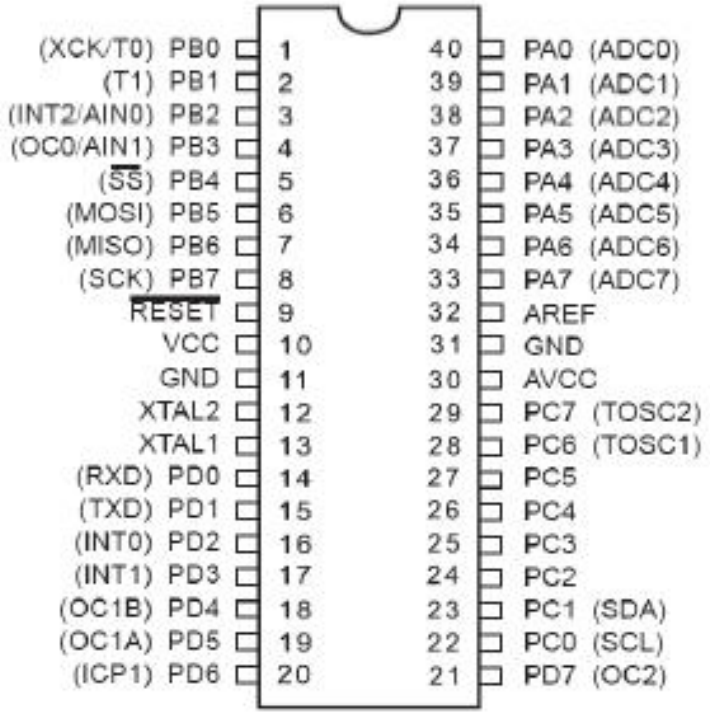
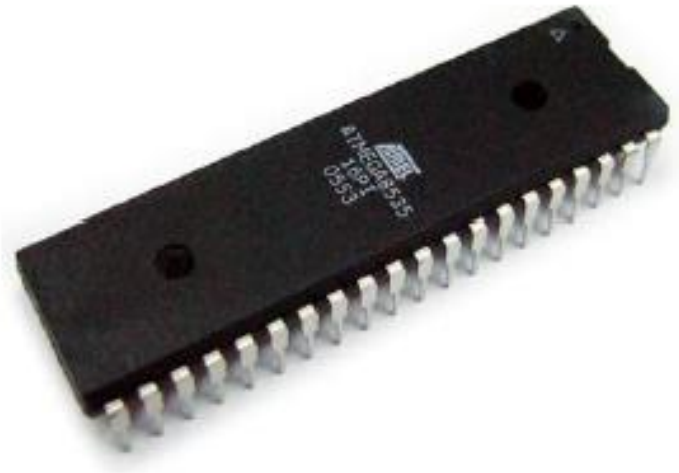
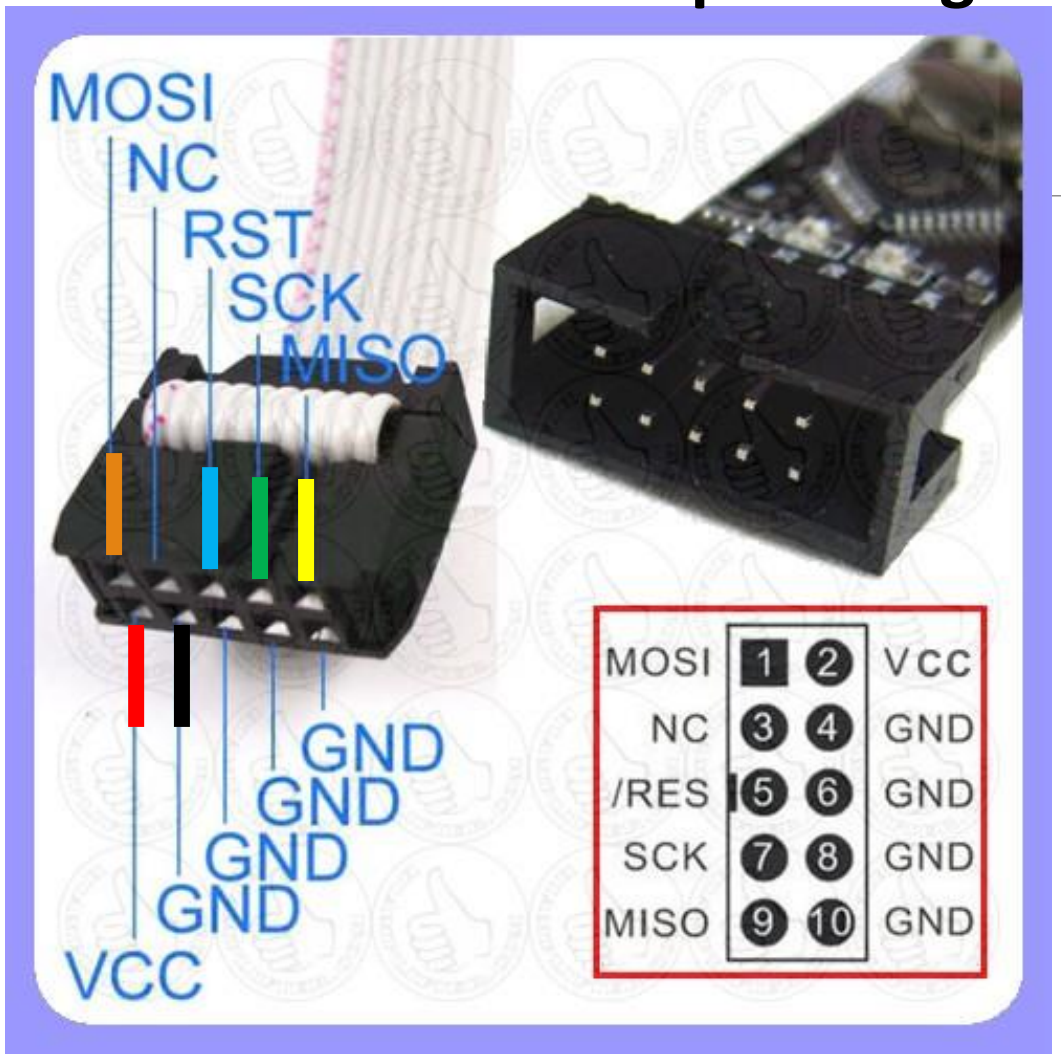
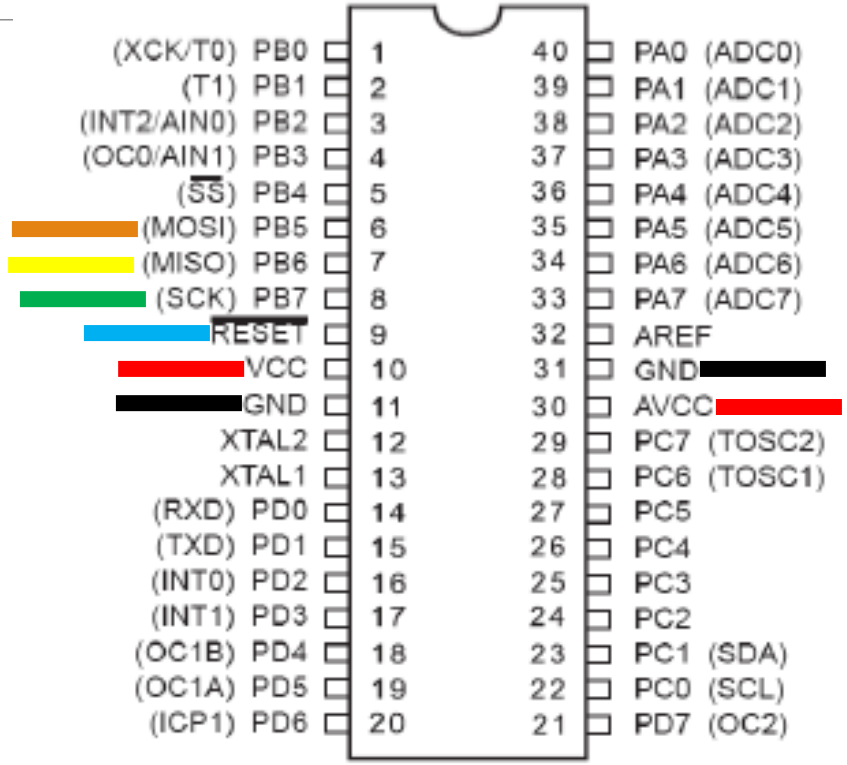
Microcontrolador ATmega16A



