ELET 4308 - SENIOR PROJECT

Car Garage Cooling System

Team Members:

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Background of the Project

- Implement a one car, fully-automated car garage opener and cooling system.
- Build a device that will minimize human error while parking a car in the garage and use a light sensor technique to operate the garage.
- Affordable and Profitable
- Easy to Use

Application of the Project

- Optimize the interior temperature of a house, in addition to simulating the action of a car pulling into the driveway with the lights on.
- ***The System will:***
  - Turn on two cooling fans if the temperature becomes excessive.
  - Display the increase in temperature in binary through the LM34 temperature sensor.
  - Turn on the lights above the garage if lights shine on the garage doors.

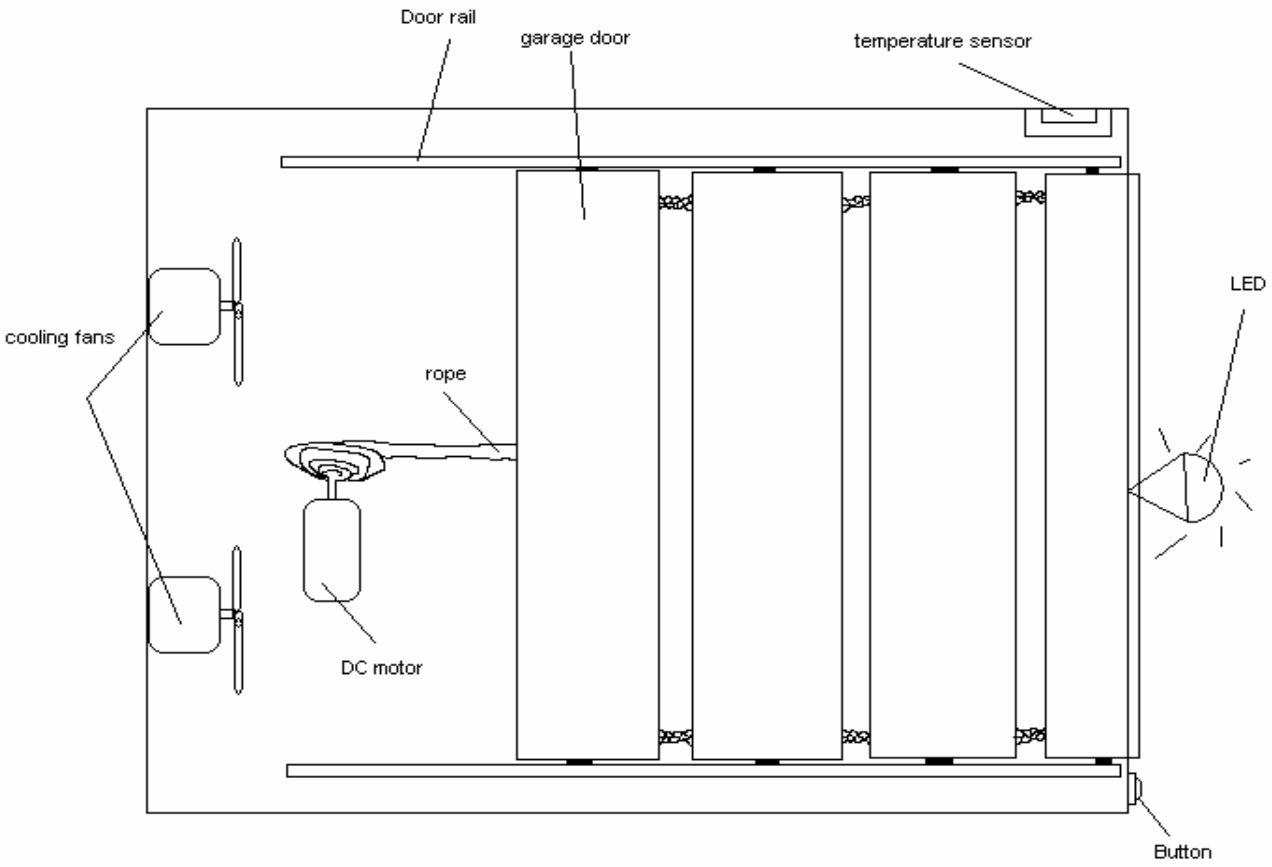
Project Specifications

- Interior of garage is equipped with a LM34 temperature sensor.
- Turns on two DC motorized fans as interior garage temperature increases. The exterior of the garage is equipped with a standard light sensor above the garage door.
- The lights above the garage door illuminate as light is shown on the front of the garage.
- The garage is equipped with a momentary button to activate car garage opener.

