

아두이노 기초편

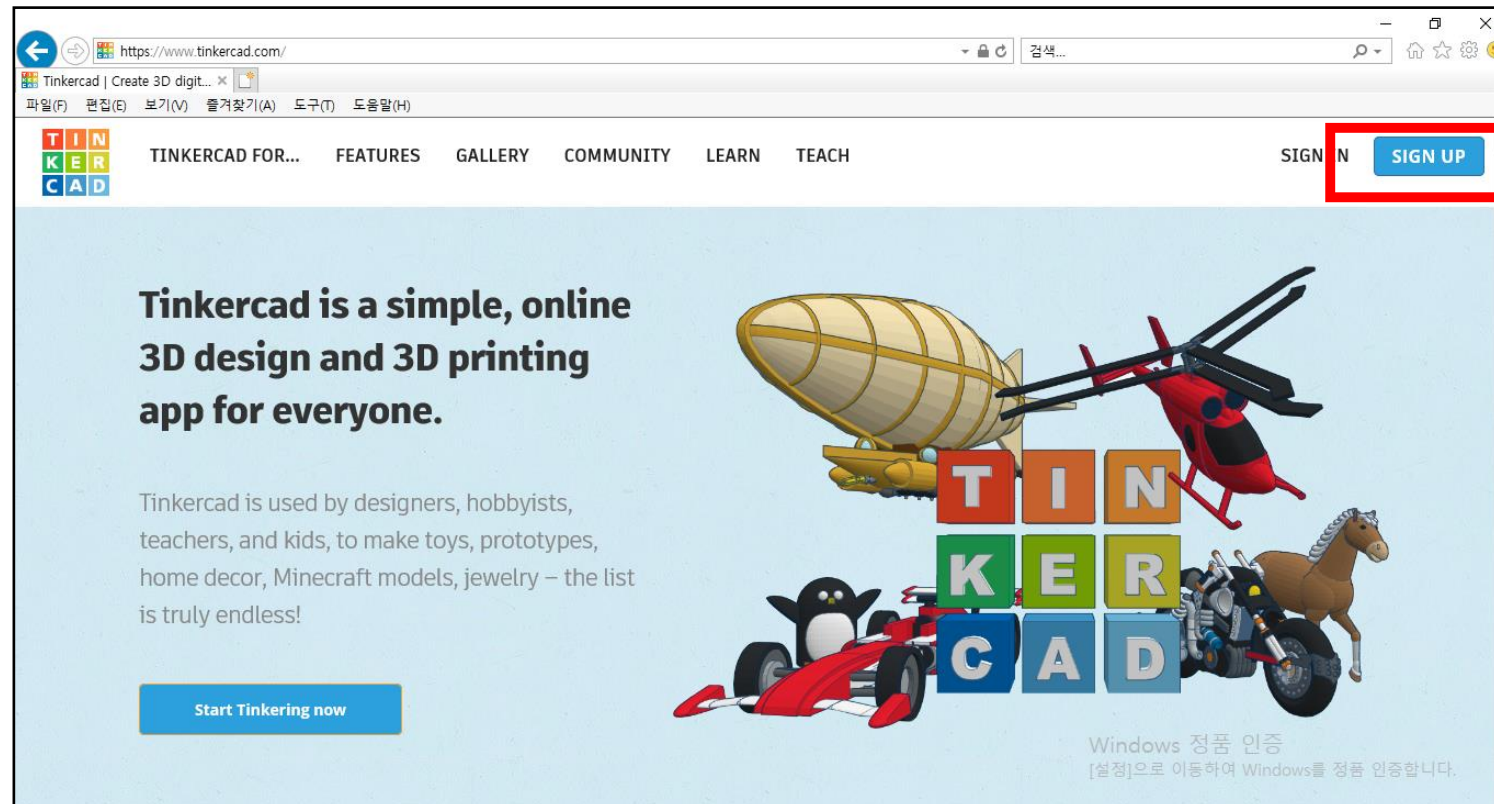
- mech9917@sogang.ac.kr



TinkerCAD



<https://www.tinkercad.com/>
팅커링 시작-계정 생성-로그인-Circuits-새 회로 작성

