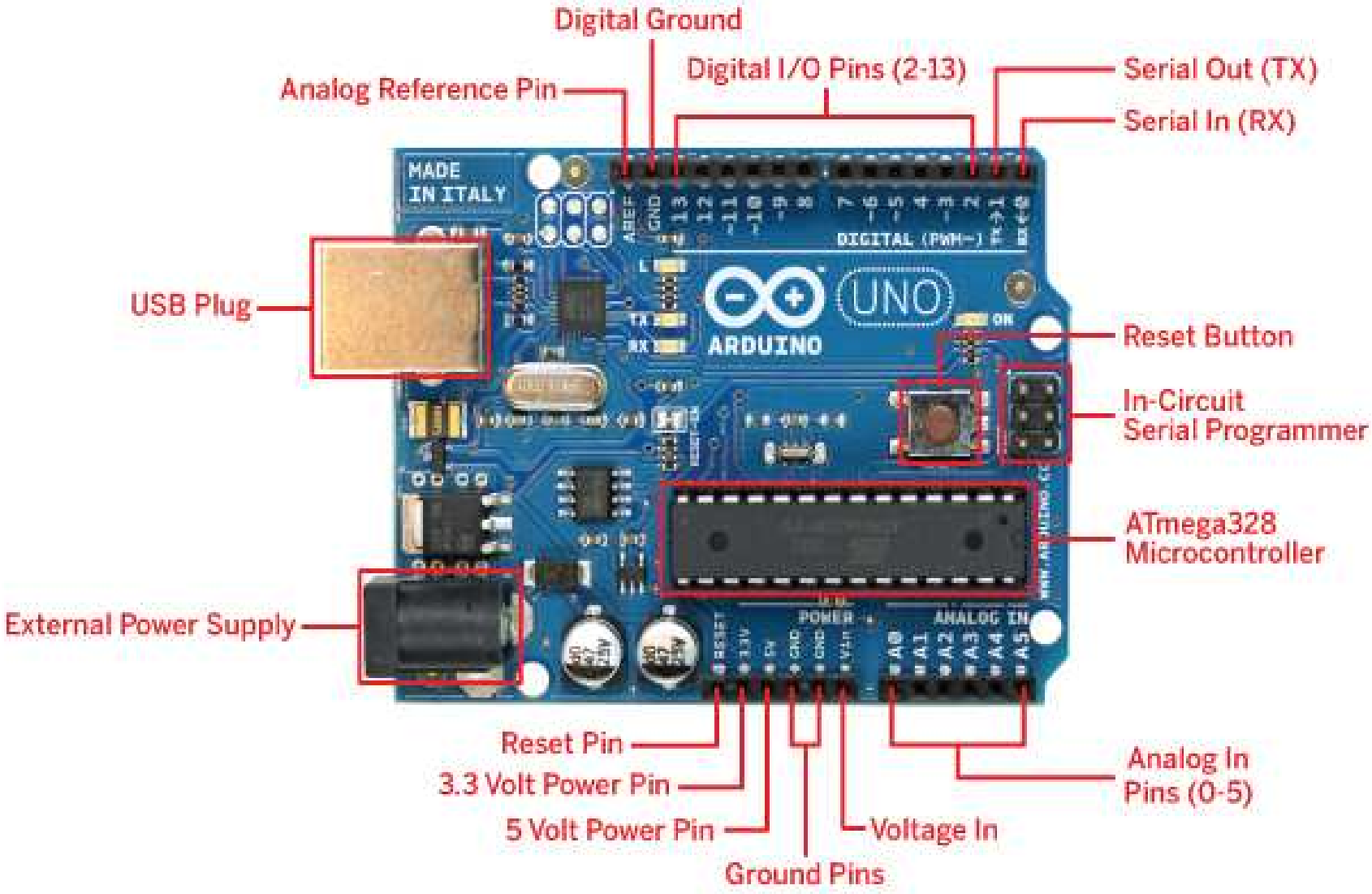
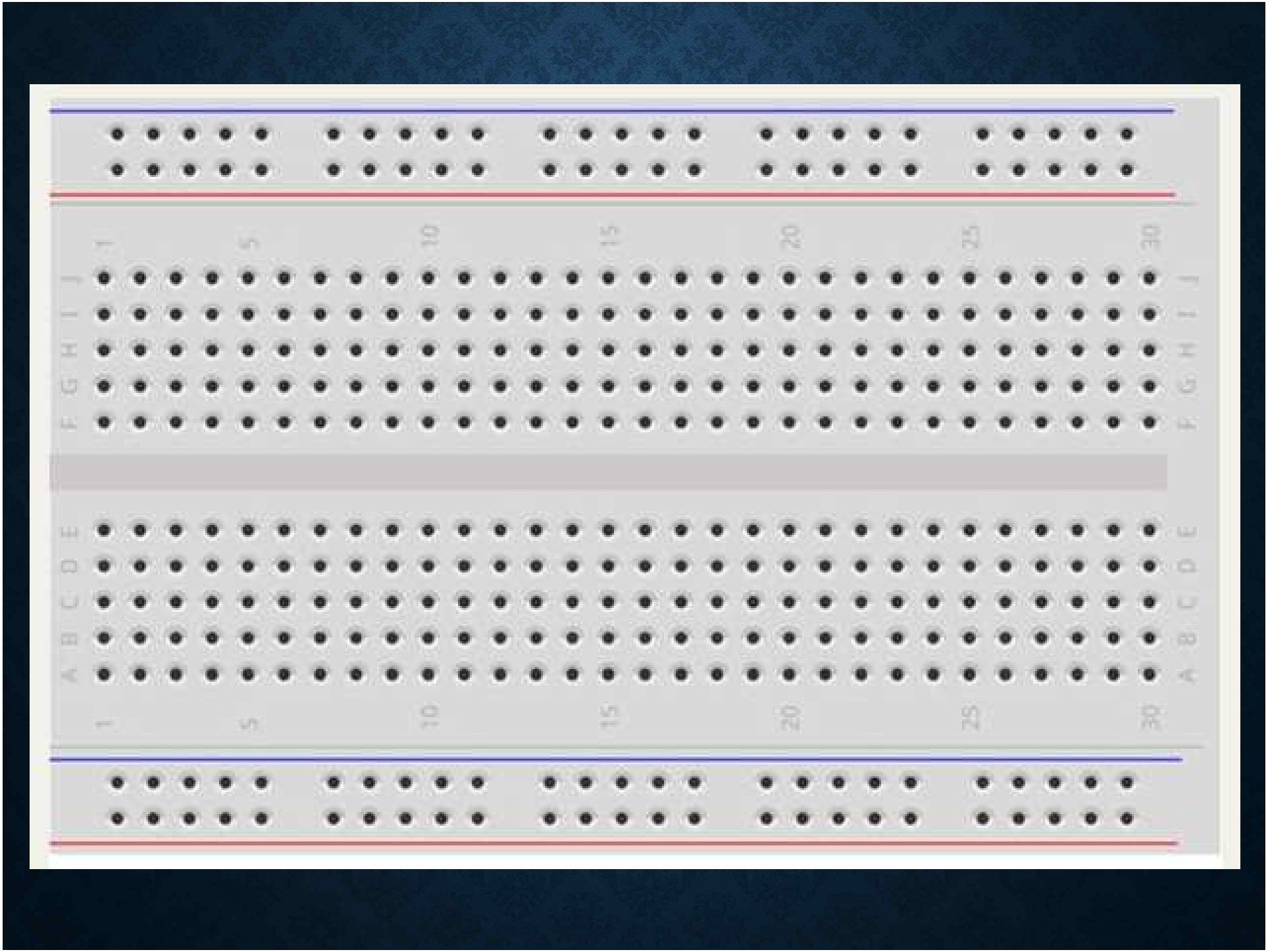
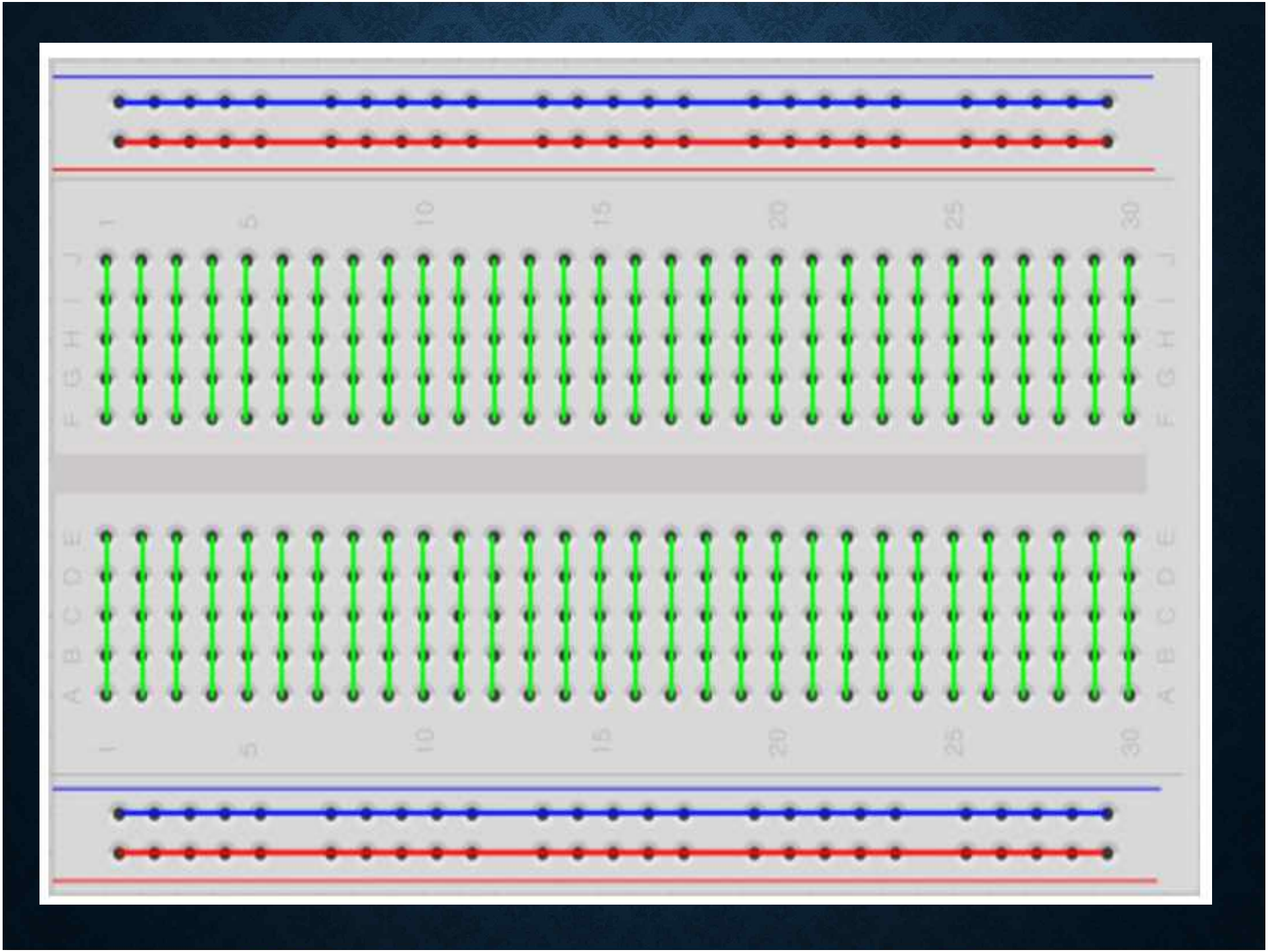
IOT 맴버스

