	digitalWrite(layer[3], 1);

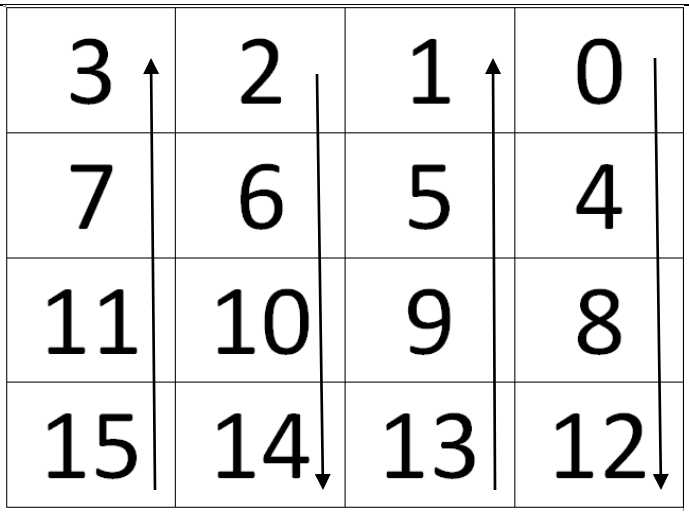
	void parcurgere_straturi_sus_jos()
	{
	for(int i = 0; i<4; i++)
	{
	digitalWrite(layer[i], 1);
	delay(100);
	digitalWrite(layer[i], 0);
	delay(100);
	}
	}
		Se merge de sus de la stratul A0, în jos la stratul A3
		(i scade cu 1 ⇔i++)
		
		i=0 A0
		i=1 A1
		i=2 A2
		i=3 A3
		
		-se aprinde stratul, apoi se stinge stratul

	void parcurgere_straturi_jos_sus()
	{
	for(int i = 3; i>=0; i--)
	{
	digitalWrite(layer[i], 1);
	delay(100);
	digitalWrite(layer[i], 0);
	delay(100);
	}
	}
		Se merge de jos, de la stratul A3, în sus la stratul A0
		(i scade cu 1 ⇔i--)
		i=3 A3
		i=2 A2
		i=1 A1
		i=0 A0
		
		-se aprinde stratul, apoi se stinge stratul

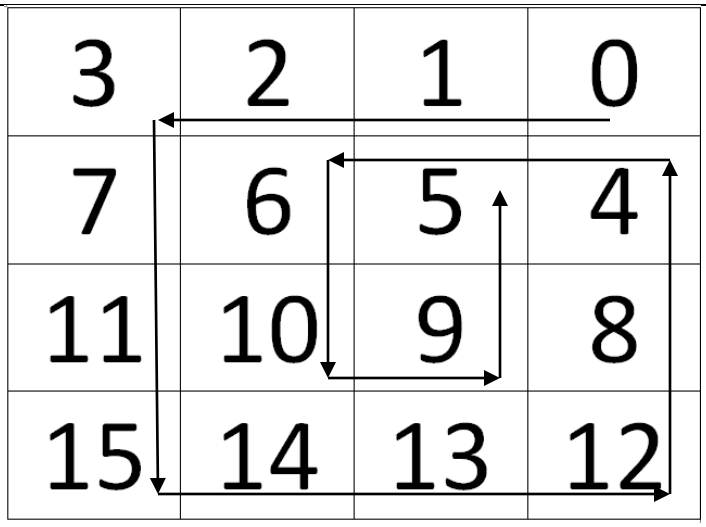
```
void parcurgere_orizontala()
{

for(int i = 0; i<16; i++)
  {
    digitalWrite(column[i], 0);
  }
  for(int i = 0; i<4; i++)
  {
    digitalWrite(layer[i], 1);
  }
//ordine parcurgere: 0, 1, 2, 3, 7, 6, 5, 4, 8, 9,
10, 11, 15, 14, 13, 12

    digitalWrite(column[0], 1);
    delay(100);
    digitalWrite(column[1], 1);
    delay(100);
    digitalWrite(column[2], 1);
    delay(100);
    digitalWrite(column[3], 1);
    delay(100);
    digitalWrite(column[7], 1);
    delay(100);
    digitalWrite(column[6], 1);
    delay(100);
    digitalWrite(column[5], 1);
    delay(100);
    digitalWrite(column[4], 1);
    delay(100);
    digitalWrite(column[8], 1);
    delay(100);
    digitalWrite(column[9], 1);
    delay(100);
    digitalWrite(column[10], 1);
    delay(100);
    digitalWrite(column[11], 1);
    delay(100);
    digitalWrite(column[15], 1);
    delay(100);
    digitalWrite(column[14], 1);
    delay(100);
    digitalWrite(column[13], 1);
    delay(100);
    digitalWrite(column[12], 1);
    delay(100);
}
```