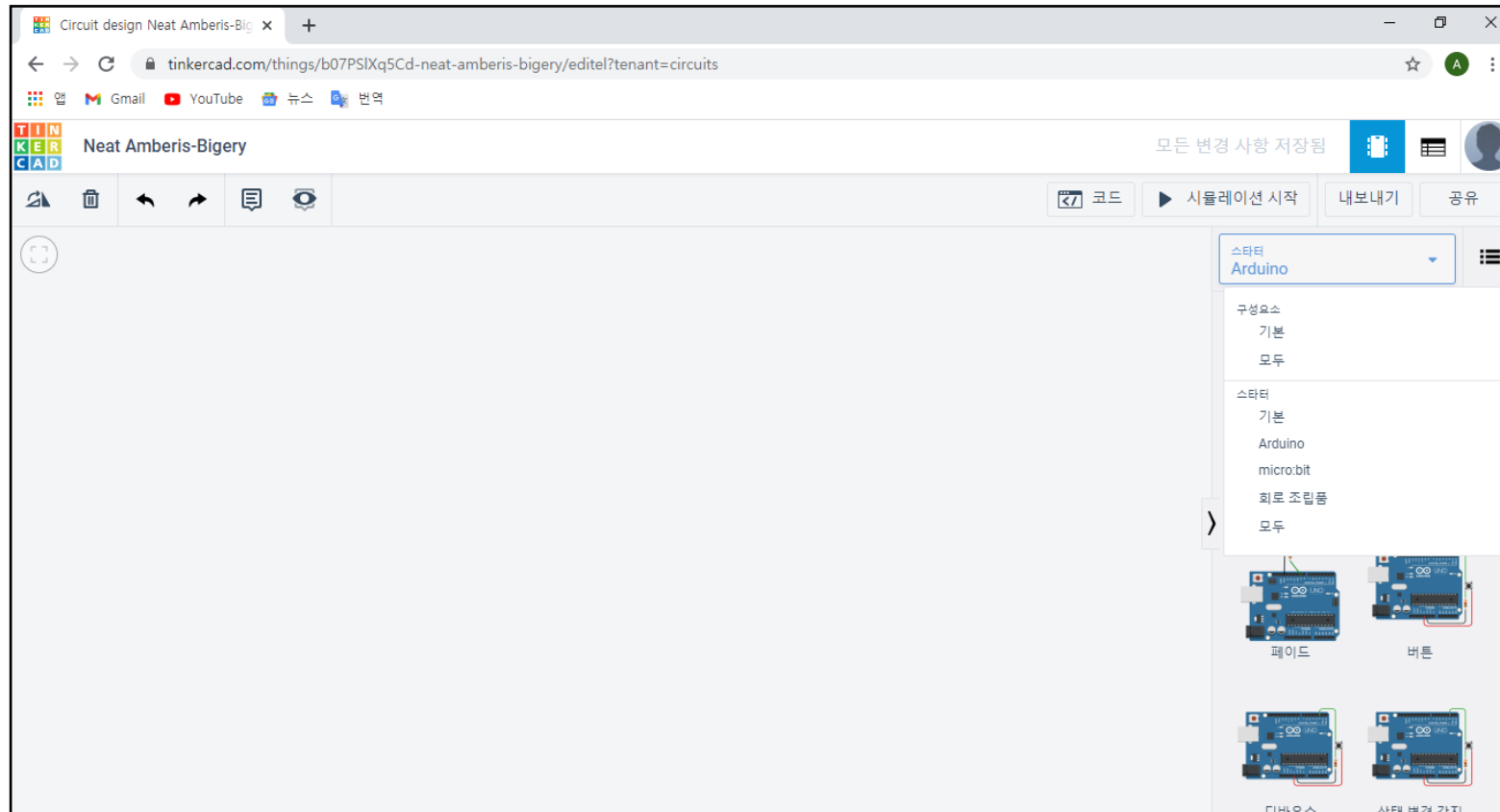




TinkerCAD

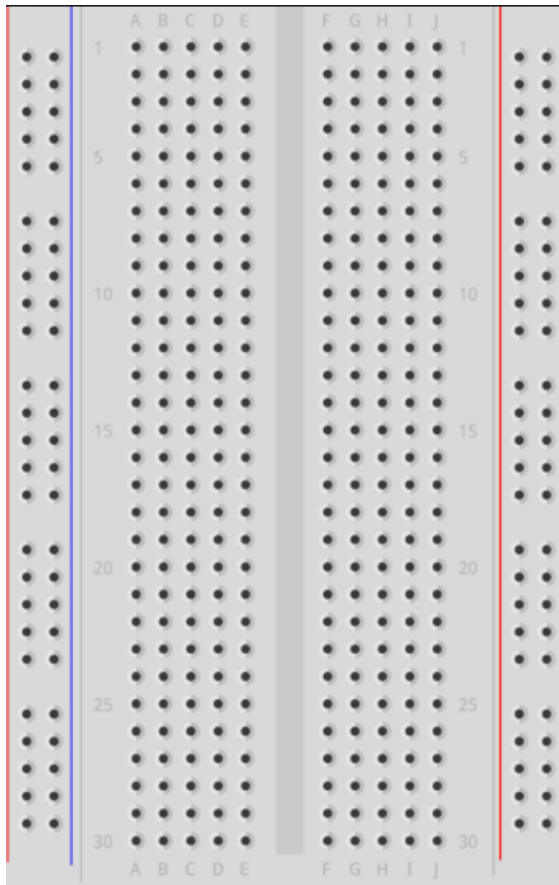


팅커링 시작-계정 생성-로그인-Circuits-새 회로 작성

