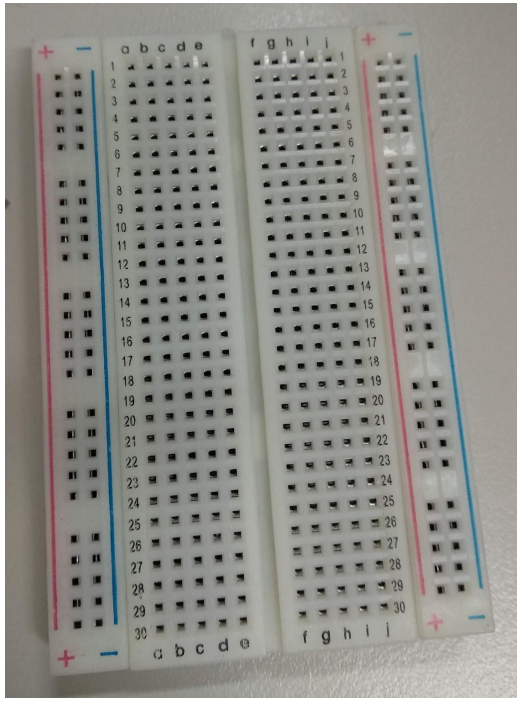
MPSL2019

Lab3

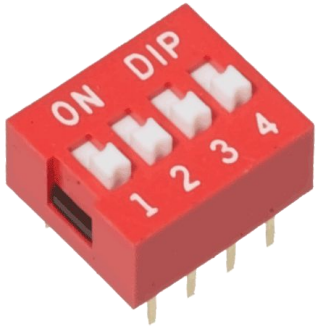
Components of lab

- Breadboard
- 4DIP Switch
- 1K Ω Network Resistor *1
- LED *4
- 220 Ω resistor *4

