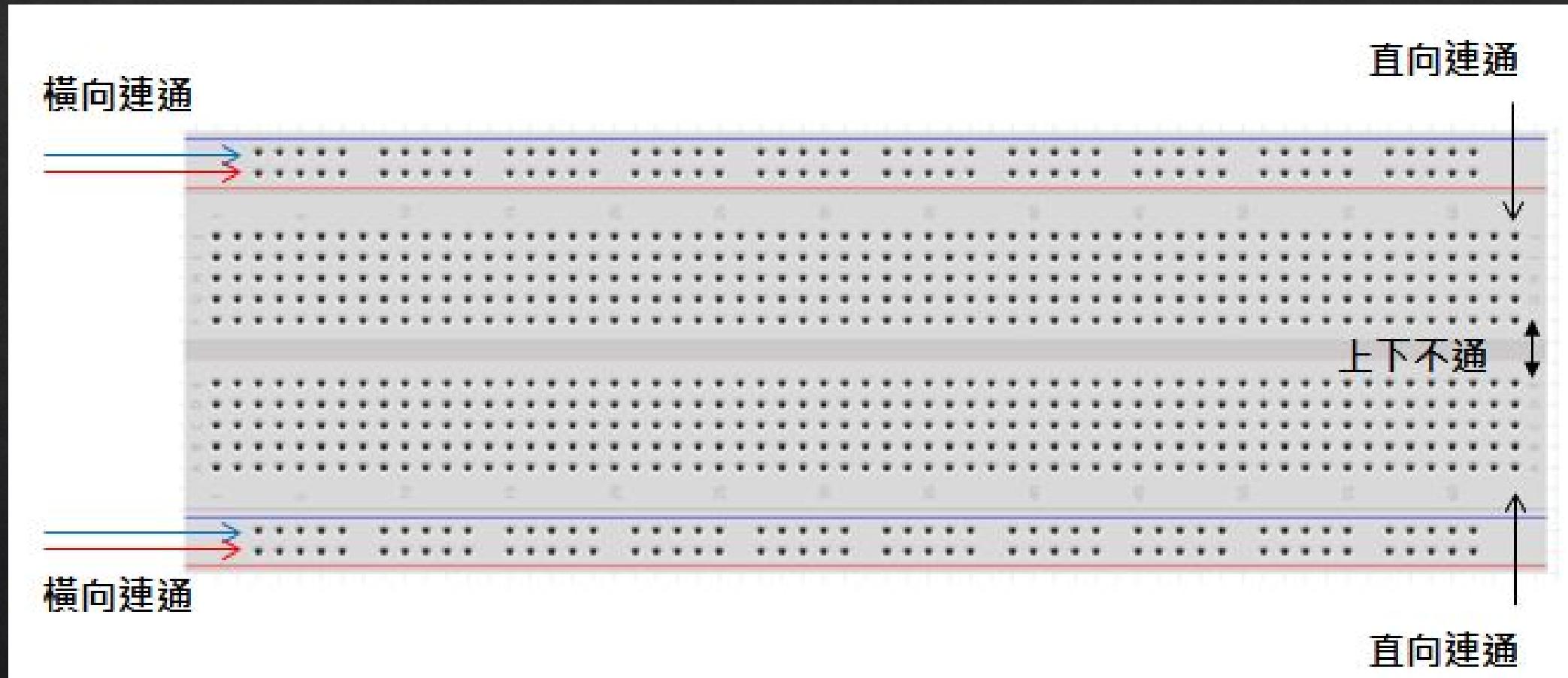


Flip Flop & Counter Demo

Yi-Yun Liao

Taiwan Evolutionary Intelligence Laboratory

麵包板



LED & Capacitor