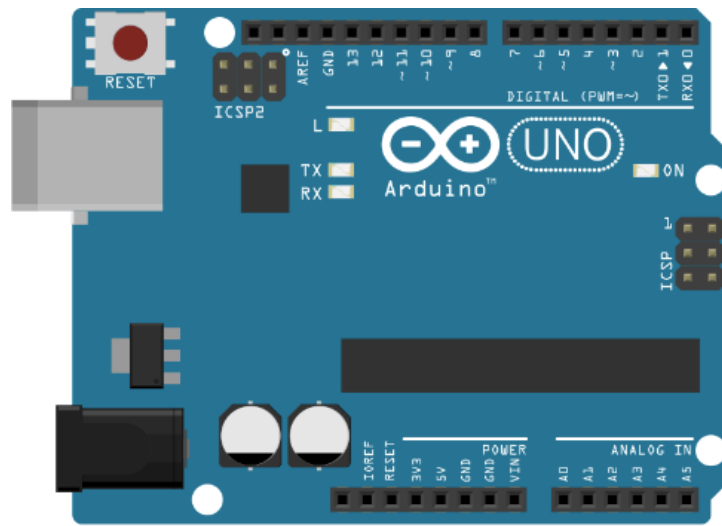




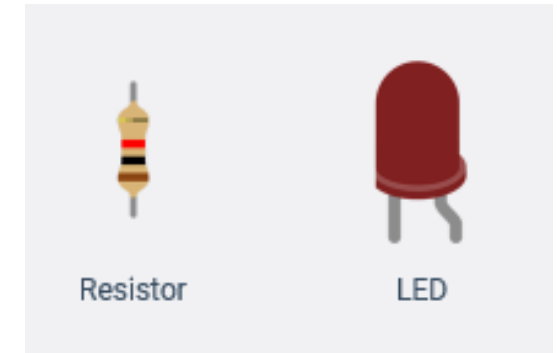
Electric Components



Breadboard

