NYU Polytechnic School of Engineering

KITCHEN EXHAUST FAN CONTROLLER

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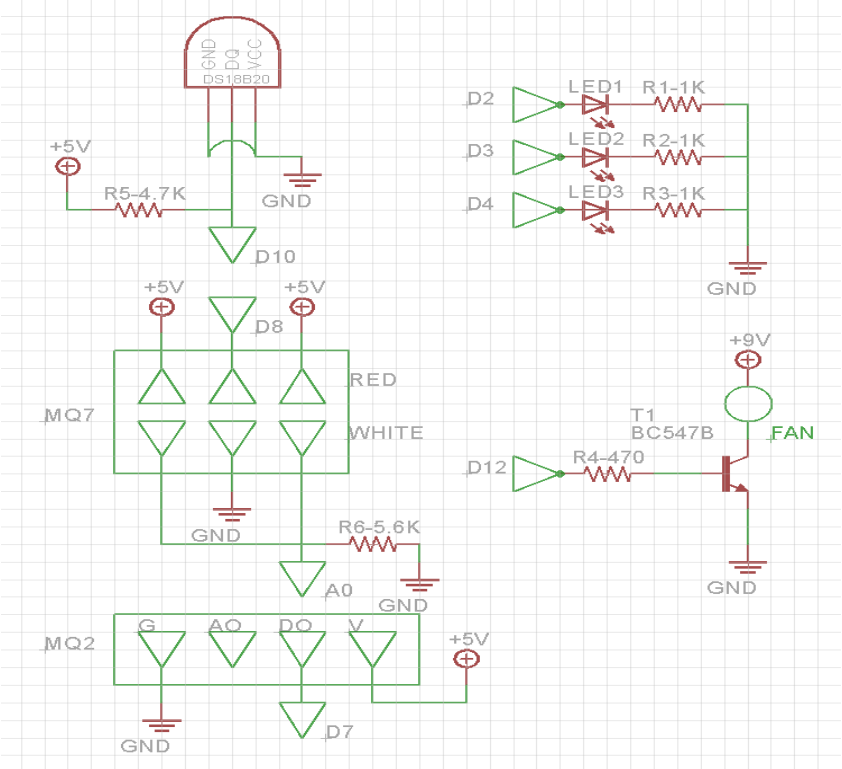
PROTOTYPE

Component	Function	Cost
Arduino UNO	Microprocessor	30$
MQ 2	LPG sensor	2.58$
MQ 7	CO sensor	7.25$
DS18B20	Digital thermometer	9.96$
Electric components		~5.00$
Wire and packaging		~5.00$
Fan	Actuator	5.00$
		Total ~64.79