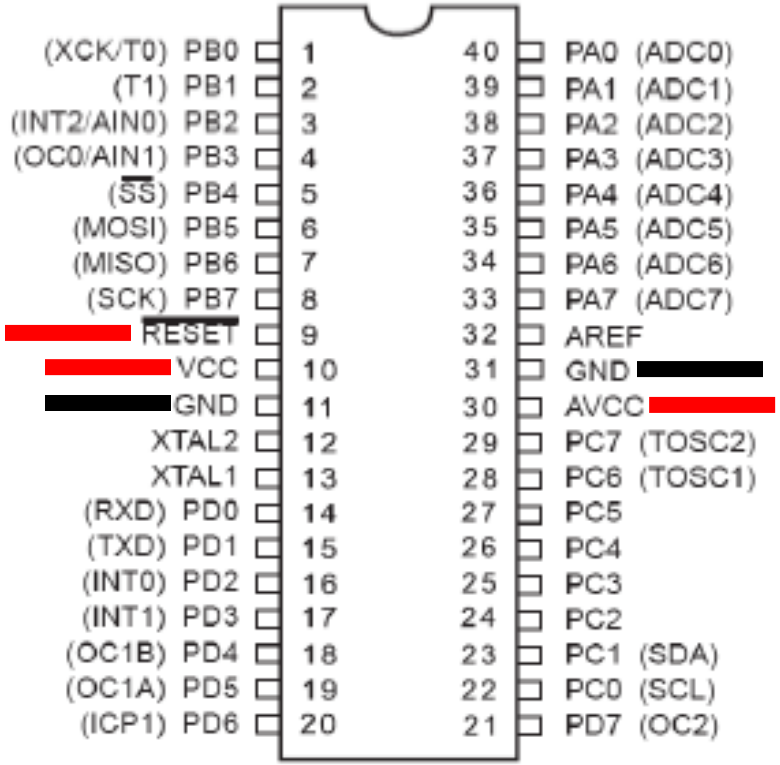


Conexiones para carga de programa al ATmega16A

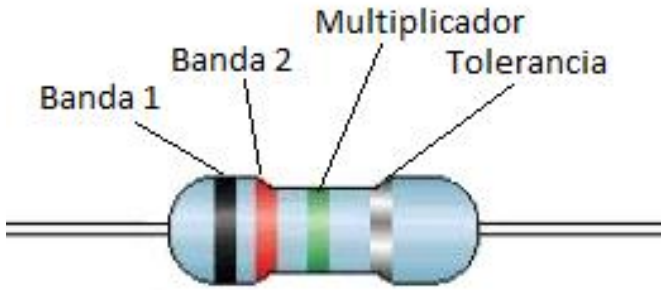




Sistema mínimo ATmega16A



Resistencias

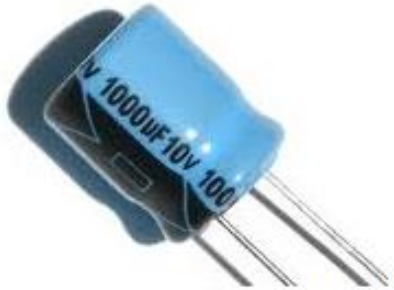


RESISTENCIAS

	Banda1	Banda 2	Multiplicador	Tolerancia
PLATA				10%
ORO				5%
NEGRO	-	-	x 1	
CAFÉ	1	1	x 10	1%
ROJO	2	2	x 100	2%
NARANJA	3	3	x 1000 (1k)	
AMARILLO	4	4	x 10 000	
VERDE	5	5	x 1 000 000 (1M)	0.5%
AZUL	6	6		
VIOLETA	7	7		
GRIS	8	8		
BLANCO	9	9		
NINGUNO				20%

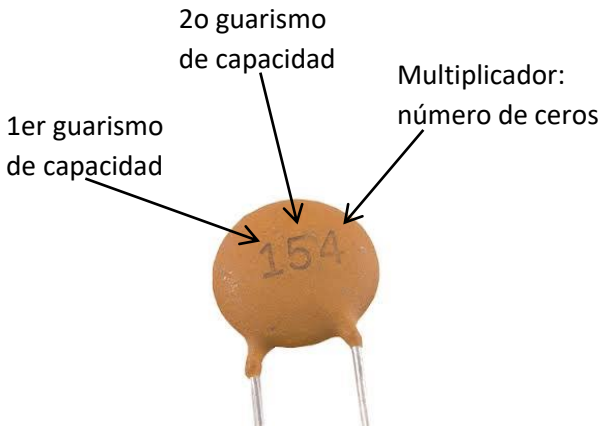
Capacitores

Capacitor cerámico

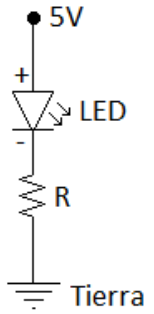


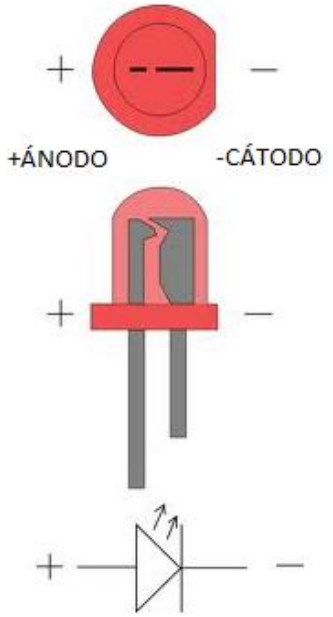
Capacitor electrolítico

Factor	Prefijo	Símbolo
10^{3}	kilo-	k
10^{-1}	deci-	d
10^{-2}	centi-	c
10^{-3}	milli-	m
10^{-6}	micro-	μ
10^{-9}	nano-	n
10^{-12}	pico-	p