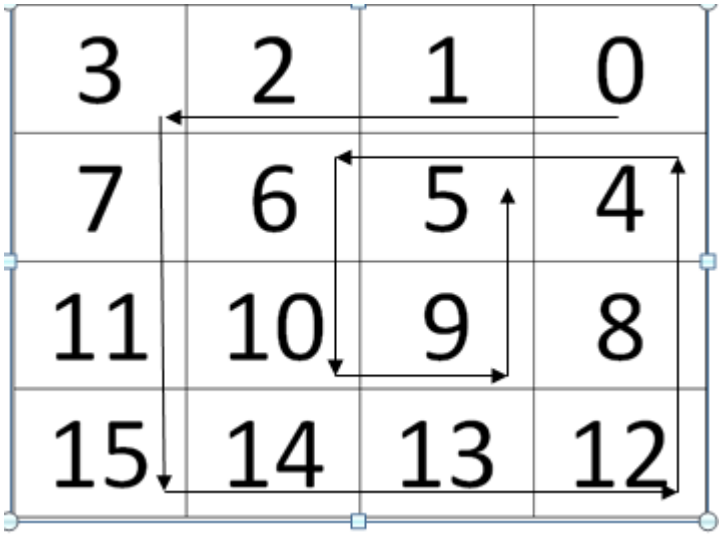


```
void parcurgere_verticala()
{

for(int i = 0; i<16; i++)
 {
   digitalWrite(column[i], 0);
 }

 for(int i = 0; i<4; i++)
 {
   digitalWrite(layer[i], 1);
 }
//ordine parcurgere: 0, 4, 8, 12, 13, 9, 5, 1, 2,
6, 10, 14, 15, 11, 7, 3

   digitalWrite(column[0], 1);
   delay(100);
   digitalWrite(column[4], 1);
   delay(100);
   digitalWrite(column[8], 1);
   delay(100);
   digitalWrite(column[12], 1);
   delay(100);
   digitalWrite(column[13], 1);
   delay(100);
   digitalWrite(column[9], 1);
   delay(100);
   digitalWrite(column[5], 1);
   delay(100);
   digitalWrite(column[1], 1);
   delay(100);
   digitalWrite(column[2], 1);
   delay(100);
   digitalWrite(column[6], 1);
   delay(100);
   digitalWrite(column[10], 1);
   delay(100);
   digitalWrite(column[14], 1);
   delay(100);
   digitalWrite(column[15], 1);
   delay(100);
   digitalWrite(column[11], 1);
   delay(100);
   digitalWrite(column[7], 1);
   delay(100);
   digitalWrite(column[3], 1);
   delay(100);
}
```