- LED
 - 長腳正極、短腳負極
 - 1.8-2.4V
- Capacitor
 - 長腳正極、短腳負極



NAND/NOR Gate

A	B	NAND	NOR
0	0	1	1
0	1	1	0
1	0	1	0
1	1	0	0

- NAND



- NOR



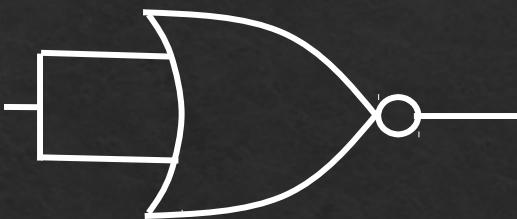
NAND/NOR Gate

- NOT



- AND

- NAND + NOT



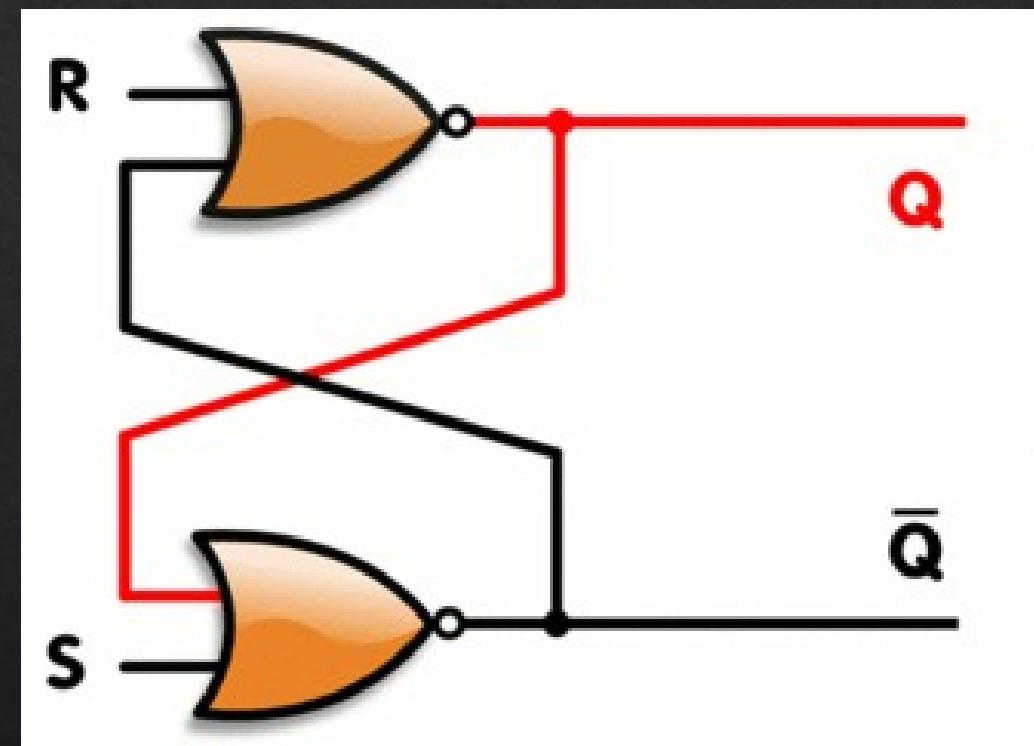
- OR

- NOR + NOT