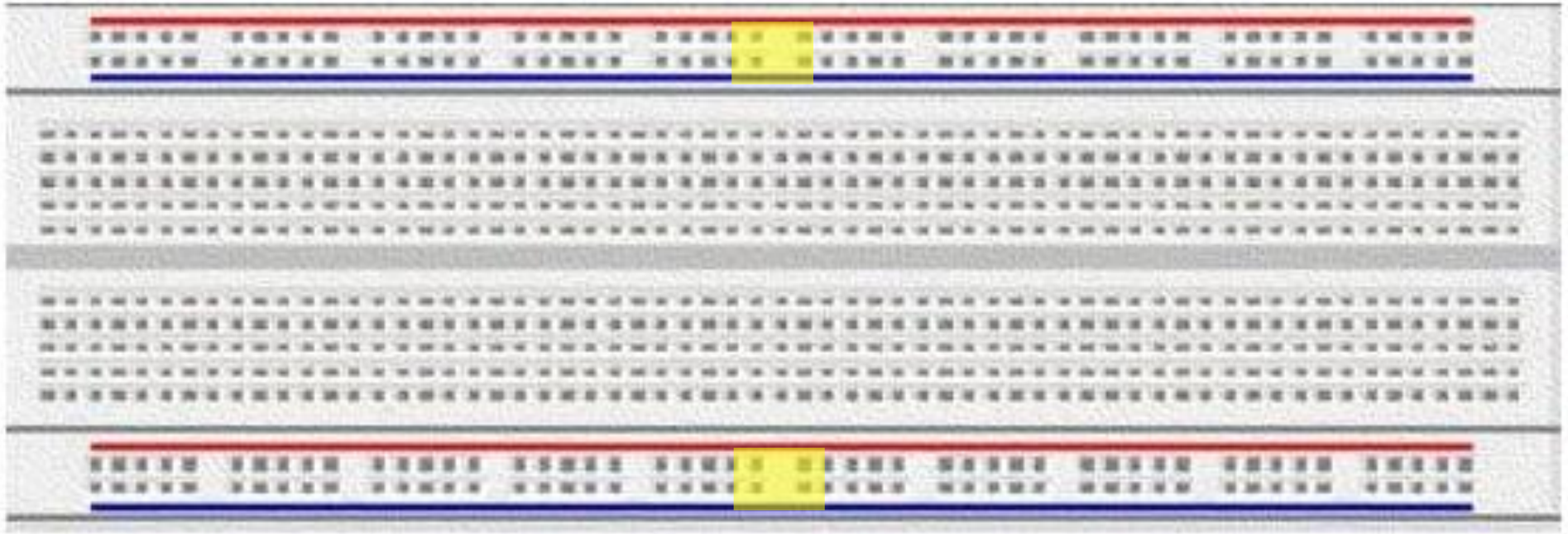


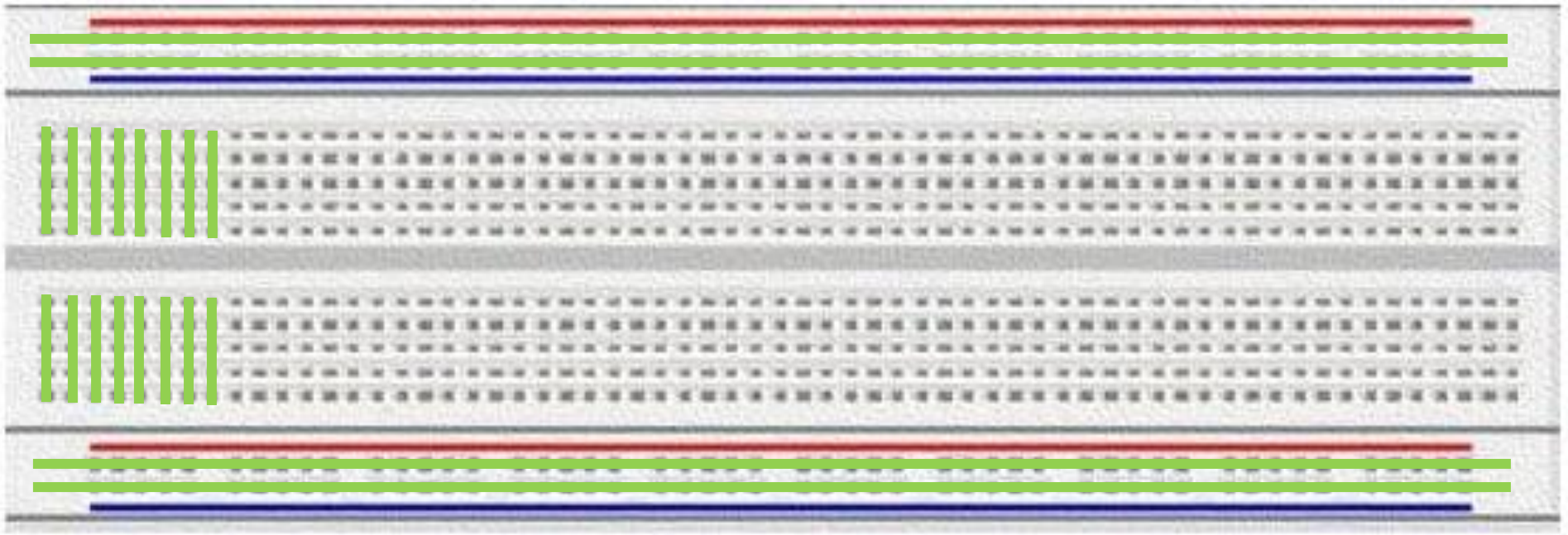
LEDs

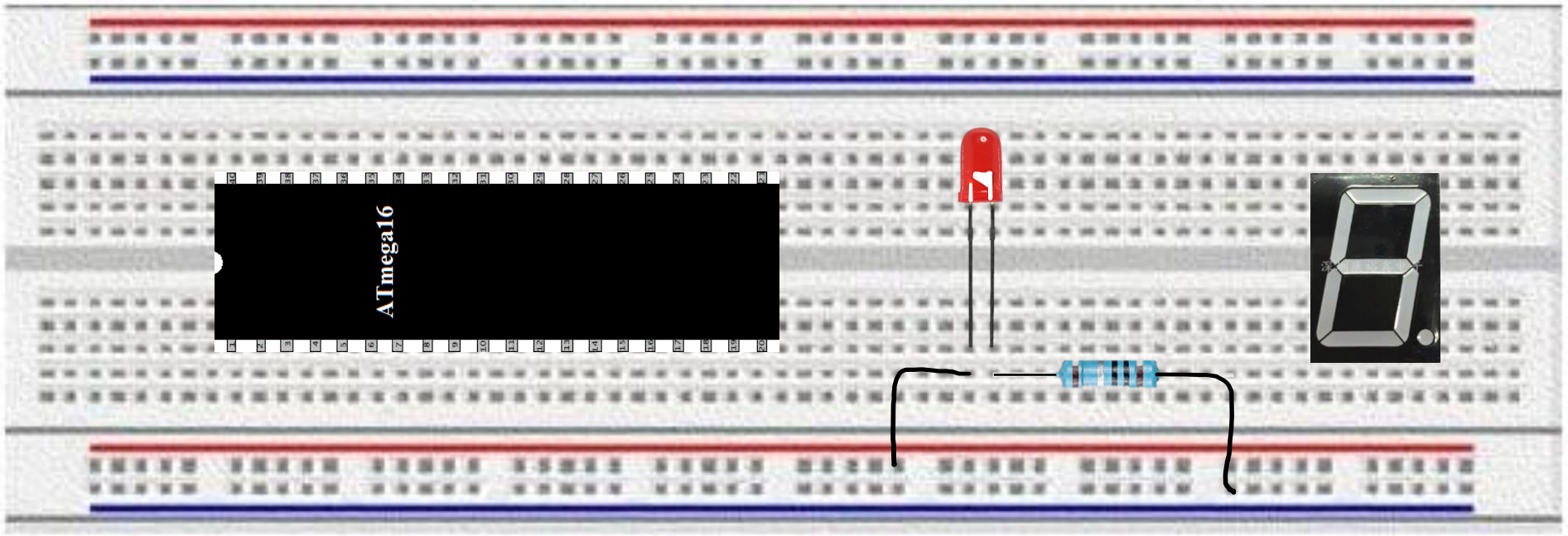




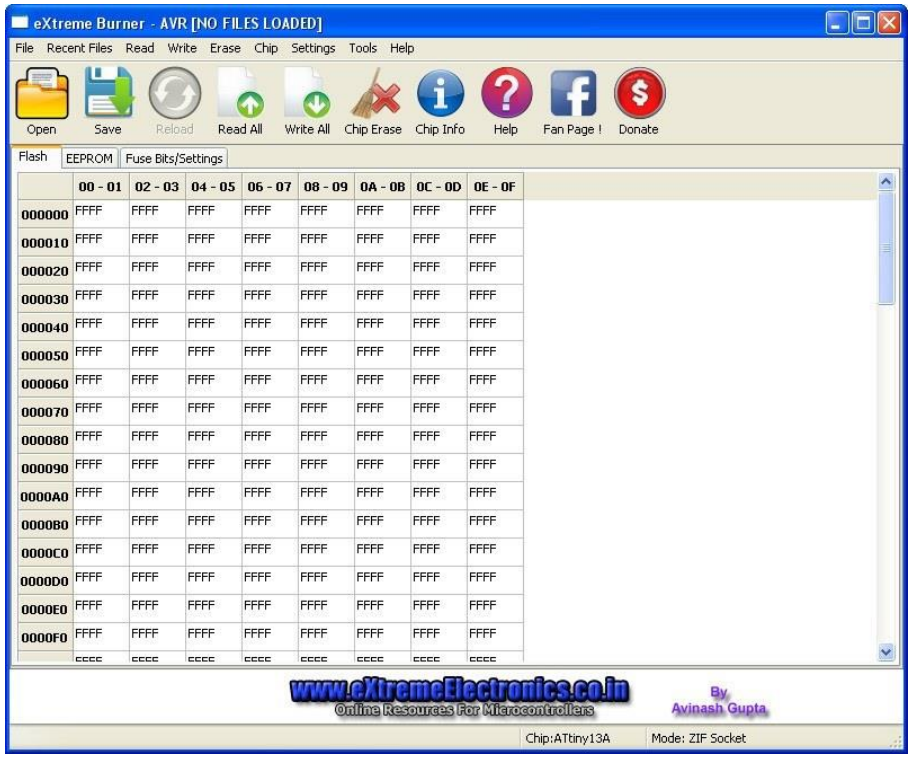
Protoboard

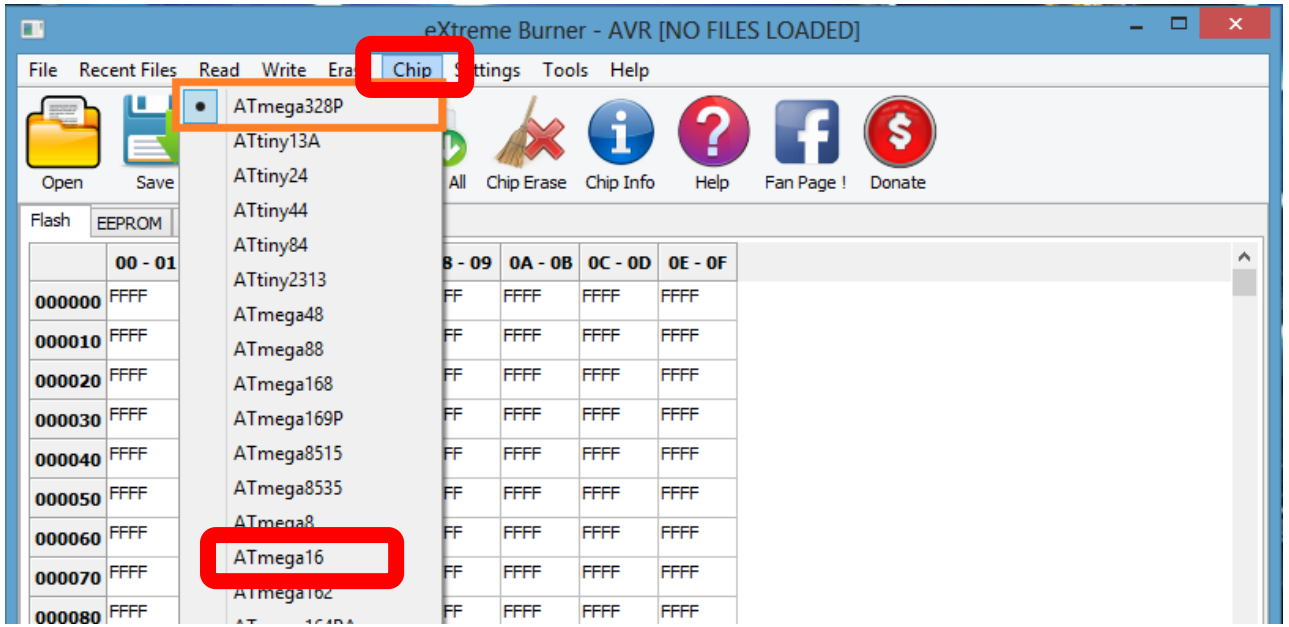




