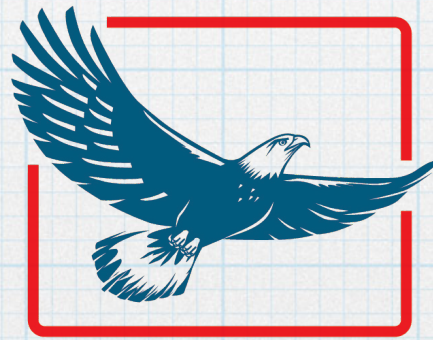




ARDUINO'YA GİRİŞ

ANTALYA SINAV ANADOLU LİSESİ ROBOTİK TOPLULUĞU



SINAV KOLEJİ



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Arduino Nedir?

Arduino is an open-source electronics platform based on easy-to-use hardware and software.

Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online. You can tell your board what to do by sending a set of instructions to the microcontroller on the board. To do so you use the Arduino programming language (based on Wiring), and the Arduino Software (IDE), based on Processing.

<https://www.arduino.cc/en/Guide/Introduction>

Özgür Yazılım Nedir?

- **Özgürlük 0:** Programı sınırsız kullanma özgürlüğü.
- **Özgürlük 1:** Programın nasıl çalıştığını inceleme ve amaçlara uygun değiştirme özgürlüğü.
- **Özgürlük 2:** Programın kopyalarını sınırsız dağıtma özgürlüğü.
- **Özgürlük 3:** Programın değiştirilmiş halini dağıtma özgürlüğü.



Free as in Freedom



GNU Logo

<https://www.gnu.org/licenses/gpl-3.0.en.html>

https://tr.wikipedia.org/wiki/GNU_Genel_Kamu_Lisansı

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ENTRY LEVEL

[ARDUINO UNO](#)[ARDUINO 101](#)[ARDUINO PRO](#)[ARDUINO PRO MINI](#)[ARDUINO MICRO](#)[ARDUINO STARTER KIT](#)[ARDUINO BASIC KIT](#)[MKR1000 BUNDLE](#)

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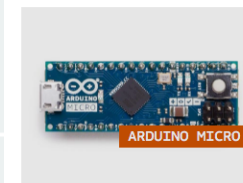
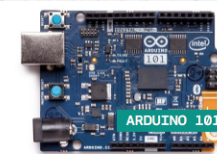
INTERNET OF THINGS

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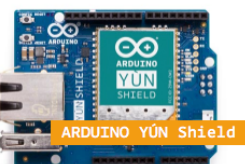
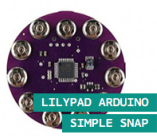
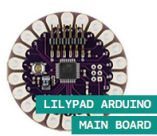
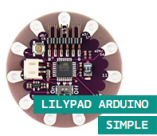
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Internet of Things

Make connected devices easily with one of these IoT products and open your creativity with the opportunities of the world wide web.