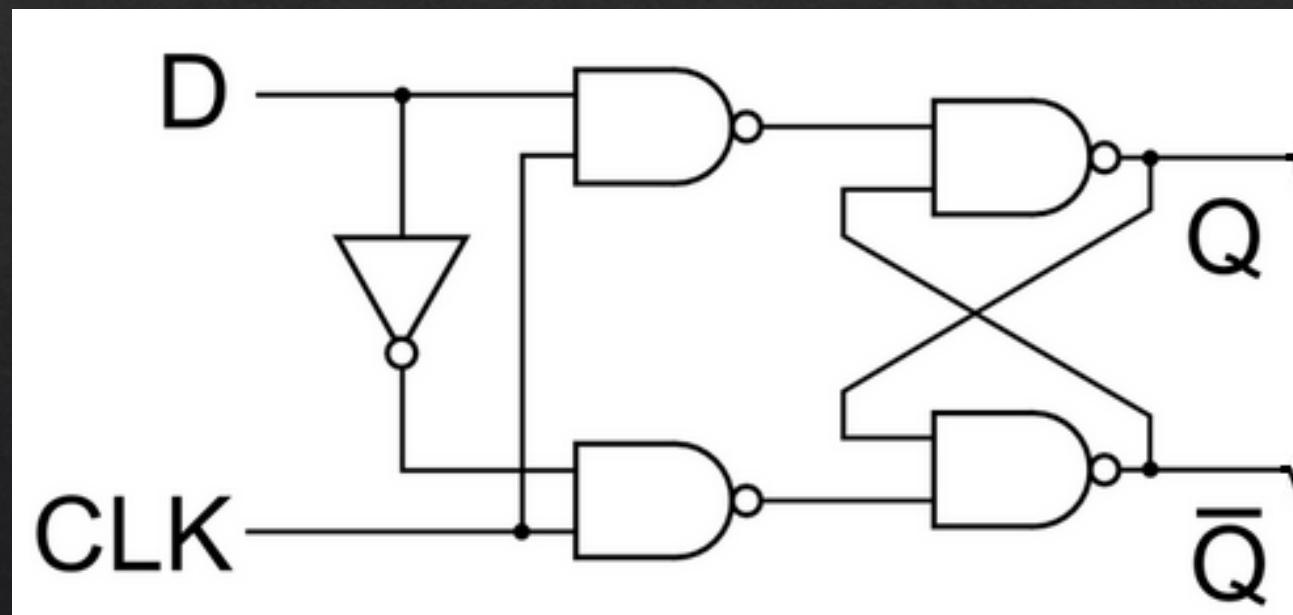
SR Flip Flop

R	S	Q	Q'
0	0	No Change	No Change
0	1	0	1
1	0	1	0
1	1	X	X



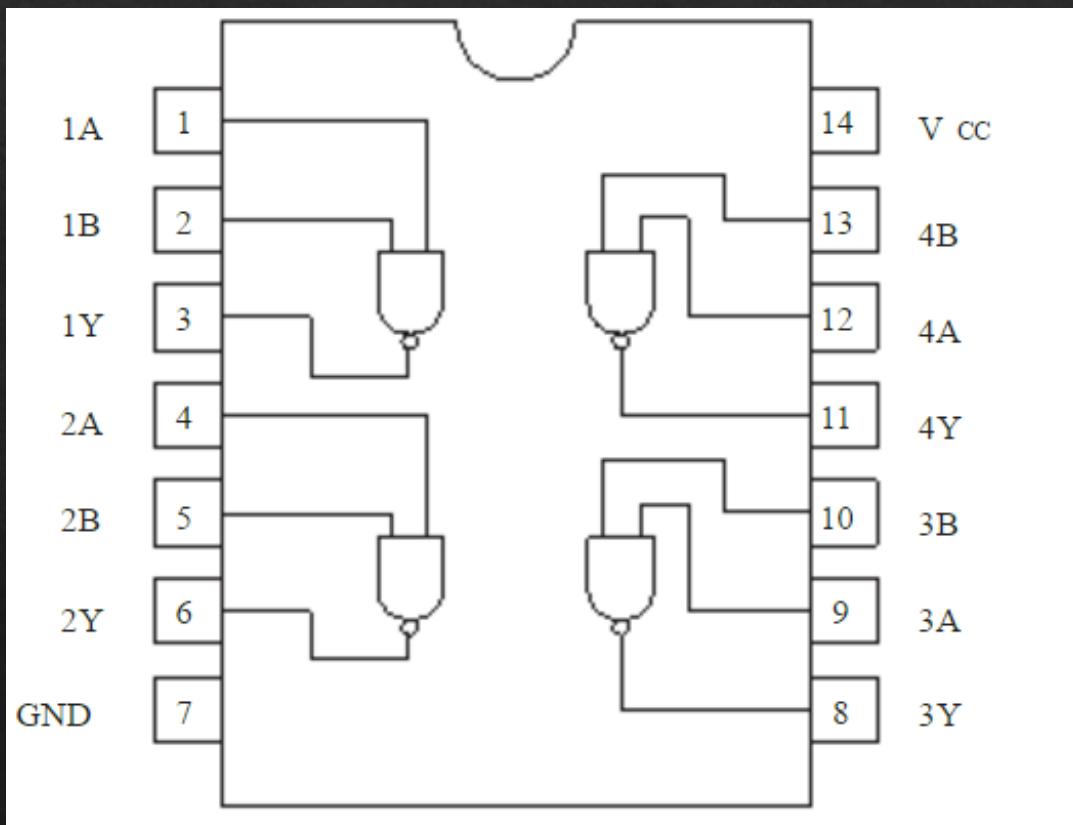