비트 소프트웨어


Digital Ground
Analog Reference Pin
Digital I/O Pins (2-13)
Serial Out (TX)
Serial In (RX)
USB Plug
Reset Button
In-Circuit
Serial Programmer
ATmega328
Microcontroller
External Power Supply
Reset Pin
3.3 Volt Power Pin
5 Volt Power Pin
Ground Pins
Voltage In
Analog In
Pins (0-5)
MADE
IN ITALY
ARDUINO
UNO
DIGITAL (PWM~)
POWER
ANALOG IN


1
5
10
15
20
25
30
F G H I J
A B C D E


1
5
10
15
20
25
30
F G H I J
A B C D E

4차 산업 혁명

증기기관 발명

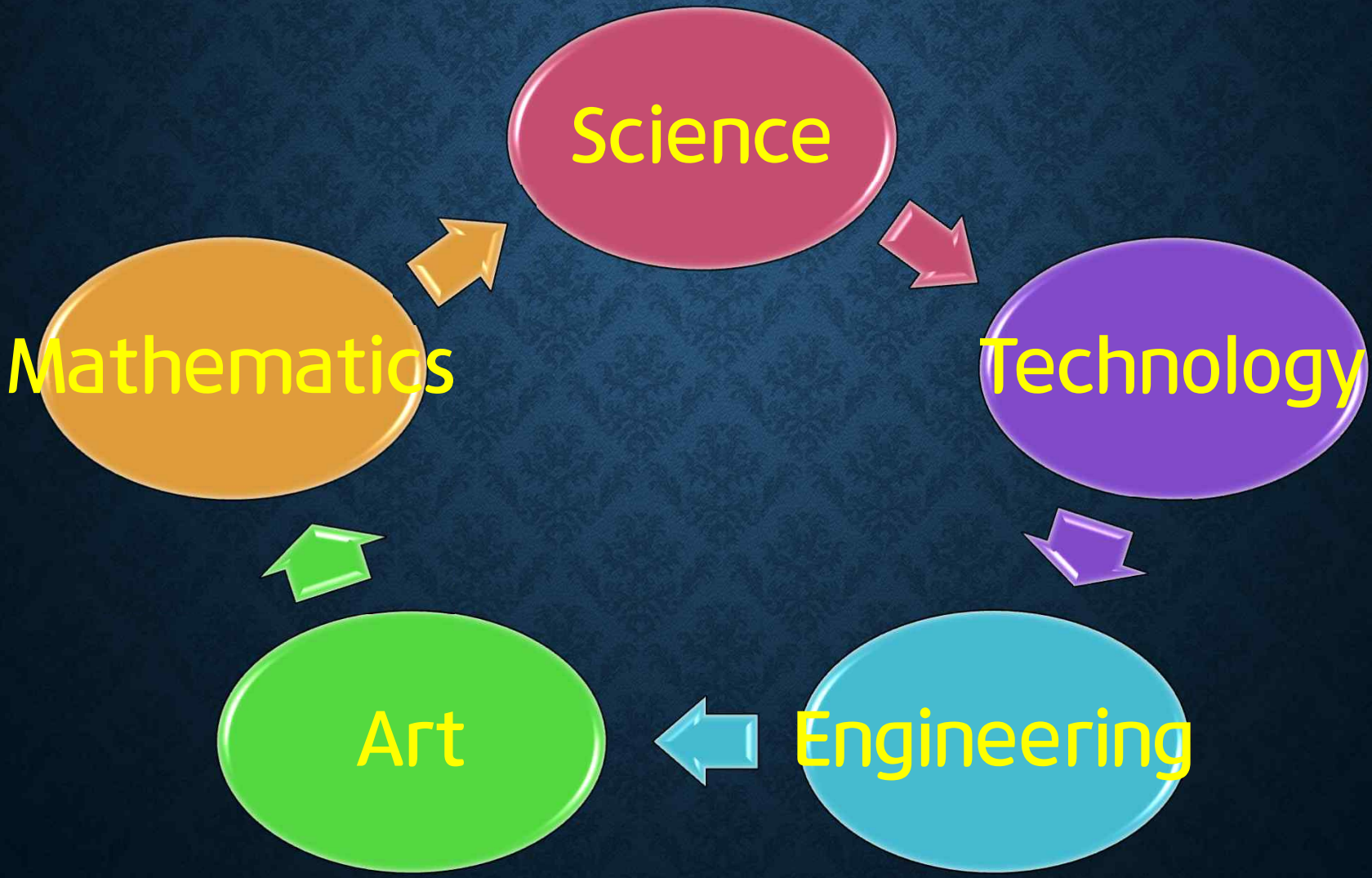
전기, 원자력

정보통신

인공지능, AR, 로봇, 융합

- 로봇, 인공지능(AI)을 통해 실재와 가상이 통합
- 사물을 자동적, 지능적으로 제어할 수 있는 가상 물리 시스템의 구축이 기대되는 산업상의 변화
- 정보통신기술(ICT)의 융합으로 이뤄지는 차세대 산업혁명
  인공지능, 로봇기술, 생명과학이 주도하는 차세대 산업혁명

