

# Project 01

## Building simple Noise detector

#	Student ID	Student Name	Grade (10)
1			

Delivery Date	
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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
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## Objective

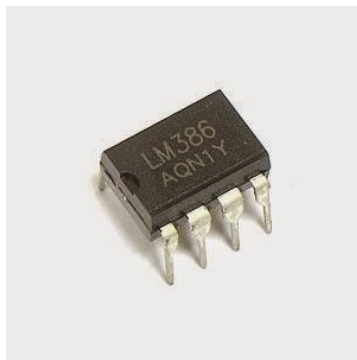
To build a functional prototype of simple noise detector circuits that light up led for a few seconds in case of noise detected..

## Theory

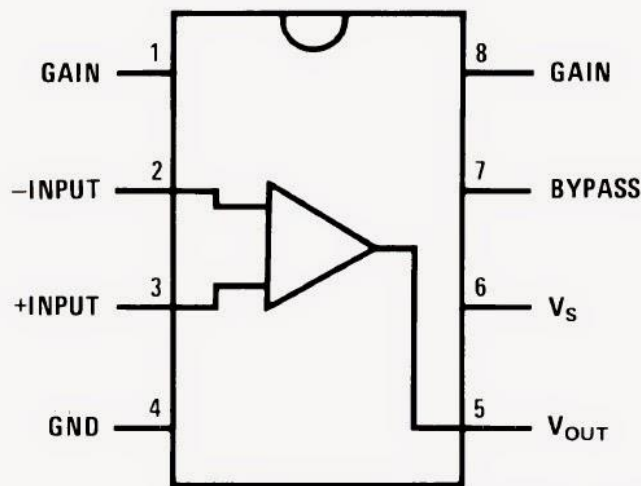
LM386 is a Low Voltage Audio Power Amplifier, that is connected to small pizo microphone. Amplifier triggers 555 upon noise detection. 555 works as one shoot, that light up the connected led upon received trigger.

## New Components

### LM386



LM386 is a 8 pin Power amplifier IC suited for low power applications. It has a wide supply range from 4v to 12v and capable of providing voltage gain from 20 to 200. The output gain is internally set to 20 to reduce the usage of external parts and can be modified using two pins of the IC.



LM386 Chip

**PIN 1 & 8 ( GAIN ) :** These two pins are used to control the output gain of the IC. Using a capacitor between these two pins will result in maximum gain 200. While using a resistor in series with capacitor in between these two pins can help you to alter the gain value from 20 to 200.

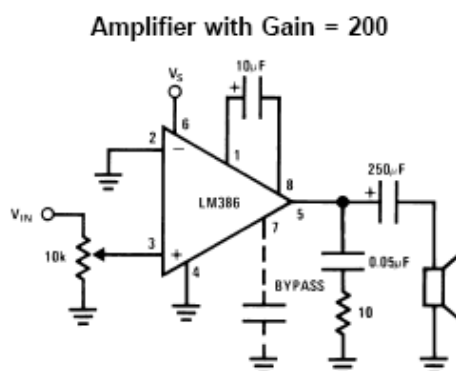
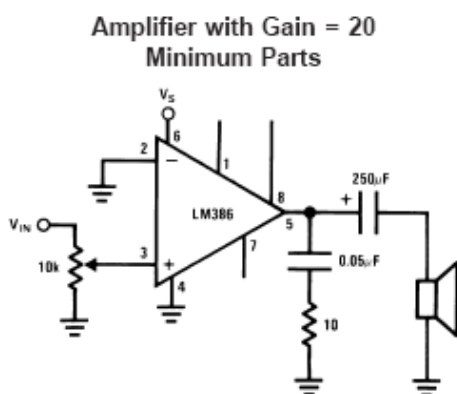
**PIN 2 (-INPUT) :** This pin is meant for feeding Negative input.

**PIN 3 (+ INPUT) :** This is the positive input pin of the IC. The input is connected to this using a POT which adjusts the input signal level which acts as a volume control.

**PIN 4 & 6 (GND & VS) :** Pin 4 is the ground pin and Vs is the power supply pin of this IC.

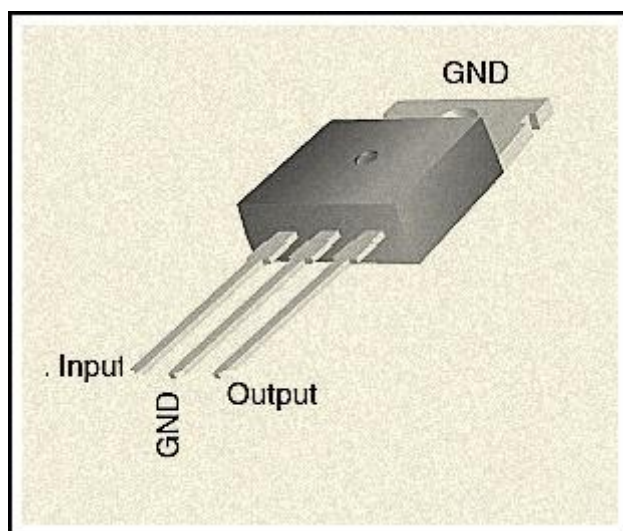
**PIN 5 (VOUT) :** This is the output pin of the IC. The signal obtained from this pin is automatically biased to half of the supply voltage. This will allow to obtain the full swing of the output in both the halves of the signal.