D Flip Flop

D	E	Q	Q'
0	0	No Change	No Change
0	1	0	1
1	0	No Change	No Change
1	1	1	0

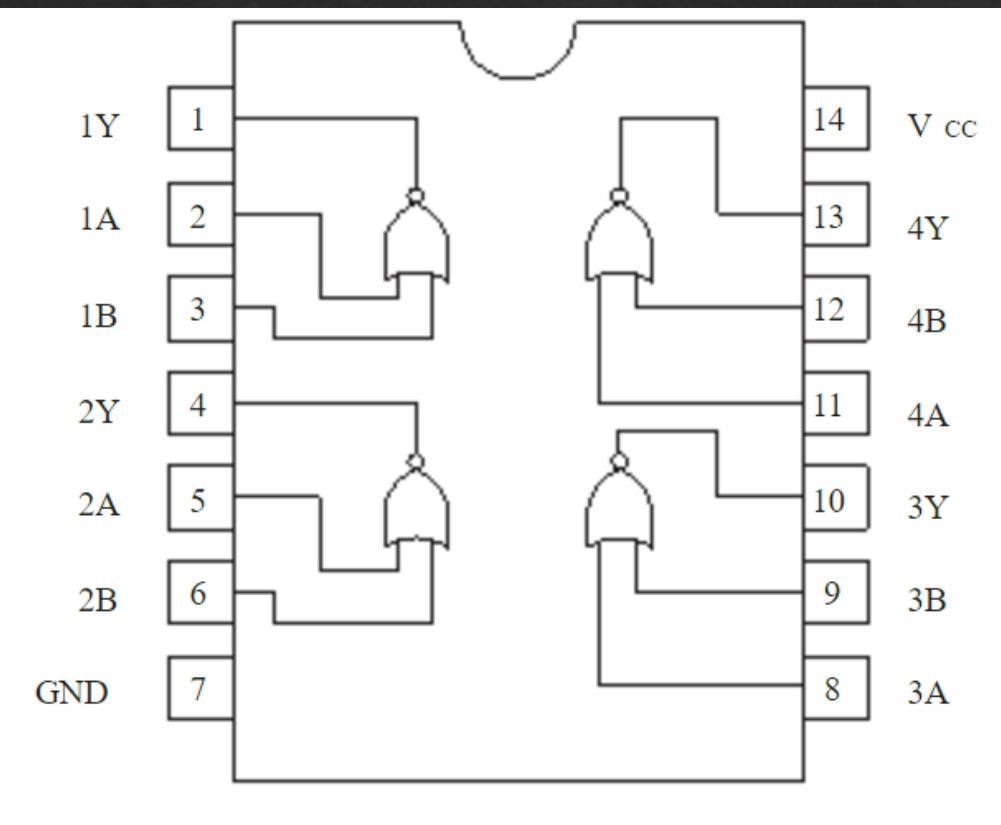