STEAM



ICBMS

Internet

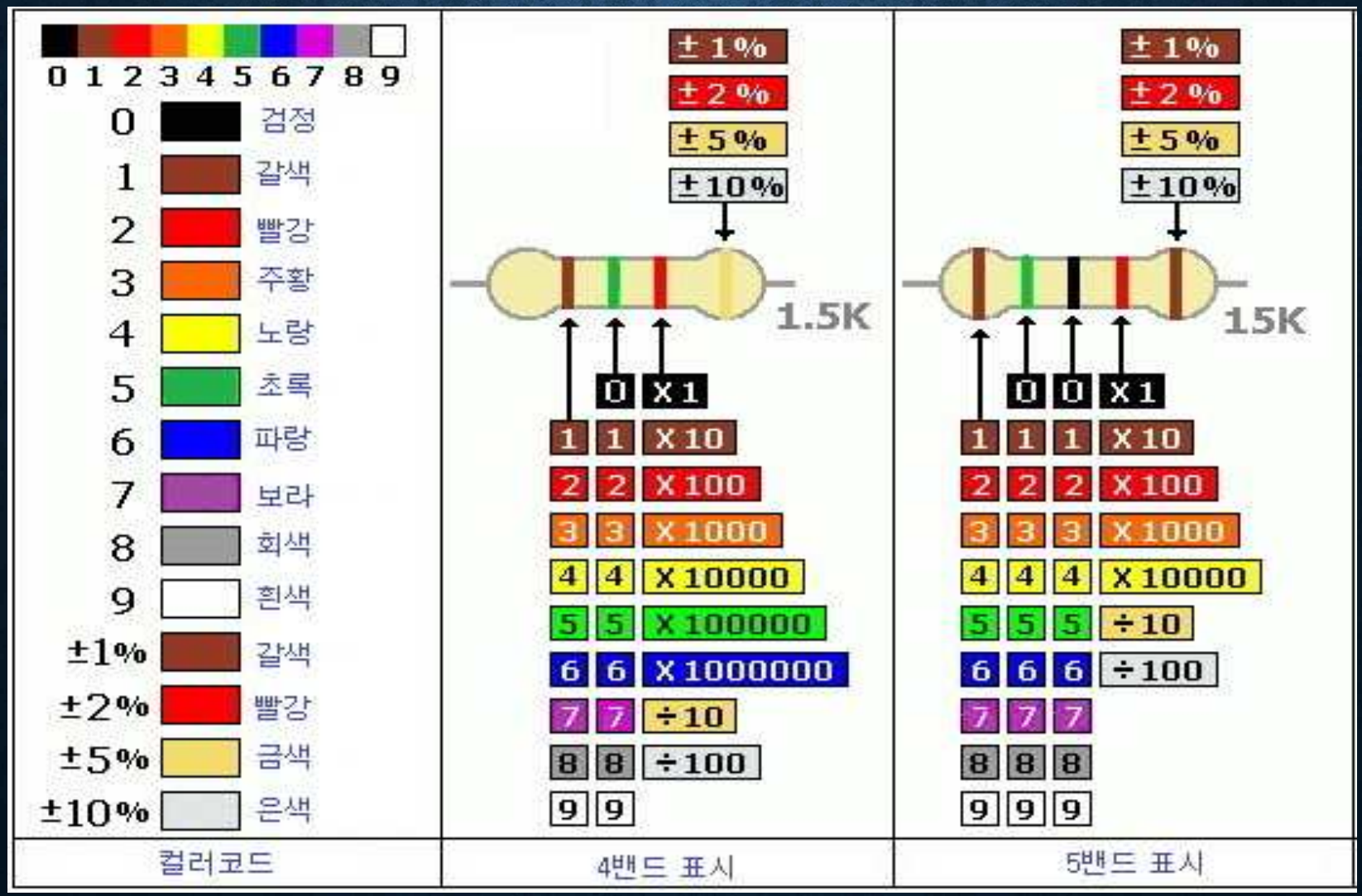
Cloud

Big Data

Mobile

Security

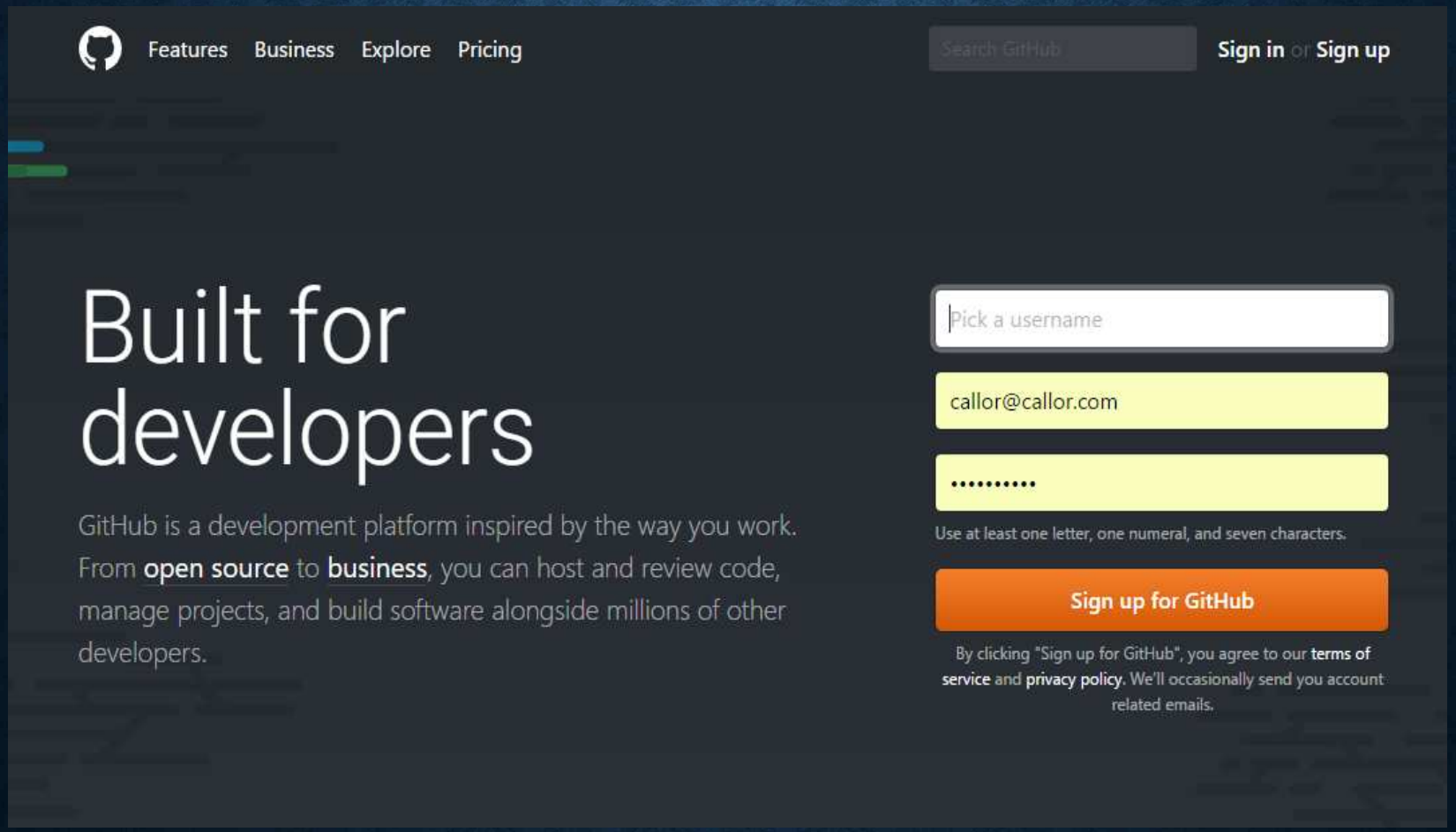
저항값 읽기


0 1 2 3 4 5 6 7 8 9
0 검정
1 갈색
2 빨강
3 주황
4 노랑
5 초록
6 파랑
7 보라
8 회색
9 흰색
±1% 갈색
±2% 빨강
±5% 금색
±10% 은색
컬러코드
±1%
±2%
±5%
±10%
1.5K
0 X1
1 1 X10
2 2 X100
3 3 X1000
4 4 X10000
5 5 X100000
6 6 X1000000
7 7 ÷10
8 8 ÷100
9 9
4밴드 표시
±1%
±2%
±5%
±10%
15K
0 0 X1
1 1 1 X10
2 2 2 X100
3 3 3 X1000
4 4 4 X10000
5 5 5 ÷10
6 6 6 ÷100
7 7 7
8 8 8
9 9 9
5밴드 표시

저항값읽기 – 560 Ω

저항값 읽기 – 1000Ω / 1kΩ

git(github.com)



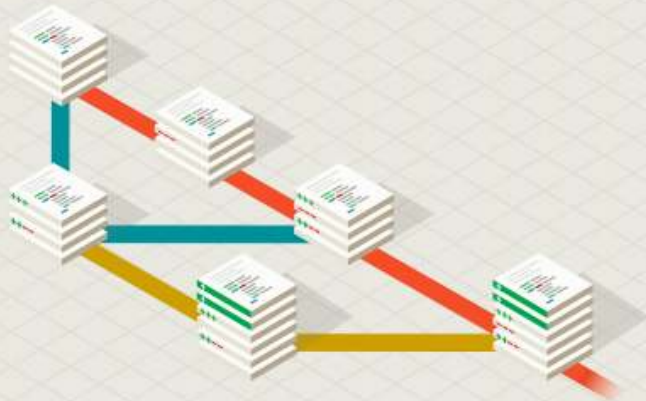
git(git-scm.com)

git --distributed-even-if-your-workflow-isnt

Search entire site...

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is easy to learn and has a tiny footprint with lightning fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows.



Learn Git in your browser for free with Try Git.

About
The advantages of Git compared to other source control systems.

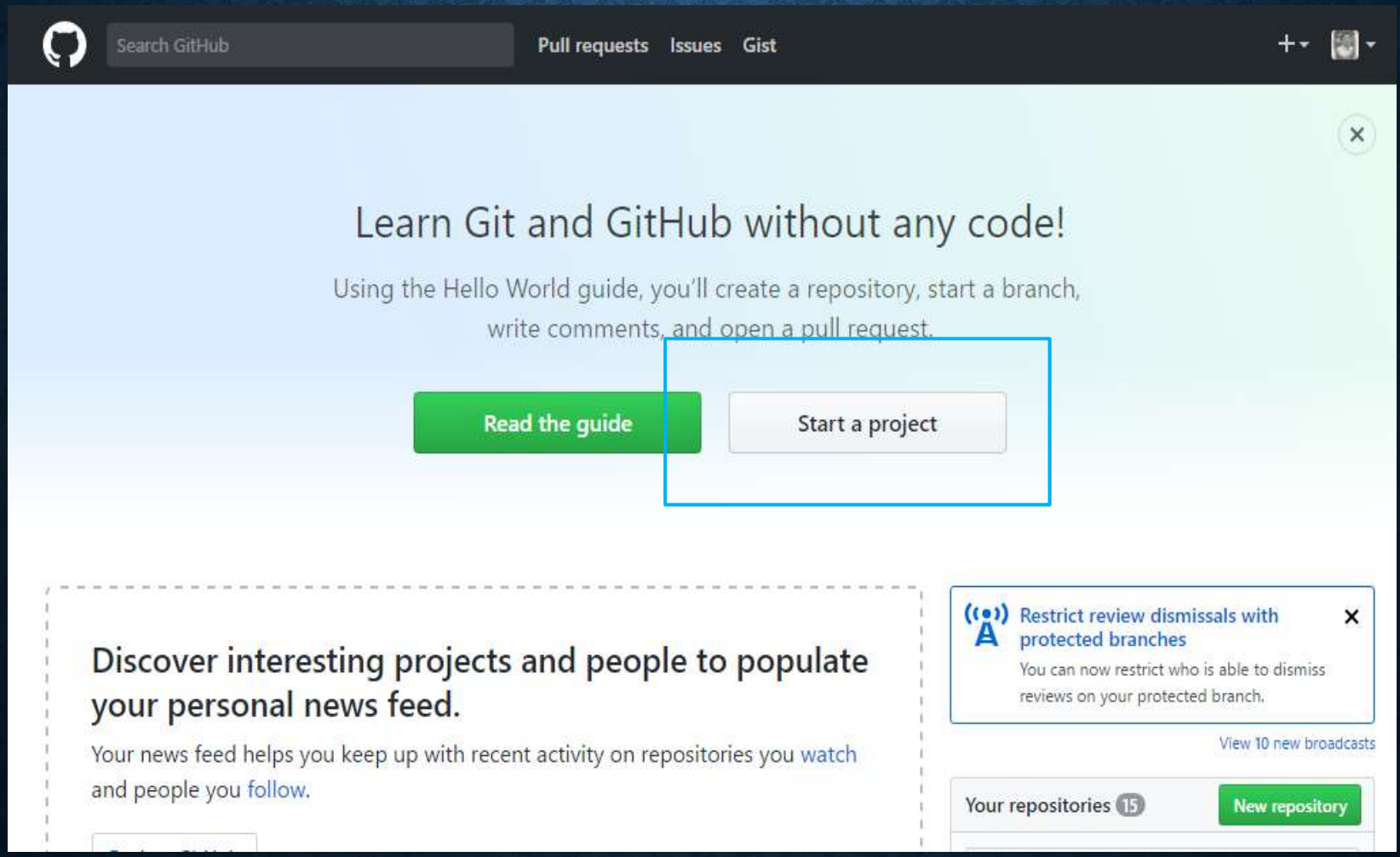
Documentation
Command reference pages, Pro Git book content, videos and other material.