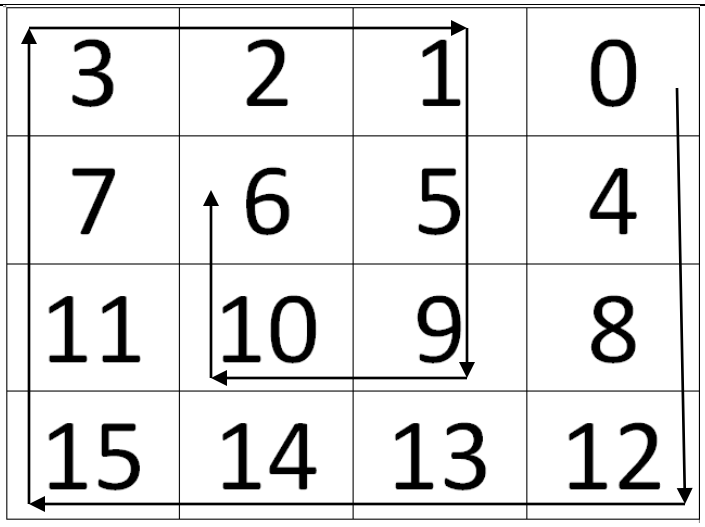


```
void parcurgere_spirala_1()
{
for(int i = 0; i<16; i++)
  {
    digitalWrite(column[i], 0);
  }


  for(int i = 0; i<4; i++)
  {
    digitalWrite(layer[i], 1);
  }
//ordine parcurgere: 0, 1, 2, 3 7, 11, 15, 14, 13,
12, 8, 4, 5, 6, 10, 9

    digitalWrite(column[0], 1);
    delay(100);
    digitalWrite(column[1], 1);
    delay(100);
    digitalWrite(column[2], 1);
    delay(100);
    digitalWrite(column[3], 1);
    delay(100);
    digitalWrite(column[7], 1);
    delay(100);
    digitalWrite(column[11], 1);
    delay(100);
    digitalWrite(column[15], 1);
    delay(100);
    digitalWrite(column[14], 1);
    delay(100);
    digitalWrite(column[13], 1);
    delay(100);
    digitalWrite(column[12], 1);
    delay(100);
    digitalWrite(column[8], 1);
    delay(100);
    digitalWrite(column[4], 1);
    delay(100);
    digitalWrite(column[5], 1);
    delay(100);
    digitalWrite(column[6], 1);
    delay(100);
    digitalWrite(column[10], 1);
    delay(100);
    digitalWrite(column[9], 1);
    delay(100);
}
```