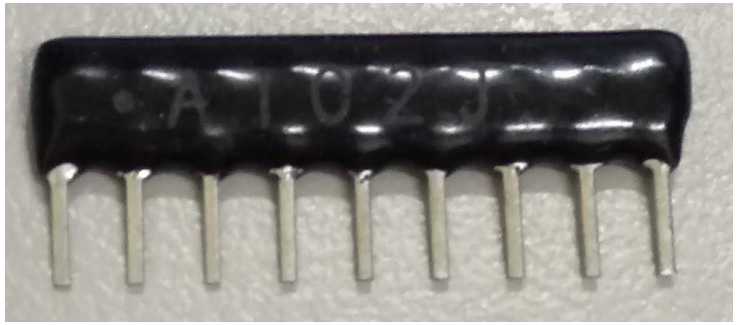
Breadboard



4 DIP Switch

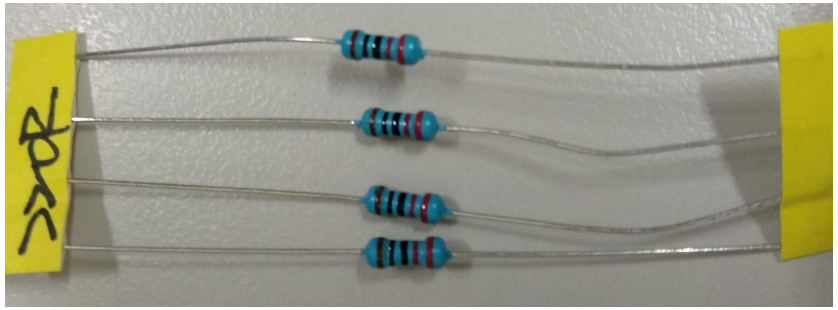


1k Ω Network resistor



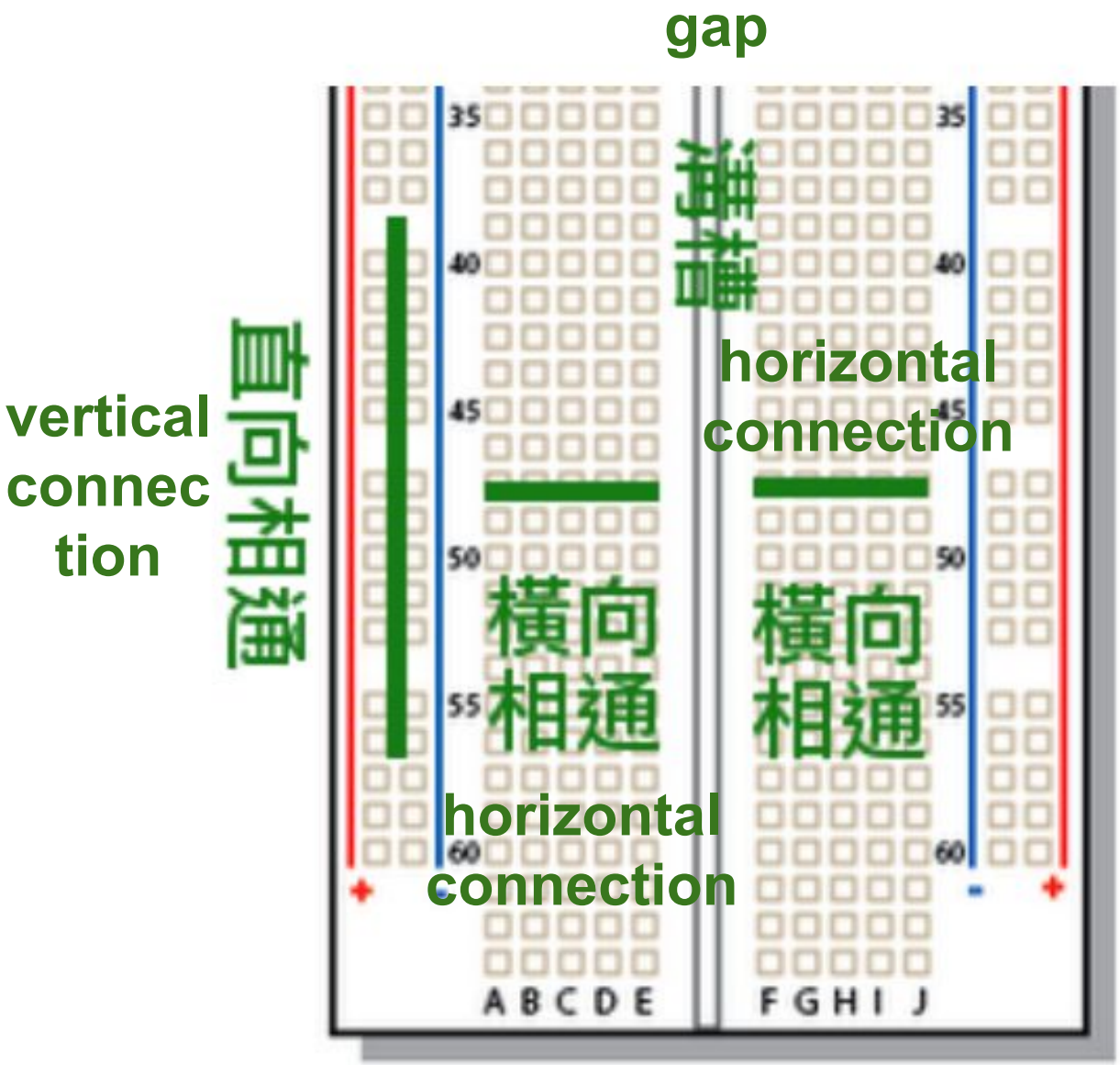
LED * 4

220 Ω resistor *4



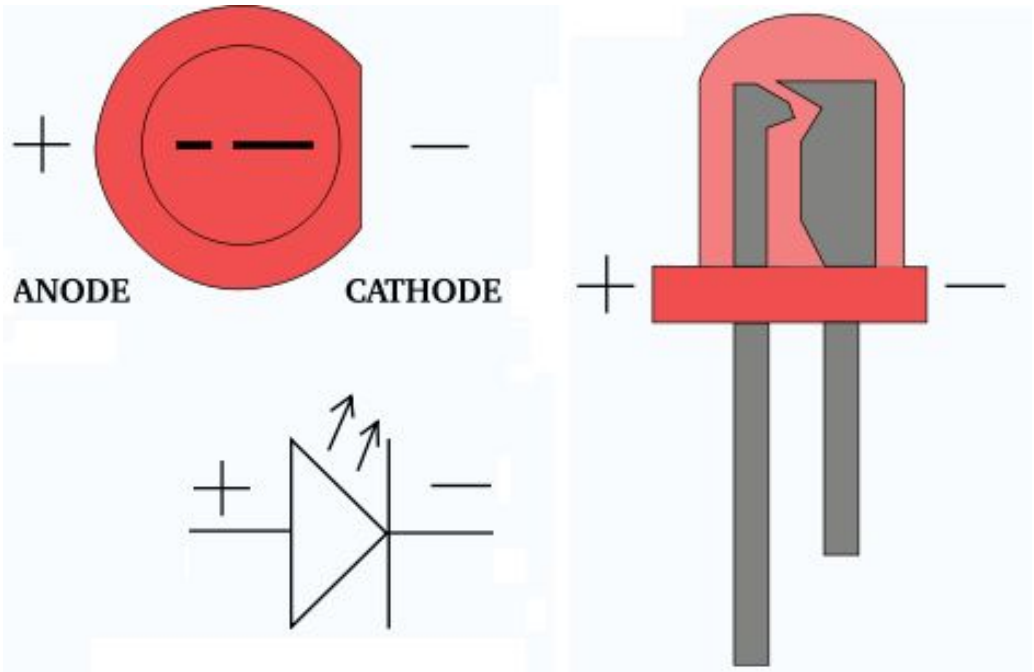