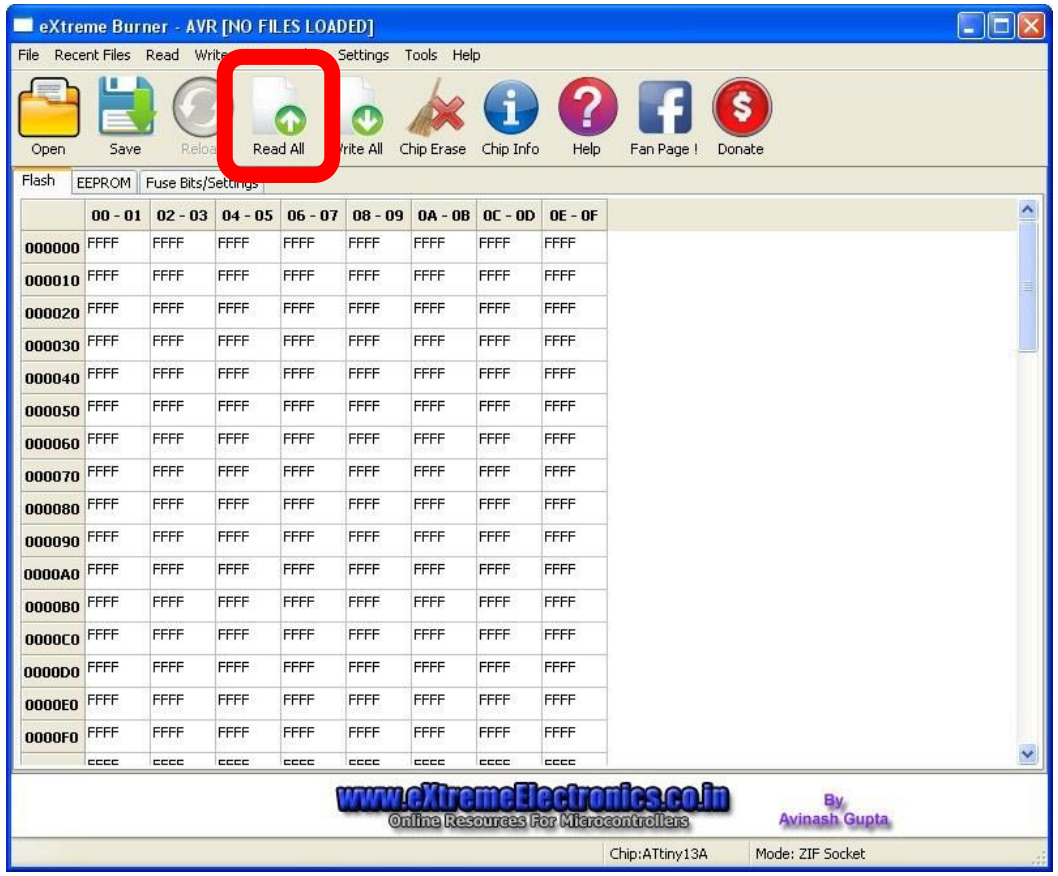

ATmega16

eXtreme Burner
(1° hay que seleccionar el microcontrolador…)

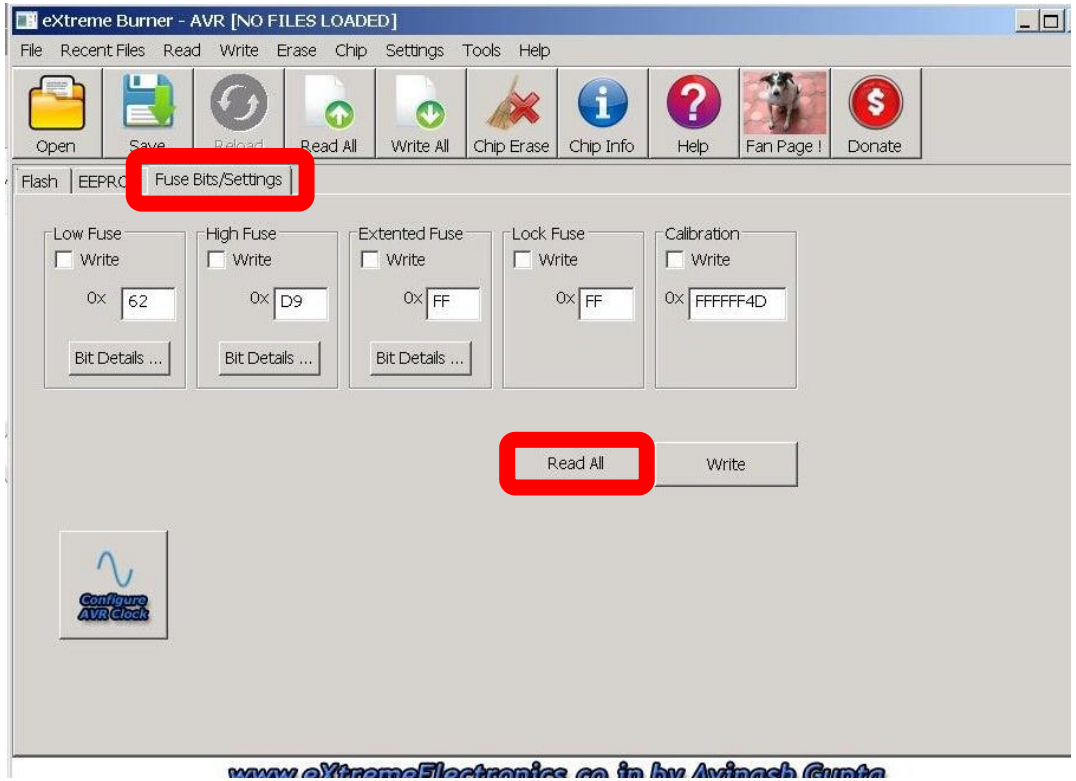




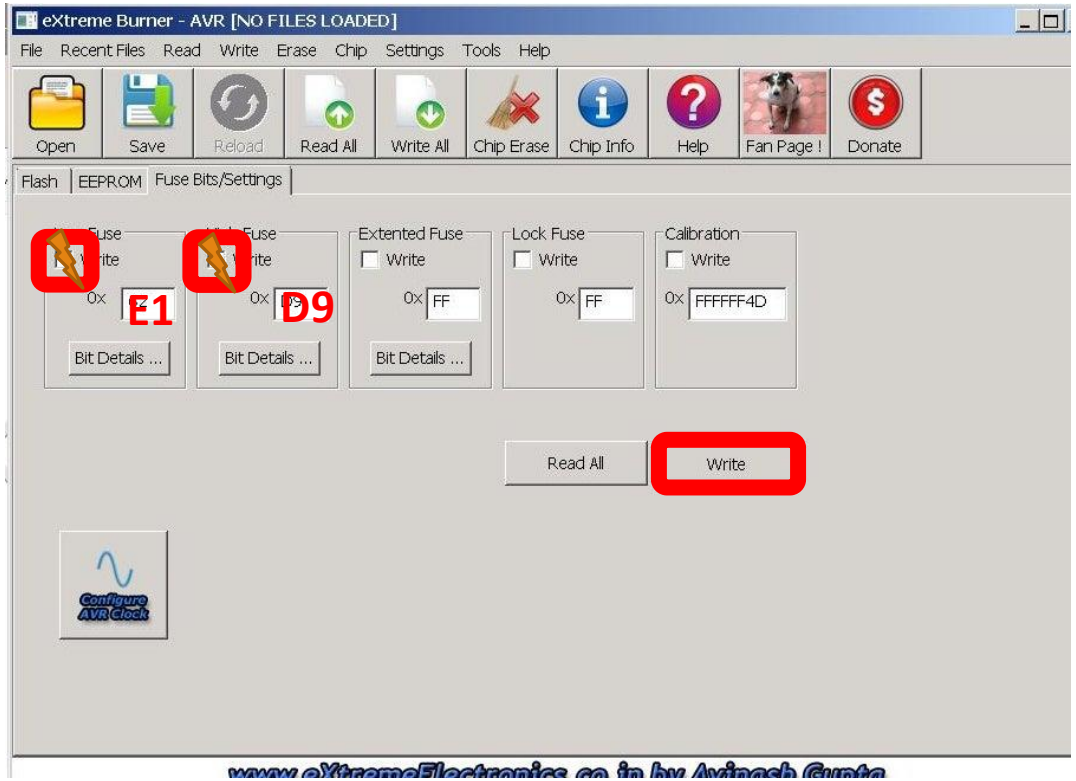
eXtreme Burner
(… y ahora hay que probar si funciona correctamente…)