Downloads
GUI clients and binary releases

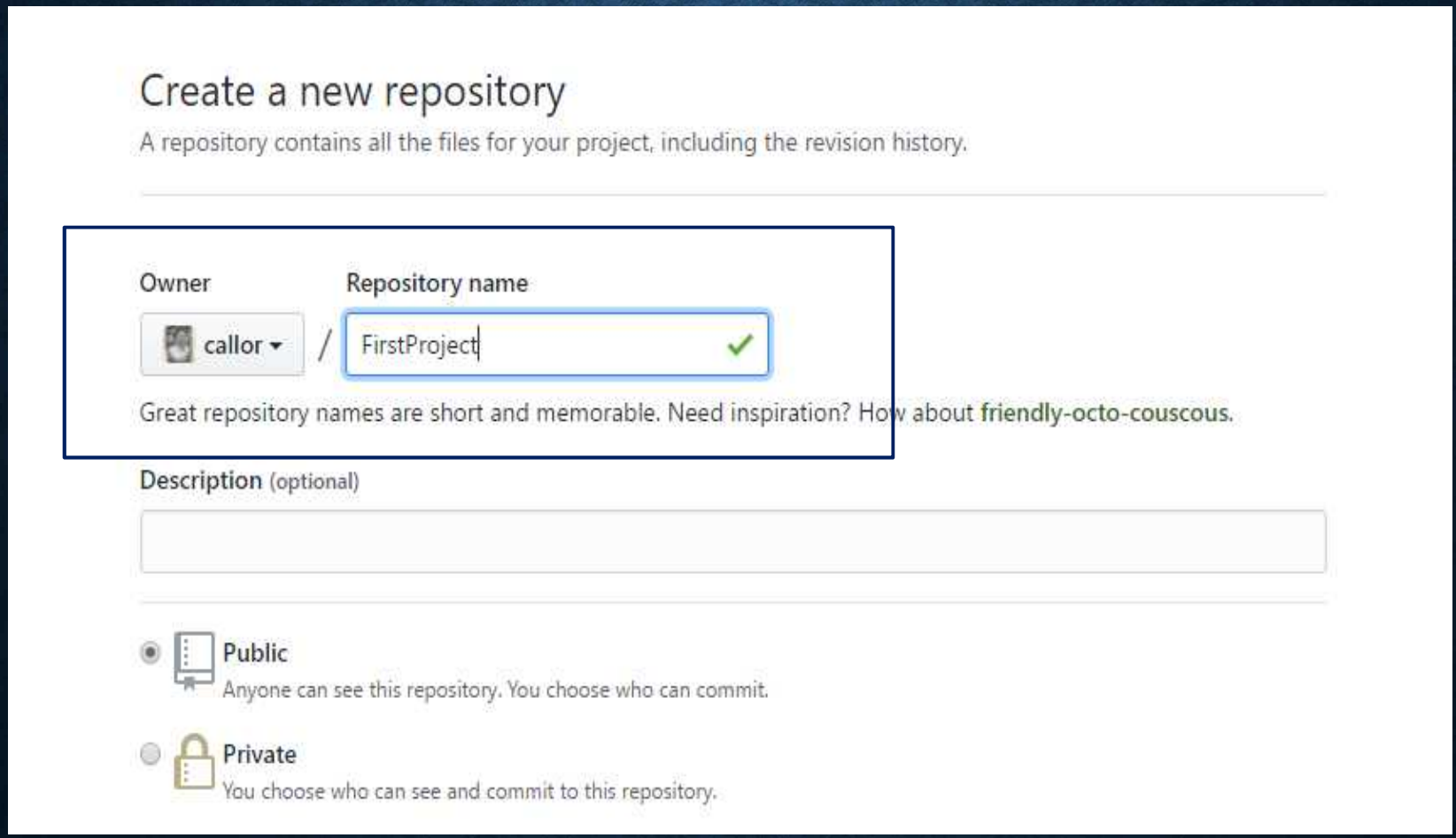
Community
Get involved! Bug reporting

Latest source Release
2.12.2
Release Notes (2017-03-24)
Downloads for Windows

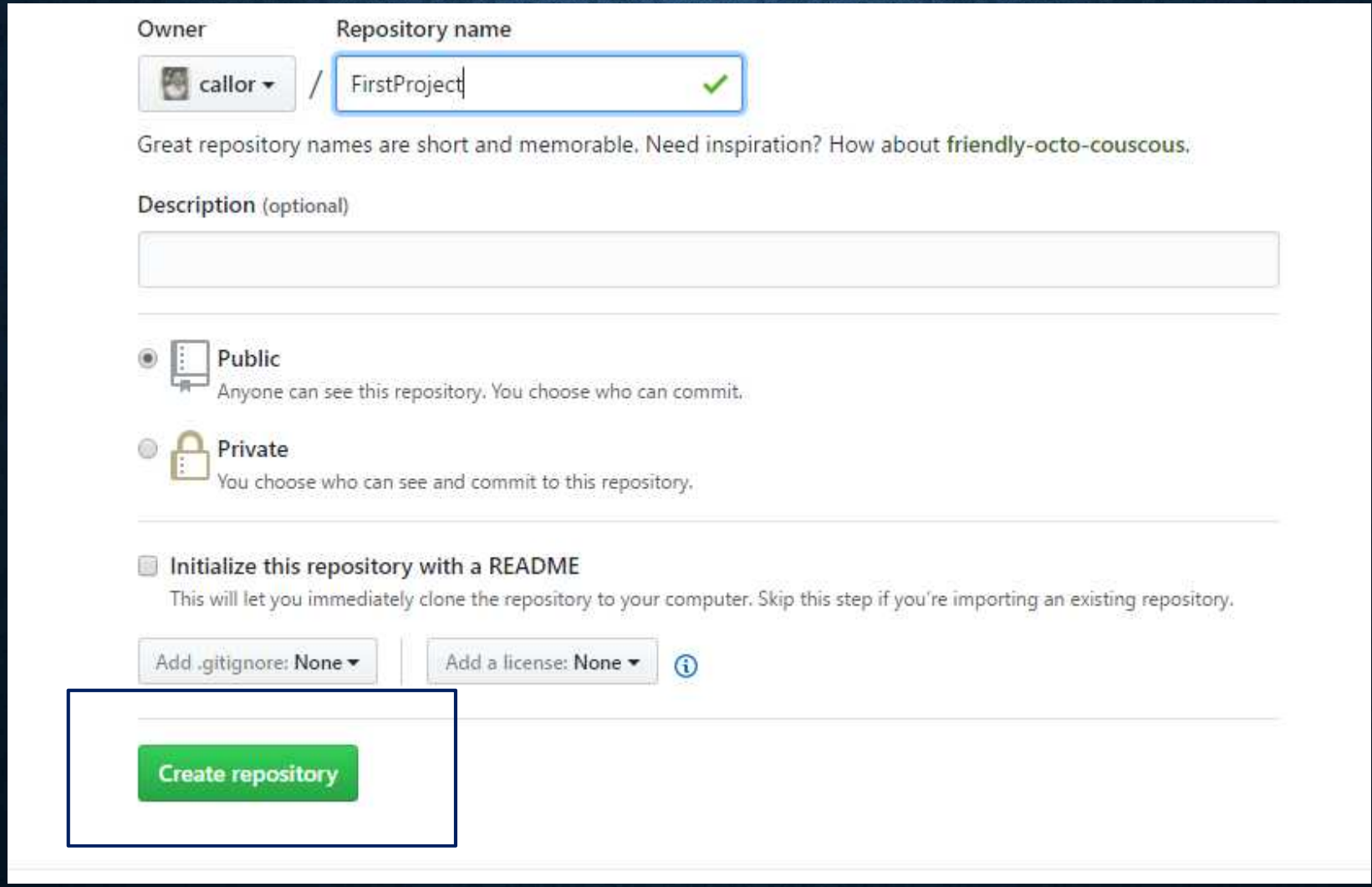
git 사용하기


Search GitHub
Pull requests
Issues
Gist
Learn Git and GitHub without any code!
Using the Hello World guide, you'll create a repository, start a branch, write comments, and open a pull request.
Read the guide
Start a project
Discover interesting projects and people to populate your personal news feed.
Your news feed helps you keep up with recent activity on repositories you watch and people you follow.
Restrict review dismissals with protected branches
You can now restrict who is able to dismiss reviews on your protected branch.
View 10 new broadcasts
Your repositories 15
New repository

git 사용하기


Create a new repository
A repository contains all the files for your project, including the revision history.
Owner
Repository name
callor
/
FirstProject
Great repository names are short and memorable. Need inspiration? How about friendly-octo-couscous.
Description (optional)
Public
Anyone can see this repository. You choose who can commit.
Private
You choose who can see and commit to this repository.