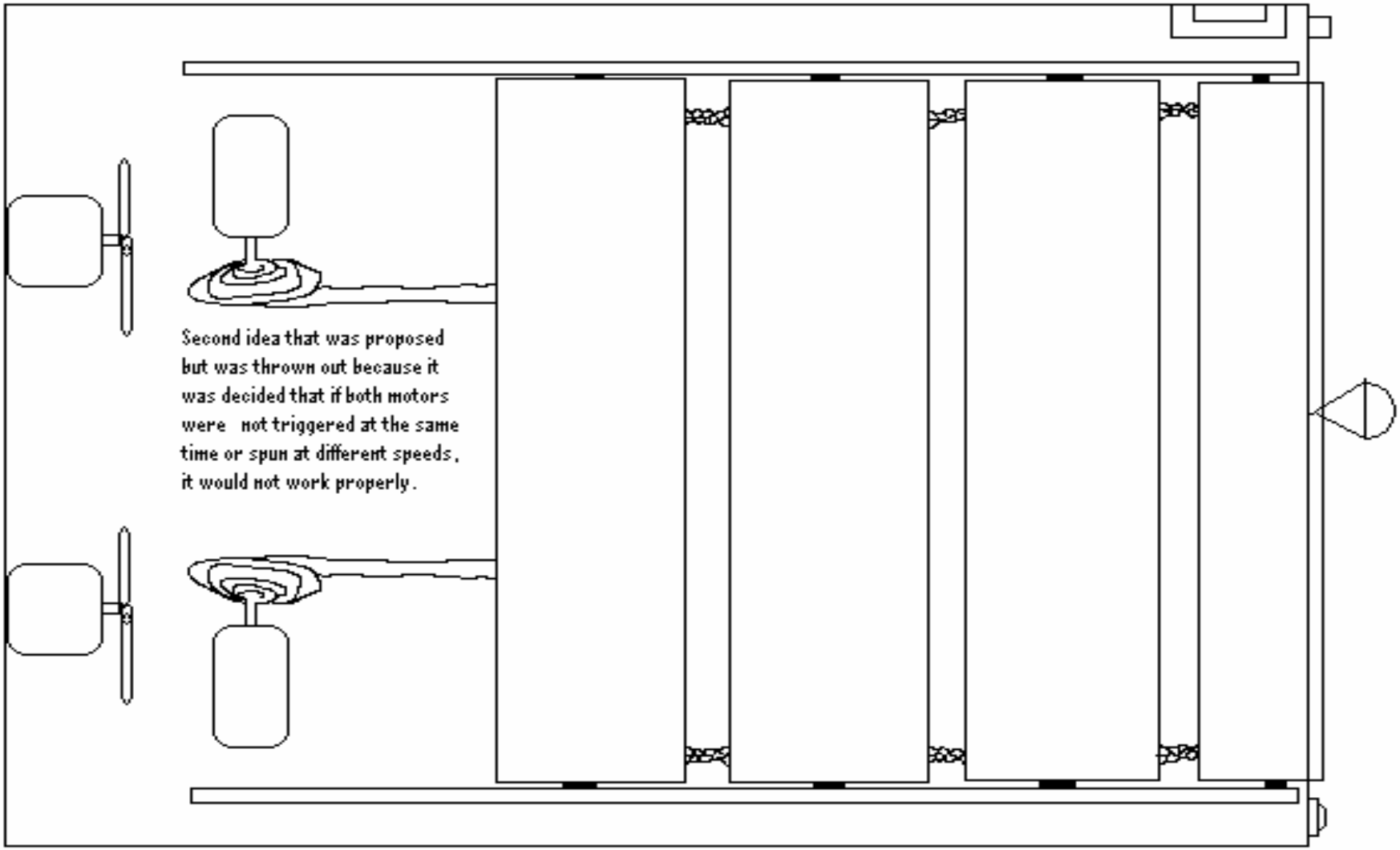
Product Requirements

- Interior Temperature Sensor
  - LM34
- Exterior Light Sensor
  - Photo diode sensor
- Analog to Digital Converter
  - ADC0804
- Digital to Analog Converter
  - DAC0808
- Momentary Button
- 8255
- MOSFET transistor