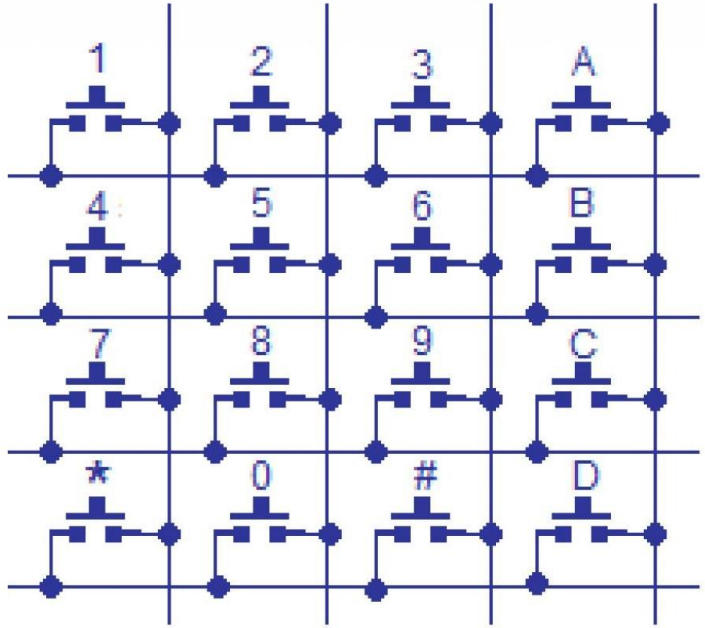
eXtreme Burner
(… y vamos a la pestaña de fusibles…)

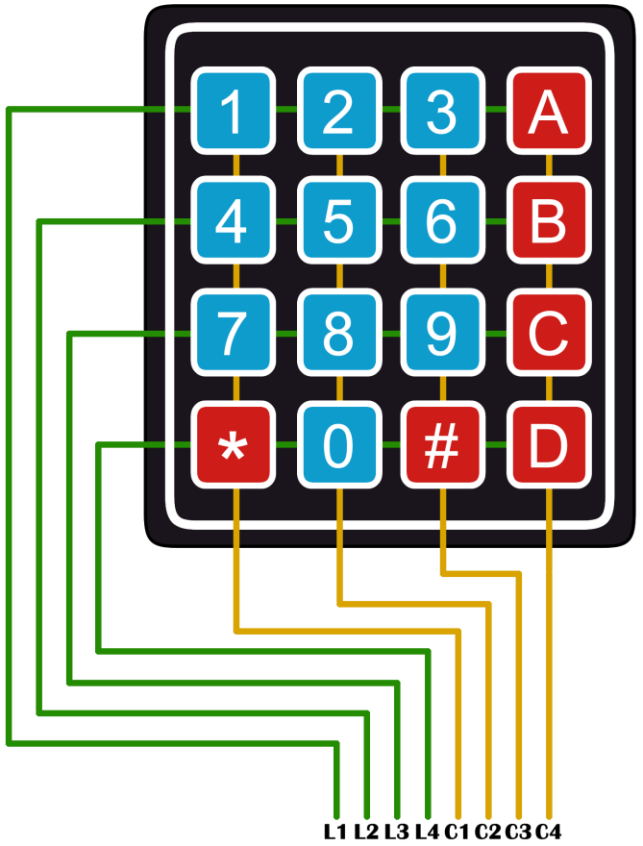


eXtreme Burner
(… y adecuamos los fusibles de acuerdo a lo que necesitamos…)