git 사용하기


Owner
Repository name
callor
/
FirstProject
Great repository names are short and memorable. Need inspiration? How about friendly-octo-couscous.
Description (optional)
Public
Anyone can see this repository. You choose who can commit.
Private
You choose who can see and commit to this repository.
Initialize this repository with a README
This will let you immediately clone the repository to your computer. Skip this step if you're importing an existing repository.
Add .gitignore: None
Add a license: None
Create repository

git 사용하기

Quick setup — if you've done this kind of thing before

Set up in Desktop or HTTPS SSH https://github.com/callor/FirstProject.git

We recommend every repository include a README, LICENSE, and .gitignore.

...or create a new repository on the command line

```
echo "# FirstProject" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/callor/FirstProject.git
git push -u origin master
```

...or push an existing repository from the command line

```
git remote add origin https://github.com/callor/FirstProject.git
git push -u origin master
```

git 사용하기

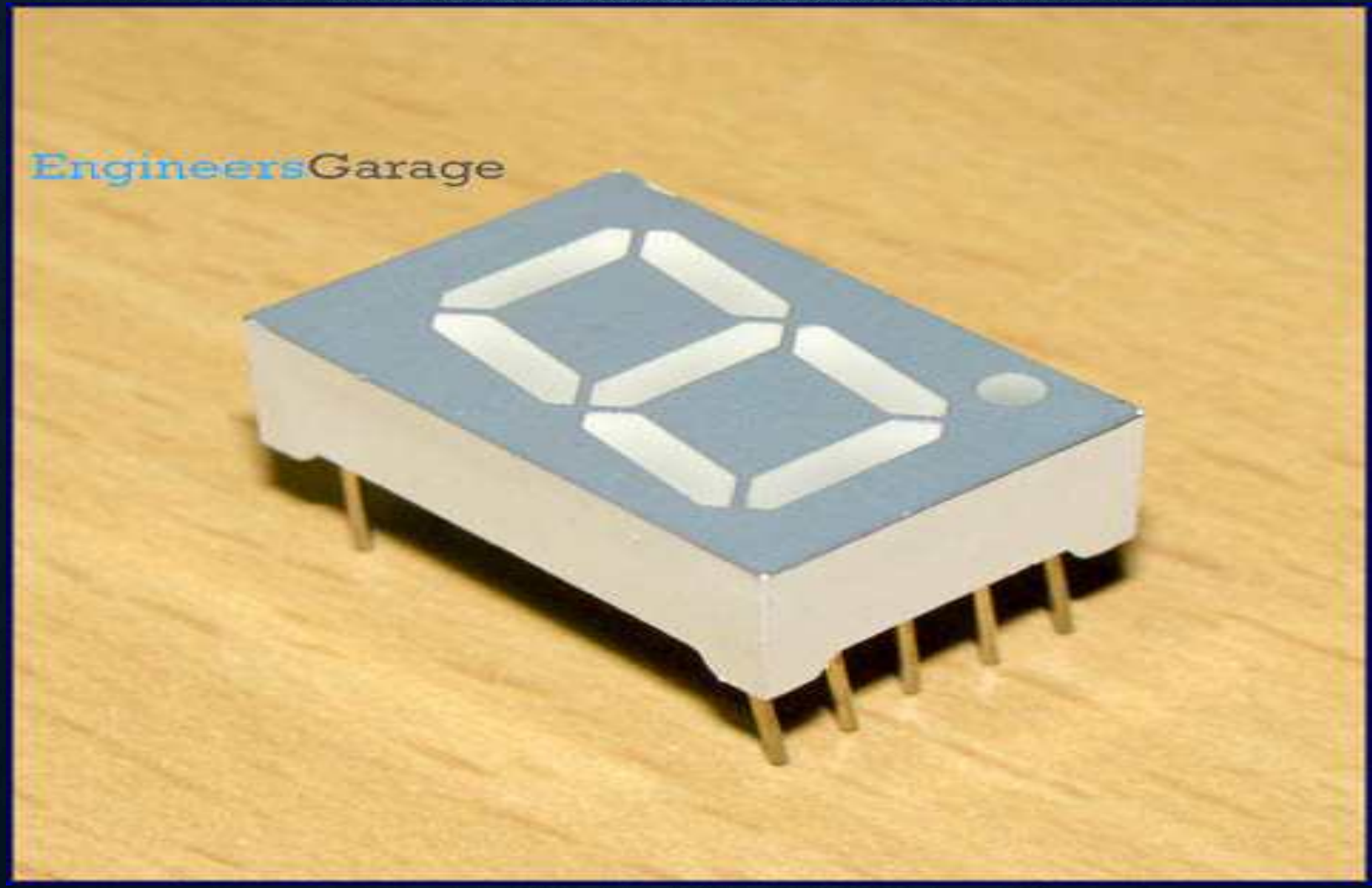

Quick setup — if you've done this kind of thing before
Set up in Desktop
or
HTTPS
SSH
https://github.com/callor/FirstProject.git
We recommend every repository include a README, LICENSE, and .gitignore.
...or create a new repository on the command line
echo "# FirstProject" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/callor/FirstProject.git
git push -u origin master

git 사용하기

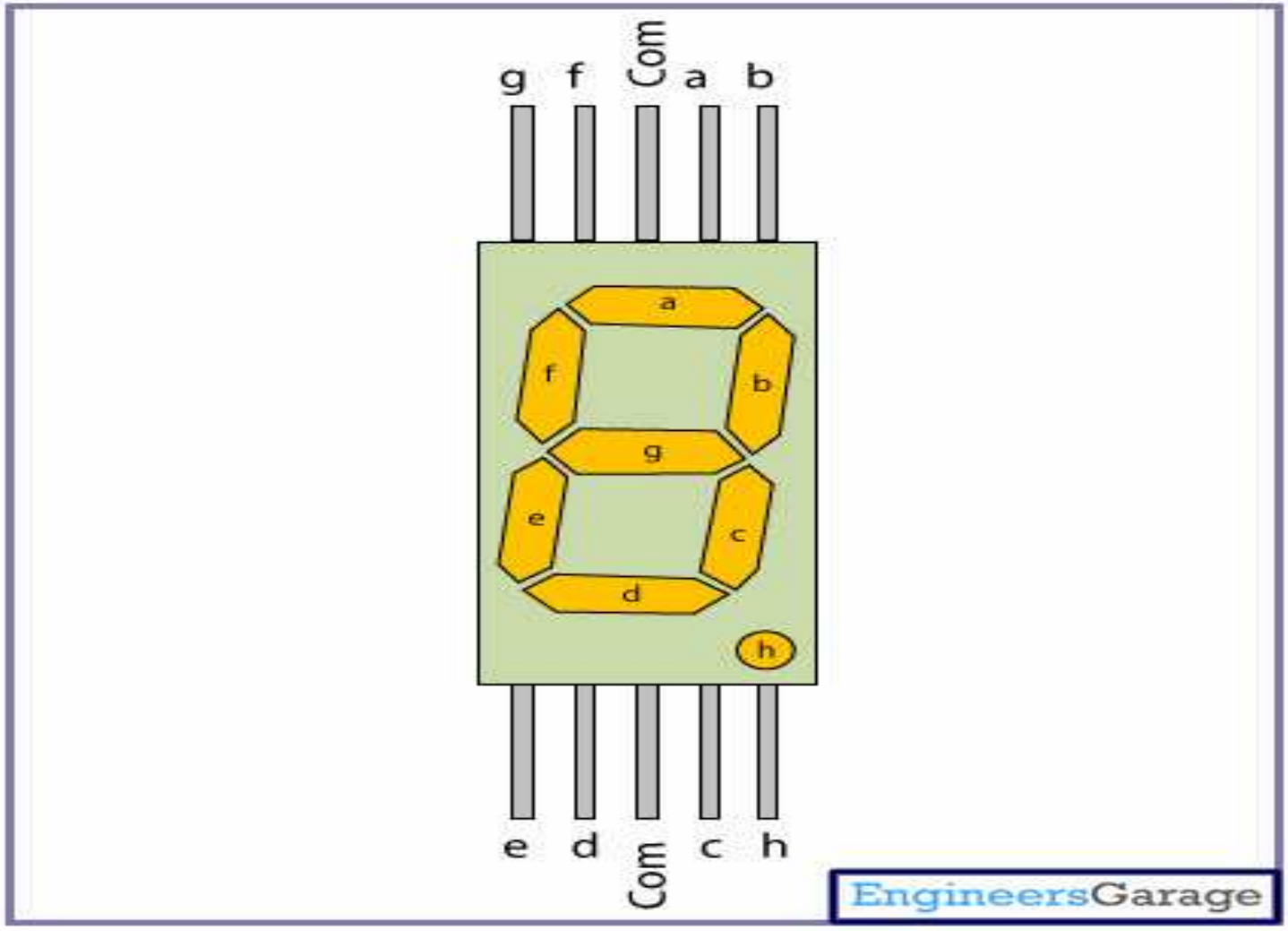
```
$ git remote -v;
$ git remote set-url origin
https://gitid@github.com/blabla.git

git push origin master
```