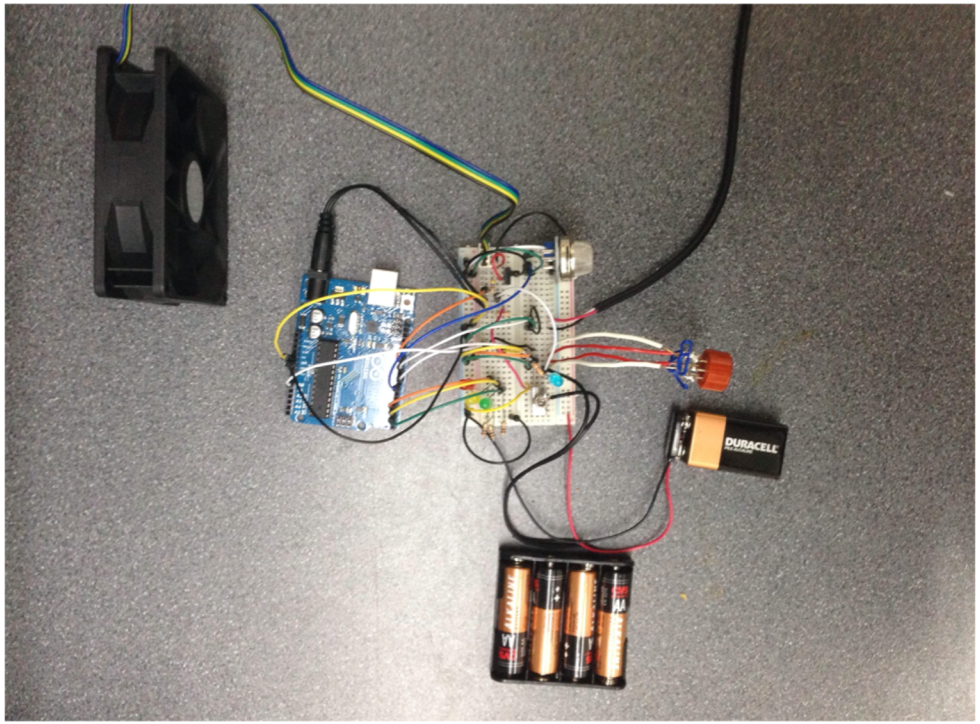
SET UP

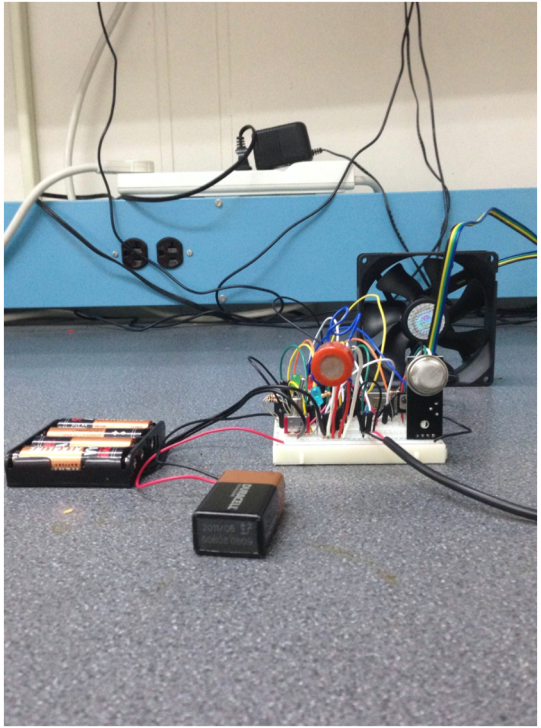
Input:
- Pin D7 (from MQ 2)
- Pin A0 (from MQ 7)
- Pin D10 (from DS18B20)

Output:
- Pin D2 (temp. sensor indicator)
- Pin D3 (gas leak indicator)
- Pin D4 (CO indicator)
- Pin D8 (MQ 7 voltage control)
- Pin D12 (actuator switch)

