




Pemrograman Dasar **Arduino**

“Buat **Game Arduino** Sederhana Untuk Latih **Fokus dan Konsentrasi**”

Ajang Rahmat - KelasRobot.com

EVALUASI

← Dasbor channel



Video Anda
Belajar Arduino Grup Facebook

- Detail
- Analytics**
- Editor
- Komentar
- Subtitel


Analisis video

MODE LANJUTAN

20-25 Feb 2021
Sejak diupload (sepanjang...)

Ringkasan **Jangkauan** Interaksi Penonton Pendapatan


Tayangan 2,4 rb	Rasio klik-tayang dari tayangan 5,5%	Penayangan 335	Penonton unik 250
---------------------------	--	--------------------------	-----------------------------



SELENGKAPNYA

EVALUASI

Konten channel



Video Anda
Sharing Session #1 (Robotic & Inter...)

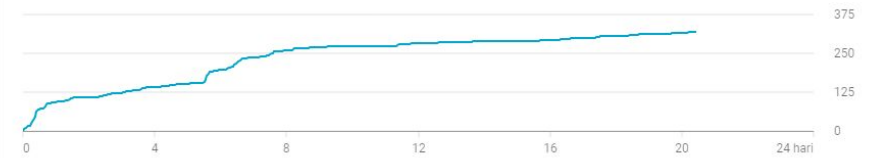
- Detail
- Analytics**
- Editor
- Komentar
- Subtitel
- Monetisasi

Analisis video

Ringkasan | Jangkauan | Interaksi | Penonton | Pendapatan

Video ini ditonton 320 kali sejak dipublikasikan

Penayangan	Waktu tonton (jam)	Subscriber	Estimasi pendapatan Anda
320	57,5	+50	Rp3.796



SELENGKAPNYA



Resume - Ajang Rahmat

1. SMKN 1 Sumedang - Teknik Komputer Jaringan
2. Universitas Siber Asia - Teknik Informatika (Semester 1)
1. PT. Daya Anugerah Mandiri
2. PT. Indokemas Sukses Makmur
3. PT. Graha 1001 Jaya
4. Robotic Explorer
5. Kelas Robot



Apa Itu Arduino?

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

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](#).



Arduino Untuk Apa?

<https://create.arduino.cc/projecthub>



Mengapa Arduino?

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

1. **Inexpensive** - Arduino boards are relatively inexpensive compared to other microcontroller platforms. The least expensive version of the Arduino module can be assembled by hand, and even the pre-assembled Arduino modules cost less than \50
2. **Cross-platform** - The Arduino Software (IDE) runs on Windows, Macintosh OSX, and Linux operating systems. Most microcontroller systems are limited to Windows.
3. **Simple, clear programming environment** - The Arduino Software (IDE) is easy-to-use for beginners, yet flexible enough for advanced users to take advantage of as well. For teachers, it's conveniently based on the Processing programming environment, so students learning to program in that environment will be familiar with how the Arduino IDE works.
4. **Open source and extensible software** - The Arduino software is published as open source tools, available for extension by experienced programmers. The language can be expanded through C++ libraries, and people wanting to understand the technical details can make the leap from Arduino to the AVR C programming language on which it's based. Similarly, you can add AVR-C code directly into your Arduino programs if you want to.
5. **Open source and extensible hardware** - The plans of the Arduino boards are published under a Creative Commons license, so experienced circuit designers can make their own version of the module, extending it and improving it. Even relatively inexperienced users can build the breadboard version of the module in order to understand how it works and save money.
6. **COMMUNITY**



Bagaimana Cara Menggunakan Arduino?

Siapkan Software Yang Dibutuhkan:

1. **Arduino IDE** (Code Editor, Compiler) - <https://www.arduino.cc/en/software>
2. **USB Driver CH340** - Khusus Yang Non Compatible Arduino USB Driver
<https://kelasrobot.com/cara-install-usb-driver-ch340g-ch340-untuk-arduino/>