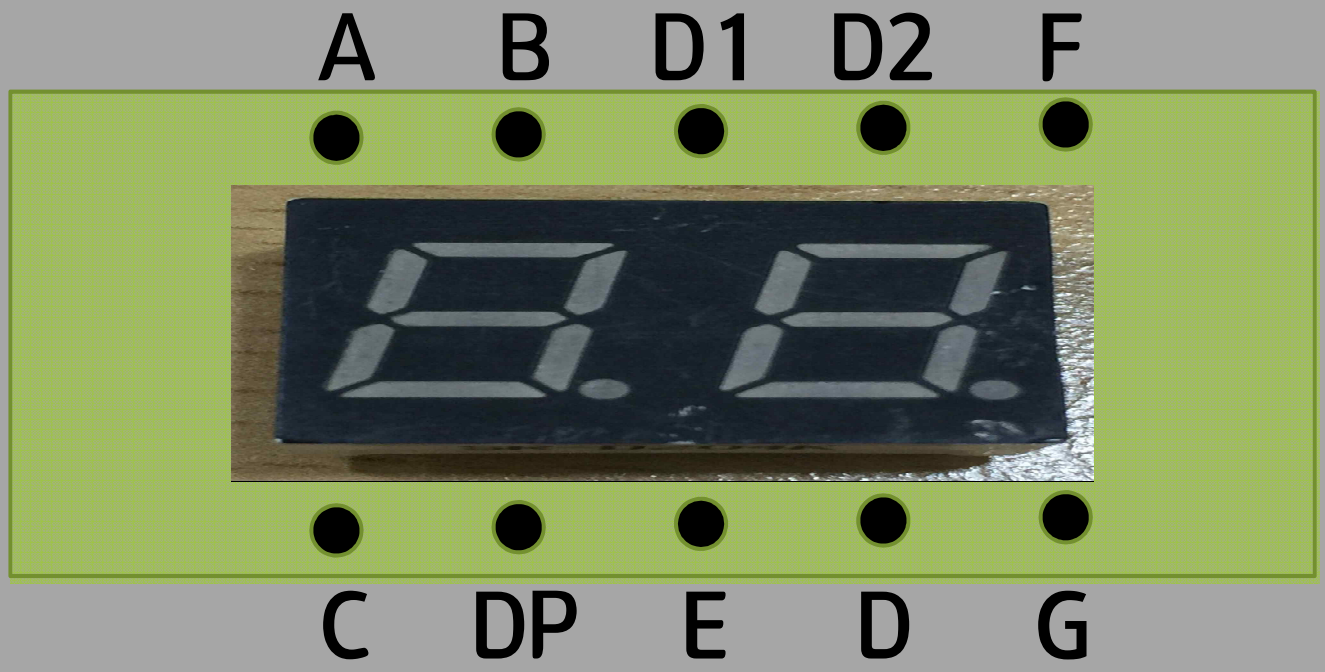
FND(Flexible number display)



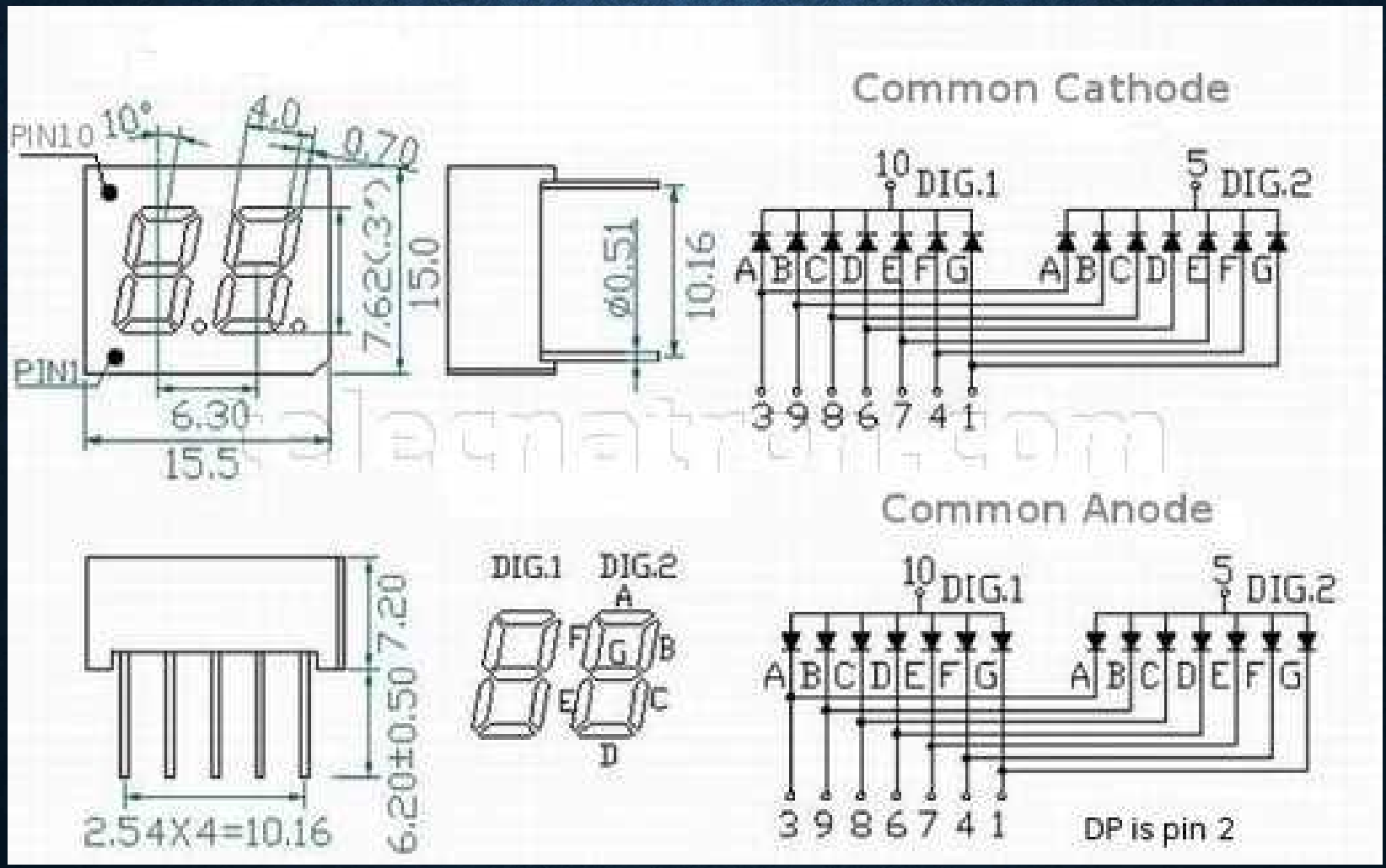
FND – 1 Digit



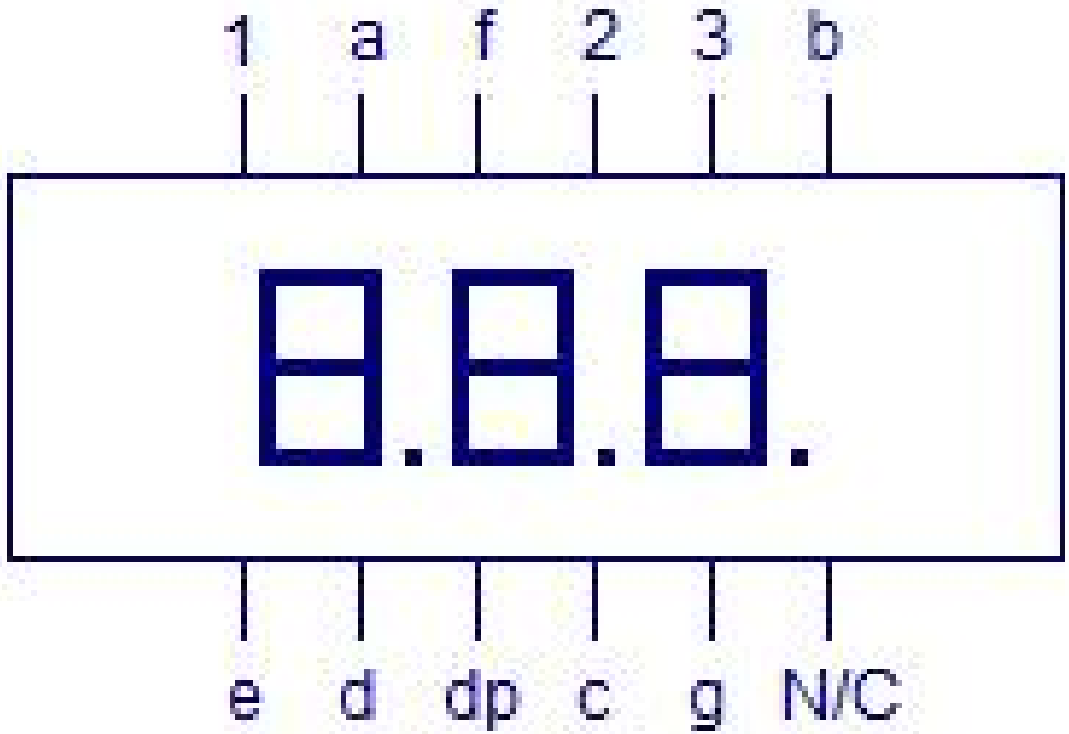
FND – 2 Digit



FND – 2 Digit


PIN1
10°
4.0
0.70
7.62(.3")
15.0
6.30
15.5
ø0.51
10.16
Common Cathode
10 DIG.1
5 DIG.2
A B C D E F G
3 9 8 6 7 4 1
DIG.1 DIG.2
A
F G B
E C
D
2.54X4=10.16
6.20±0.50
7.20
Common Anode
10 DIG.1
5 DIG.2
A B C D E F G
3 9 8 6 7 4 1
DP is pin 2