HD74LS00P / HD74LS02P

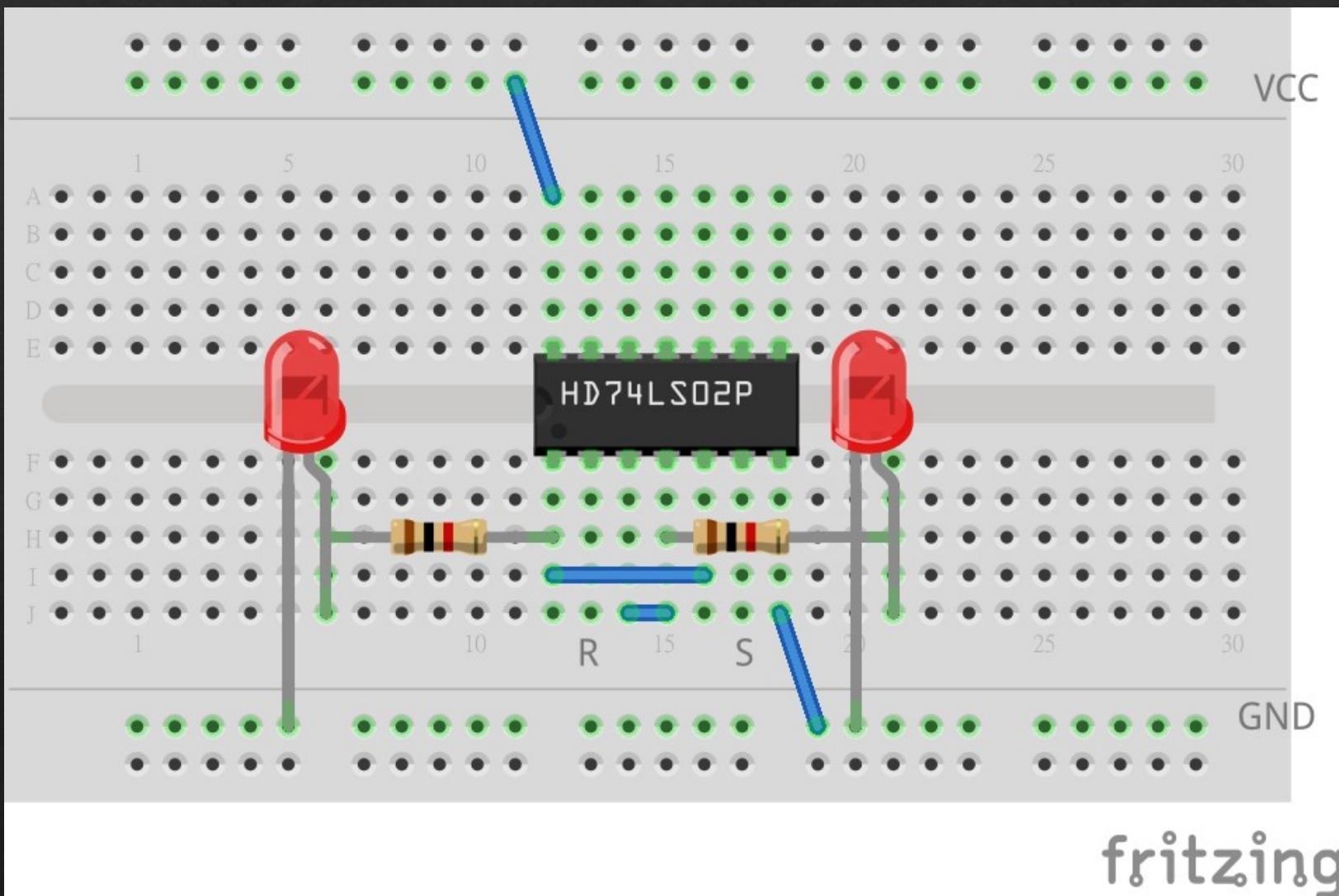
HD74LS00P



HD74LS02P

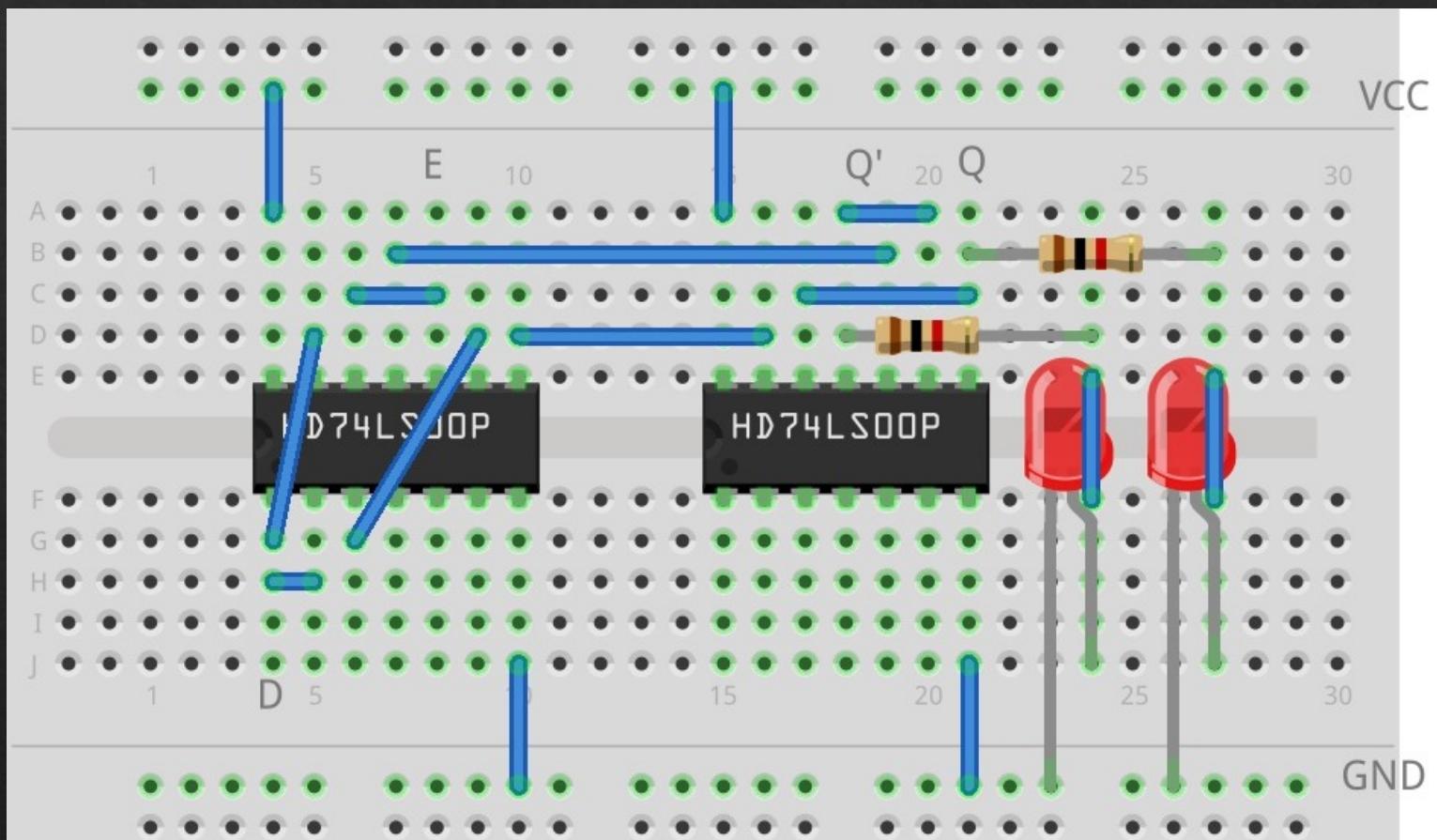


SR Flip Flop