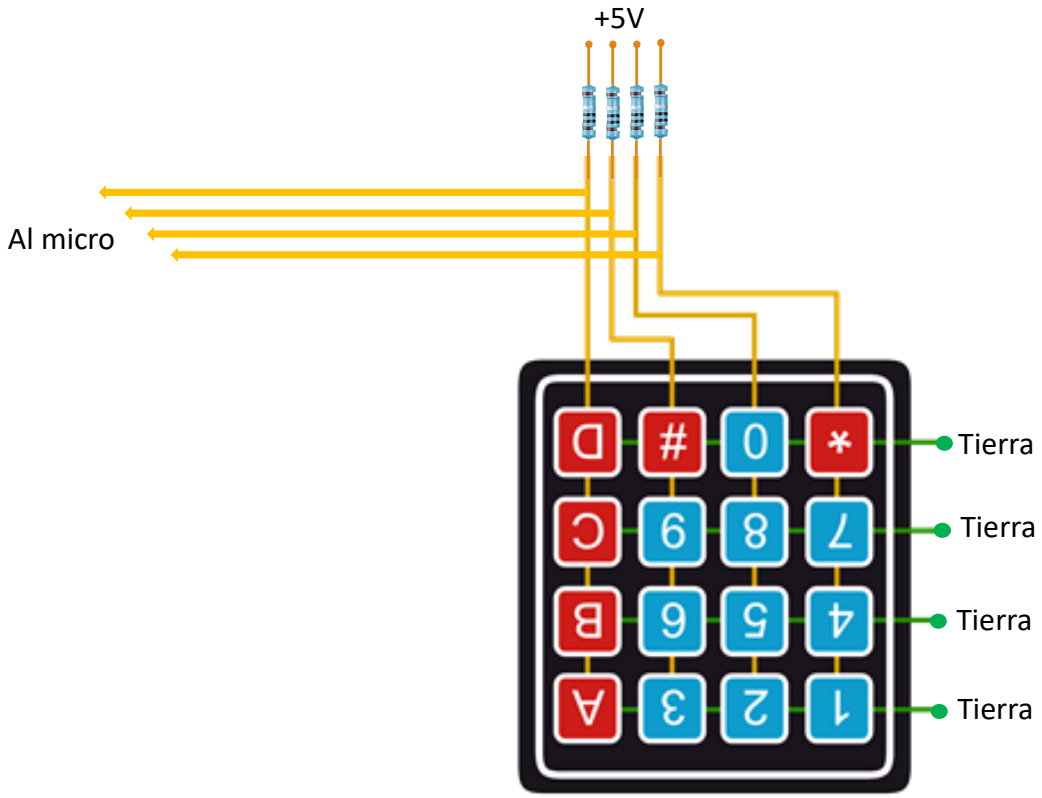


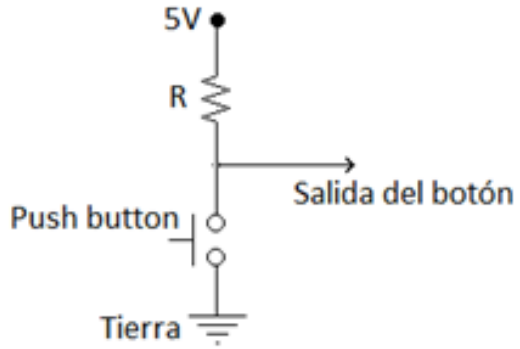
Teclado Matricial



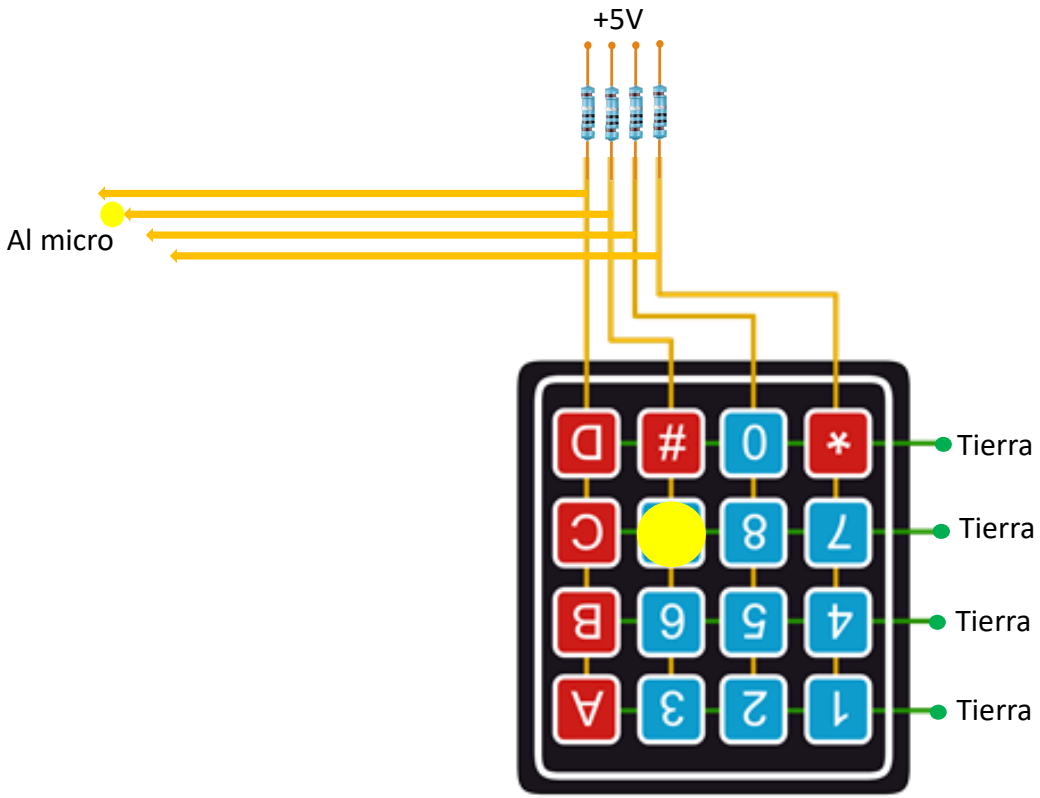


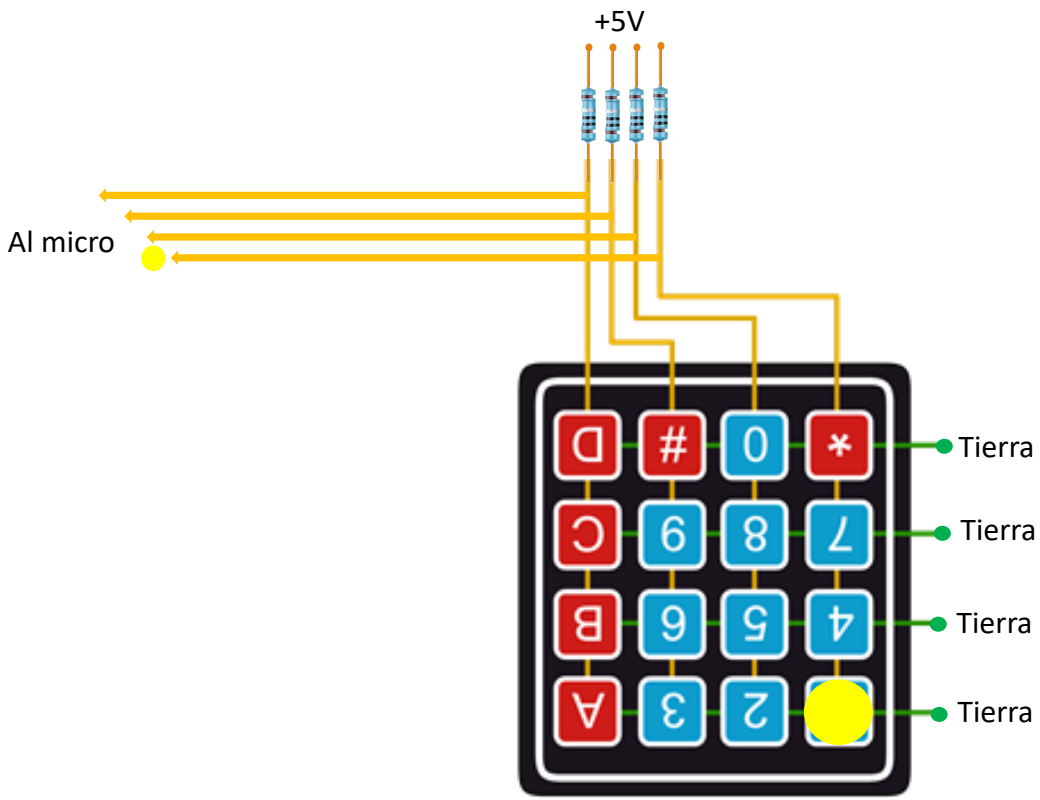
Teclado Matricial