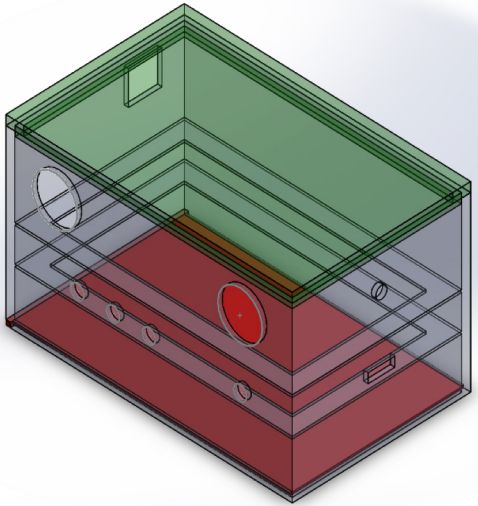


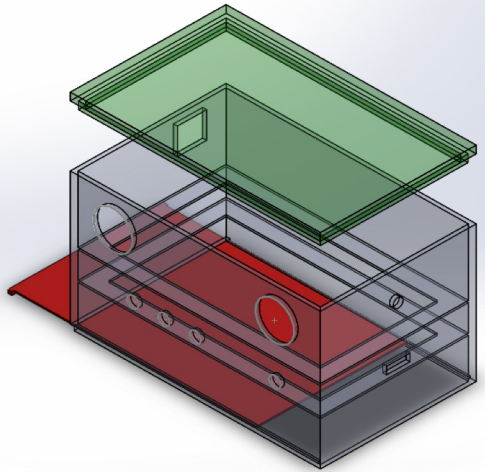
SET UP





CASING





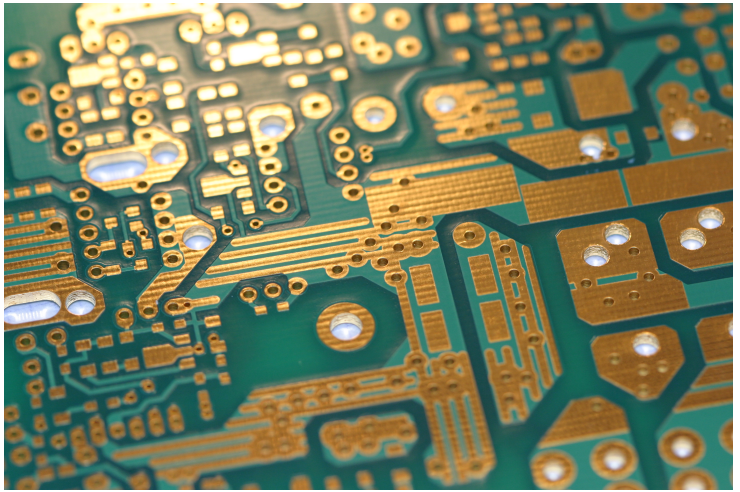
DEVICE

Sensor	Prototype	Final product
MQ 2	Any trace	Any trace
MQ 7	>35 ppm	180 ppm
DS18B20	30°C	45°C

- A switch can be used to disangage the system and an LED shows the ON-OFF status
- It can be mounted on a wall
- The temperature sensor is waterproof and can be placed above the stove

MANUFACTURING

- PIC16F688 is a cheaper alternative microcontroller for mass production
- S208T01 Series solid state relay replaces the transistor as a control switch
- The circuit is done on a printed circuit board following the industry standards



- Professional casing for the device with mounting mechanism

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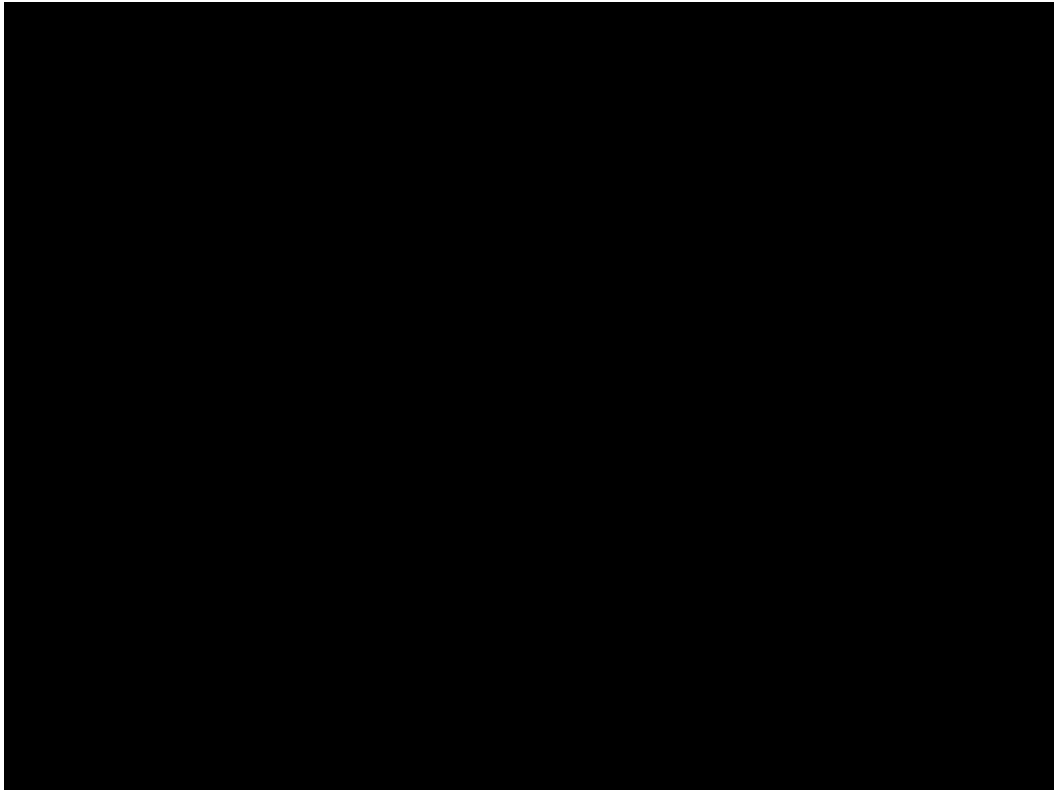
TEST



Thank you! Questions?