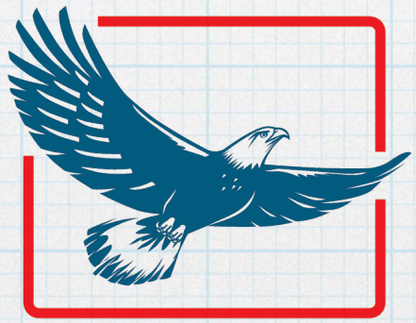
ARDUINO'YA GİRİŞ

ANTALYA SINAV ANADOLU LİSESİ ROBOTİK TOPLULUĞU



SINAV KOLEJİ

E-posta: yucelkilic@antalyasinavkoleji.com
ilkerkaya@antalyasinavkoleji.com

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.

GNU Logo

https://www.gnu.org/licenses/gpl-3.0.en.html
https://tr.wikipedia.org/wiki/GNU_Genel_Kamu_Lisansı

Arduino Çeşitleri

Buy Download Products Learning Forum Support Blog LOG IN SIGN

- Summary
- Entry Level
- Enhanced Features
- IoT
- Wearable
- 3D Printing
- Retired

ENTRY LEVEL

ARDUINO UNO | ARDUINO 101 | ARDUINO PRO | ARDUINO PRO MINI | ARDUINO MICRO

ARDUINO STARTER KIT | ARDUINO BASIC KIT | MKR1000 BUNDLE

ENHANCED FEATURES

ARDUINO MEGA | ARDUINO ZERO | ARDUINO PROTO SHIELD

INTERNET OF THINGS

ARDUINO MKR1000 | ARDUINO WIFI SHIELD 101 | ARDUINO YÚN SHIELD

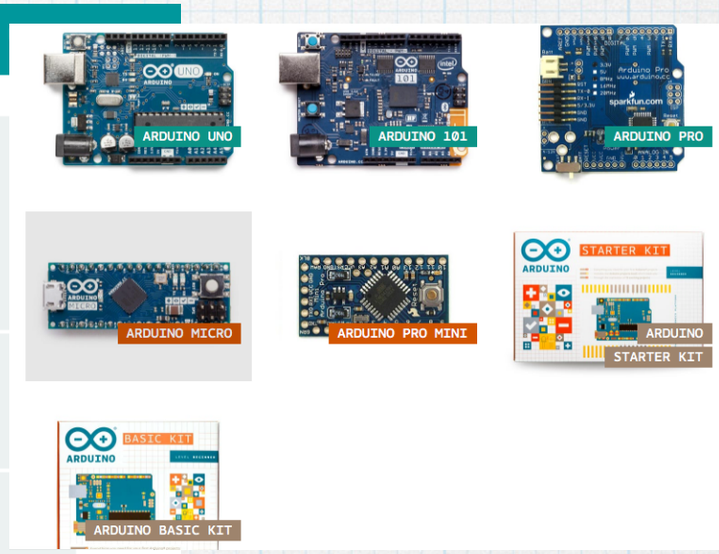
WEARABLE

ARDUINO GEMMA | LILYPAD ARDUINO USB | LILYPAD ARDUINO MAIN BOARD

LILYPAD ARDUINO SIMPLE | LILYPAD ARDUINO SIMPLE SNAP

3D PRINTING

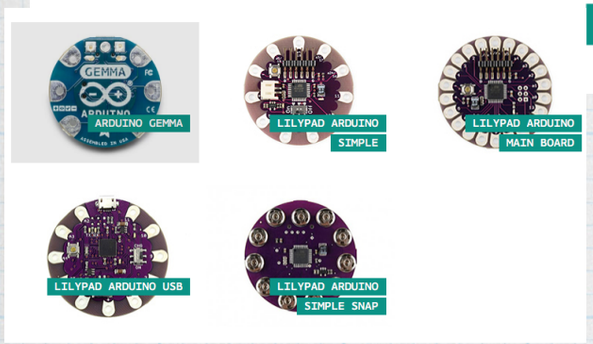
MATERIA 101



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.

