

Project 01

Building simple Voltage level indicator

#	Student ID	Student Name	Grade (10)
1			

Delivery Date	
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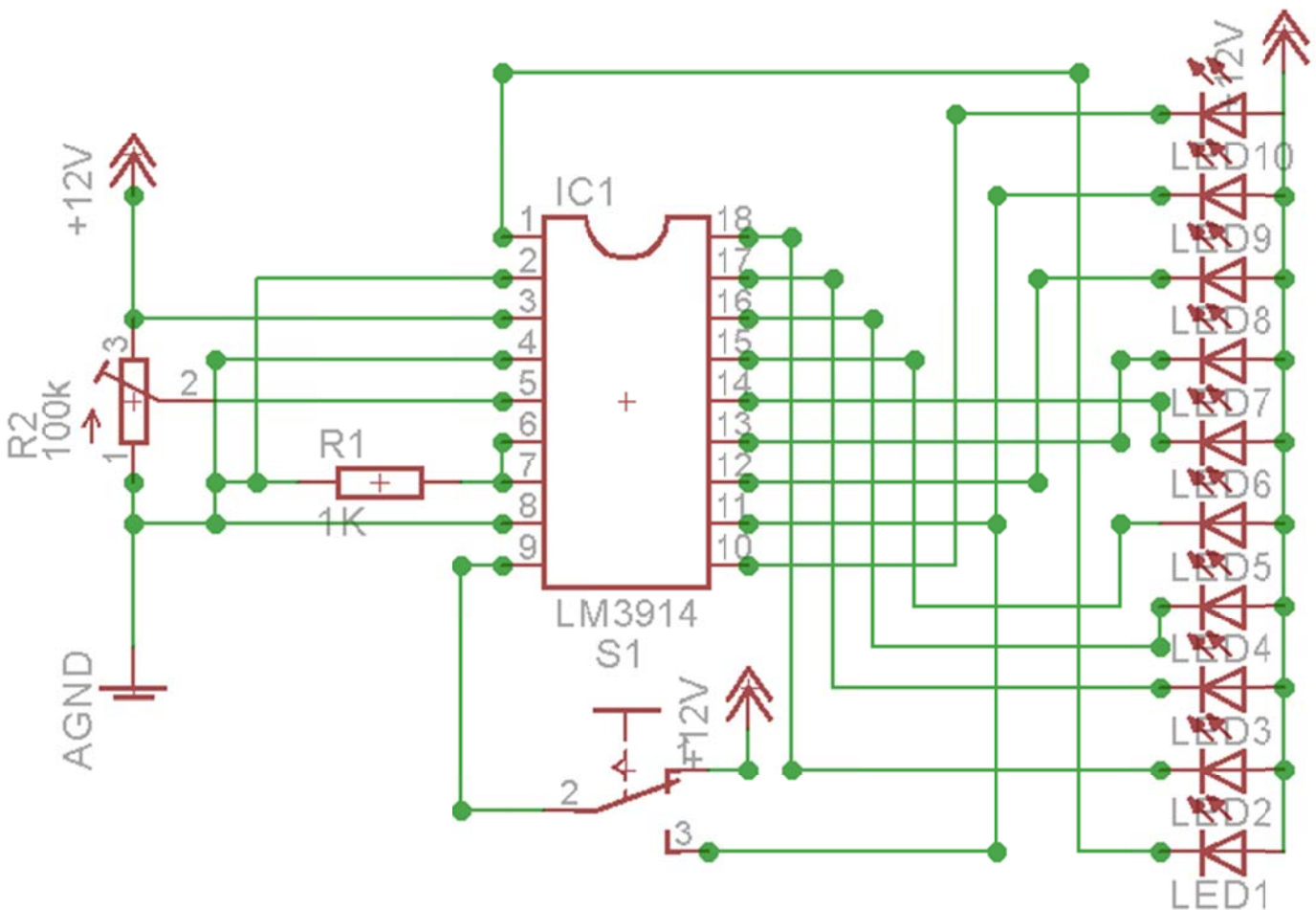
<p>١. يتم تسليم المشروع في خلال أسبوعين من تاريخ عرضة، و يتم حذف درجتان و نصف من المشروع عن كل أسبوع تأخير ٢. يتم تسليم المشروع لمعيد المقرر مباشرة</p>

Dot/Bar Display driver (LM3914)

One of the most important chips, drives up to 10 leds at a time (bar mode) or a single led out of ten (dot mode) in response to an input voltage.

Chip contains voltage divider and 10 comparators that turns on in sequence as the input voltage raises.




Schematic diagram






Theory of operation



- R1 controls the leds current, through R1 is 1/10 led current.
- Since current (I) through a resistor (R) is voltage drop on (R) divided by (R) which is 1K gives a led current om 10 mA.
- When +V = +3 ~18 V, the read out range (0.13 ~ 1.3 Volts).
- To change the range to (0.1 ~ 1.0 volts) (0.1 volts per led) insert a 5K POT between pins 6,7.
- Connect voltemeter between pins 5,8 and adjust R2 POT for 1 volt at pin 5.
- Then adjust the POT until 10th led glows.
- Repeat this procedure for 0.1 volt at pin 5 and 1st led.

List of components

#	Q	item	link	image
1	10	Led 5mm	http://ram-e-shop.com/oscmx/catalog/product_info.php?cPath=60&products_id=227	
2	1	Resistor = 1K R1	http://ram-e-shop.com/oscmx/catalog/product_info.php?cPath=31_46_69&products_id=342	
3	1	Resistor = 4.7K R1	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=354	

4	1	Pot 100K R2	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=428	
5	1	LM3914	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=1326	
6	1	Bread board	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=164	
7	1	Power supply	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=1394 or	

			http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=1106	
8	1	Power socket 2 bead board	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=1203	
9	1	wires	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=221 or http://ram-e-	

			shop.com/oscmx/catalog/product_info.php?products_id=3183	
10	1	3way switch	http://ram-e-shop.com/oscmx/catalog/product_info.php?products_id=2714	



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