FND – 3 Digit

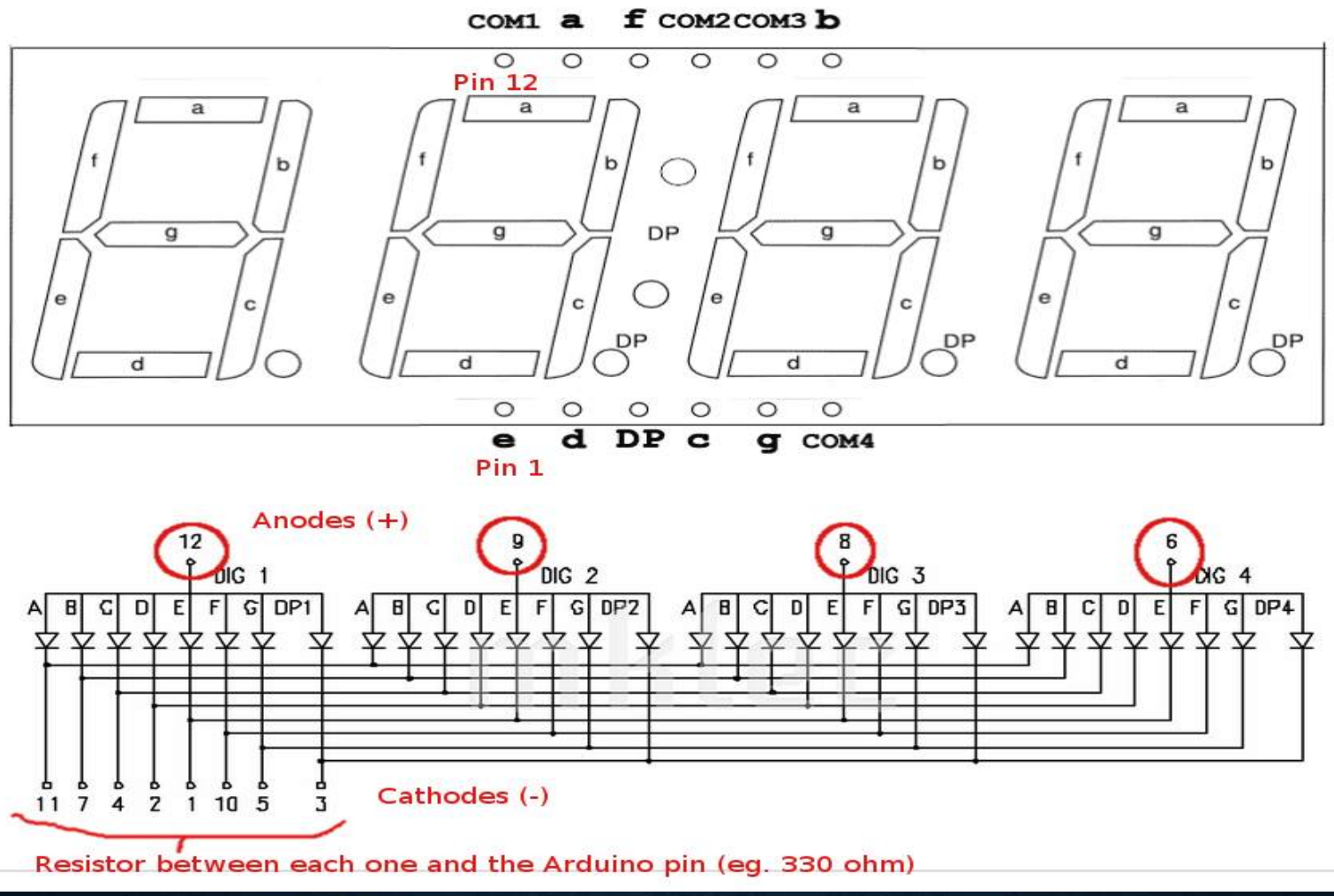


E1-3056ASR1 Pinout

FND – 4 Digit


Pin HIGH activates this segment
Pins Explained
12 11 10 9 8 7
11
10
7
5
1
4
2
3
12
9
8
6
Grounding this pin, activates this digit
1 2 3 4 5 6
Common cathode

FND – 4 Digit


COM1 a f COM2 COM3 b
Pin 12
a
f
b
g
e
c
d
DP
e d DP c g COM4
Pin 1
Anodes (+)
12
9
8
6
DIG 1
DIG 2
DIG 3
DIG 4
A B C D E F G DP1
A B C D E F G DP2
A B C D E F G DP3
A B C D E F G DP4
11 7 4 2 1 10 5 3
Cathodes (-)
Resistor between each one and the Arduino pin (eg. 330 ohm)

FND(Flexible number display)

```
* 0 : ABCDEF- : 1111110
* 1 : -BC---- : 0110000
* 2 : AB-DE-G : 1101101
* 3 : ABCD--G : 1111001
* 4 : -BC--FG : 0110011
* 5 : A-CD-FG : 1011011
* 6 : A-CDEFG : 1011111
* 7 : ABC---- : 1110000
* 8 : ABCDEFG : 1111111
* 9 : ABCD-FG : 1111011
```

피에조 Buzzer 음계와 주파수 관계

(단위 : Hz)

옥타브 / 음계	1	2	3	4	5	6	7	8
C(도)	32.7032	65.4064	130.8128	261.6256	523.2511	1046.502	2093.005	4186.009
C#	34.6478	69.2957	138.5913	277.1826	554.3653	1108.731	2217.461	4434.922
D(레)	36.7081	73.4162	146.8324	293.6648	587.3295	1174.659	2349.318	4698.636
D#	38.8909	77.7817	155.5635	311.1270	622.2540	1244.508	2489.016	4978.032
E(미)	41.2034	82.4069	164.8138	329.6276	659.2551	1318.510	2637.020	5274.041
F(파)	43.6535	87.3071	174.6141	349.2282	698.4565	1396.913	2793.826	5587.652
F#	46.2493	92.4986	184.9972	369.9944	739.9888	1479.978	2959.955	5919.911
G(솔)	48.9994	97.9989	195.9977	391.9954	783.9909	1567.982	3135.963	6271.927
G#	51.9130	103.8262	207.6523	415.3047	830.6094	1661.219	3322.438	6644.875
A(라)	55.0000	110.0000	220.0000	440.0000	880.0000	1760.000	3520.000	7040.000
A#	58.2705	116.5409	233.0819	466.1638	932.3275	1864.655	3729.310	7458.620
B(시)	61.7354	123.4708	246.9417	493.8833	987.7666	1975.533	3951.066	7902.133