**PIN 7 (BYPASS) :** This pin allows you to access the un-amplified input signal in case if you needed it.

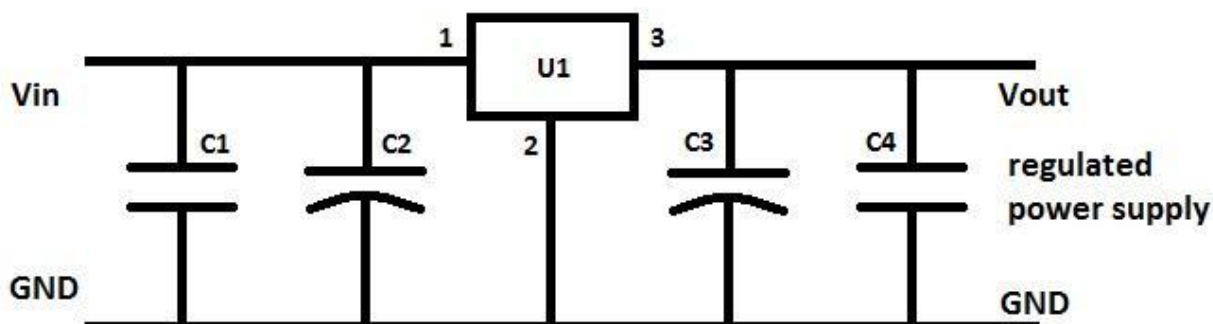


## 7805

A regulated power supply is very much essential for several electronic devices due to the semiconductor material employed in them have a fixed rate of current as well as voltage. The device may get damaged if there is any deviation from the fixed rate. The AC power supply gets converted into constant DC by this circuit. By the help of a voltage regulator DC, unregulated output will be fixed to a constant voltage.

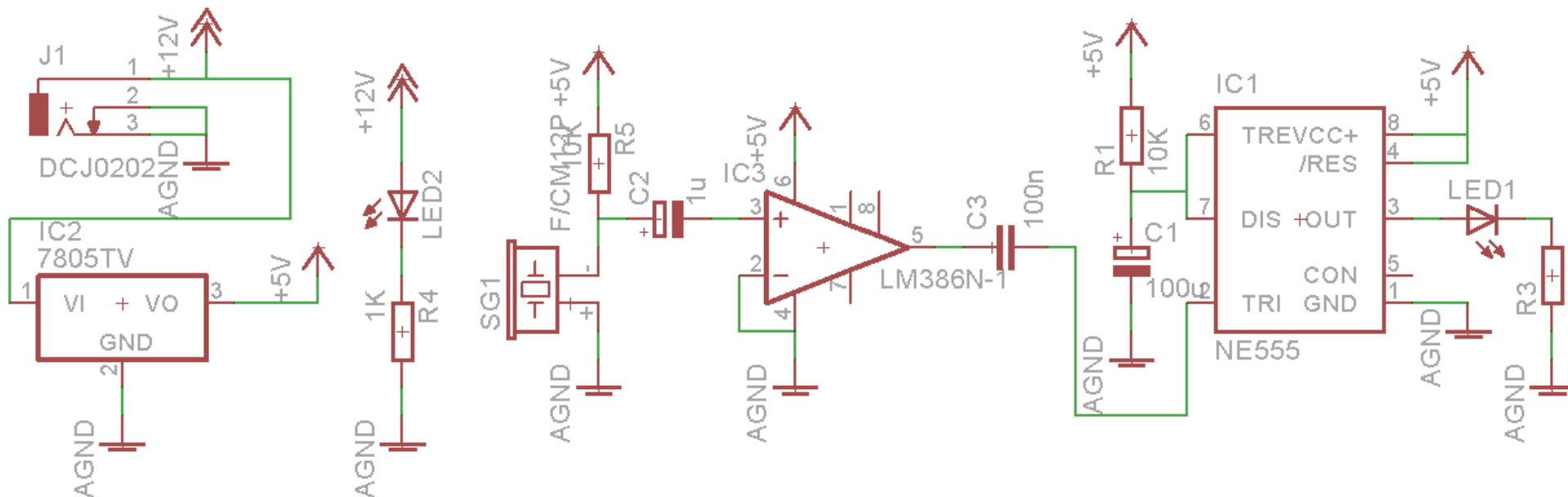


PIN NO.	PIN	DESCRIPTION
1	INPUT	In this pin of the IC positive unregulated voltage is given in regulation.
2	GROUND	In this pin where the ground is given. This pin is neutral for equally the input and output.
3	OUTPUT	The output of the regulated 5V volt is taken out at this pin of the IC regulator.





## Schematic



## Components list

#	item	link	Quantity
1	L7805CV "Positive Voltage Regulator 5V"	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=635">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=635</a>	1
2	LM386	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=602">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=602</a>	1
3	NE555	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=609">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=609</a>	1
4	MIC	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=1221">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=1221</a>	1
5	Cap 1u	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=476">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=476</a>	4
6	Cap 100n	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=475">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=475</a>	4
7	Cap 100 u	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=504">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=504</a>	4
8	Resistor 100 ohm	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=313">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=313</a>	10
9	Resistor 10 K	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=362">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=362</a>	10



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10	Led 5mm	<a href="http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=228">http://ram-e-shop.com/oscmax/catalog/product_info.php?products_id=228</a>	4
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