BOARDS MODULES SHIELDS KITS ACCESSORIES COMING



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

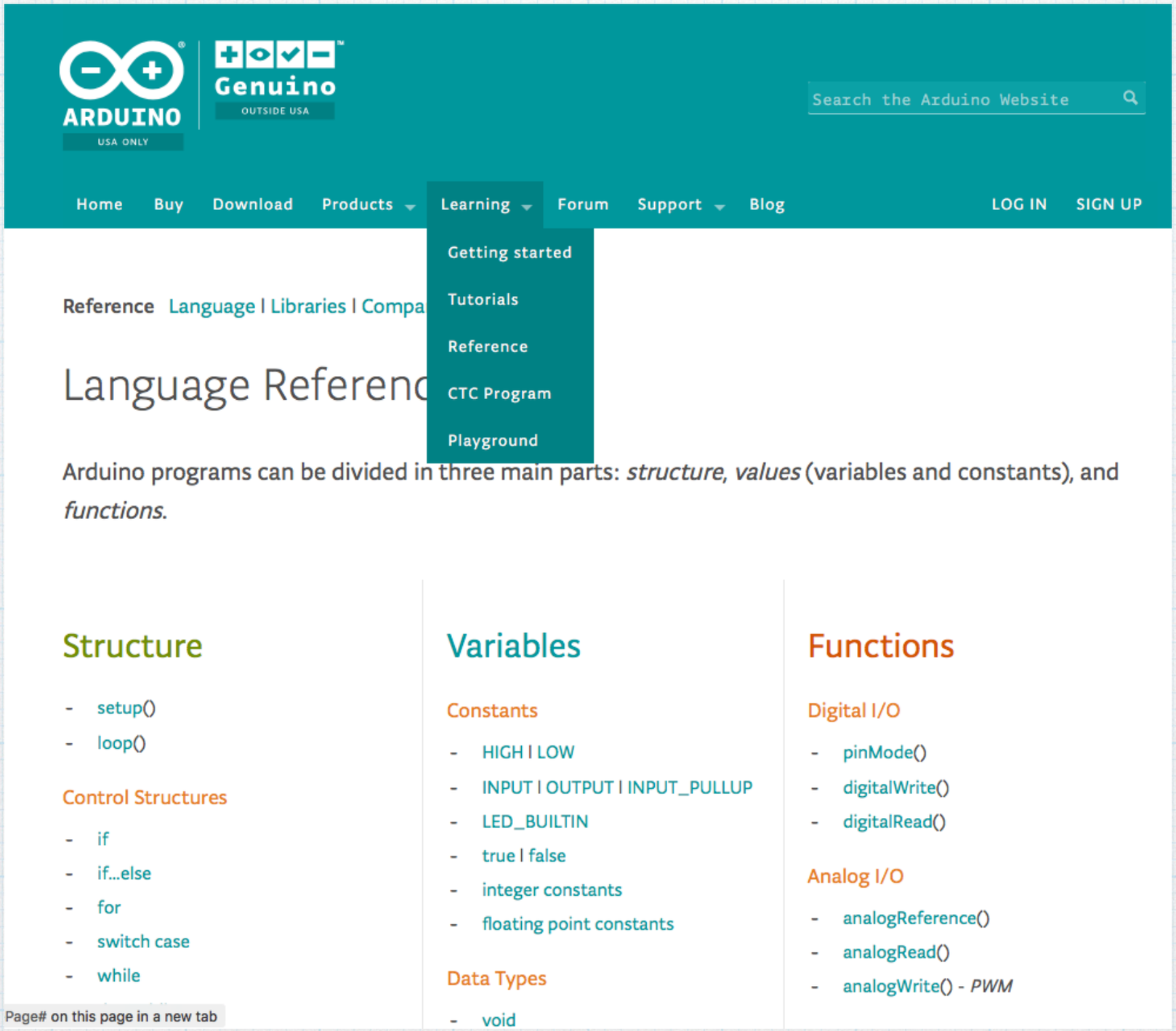