Breadboard

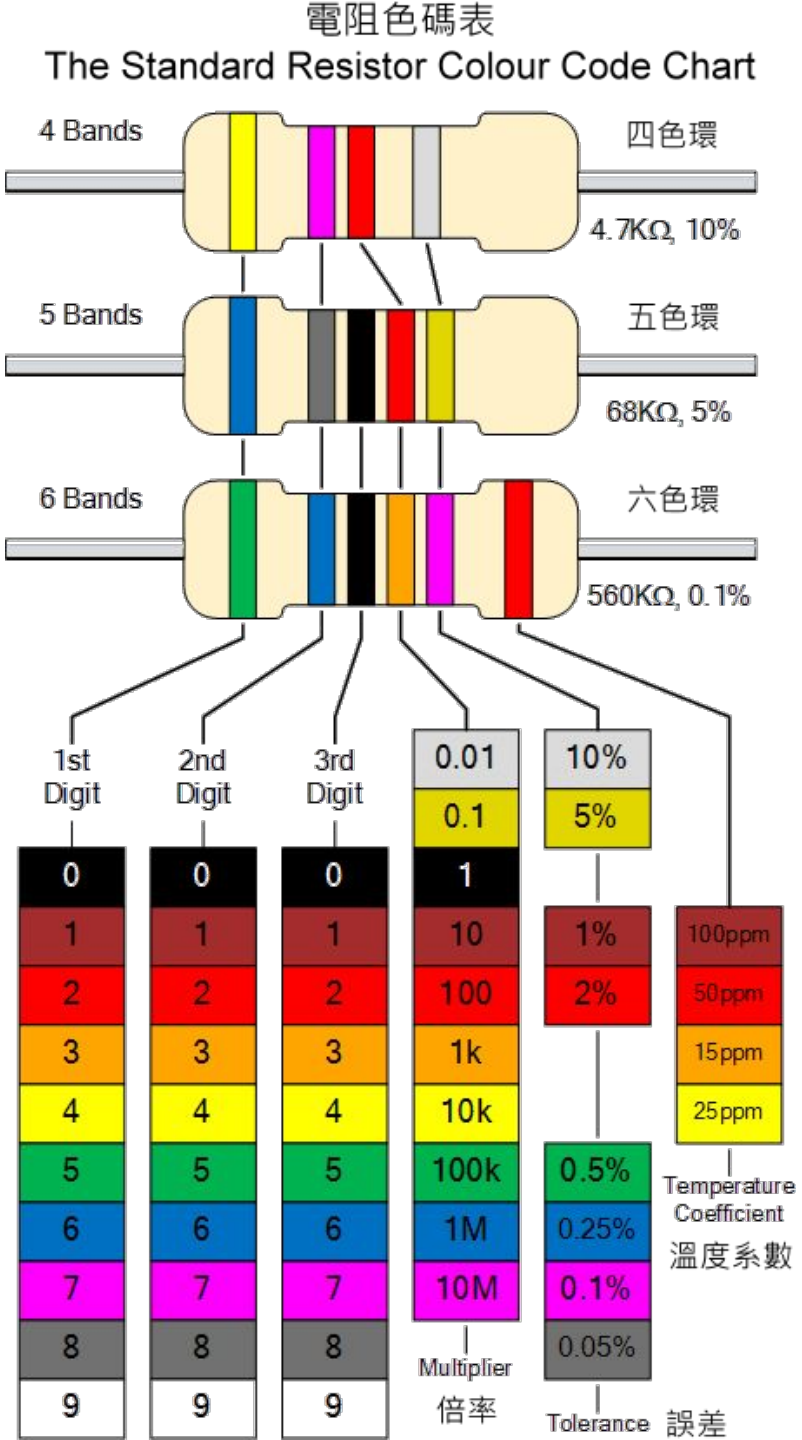
- Easy to connect electronic components
- Please be careful when plugging and unplugging



Resistor and LED

- mark resistor value by colour code
- the long pin of LED is positive (+)