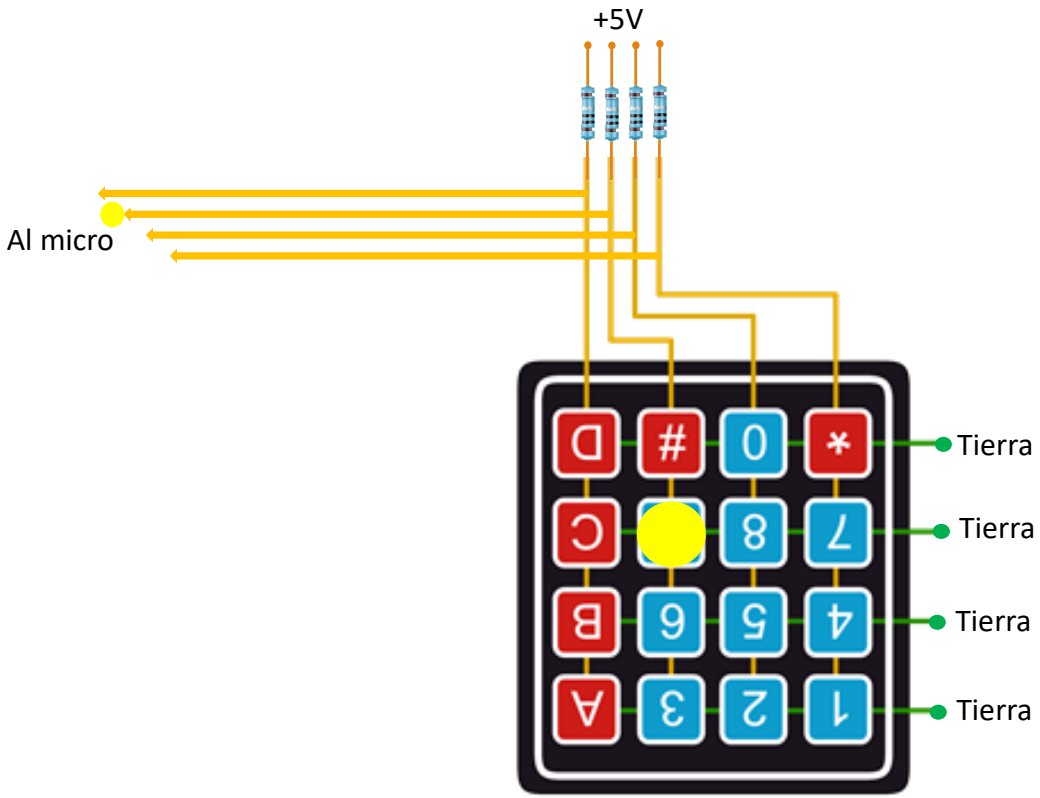


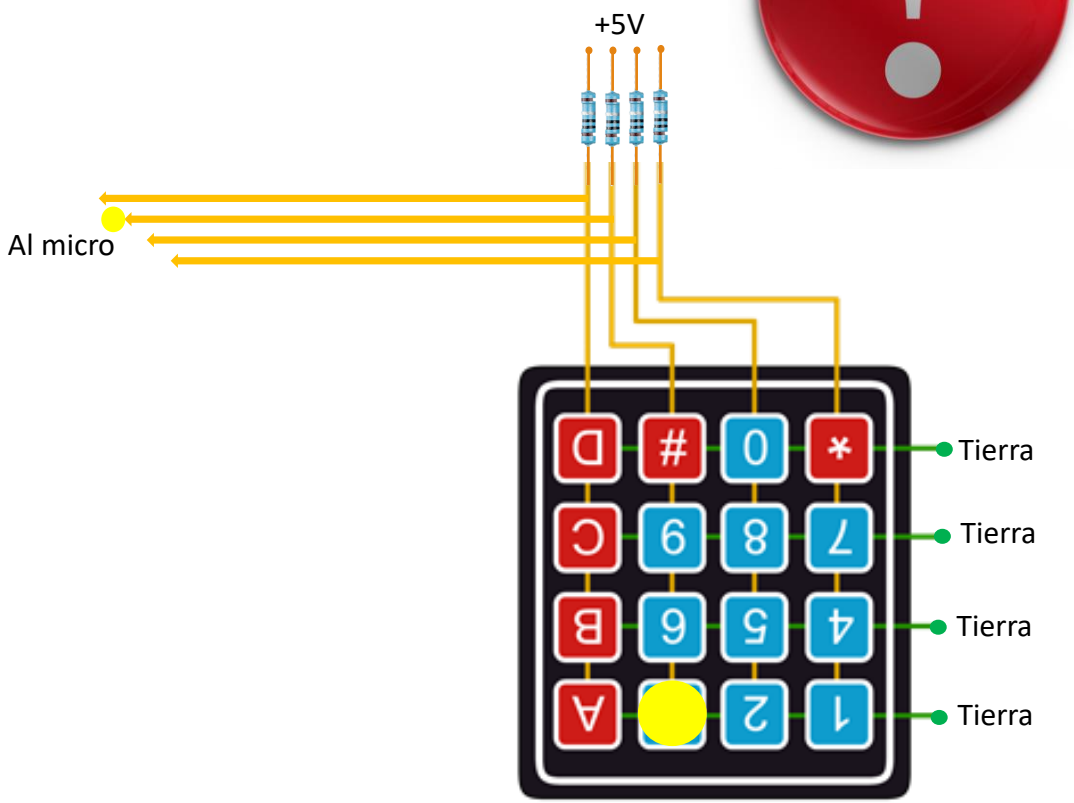
Teclado Matricial



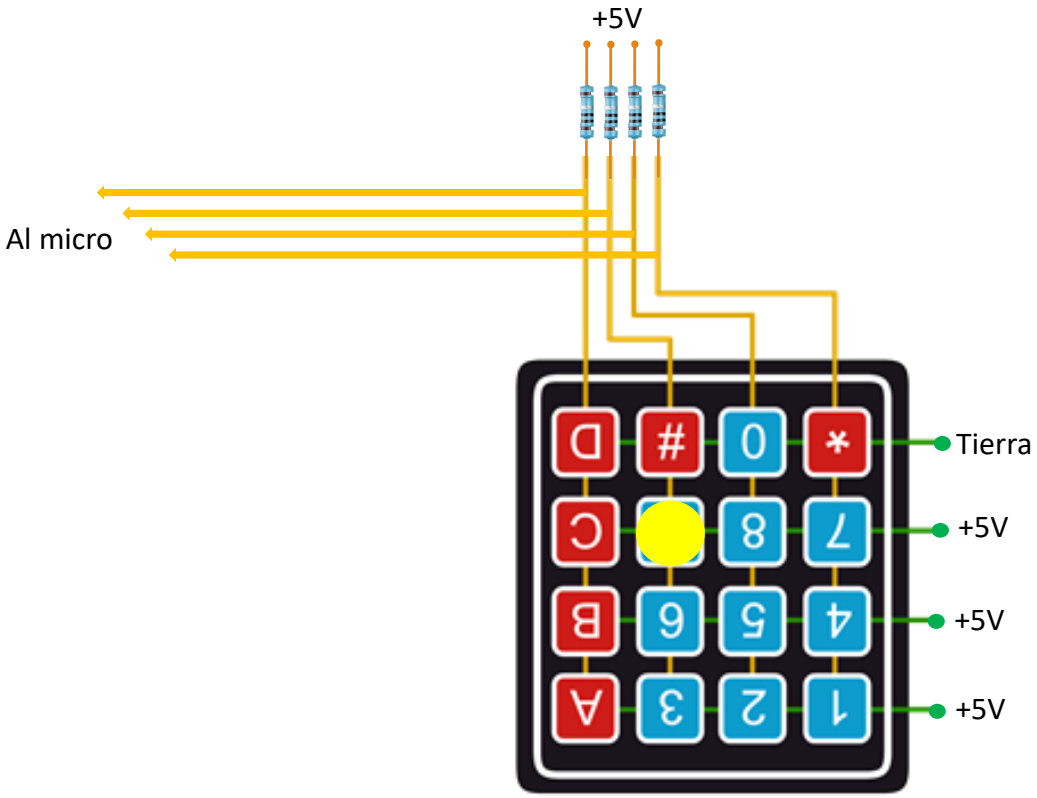


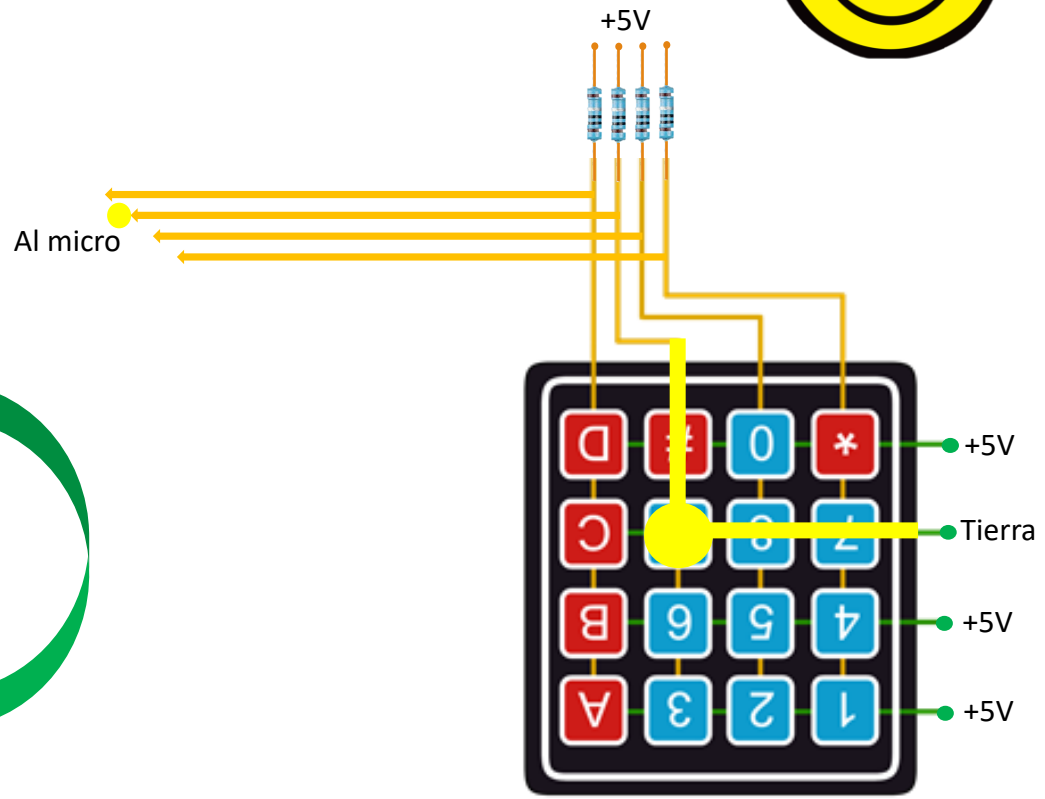
Teclado Matricial
(Ejemplo con problema)