Arduino Uno

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

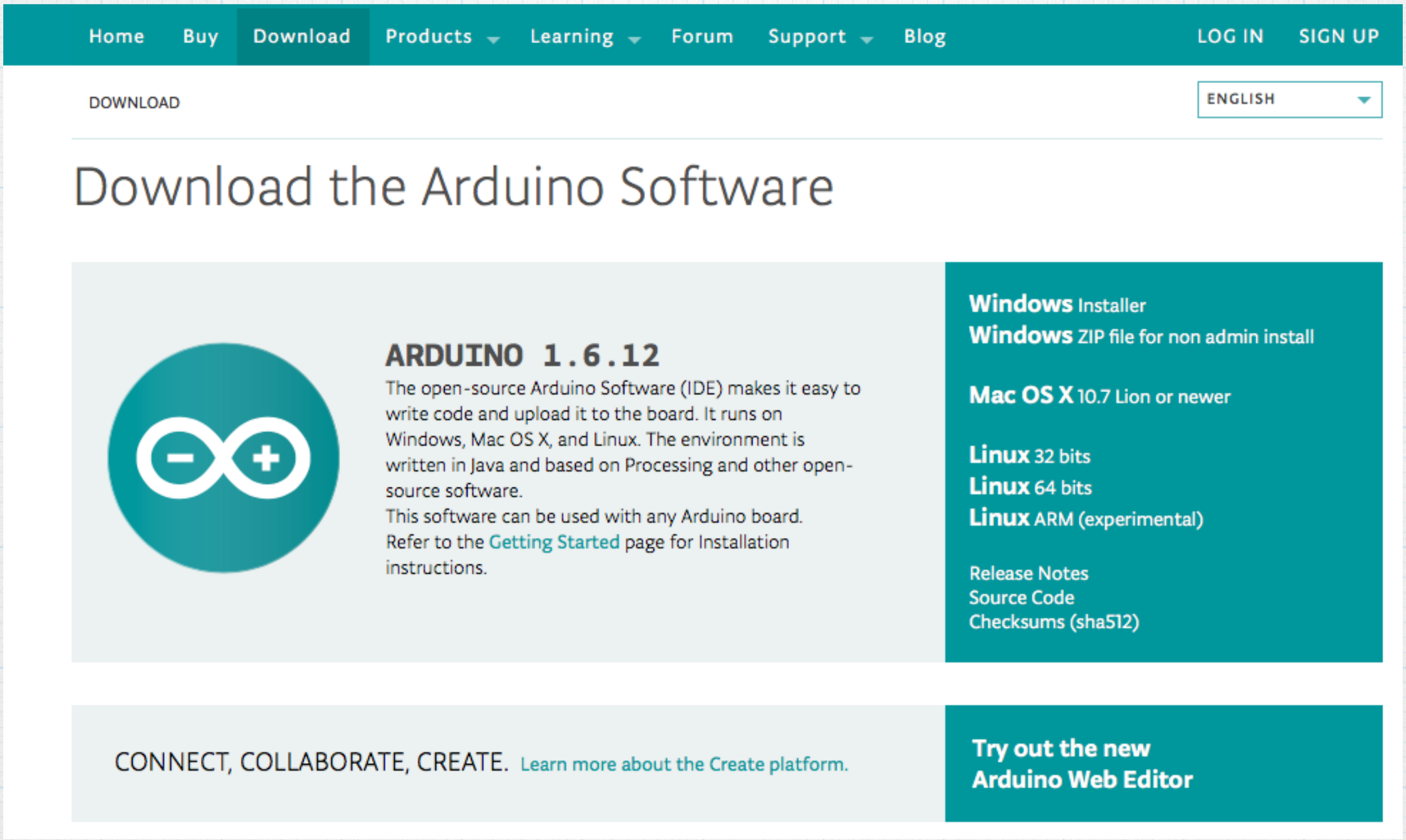
https://www.arduino.cc/en/Main/ArduinoBoardUno