Siapkan Hardware Yang Dibutuhkan

1. **Laptop / PC** (OS Windows, Linux, Mac)
2. **Arduino** dan DKK

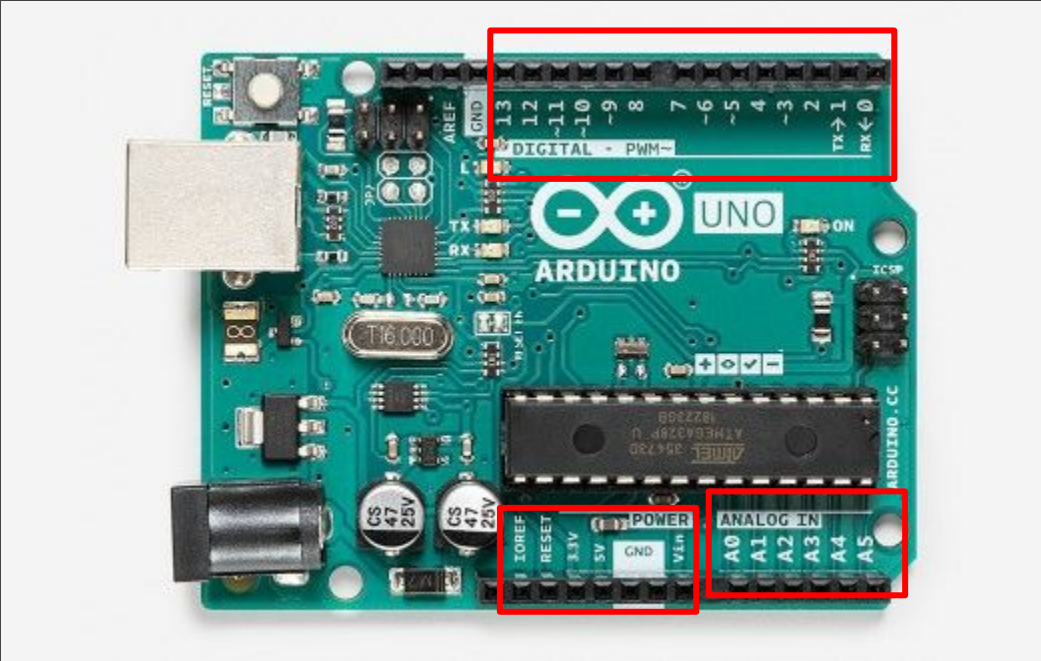


Jenis Jenis Arduino

<https://www.arduino.cc/en/main/products>

Arduino Uno

Image Source: <https://store.arduino.cc/usa/arduino-uno-rev3>





Pemrograman Arduino



Bare Minimum

```
void setup() {  
    // put your setup code here, to run once:  
}  
  
void loop() {  
    // put your main code here, to run repeatedly:  
}
```



Komunikasi Serial

```
int nilai = 100;

void setup() {
  Serial.begin(9600);
  Serial.println("Hello World");
  Serial.println(nilai);
}

void loop() {
  if (Serial.available()) {
    char kode = Serial.read();
    Serial.print(kode);
  }
}
```



digital / analog write

```
void setup() {  
    pinMode(4, OUTPUT);  
    pinMode(3, OUTPUT);  
}  
  
void loop() {  
    digitalWrite(4, HIGH); // LOW untuk OFF  
    analogWrite(3, 100); //PWM Set 0-255  
    delay(1000);  
    digitalWrite(4, 0);  
    analogWrite(3, 0);  
    delay(1000);  
}
```



digital / analog read

```
void setup() {  
  Serial.begin(9600);  
  pinMode(2, INPUT);  
}  
  
void loop() {  
  Serial.println(digitalRead(2));  
  Serial.println(analogRead(A0));  
}
```



Variabel

```
int namaVariabel;  
int nama_variabel = 0;  
int nama_variabel = 130;  
  
String namaVariabel = "Hello World";
```




Tipe Data

```
//Numerik
byte namaVariabel1 = 13;
int namaVariabel2 = 300;
float namaVariabel3 = 0.56;
long namaVariabel4 = 19010121;

//Text
char nama_variabel1 = 'a';
char* nama_variabel2 = "Hello World";
char nama_variabel3[] = "Hello World";
String nama_variabel4 = "Hello Wolrd";

//Boolean
boolean nama_variabel5 = false;
bool nama_variabel6 = true;
```



Aritmatika

```
int nilai1 = 10, nilai2 = 2, hasil;  
  
void setup() {  
    hasil = nilai1 + nilai2;  
    hasil = nilai1 - nilai2;  
    hasil = nilai1 / nilai2;  
    hasil = nilai1 * nilai2;  
    hasil++;  
    hasil--;  
}  
  
void loop() {}
```



Kondisi

```
if (kondisi) {  
    //perintah  
}  
else if (kondisi) {  
    //perintah  
}  
else {  
    //perintah  
}
```



Perulangan

```
while(kondisi){  
    //perintah  
    //sebaiknya ditambahkan increment  
}  
  
for(nilaiAwal, kondisi, increament/discreament){  
    //perintah  
}
```



Fungsi

```
void namaFungsi(parameter){  
    //perintah  
}  
  
int namaFungsi2(parameter){  
    int hasil;  
    //perintah  
    return hasil;  
}
```



Array

```
int dataArray[4] = {10, 23, 50, 45};

void setup() {
  Serial.begin(9600);
  Serial.println(dataArray[0]);
}

void loop() {}
```



Terimakasih...