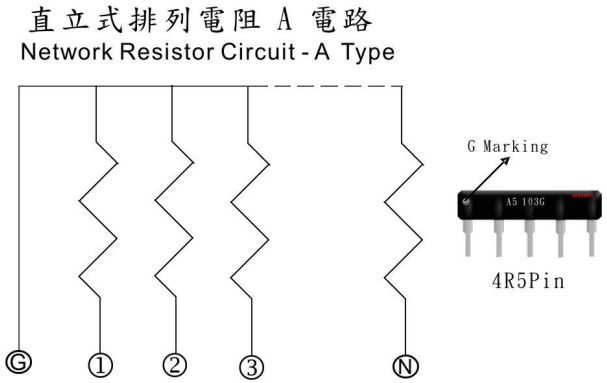




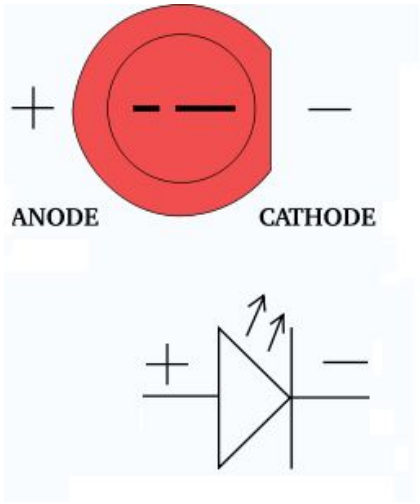
Network resistor 排列電阻

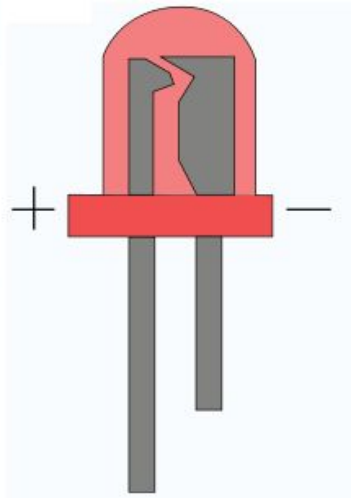
- many resistors in it
- mark resistor value by number, e.g : 102=10*10^2 = 1K Ω

network resistor naming			
circuit type	number of pins	resistor value	difference
• A : all resistors share one pin (leftmost) • B : each resistor has its own independent pin • ...	4 ~ 14	three-digital first and second digital are valid number and third digital is number of zero after valid number	• F : ±1% • G : ±2% • J : ±5%



Our network resistor name is "A 102 J".
The “A” means all resistors share one pin.
102 means 1K Ω



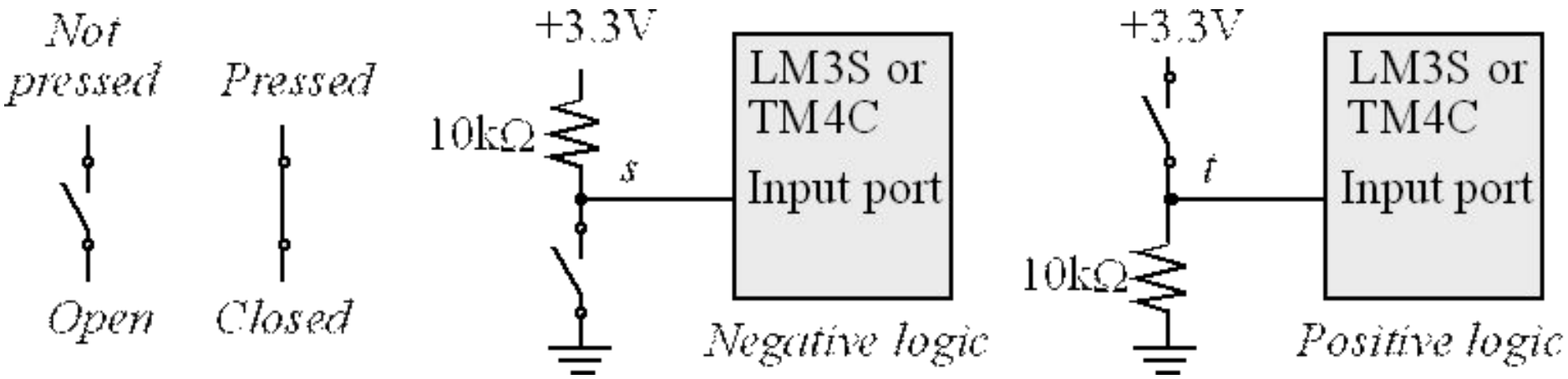


排阻命名方法			
第一部分電路類型	**第二部分引腳數**	**第三部分阻值**	**第四部分誤差**
A-所有電阻共用一端，公共端從左端（第1引腳）引出B-每個電阻有各自獨立引腳，相互間無連接C-各個電阻首尾相連，各連接到均有引出腳D-所有電阻共用一端，公共端從中間引出E、F、G、H、I-內部連接較複雜，不常用，此次略去	4~14	3位數字（第1、2位為有效數，第3位為有效數後面0的個數，如102表示1000Ω）	F-±1%G-±2%J-±5%

Negative logic and Positive logic

- logic can mean to the logical level received by the CPU when a component "action" or "trigger"
- Positive logic or Active High
  - When component actions, CPU receives High level ("1")
- Negative logic or Active Low
  - When component actions, CPU receives Low level ("0")

e.g.



Hardware Sketch

- http://fritzing.org/