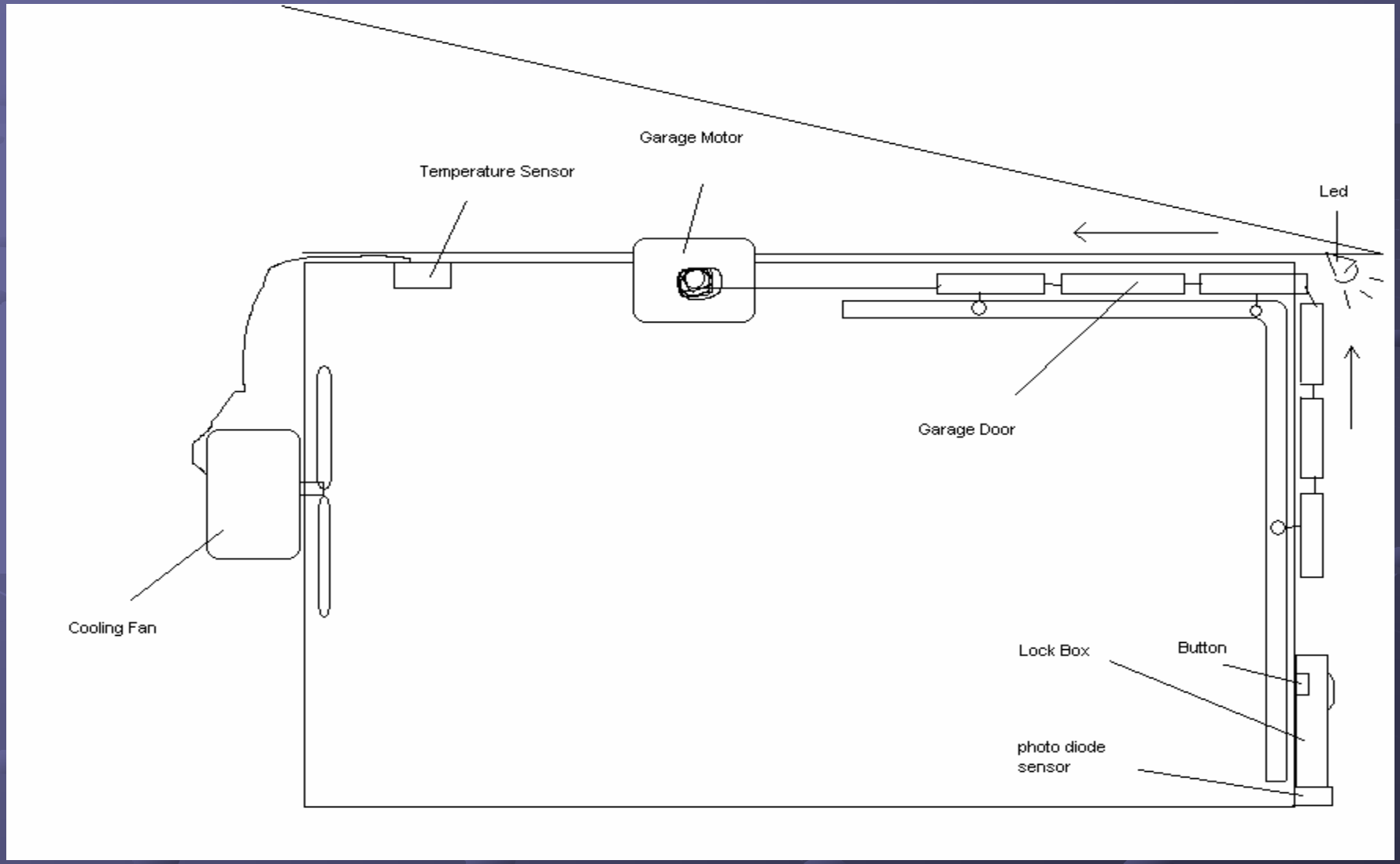
Project Model (cont.)