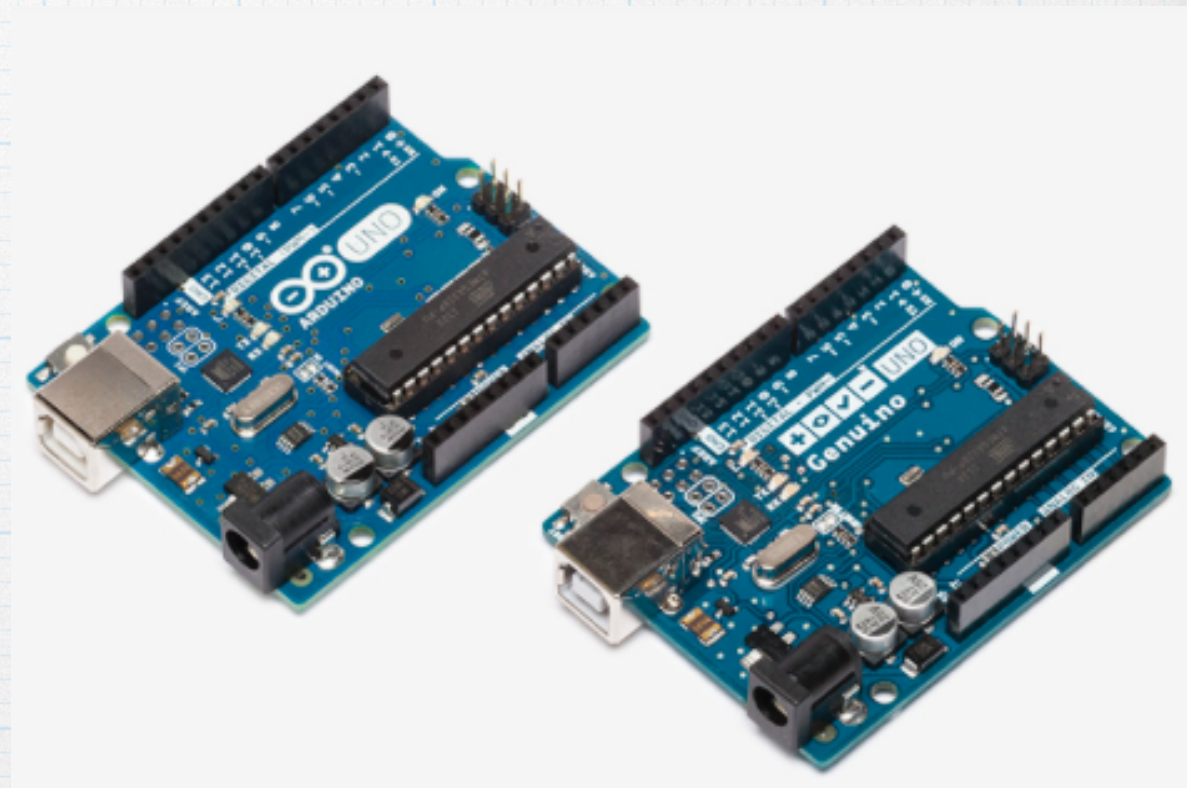
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<https://www.arduino.cc/en/Main/Products>

Arduino Uno

Technical specs

Microcontroller	ATmega328P
Operating Voltage	5V
Input Voltage (recommended)	7-12V
Input Voltage (limit)	6-20V
Digital I/O Pins	14 (of which 6 provide PWM output)
PWM Digital I/O Pins	6
Analog Input Pins	6
DC Current per I/O Pin	20 mA
DC Current for 3.3V Pin	50 mA
Flash Memory	32 KB (ATmega328P) of which 0.5 KB used by bootloader
SRAM	2 KB (ATmega328P)
EEPROM	1 KB (ATmega328P)
Clock Speed	16 MHz
LED_BUILTIN	13
Length	68.6 mm
Width	53.4 mm
Weight	25 g



E-Belge/E-Kaynak



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Language Reference

Arduino programs can be divided in three main parts: *structure*, *values* (variables and constants), and *functions*.

Structure

- `setup()`
- `loop()`

Control Structures

- `if`
- `if...else`
- `for`
- `switch case`
- `while`

Variables

Constants

- `HIGH` | `LOW`
- `INPUT` | `OUTPUT` | `INPUT_PULLUP`
- `LED_BUILTIN`
- `true` | `false`
- integer constants
- floating point constants

Data Types

- `void`

Functions

Digital I/O

- `pinMode()`
- `digitalWrite()`
- `digitalRead()`

Analog I/O

- `analogReference()`
- `analogRead()`
- `analogWrite()` - *PWM*

Page# on this page in a new tab

Arduino IDE Kurulumu

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Download the Arduino Software



ARDUINO 1.6.12

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software.

This software can be used with any Arduino board. Refer to the [Getting Started](#) page for Installation instructions.

Windows Installer**Windows** ZIP file for non admin install**Mac OS X** 10.7 Lion or newer**Linux** 32 bits**Linux** 64 bits**Linux** ARM (experimental)[Release Notes](#)[Source Code](#)[Checksums \(sha512\)](#)

CONNECT, COLLABORATE, CREATE. [Learn more about the Create platform.](#)

