Proj5 Ardupilot

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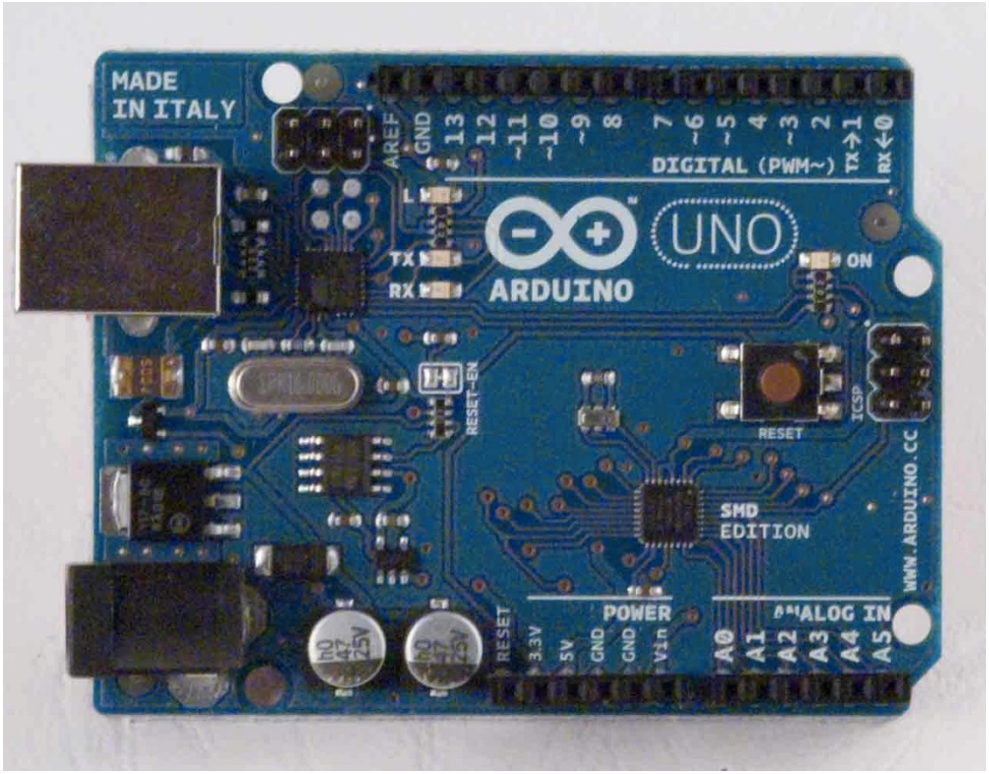
Introduction

Objective

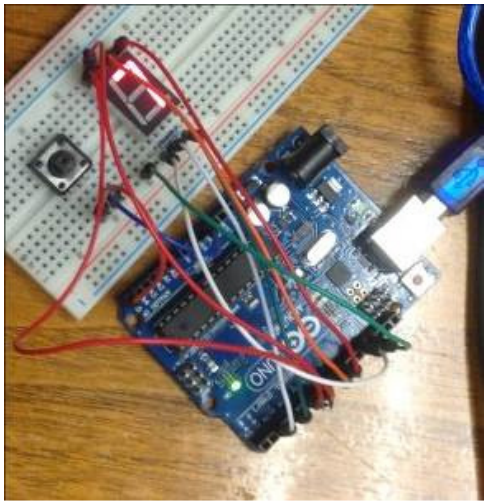
https://vimeo.com/35928088

For this semester



Learning about Arduino by doing 10 small projects.

Experiment 1:



Date: 9.12.13

Title: Lottery Simulator

Basic Idea:

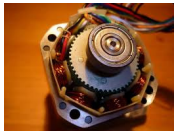
Digital display → random number

Switch → turn on/off

By connected the whole circuit with Arduino, which can generate a random number twice per second, then display it on the screen.

[Check it out !]

Experiment 2:



Date: 9.19.13

Title: Joystick Control Step Motors

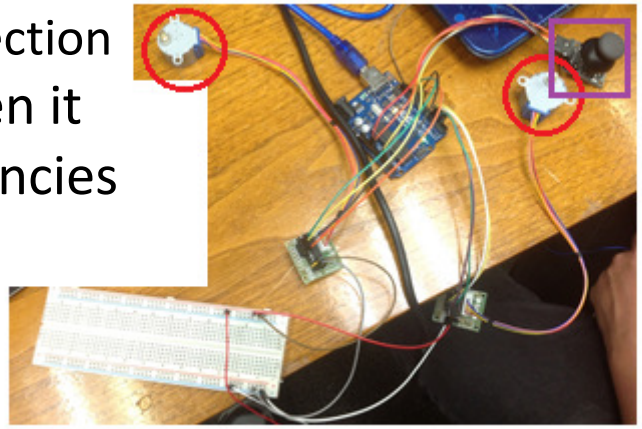
Basic Idea:

Joystick :

- 4 different output (supposed to be 6, with z-axis)
  x+, x-, y+, y- (z+,z-)

Step Motor:

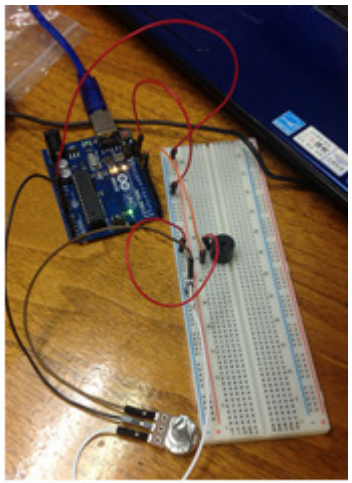
- Rotate counter or clockwise direction
- Release different sounds when it works under different frequencies



Then something interesting happens

Music can be played on Step Motors!