E-Belge/E-Kaynak



https://www.arduino.cc/en/Reference/HomePage

Arduino IDE Kurulumu



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

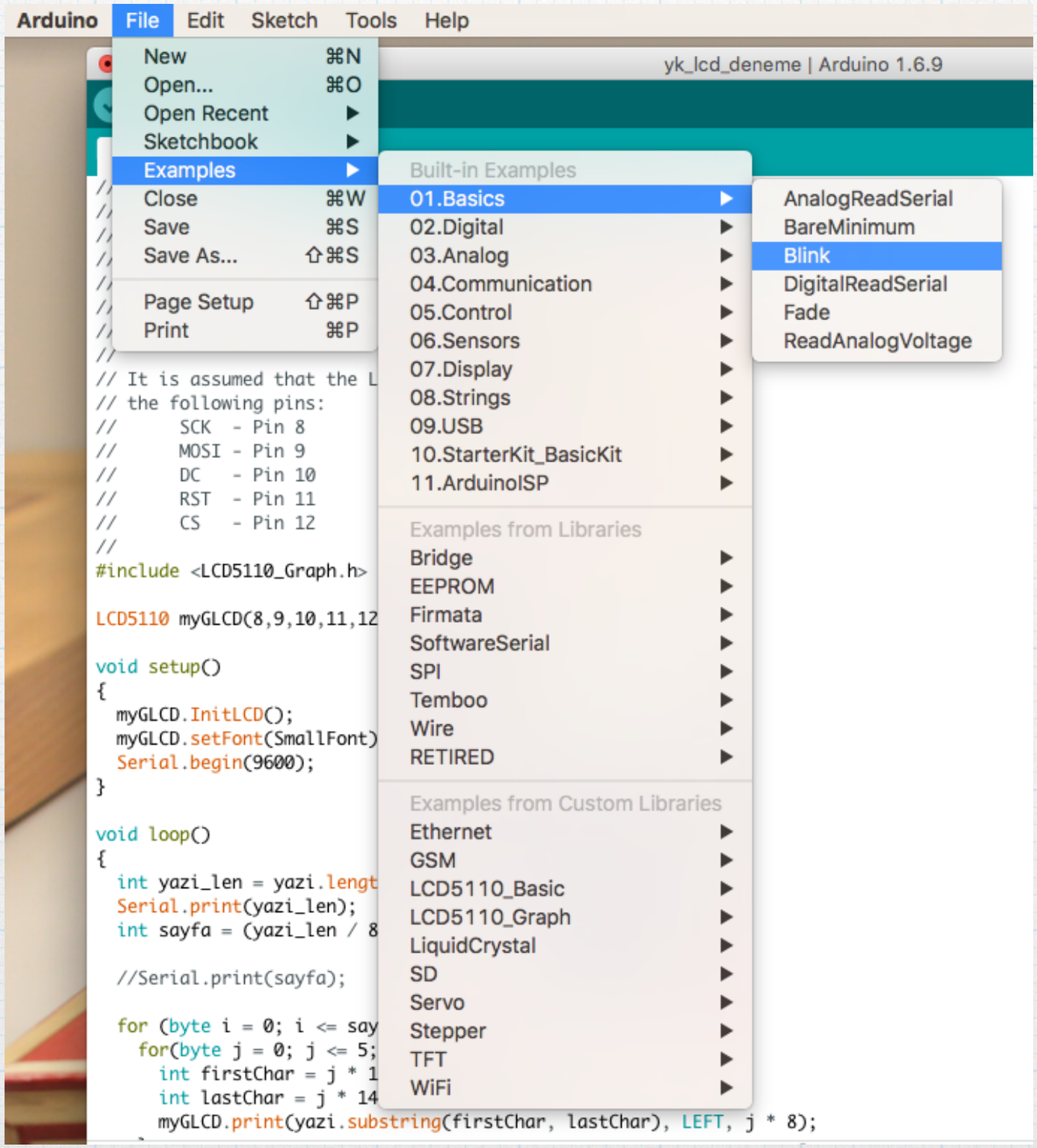
“Merhaba Dünya!”

```
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

