

Electronics Circuits – Project 02 Automatic decimal counter using 7 – segments display

#	Student ID	Student Name	Grade (10)
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Delivery Date	
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<p>١. يتم تسليم المشروع في خلال أسبوعين من تاريخ عرضة، و يتم حذف درجتان و نصف من المشروع عن كل أسبوع تأخير ٢. يتم تسليم المشروع لمعيد المقرر مباشرة</p>

Objective

The project is considered as extension for the first project (decimal counter), by adding a simple clock generator, in order to make it count automatically

Theory

After building your first project, remove the manual clock generator (press with resistor) and build a simple 555 clock generator, then connect its output to counter 7490/8493

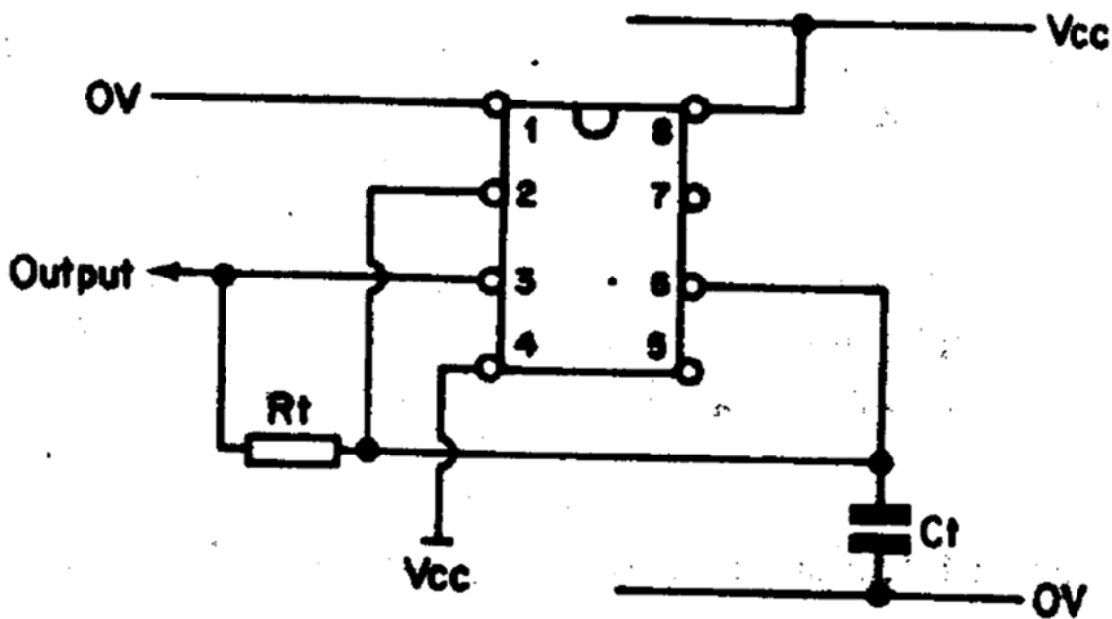
You can easily build a clock generator using 555 by its pins as shown in following schematic. The period of oscillation is calculated by

$$T = 1.4 R_t C_t$$




Each period if divided into exactly equal mark space ratio,
So the frequency can be calculated by



$$F = 0.7 / (R_t C_t)$$

Schematic



Components list

#	item	link	image
1	555	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=609	
2	Resistor = 100K ohm	http://ram-e-shop.com/oscmx/catalog/product_info.php?cPath=31_46_69&products_id=383	
3	Capacitor = 10 uF	http://ram-e-shop.com/oscmx/catalog/product_info.php?cPath=30_88&products_id=485	

4	Led 5mm	http://ram-e-shop.com/oscmx/catalog/product_info.php?cPath=60&products_id=227	
5	Resistor = 1K	http://ram-e-shop.com/oscmx/catalog/product_info.php?cPath=31_46_69&products_id=342	
6	DIP Switch 1 Way	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=1239	