Experiment 3:



Date: 9.26.13

Title: Remote Control Buzzer

Basic Idea:

Remote :

- 8 different output (depends on how many buttons)
- Release 8 different signals, controlling the buzzer
  Do, Re, Mi, Fa, So, La, Ti, Do, respectively

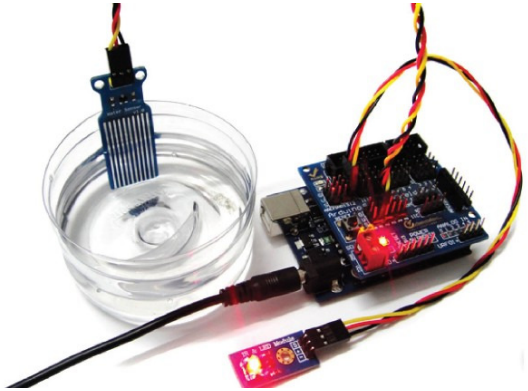
Buzzer:

- Work as an " music instrument"

Frequencies Data (unit: Hz):

C = 261.6; D = 293.7; E = 329.6; F = 349.2; G = 392.0; A = 440.0; B = 493.9;

Experiment 4:

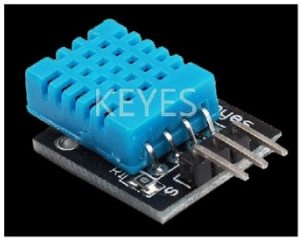


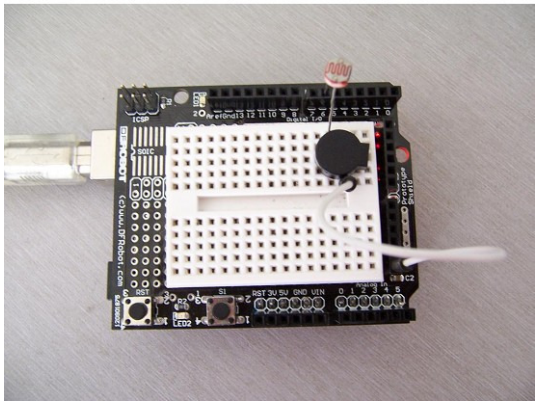
Date: 10.10.13

Title: Room Humidity, Water Level Tes

Achievement:

- Study on sensor control technology
- Implement the light, temperature and water sensor control system.





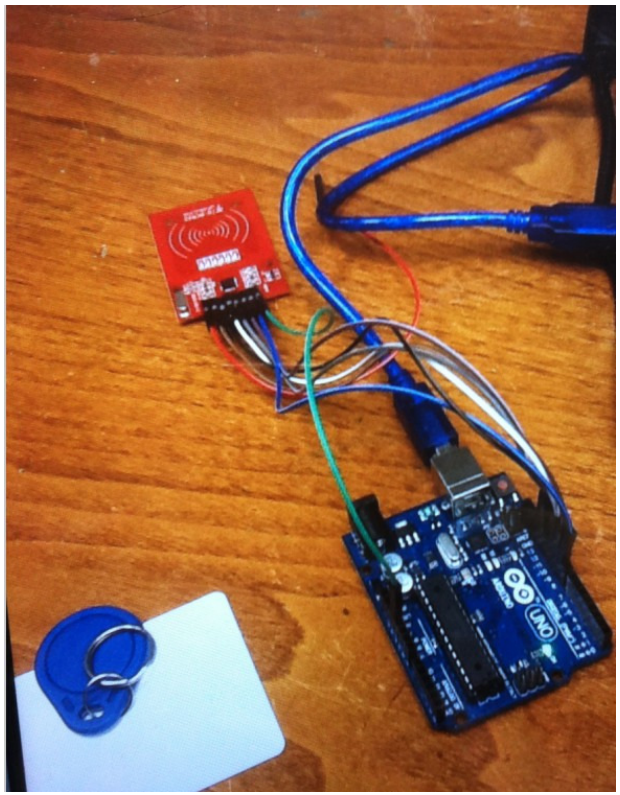
Experiment 5:

Date: 10.20.13

Title: RFID Reader Study

Achievement:

- Study on RFID technology
- Implement the RFID reader



Future Plans

- Ard
- Buil

Timetable

- Dec./Jan. 2013/14 – ArduPilot simulation
- February 2014 – Sailplane built (RC)
- May 2014 – ArduPilot UAV complete

- Spring 2014 – Collaborate with Quadcopter team on wiring/programming ArduPilot

Conclusion

- ArduPilot: Open Source Autopilot
- Arduino: A microcontroller with unlimited possibilities
- Questions?