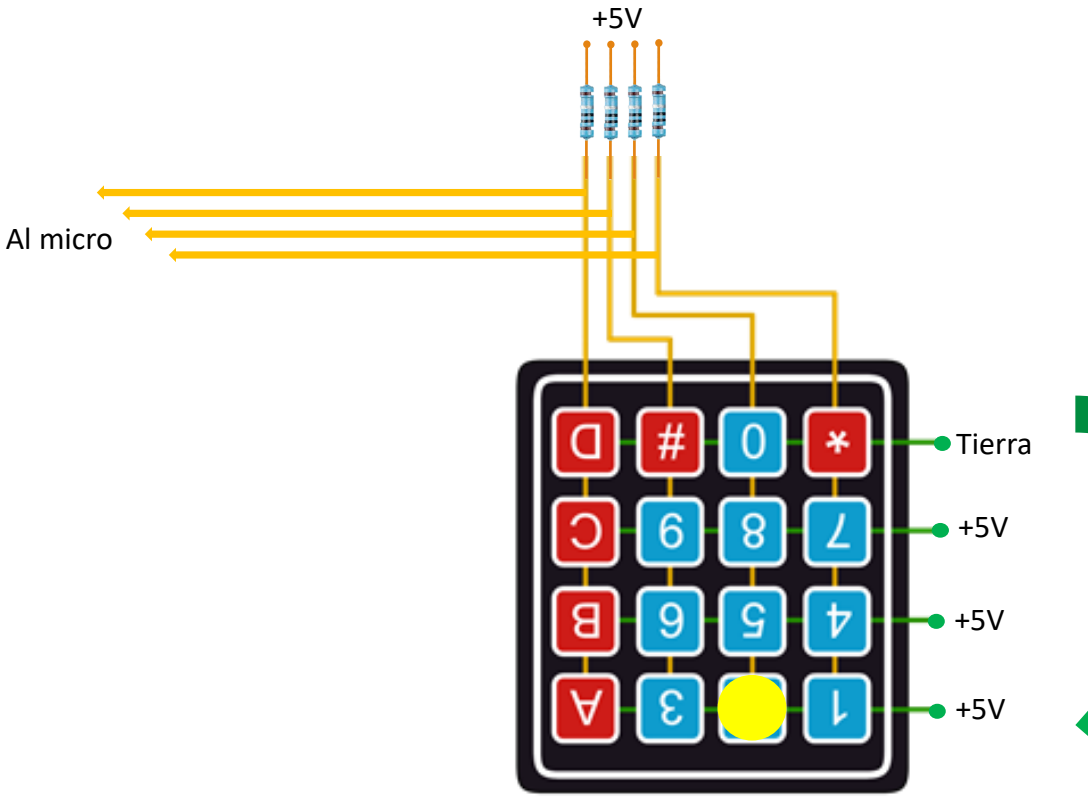


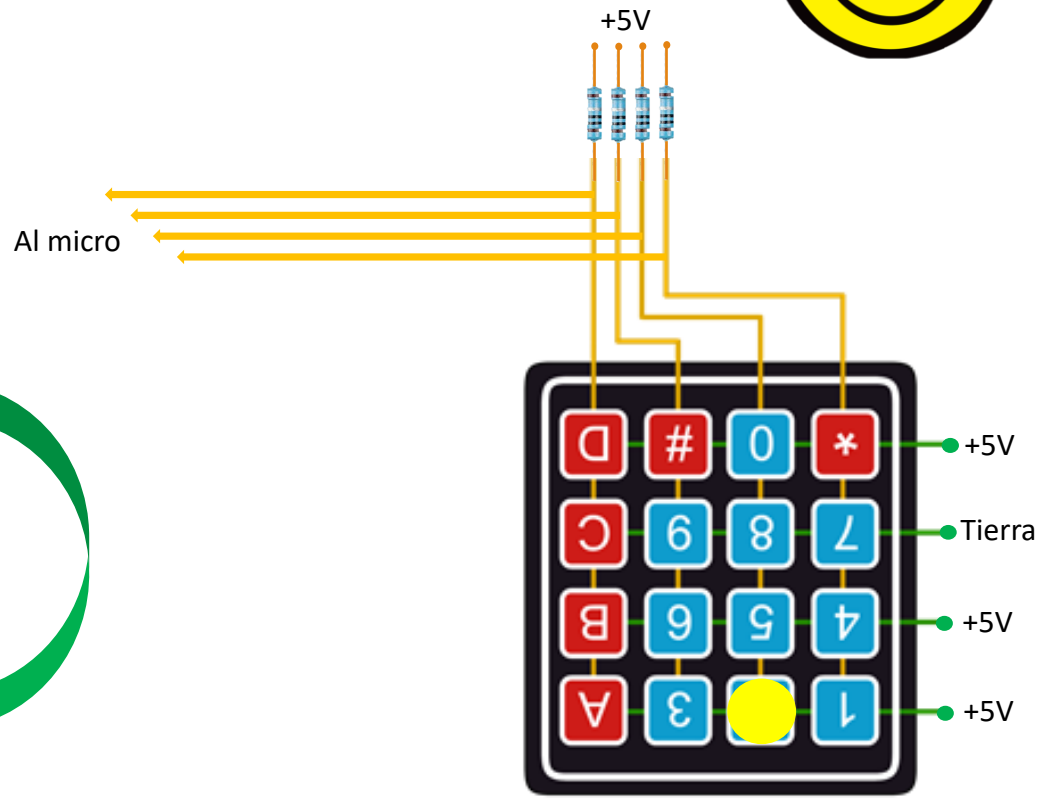
Teclado Matricial
(Ejemplo con solución)



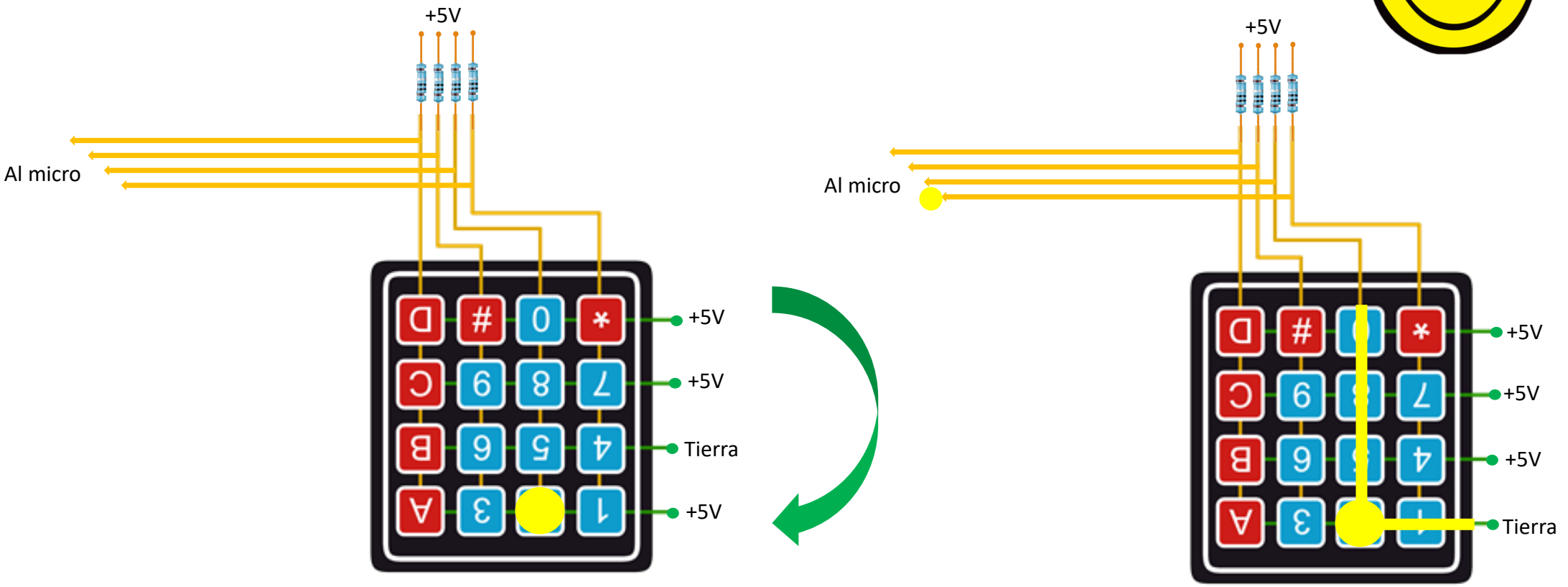


Teclado Matricial
(Otro ejemplo… primera parte)

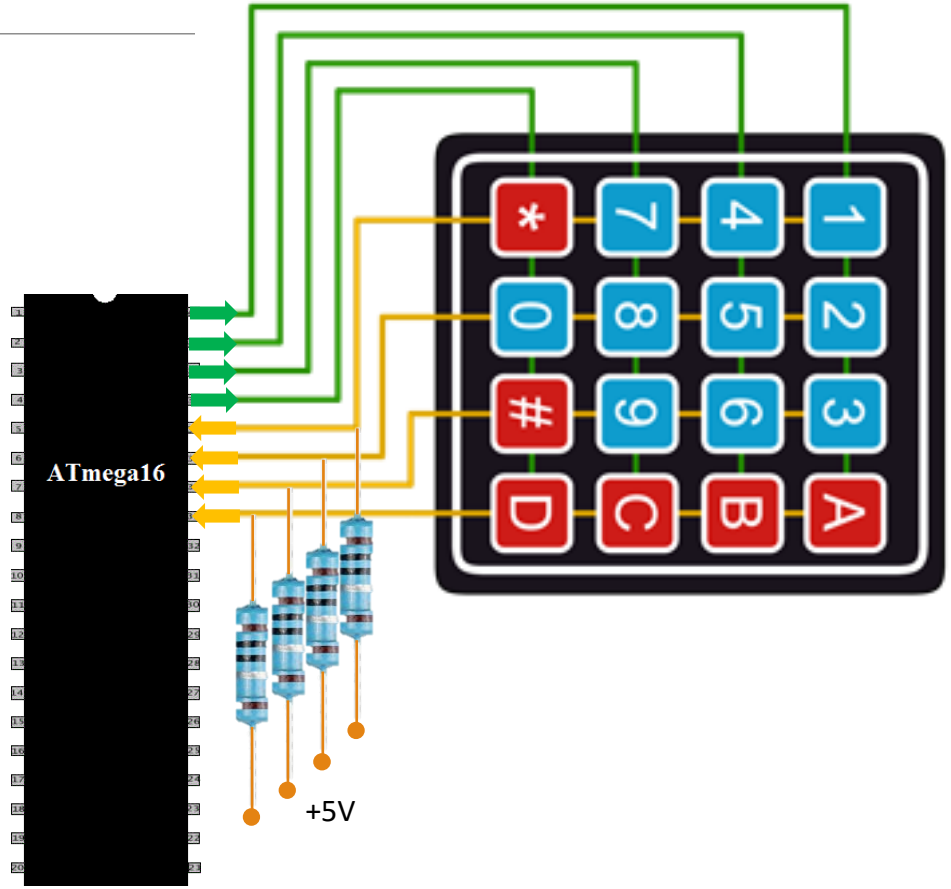


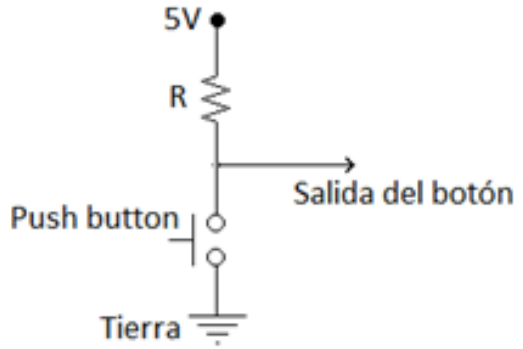


Teclado Matricial
(Otro ejemplo… segunda parte)



Teclado Matricial (con pull ups externas)





Teclado Matricial (conexiones finales)