

Knight Rider Circuit [EELKKR] by TRONIC.LK

The Knight Rider Circuit is an LED chaser circuit built using CD4017 Decade Counter and 555 Timer IC. The working principle, circuit diagram and components can be seen below.

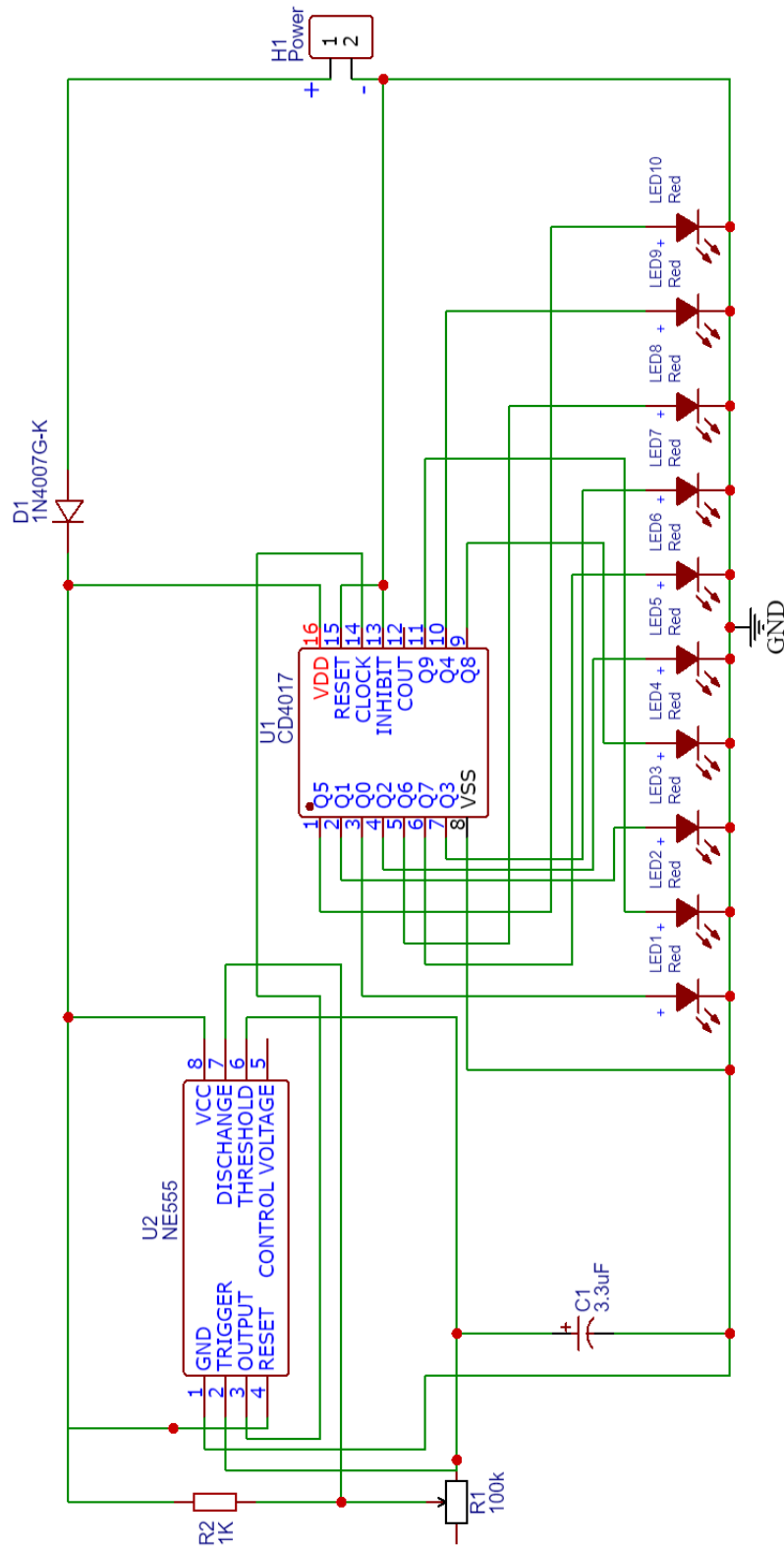
Working Principle

In this project, the LEDs are turned on one after the other and visualise the chasing effect. There are two major parts in the circuit namely, the clock based on 555 Timer IC and the decade counter based on CD4017 IC. Here the 555 Timer is configured to work in Astable mode where it generates a pulse whose frequency is determined by the R1, R2 and C1 components. The frequency of the pulse can be controlled by adjusting the R1 potentiometer. This clock pin is connected to the clock input pin of the CD4017 IC where its counter increases by one step for every clock pulse of the 555 Timer.

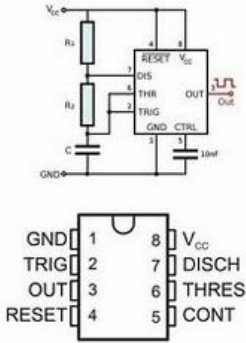
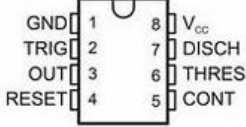
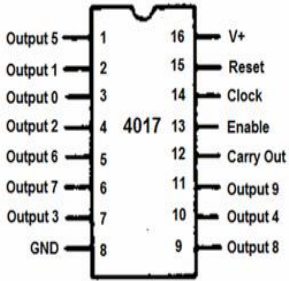
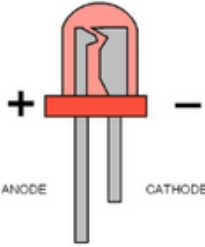
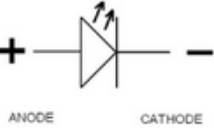
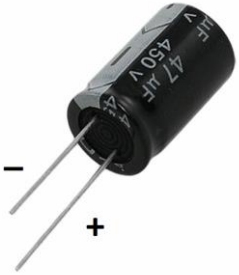
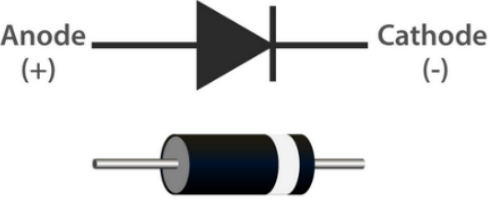
As it is a decade counter, it counts up to 10 and the connected LEDs are turned on in order. After 10 clock pulses, the count gets reset and will repeat the same sequential operation.

ITEM CODE	VALUE	DESIGNATOR	QUANTITY	IMAGE
CA0158	3.3uf	C1	1	
DI0002	1N4007	D1	1	
TA0443	Header	H1	1	
RE0091	100K V/R	R8	1	
RP0035	1K	R2	1	
IC0130	CD4017	U1	1	
HE0016	16 Pin IC Base	U1	1	
IC0018	NE555	U2	1	
HE0014	8 pin IC Base	U2	1	
LE0027	LED 5mm Red	LED 1,2,3,4,5,6,7,8,9,10	10	

Supply Voltage: 5V



PIN DESCRIPTION OF SPECIAL COMPONENTS

COMPONENTS & FINAL ASSEMBLY

LED Knight Rider