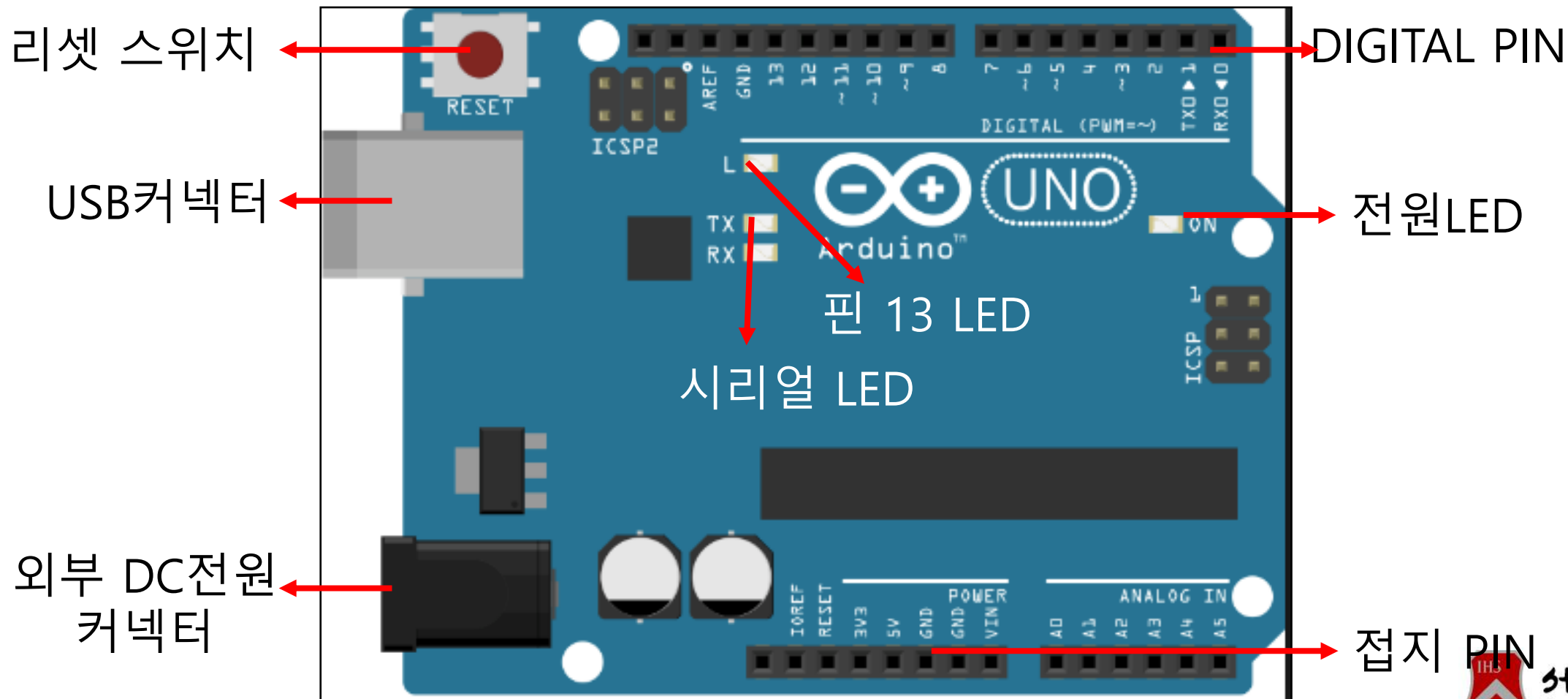


Arduino UNO



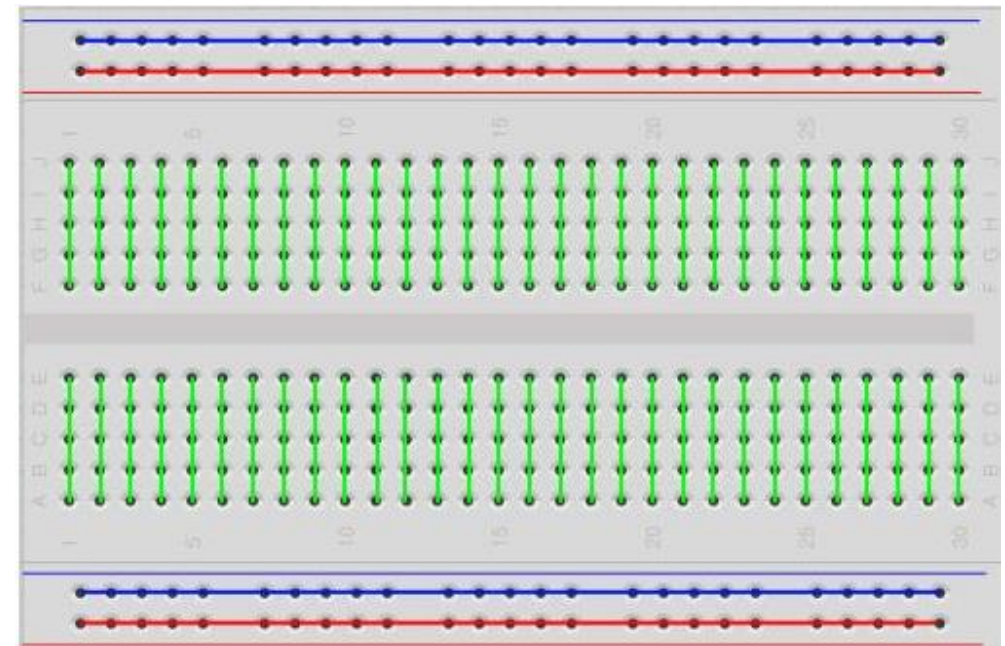
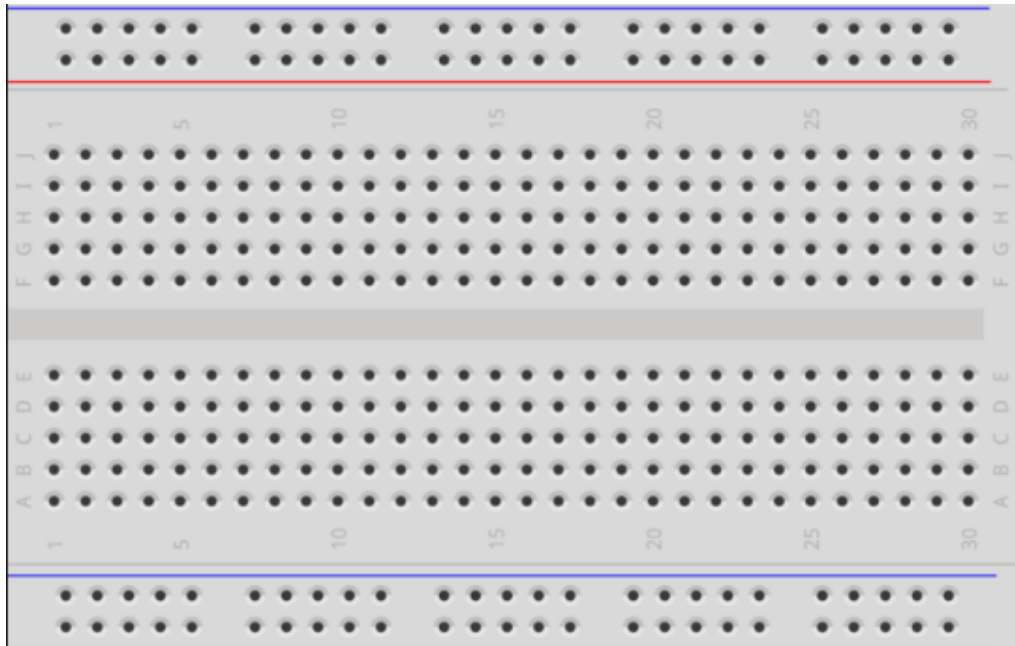
Basic Components