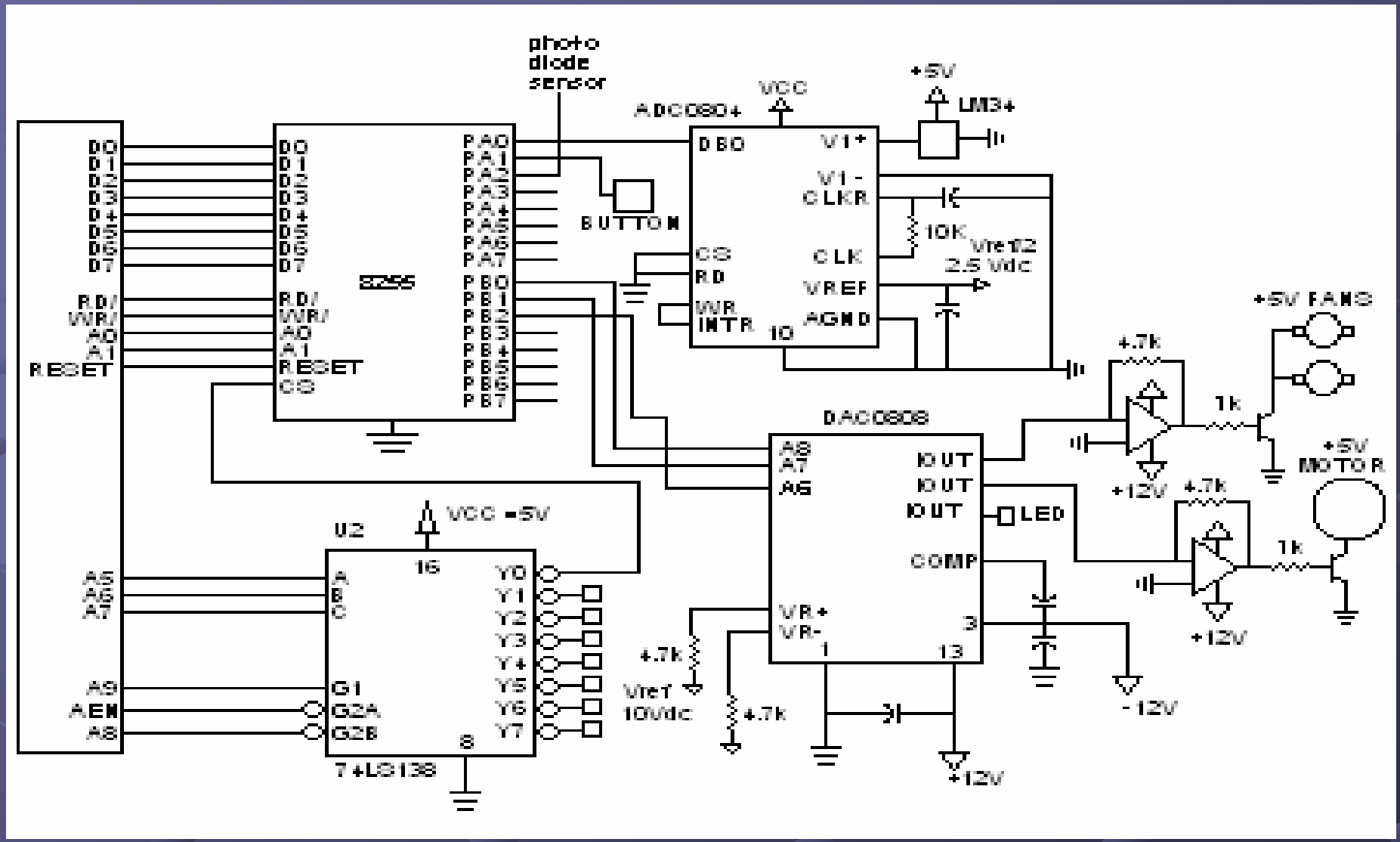
Design Alternatives



Project Model



Circuit Diagram



Cost Analysis

Materials:

- 4 pieces of plywood - $12.00
- 3 Relay Board Kit - $18.00
- 2 12VDC Fan - $24.00
- LM34 temperature sensor - $1.00
- Light sensor - $5.00
- Momentary button - $2.00
- Garage Motor - $5.00
- Analog to Digital Converter (ADC0804) - Free
- Digital to Analog Converter (DAC0808) - Free
- Programmable 8255 Chip – Free

TOTAL - $67.00

Labor Hours for Project:

- John Cao – 250 hours
  - Total – ($25.00/hr) * 2.5 * 250 hours = $15,625.00
- Quentin Guyton – 250 hours
  - Total – ($25.00/hr) * 2.5 * 250 hours = $15,625.00

TOTAL - $31,250.00

GRAND TOTAL: $31,317.00

Questions