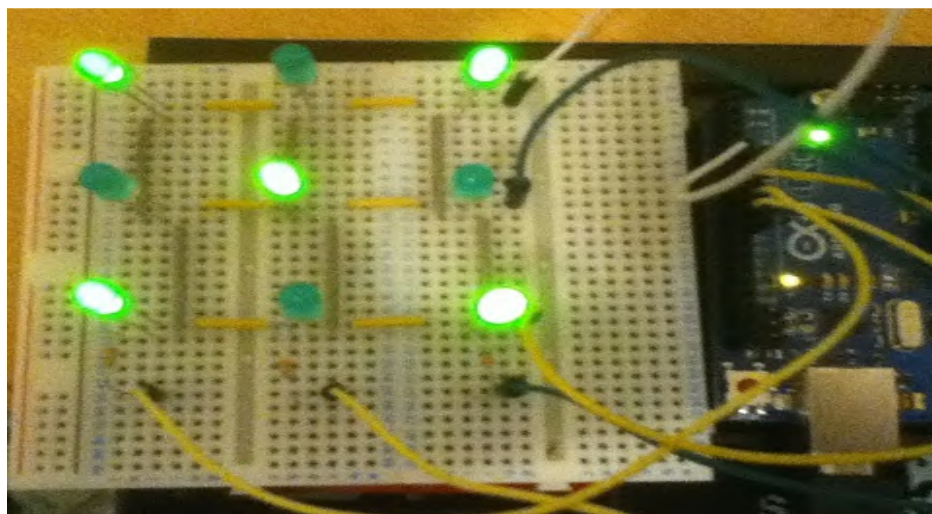
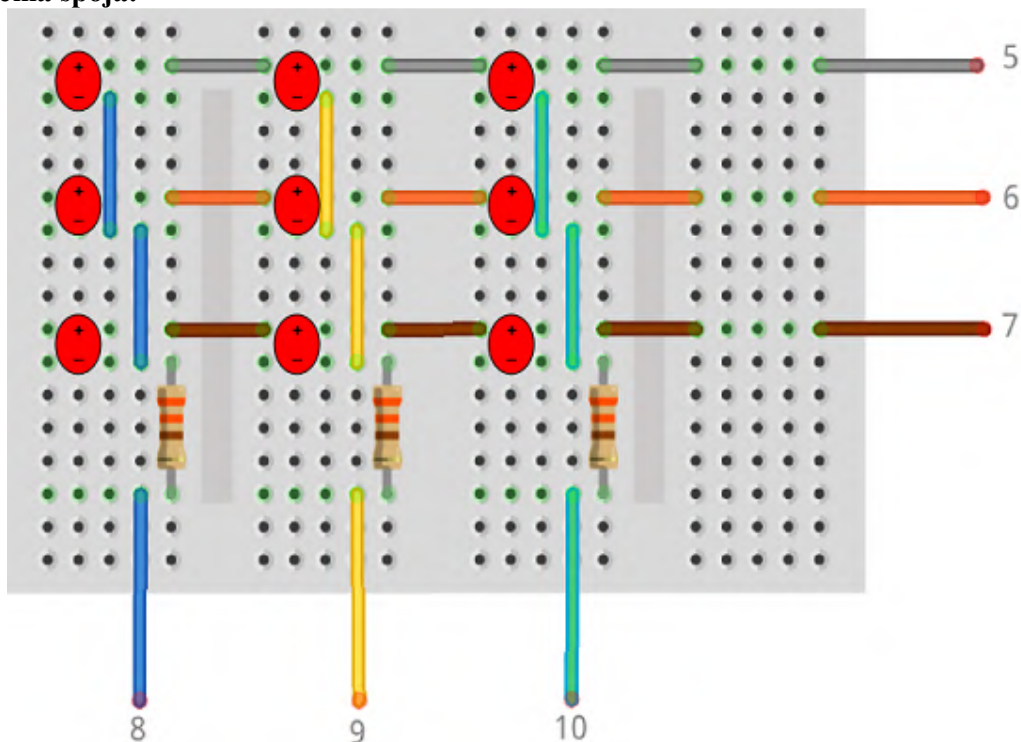


7 VJEŽBA: LED Matrix

Potrebni elementi :

- 9x LED lampice
- spojni vodiči
- 1 x protobord
- 1 x Arduino UNO SMD
- 3 x 330 Ω otpornik

Shema spoja:



Kod programa:

```
/ anoda LED diode
int row[] = {5,6,7};
// katoda LED diode
int col[] = {8,9,10};

void setup()
{
  for (int i=0;i<3;i++)
  {
    pinMode(row[i], OUTPUT);
    pinMode(col[i], OUTPUT);
  }
  allOff();
}

void loop()
{
  digitalWrite(row[1], HIGH);
  digitalWrite(col[1], LOW);
}

void allOff()
{
  for (int i=0;i<3;i++)
  {
    digitalWrite(row[i], LOW);
    digitalWrite(col[i], HIGH);
  }
}
```

Drugi kod programa

```
// anodes
int row[] = {5,6,7};
// cathodes
int col[] = {8,9,10};

// bit patterns for each row
byte data[] = {
  0,0,0};

// defines the size of the matrix
int columns = 3;
int rows = 3;

//millisecond delay between displaying each row
int pause = 1;

void setup()
{
  for (int i=0;i<3;i++)
  {
    pinMode(row[i], OUTPUT);
    pinMode(col[i], OUTPUT);
  }
  allOff();
}

void loop()
{
  // define pattern
  data[0] = B00000101;
  data[1] = B00000010;
  data[2] = B00000101;

  showPattern();
}
```

```

void allOff()
{
  for (int i=0;i<3;i++)
  {
    digitalWrite(row[i], LOW);
    digitalWrite(col[i], HIGH);
  }
}

void showPattern()
{
  for (int thisrow=0;thisrow<rows;thisrow++)
  {
    //turn everything off
    allOff();
    //turn on current row
    digitalWrite(row[thisrow], HIGH);
    // loop through columns of this row and light
    for (int thiscol=0;thiscol<columns;thiscol++)
    {
      if (bitRead(data[thisrow], columns-thiscol-1)==1)
      {
        digitalWrite(col[thiscol], LOW);
      }
      else
      {
        digitalWrite(col[thiscol], HIGH);
      }
    }
    delay(pause);
  }
}

```

ANALIZA VJEŽBE

1. *Opiši što se događa kada unesemo prvi kod programa, a što kada unesemo drugi kod programa?*

2. *Napiši zaključak*