UNO Board

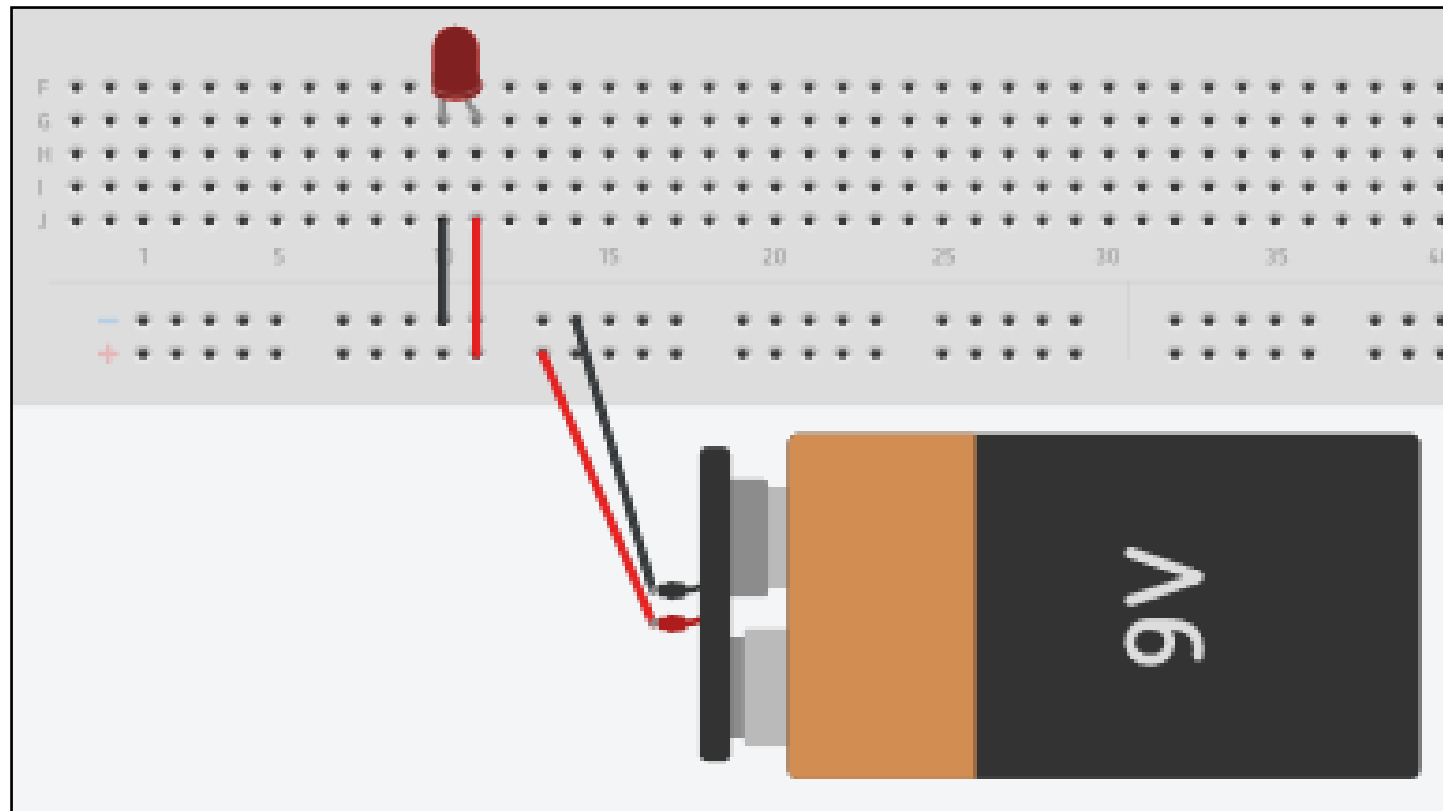


Breadboard

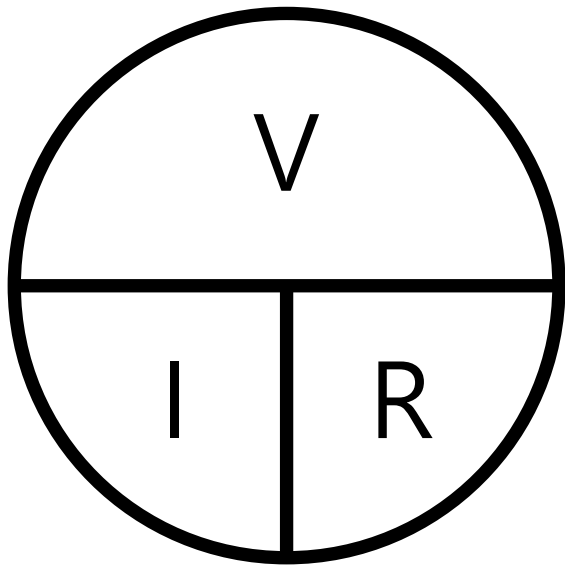
Wire Connection Diagram



Q. 올바른 회로연결법인가?