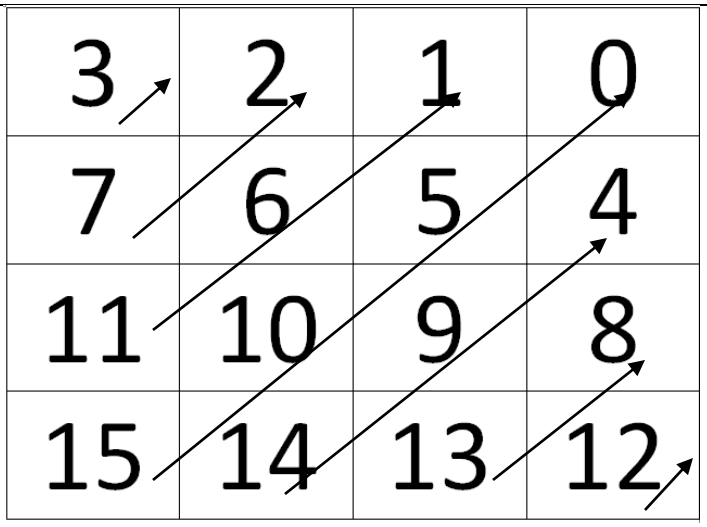


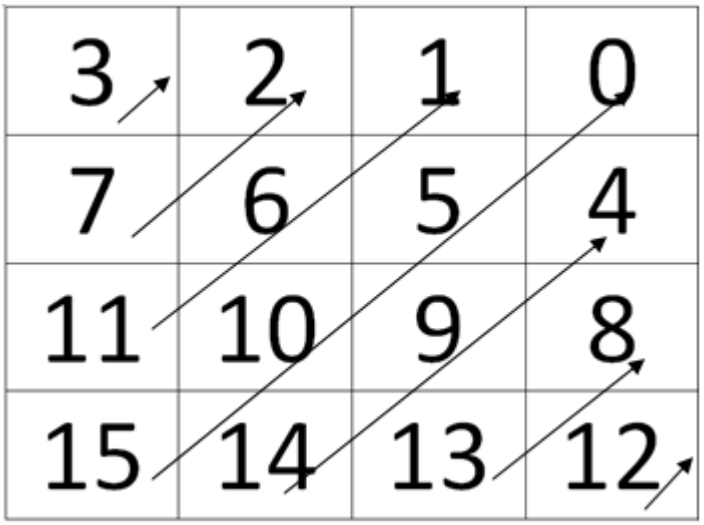


```
void parcurgere_spirala_2()
{
for(int i = 0; i<16; i++)
  {
    digitalWrite(column[i], 0);
  }
  for(int i = 0; i<4; i++)
  {
    digitalWrite(layer[i], 1);
  }
//ordine parcurgere> 0, 4, 8, 12, 13, 14, 15, 11,
7, 3, 2, 1, 5, 9, 10, 6

    digitalWrite(column[0], 1);
    delay(100);
    digitalWrite(column[4], 1);
    delay(100);
    digitalWrite(column[8], 1);
    delay(100);
    digitalWrite(column[12], 1);
    delay(100);
    digitalWrite(column[13], 1);
    delay(100);
    digitalWrite(column[14], 1);
    delay(100);
    digitalWrite(column[15], 1);
    delay(100);
    digitalWrite(column[11], 1);
    delay(100);
    digitalWrite(column[7], 1);
    delay(100);
    digitalWrite(column[3], 1);
    delay(100);
    digitalWrite(column[2], 1);
    delay(100);
    digitalWrite(column[1], 1);
    delay(100);
    digitalWrite(column[5], 1);
    delay(100);
    digitalWrite(column[9], 1);
    delay(100);
    digitalWrite(column[10], 1);
    delay(100);
    digitalWrite(column[6], 1);
    delay(100);
}
```



```
void parcurgere_diagonala_1()
{
for(int i = 0; i<16; i++)
  {
    digitalWrite(column[i], 0);
  }
  for(int i = 0; i<4; i++)
  {
    digitalWrite(layer[i], 1);
  }
//ordine parcurgere: 3, 7, 2, 11, 6, 1, 15, 10, 5, 0, 14, 9, 4, 13, 8, 12

    digitalWrite(column[3], 1);
    delay(100);
    digitalWrite(column[7], 1);
    delay(100);
    digitalWrite(column[2], 1);
    delay(100);
    digitalWrite(column[11], 1);
    delay(100);
    digitalWrite(column[6], 1);
    delay(100);
    digitalWrite(column[1], 1);
    delay(100);
    digitalWrite(column[15], 1);
    delay(100);
    digitalWrite(column[10], 1);
    delay(100);
    digitalWrite(column[5], 1);
    delay(100);
    digitalWrite(column[0], 1);
    delay(100);
    digitalWrite(column[14], 1);
    delay(100);
    digitalWrite(column[9], 1);
    delay(100);
    digitalWrite(column[4], 1);
    delay(100);
    digitalWrite(column[13], 1);
    delay(100);
    digitalWrite(column[8], 1);
    delay(100);
    digitalWrite(column[12], 1);
    delay(100);

}
```





```
void parcurgere_diagonala_2()
{
for(int i = 0; i<16; i++)
  {
    digitalWrite(column[i], 0);
  }
  for(int i = 0; i<4; i++)
  {
    digitalWrite(layer[i], 1);
  }
//ordine parcurgere> 0, 4, 1, 8, 5, 2, 12, 9, 6, 2,
13, 10, 7, 14, 11, 15

    digitalWrite(column[0], 1);
    delay(100);
    digitalWrite(column[4], 1);
    delay(100);
    digitalWrite(column[1], 1);
    delay(100);
    digitalWrite(column[8], 1);
    delay(100);
    digitalWrite(column[5], 1);
    delay(100);
    digitalWrite(column[2], 1);
    delay(100);
    digitalWrite(column[12], 1);
    delay(100);
    digitalWrite(column[9], 1);
    delay(100);
    digitalWrite(column[6], 1);
    delay(100);
    digitalWrite(column[3], 1);
    delay(100);
    digitalWrite(column[13], 1);
    delay(100);
    digitalWrite(column[10], 1);
    delay(100);
    digitalWrite(column[7], 1);
    delay(100);
    digitalWrite(column[14], 1);
    delay(100);
    digitalWrite(column[11], 1);
    delay(100);
    digitalWrite(column[15], 1);
    delay(100);

}
```