**Try out the new
Arduino Web Editor**

<https://www.arduino.cc/en/Main/Software>

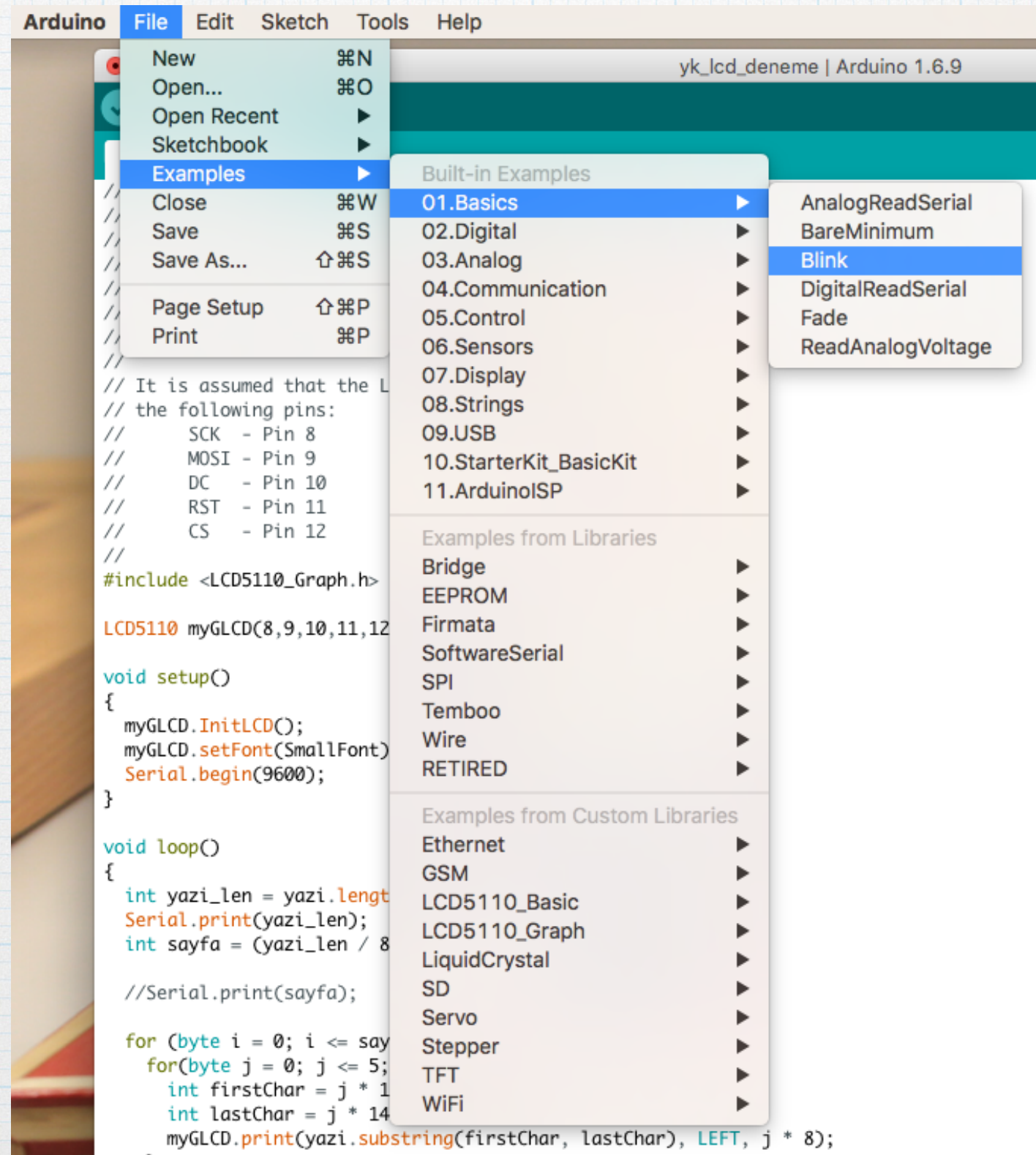
“Merhaba Dünya!”

```
void setup() {  
  // Seri iletişim hızı yaklaşık olarak 1000 karakter olarak başlatılır.  
  Serial.begin(9600);  
  
}
```

```
void loop() {  
  // Ekrana yazı yazdırıp, satır atlıyor.  
  Serial.println("Merhaba Dünya!");  
  // Döngü içindeki bekleme zamanı  
  delay(1000);  
  
}
```