블루투스 설정

AT : test ☞ OK

AT+ORGL : 초기화 ☞ OK

AT+ROLE=0 : slave set ☞ OK

AT+CMODE=1 : 장치 mode ☞ OK

AT+UART=9600,0,0 : 속도설정 ☞ OK

AT+NAME="BIT01" : 이름설정 ☞ OK

AT+PSWD="1234" : 비밀번호 ☞ OK

AT+RESET : 재 부팅 ☞ OK

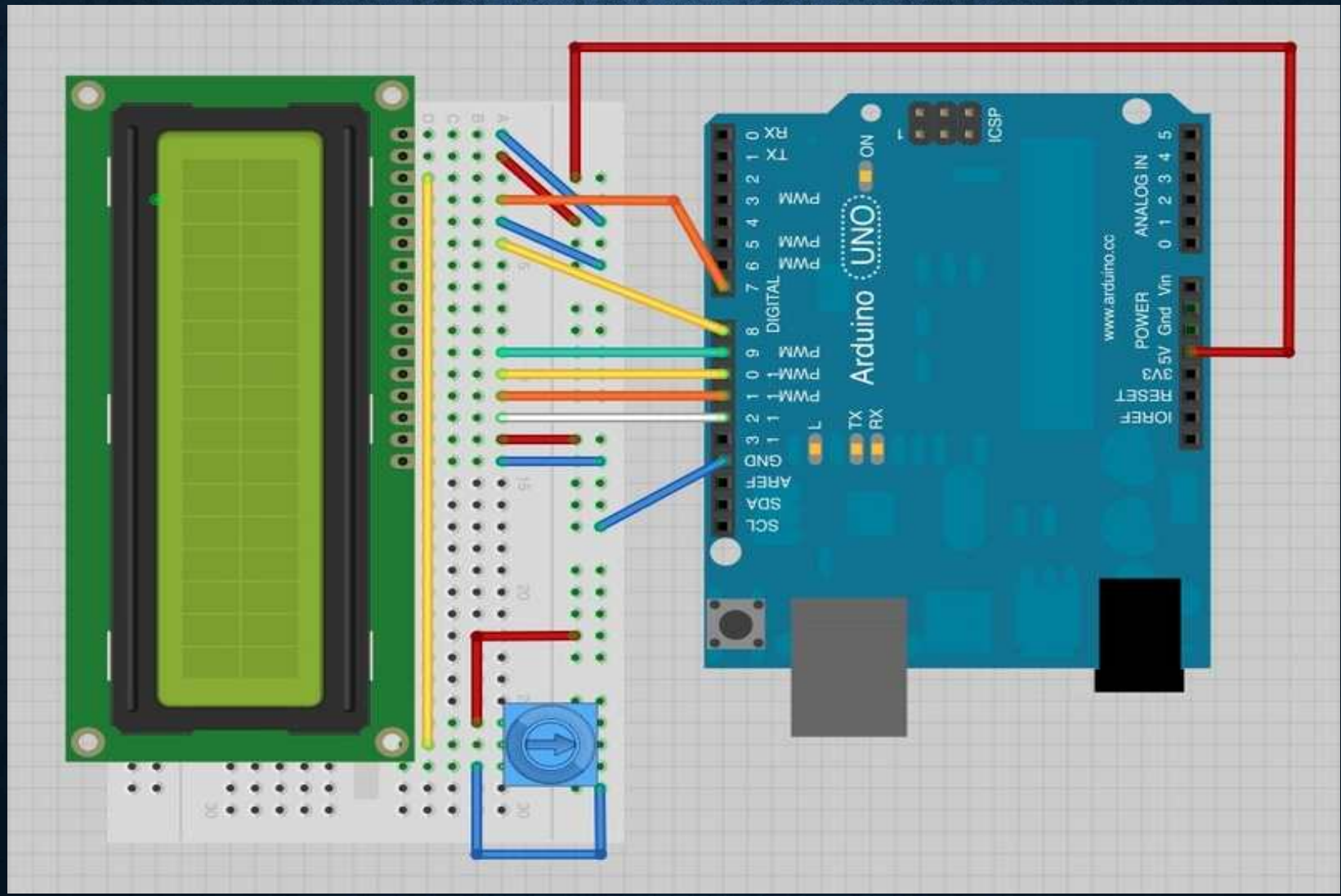
블루투스 설정

AT+NAME="BIT01" : 이름설정 ☞ OK

AT+PSWD : 비밀번호 ☞ OK

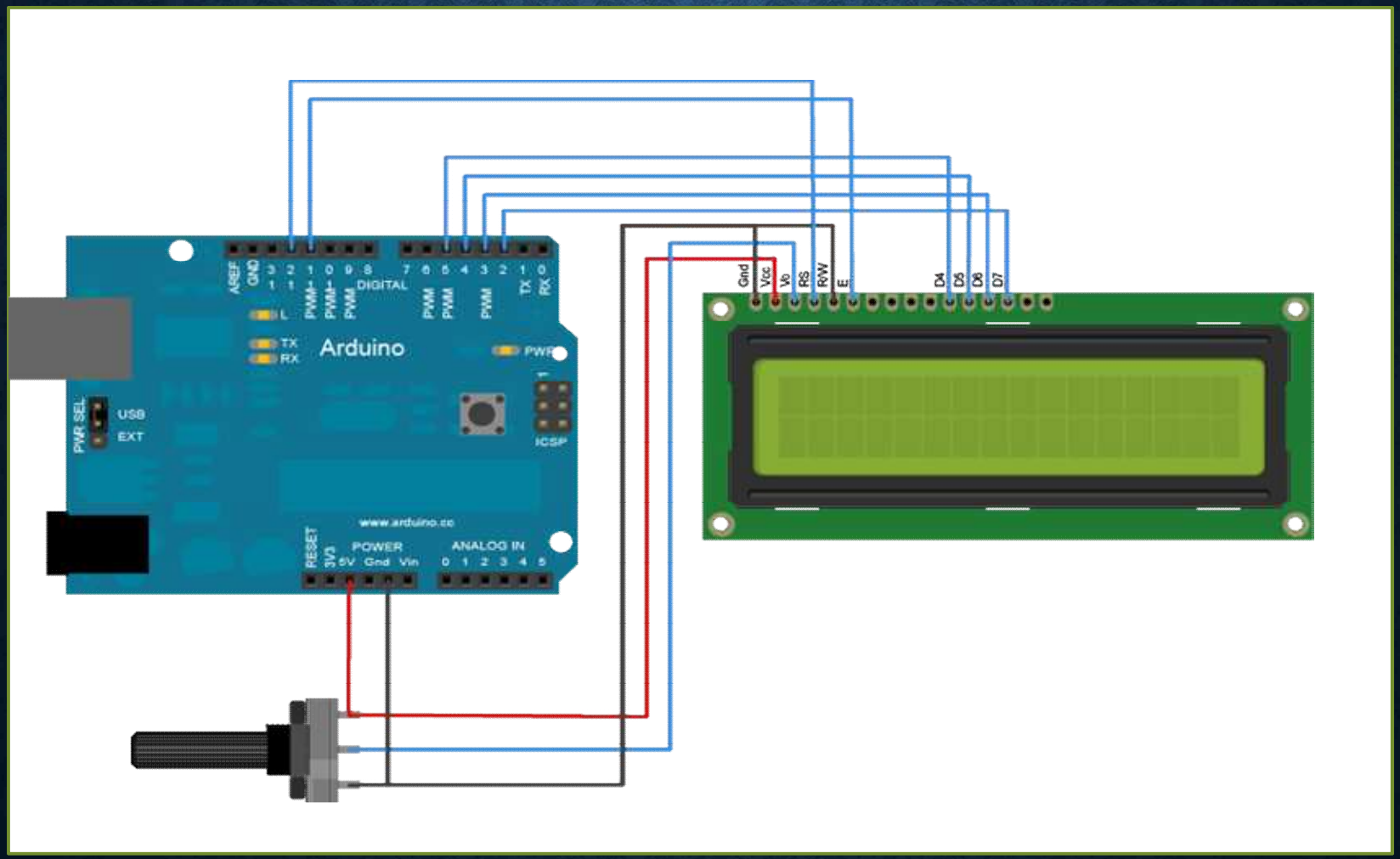
AT+RESET : 재 부팅 ☞ OK

LCD 연결 설정

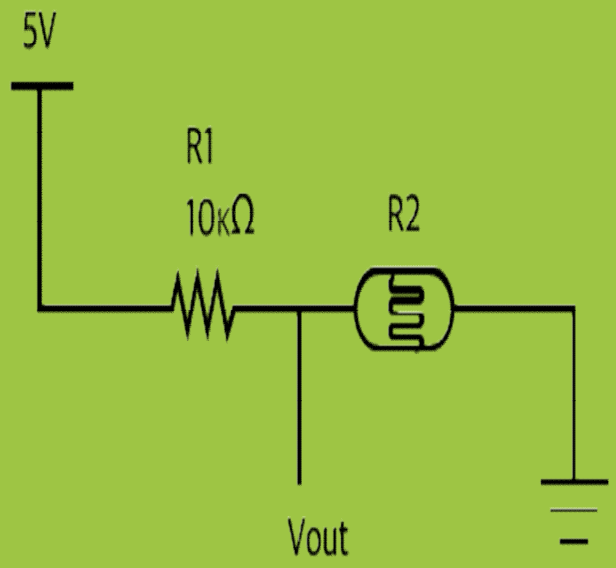

Arduino
UNO
DIGITAL
POWER
ANALOG IN
ICSP
www.arduino.cc
RX
TX
ON
PWM
GND
AREF
SDA
SCL
L
TX
RX
5V
3V3
Gnd
Vin
RESET
IOREF

LCD 연결 설정

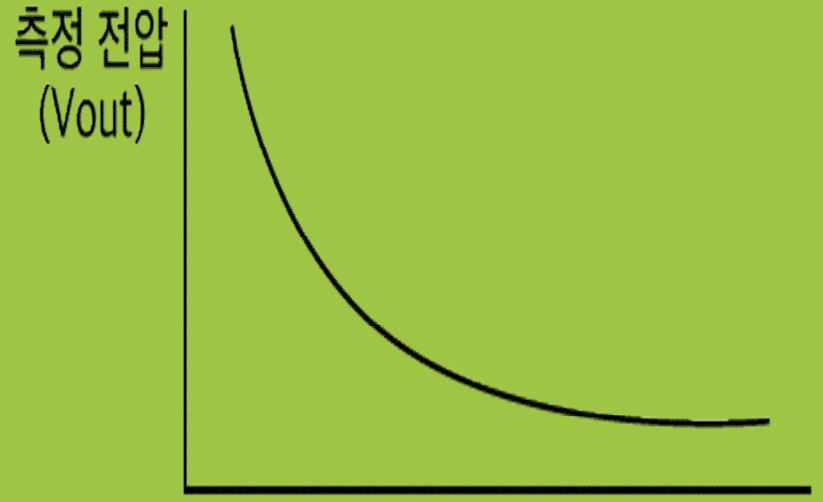
LCD 연결 설정


Arduino
DIGITAL
POWER
ANALOG IN
USB
EXT
PWR SEL
ICSP
www.arduino.cc
Gnd
Vcc
Vo
RS
R/W
E
D4
D5
D6
D7

조도센서



풀업 저항 사용



풀업 저항 사용시 밝기에 대한 측정 전압