Ohm's Law



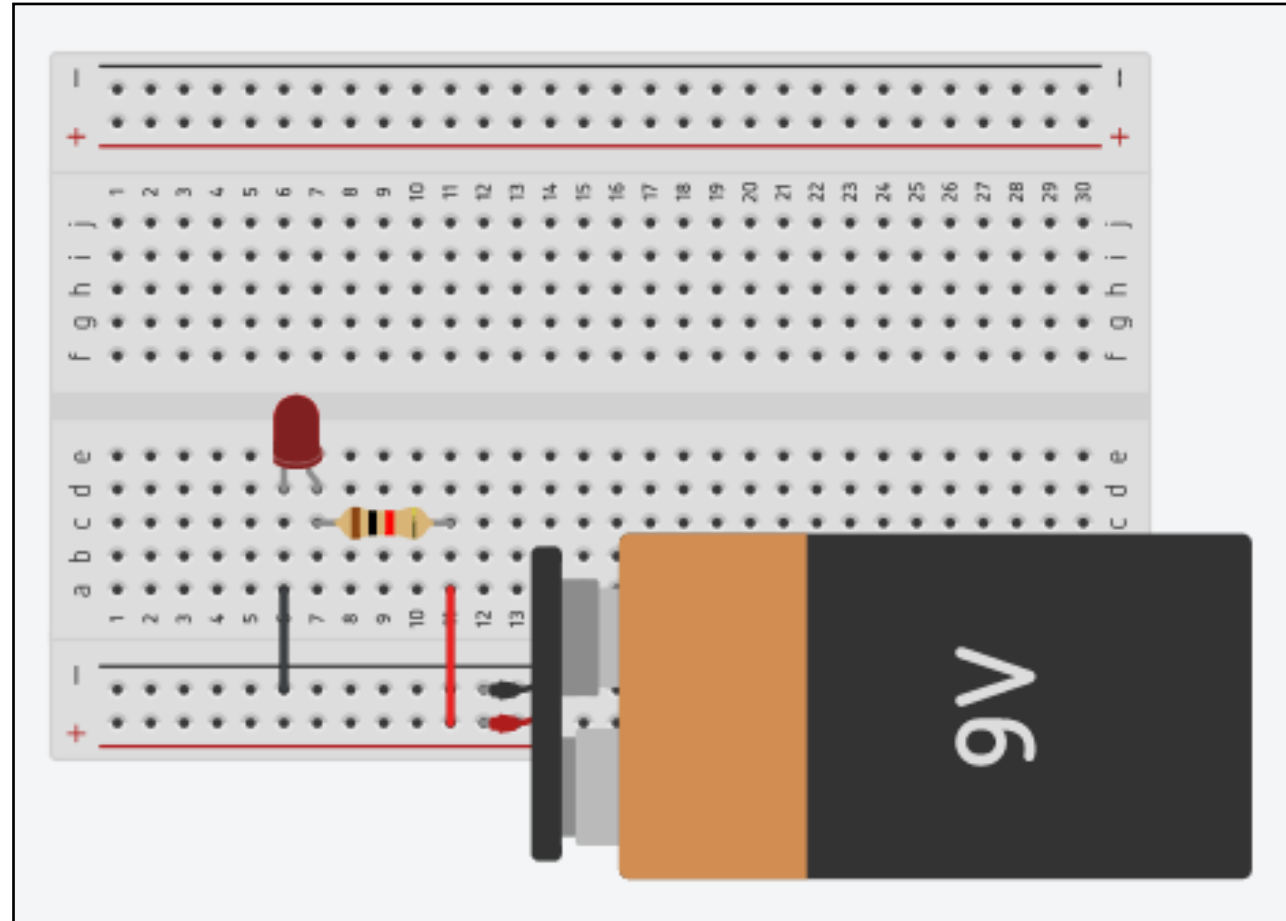
$$I = \frac{V}{R}$$

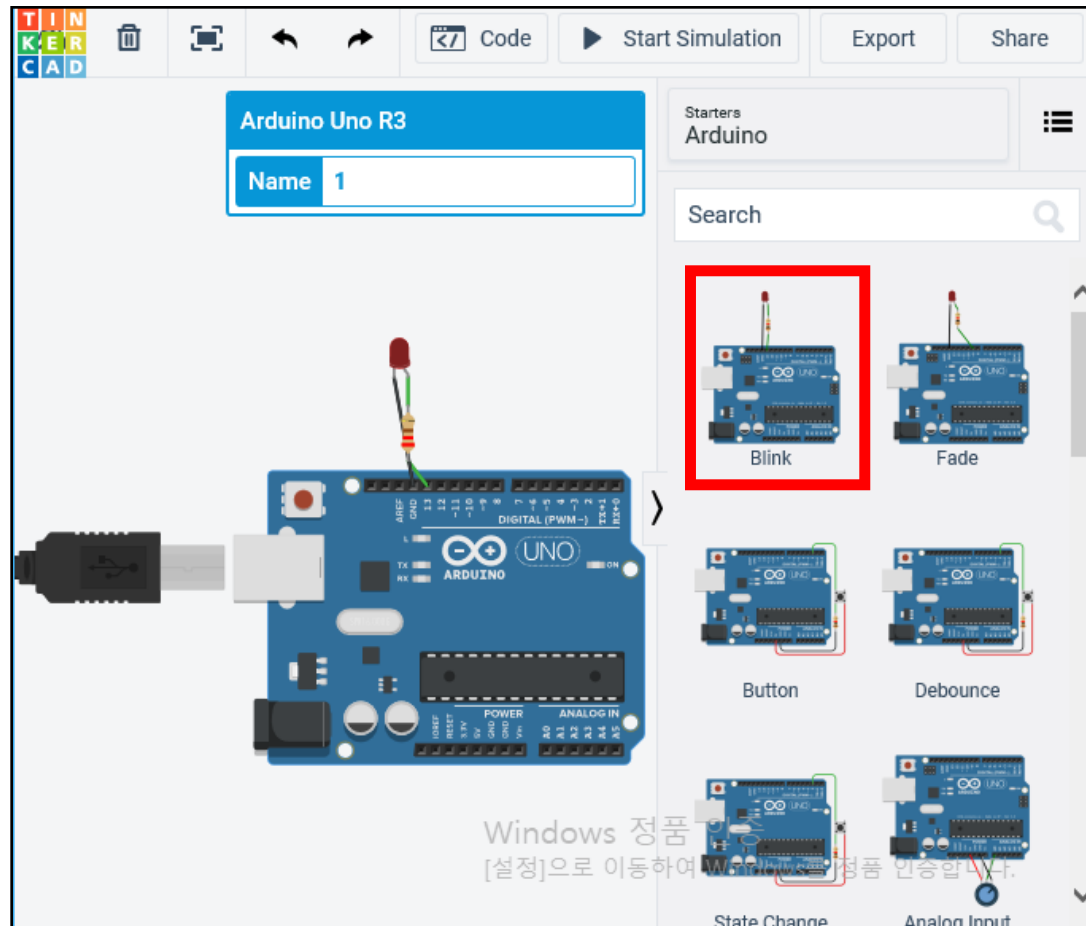
If $R \rightarrow 0$,
Then $I =$ 무한대?