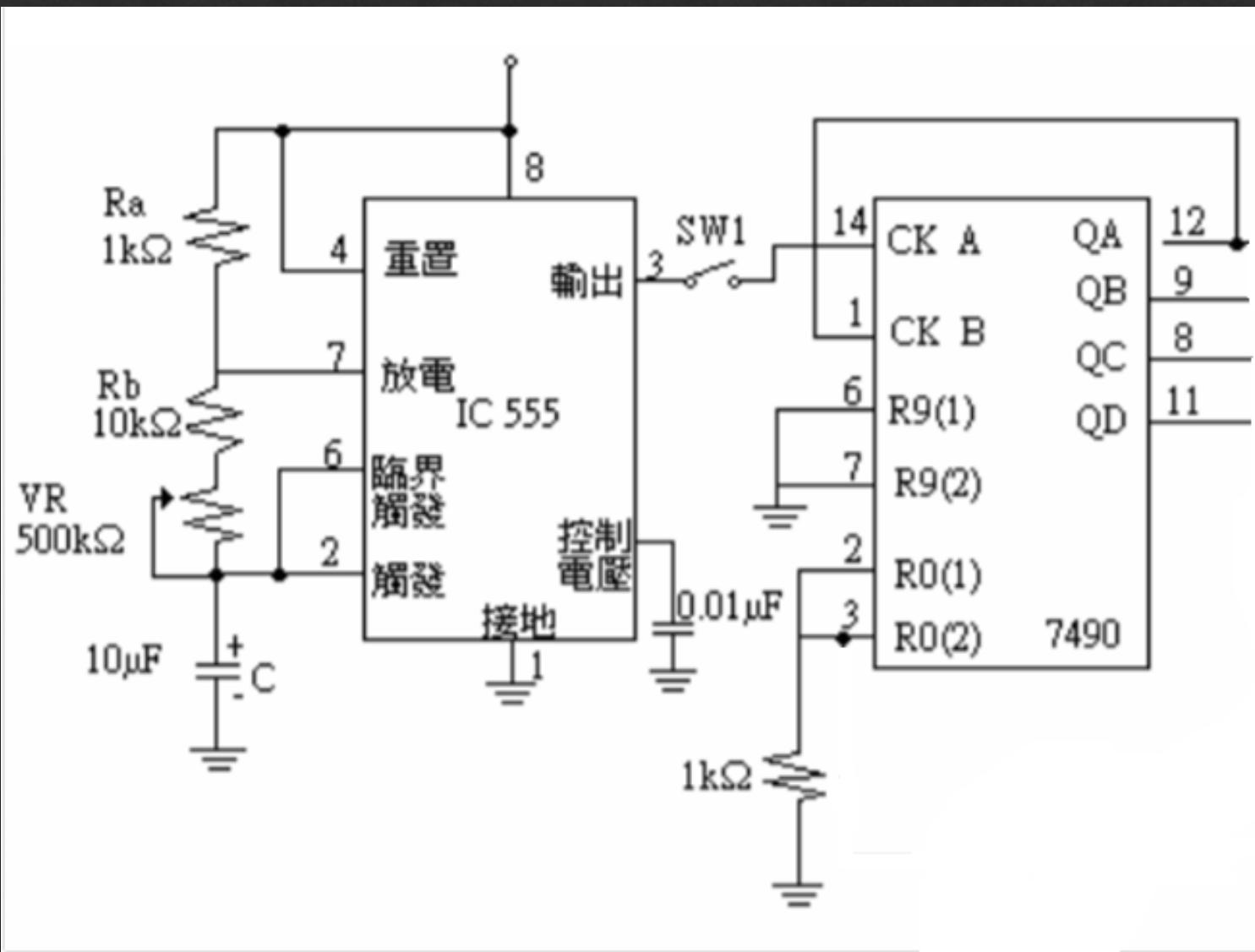
fritzing

D Flip Flop



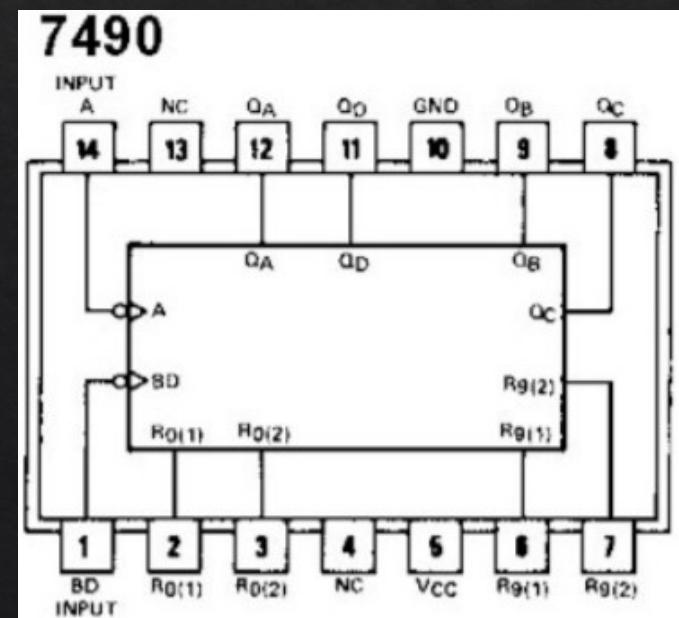
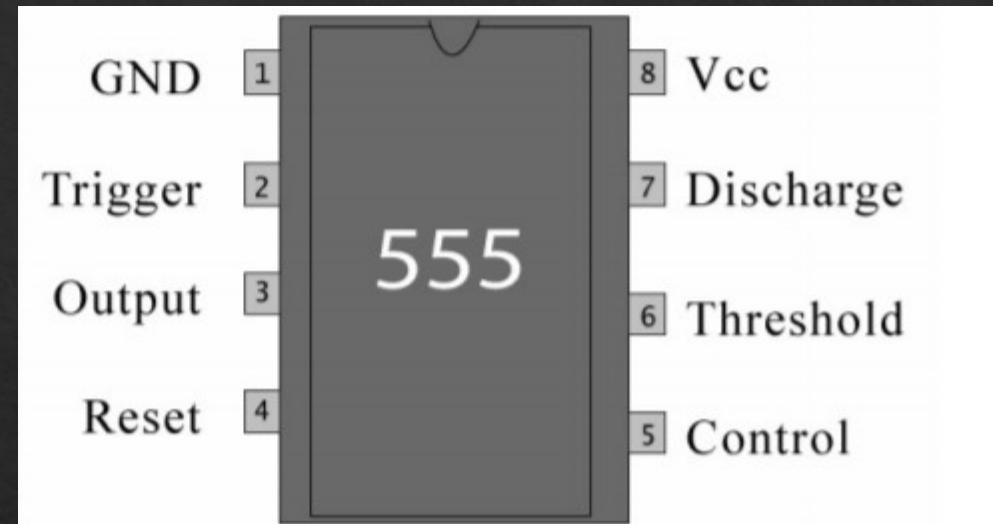
fritzing