Araçlar > Serial Port Ekranı

LED YAKIP SÖNDÜRME

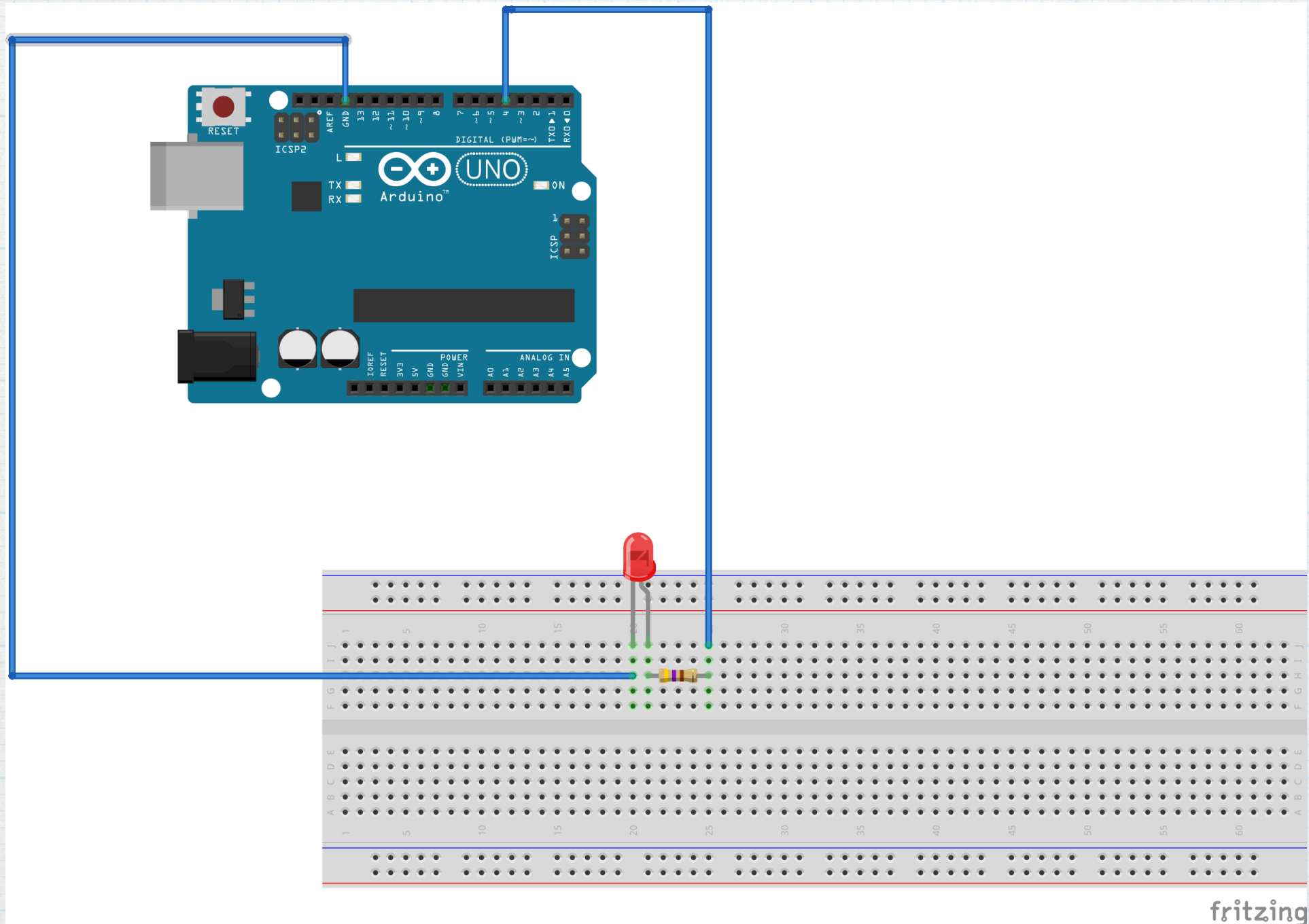


Arduino ile LED Yakma

Gerekenler;

- * Arduino UNO
- * Breadboard
- * 1 Adet 470 Ohm Direnç
- * Jumper Kablolar
- * İlgil ve Merak!

