

EE 1st Projects – 2nd semester – spring 2016 Project 01 Toy organ

#	Student ID	Student Name	Grade (10)
1 (bread bard)			
2 (PCB)			

Delivery Date	
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<p>١. يتم تسليم المشروع على bread board خلال أسبوع من نشرة ٢. يتم تسليم المشروع على PCB بعد أسبوعين من نشرة ٣. كل طالب يقوم بتسليم مشروع منفصل ٤. غير مسموح بالتأخير في تسليم المشاريع منعا لتداخل المشاريع و تراكمها</p>

Objective

To build a functional prototype of simple toy organ circuits that produces 5 different sounds.

Theory

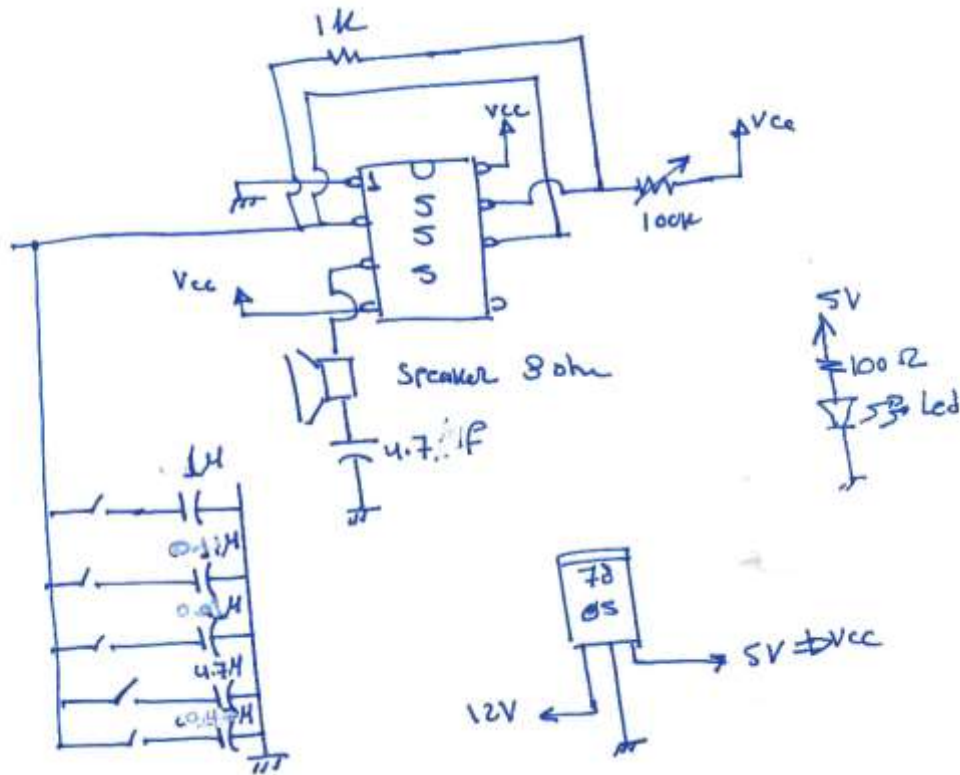
This circuit produces a tone according to the button being pressed.

Only 1 button can be pressed at a time, that's why it is called a monophonic organ.

Main heart of this circuit is 555 timer IC. The 555 timer is operated in astable multivibrator mode.

In astable multivibrator mode, the circuit produces accurate free running waveforms, which can be adjusted.

Schematic



Components list

#	item	link	Quantity
1	DC Power 2.1mm Connector on PCB	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=1203	1
2	Wall Adapter Fixed 12Vdc (1A)	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=1394	1
3	L7805CV "Positive Voltage Regulator 5V"	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=635	1
4	1 K resistor	http://ram-e-shop.com/oscmax/catalog/product_info.php?cPath=31_46_69&products_id=342	10
5	100 ohm resistor	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=313	10
6	Rotary Pot 100Kohm	http://ram-e-shop.com/oscmax/catalog/product_info.php?cPath=31_76_77&products_id=554	1
7	led	http://ram-e-shop.com/oscmax/catalog/product_info.php?cPath=60&products_id=228	5
8	8 pins IC base	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=781	1
9	IC 555	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=609	1
10	Very Flat Small Speaker, 8 Ohm , 0.25W - 20mm	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=1434	1
11	press	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=2714	5
12	Capacitor 4.7uF 50v	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=481	4



13	Capacitor 1uF 50v	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=476	4
14	Capacitor 4.7uF 50v	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=481	4
15	Capacitor 0.1uF 50v	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=475	4
16	Capacitor 0.1uF 50v (100nf 50v - code PF104)	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=549	4
17	Capacitor 0.01uF 50v (10nf 50v - code PF103)	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=1309	4
18	Capacitor 0.001uF 50v (1nf 50v - code PF102)	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=545	4
19	PCB 15x9 cm2 (PCB4) - Bread Board Shape	http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=2732	1
20	Twisted pair wires (1 pair telephone or 4 pairs networks cable)	-	-



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