Counter

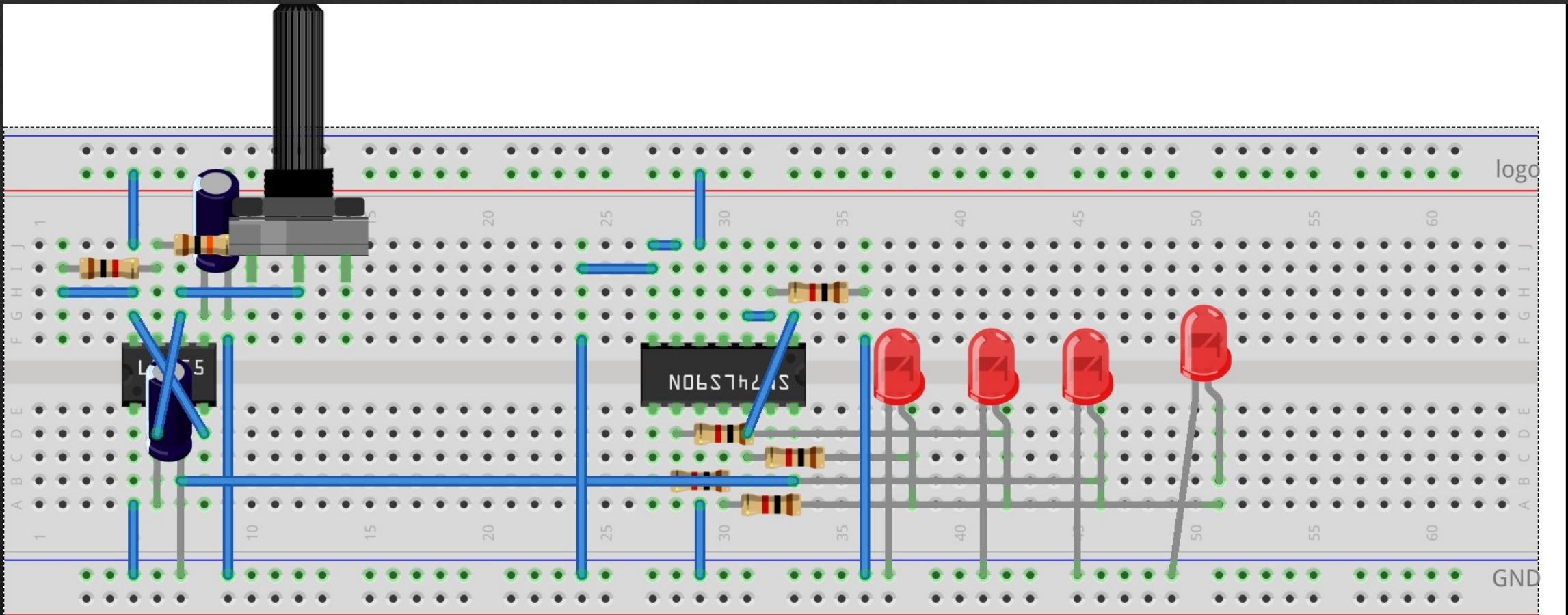


Counter

- LM 555
 - Timer
 - Pulse generator
 - Oscillator
- 74LS90
 - Binary counter



Counter



fritzing