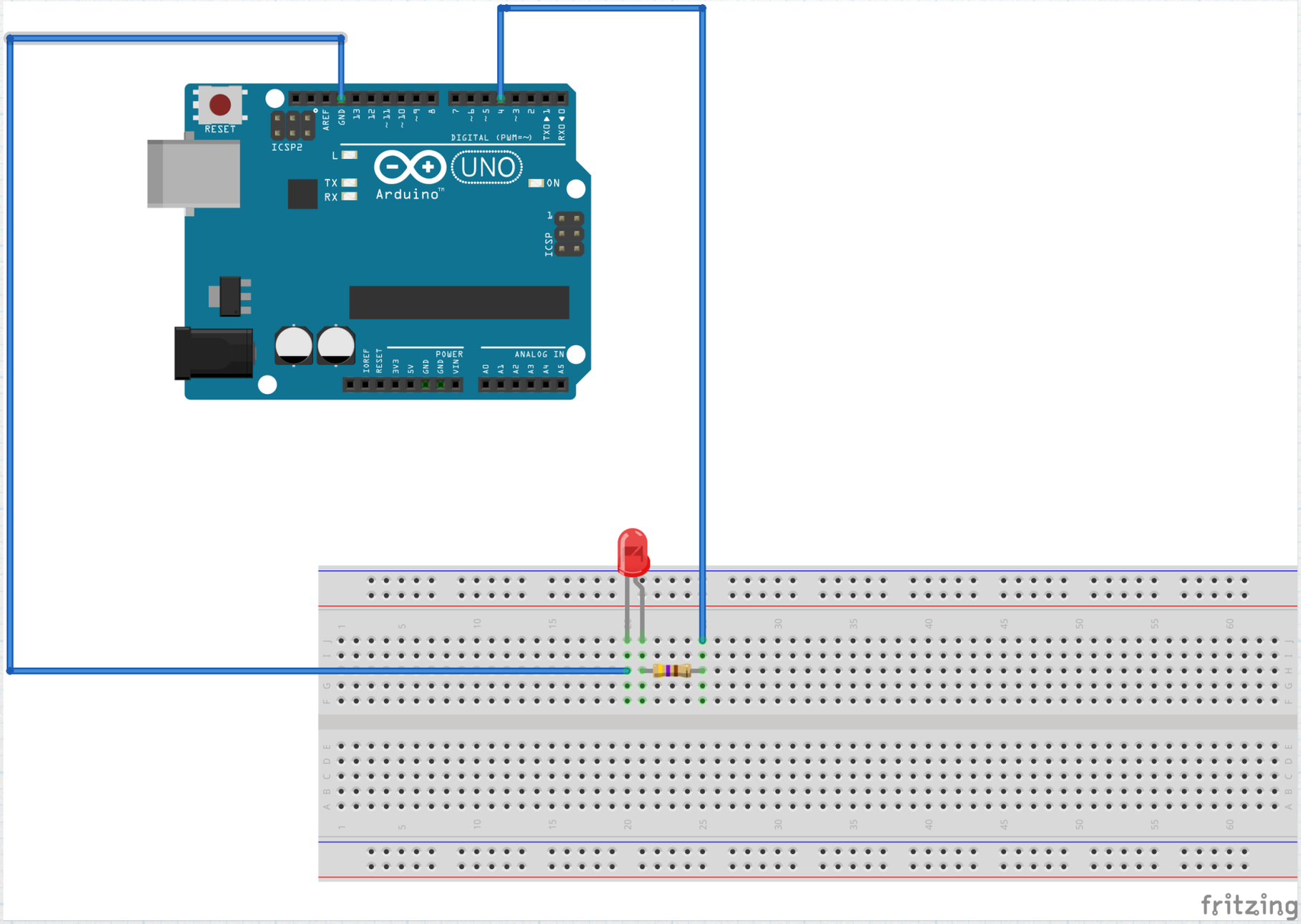


Arduino ile LED Yakma

Gerekenler;

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

Arduino İle LED Yakma (Fritzing Şema)



Arduino İle LED Yakma (Kod)

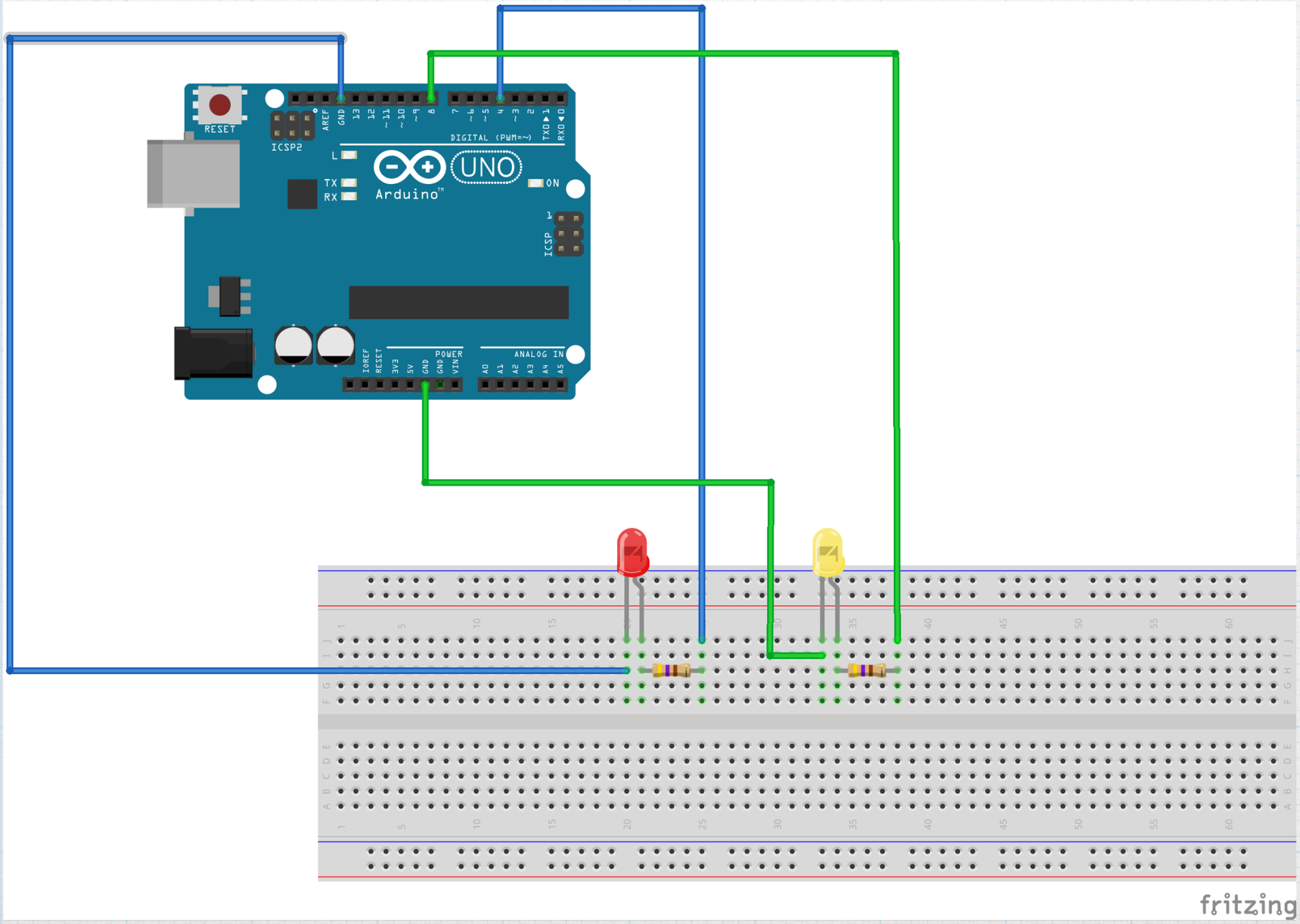
```
void setup() {
  // LED'e güç vereceğimiz çıkış pini belirtiliyor.
  pinMode(4, OUTPUT);
  }


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

}
```

Arduino İle 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...