Arduino ile LED Yakma (Fritzing Şema)



Arduino ile LED Yakma (Kod)

```
void setup() {  
  // LED'e güç vereceğimiz çıkış pini belirtiliyor.  
  pinMode(4, OUTPUT);  
  
}
```

```
void loop() {  
  // 4 numaralı pine güç veriyoruz.  
  digitalWrite(4, HIGH);  
  
}
```

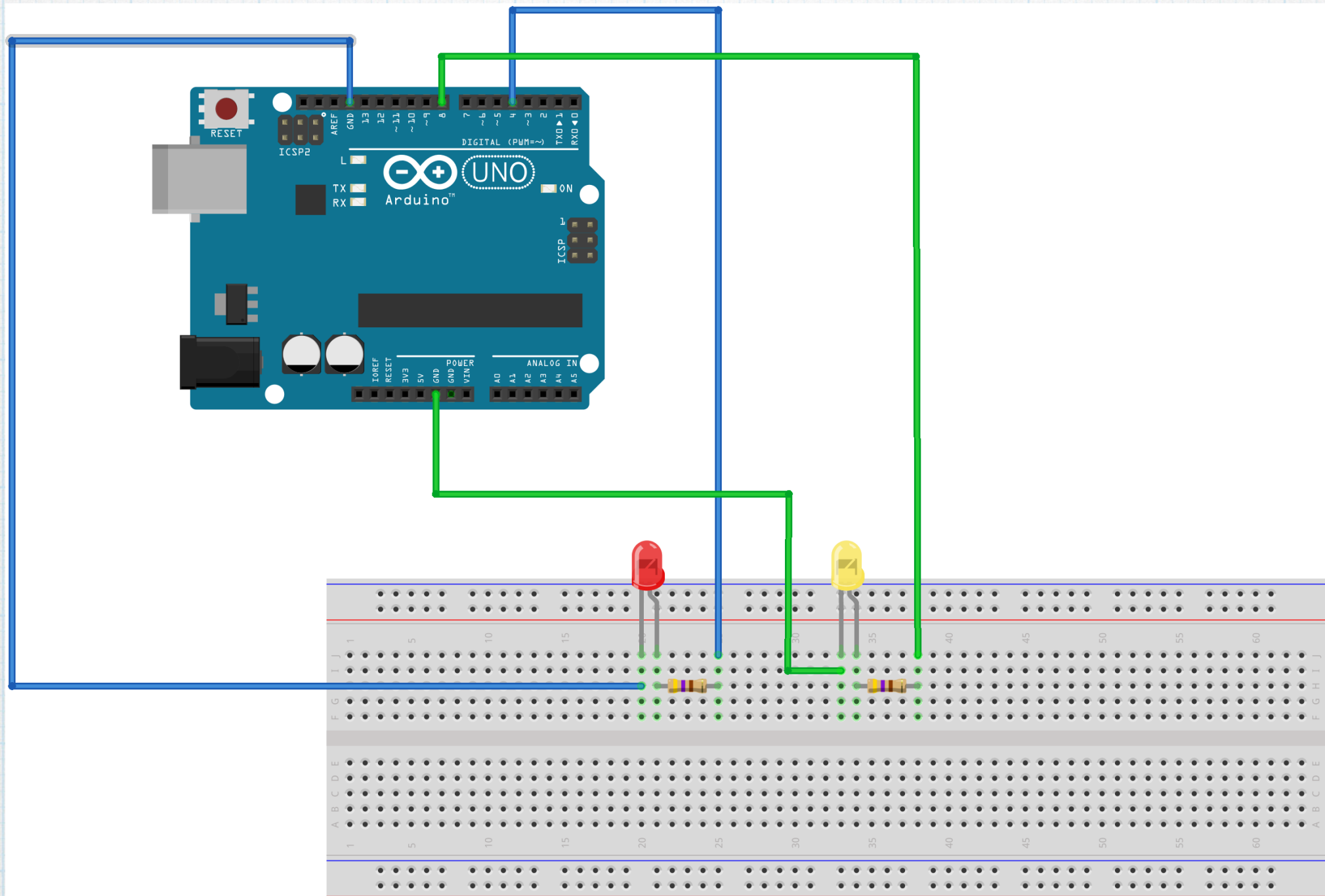

Arduino ile LED Yakma (Kod, Blink)

```
void setup() {  
  // LED'e güç vereceğimiz çıkış pini belirtiliyor.  
  pinMode(4, OUTPUT);  
  
}
```

```
void loop() {  
  // 4 numaralı pine güç veriyoruz.  
  digitalWrite(4, HIGH);  
  // Gecikme zamanı.  
  delay(500);  
  // 4 numaralı pinden gücü kesiyoruz.  
  digitalWrite(4, LOW);  
  delay(500);  
  
}
```


Challenge!

Ardışık LED Yakıp Söndürme!



Challenge!

Ardışık LED Yakıp Söndürme!

(Kod)

* To be continued...