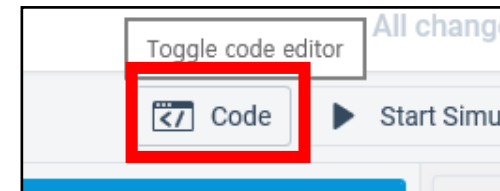


Basic Circuits



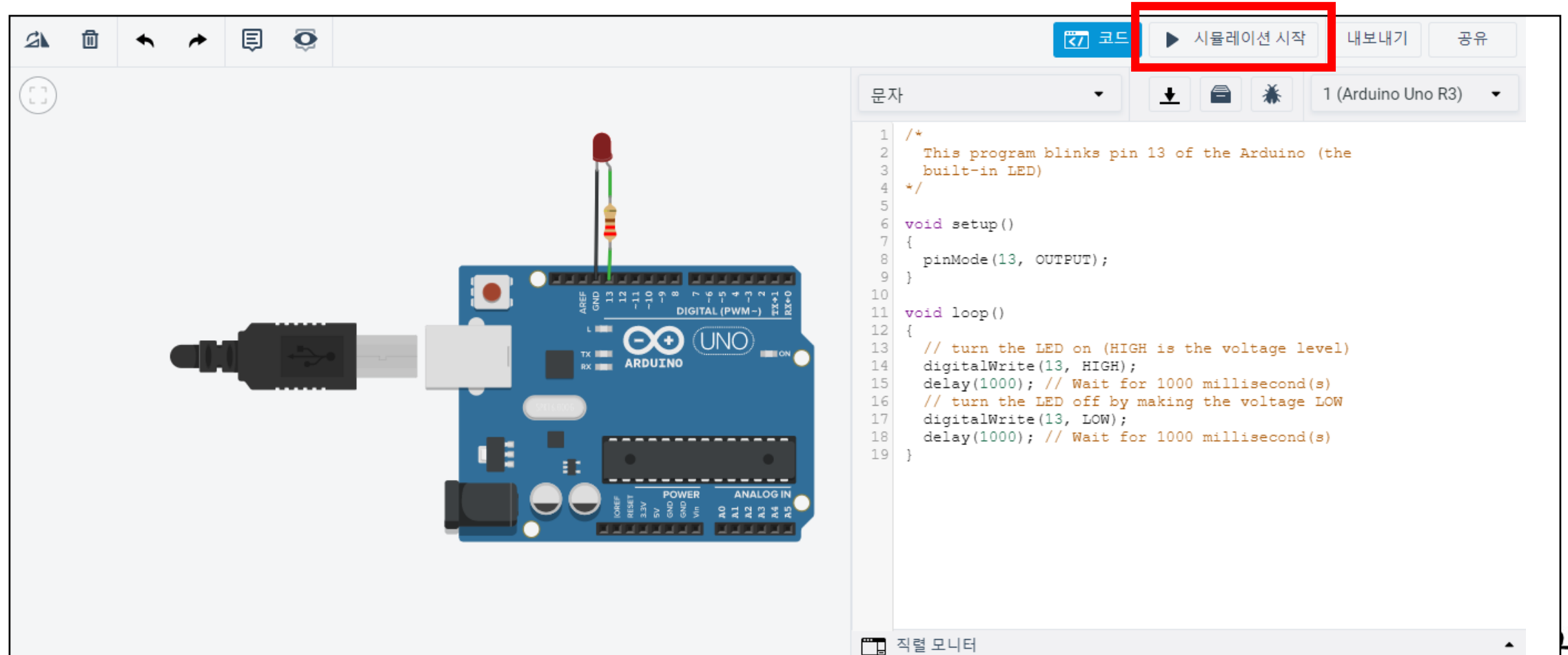


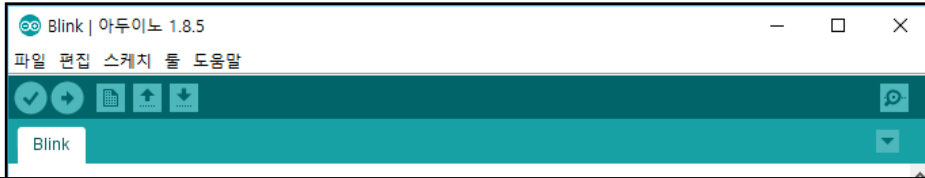
Blink 클릭-왼쪽 바탕 클릭



Code-문자 클릭

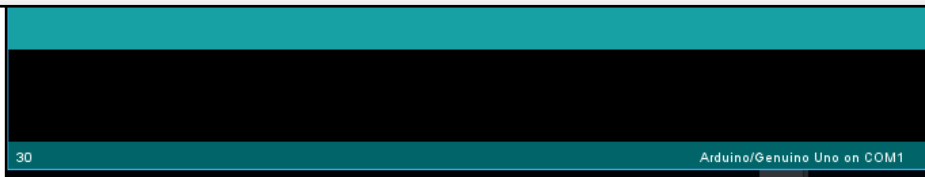
Blink





```
// the setup function runs once when you press reset or power the board
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);
  pinMode(13, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, HIGH); // turn the LED on (HIGH is the voltage level)
  delay(1000);                     // wait for a second
  digitalWrite(LED_BUILTIN, LOW);  // turn the LED off by making the voltage LOW
  delay(1000);                     // wait for a second
}
```



핀 번호 정의 (13번 핀)

LED불 켜짐
1초 대기
LED불 꺼짐
1초 대기

LED불 켜짐
1초 대기
LED불 꺼짐
1초 대기
.....(무한반복)

우리가 쓰는 Arduino
Uno 보드인 경우
LED_BUILTIN은 13번핀
에 초기화되어 있다..

Terminologies

```
// the setup function runs once when you press reset or power the board
void setup() {
  // initialize digital pin LED_BUILTIN as an output.
  pinMode(LED_BUILTIN, OUTPUT);
}

// the loop function runs over and over again forever
void loop() {
  digitalWrite(LED_BUILTIN, HIGH); // turn the LED on (HIGH is the voltage level)
  delay(1000);                     // wait for a second
  digitalWrite(LED_BUILTIN, LOW);  // turn the LED off by making the voltage LOW
  delay(1000);                     // wait for a second
}
```

A

B

ABBBBBBB...

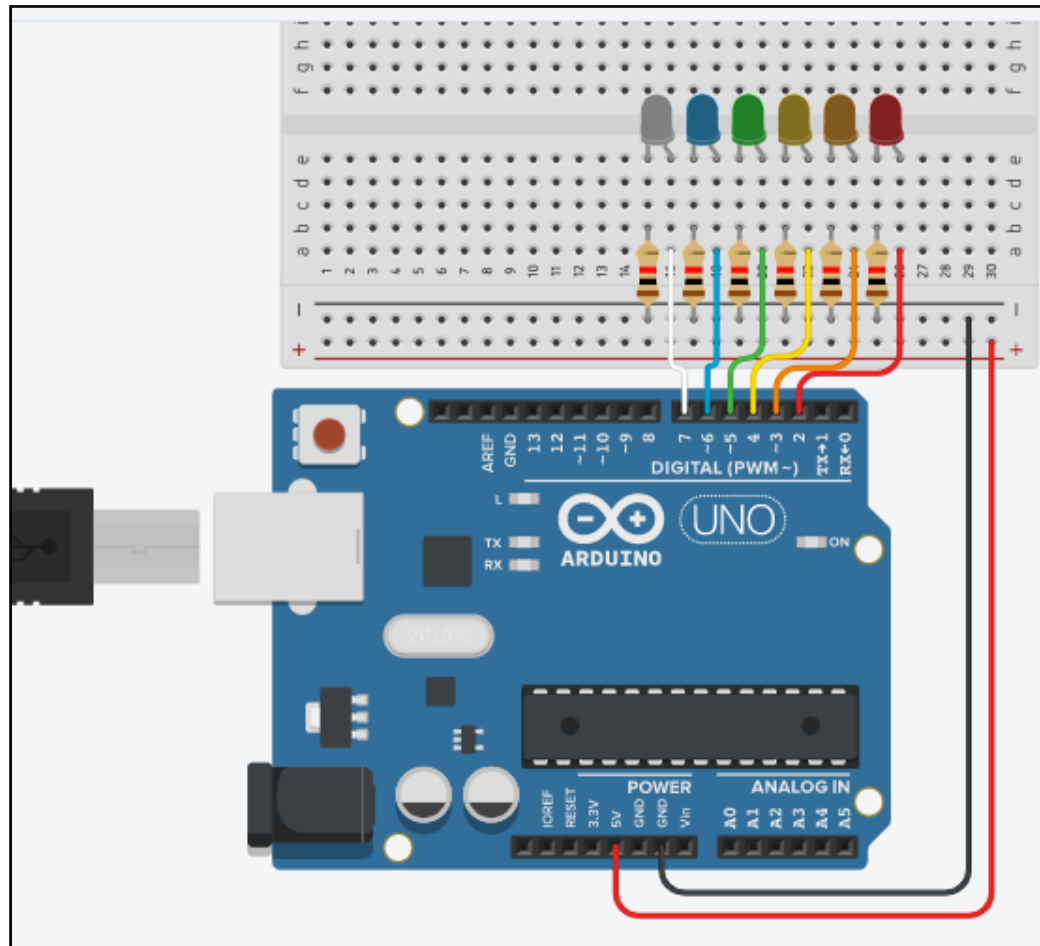
서강대학교
SOGANG UNIVERSITY

for문을 이용한 코드
무엇을 나타내는 코드인가??
예상해보자.

```
int timer = 500;  
// 시간간격 timer라는 변수에 500을 저장함.
```

```
void setup() {  
  for (int i = 2; i < 8; i++)  
  {  
    pinMode(i, OUTPUT);  
  }  
}
```

```
void loop() {  
  for (int i = 2; i < 8; i++)  
  {  
    digitalWrite(i, HIGH); // turn the pin on:  
    delay(timer); // timer(ms)의 시간 간격을 둠.  
    digitalWrite(i, LOW); // turn the pin off:  
  }  
  for (int i = 7; i >= 2; i--)  
  {  
    digitalWrite(i, HIGH);  
    delay(timer);  
    digitalWrite(i, LOW);  
  }  
}
```



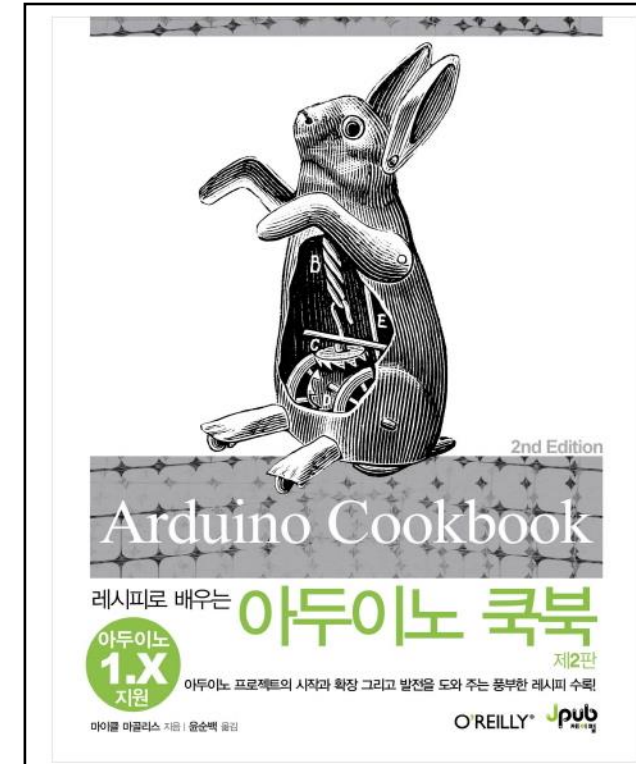
0.5초(500ms) 간격으로 2
번~7번핀에 연결된 LED를
켜고 끄
(234567,765432 순서)


DC motor 속도 방향 제어





열혈 C 프로그래밍 / 윤성우
로올라 도서관에 있습니다!



레시피로 배우는 아두이노 쿡북 /
마이클 마굴리스  서강대학교
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Q&A