cs110 - optional project

demo day: 7 Nov 100-200 xp

You project needs to be ready at the start of demo day. You will be demonstrating your project to the class. If the project is complex, you can make it a partner project.

If you have an idea but need help in either deciding if it is possible or some help in getting started, talk to me.

You can basically do anything you want. You can Google and find interesting projects. Here are some suggestions:

- a meter to tell when to water your plants (indicated by an led light, a buzzer, or whatever). This is actually very easy although you do need to bring a plant to class. This is basically the potentiometer circuit. When soil is dry it is resistant to the flow of electricity; when it is moist it is not so resistant.

- borrow one of our 5 robot kits (some need some assembly). can you make one follow a light? can you get one mirror the demo I did with the robot with the range sensor? Or can you make it follow a line?

- do something with a motion sensor. A motion sensor detects movement in a room. Can you turn on a battery powered toy when someone enters?

- a tiny laser and a servo arm? no clue but it sounds interesting

- a 2 note at a time buzzer music machine (harmony!)

- using the buzzer as a knock detector

Please send email (ron.zacharski@gmail.com) telling me what you plan to do. This doesn't commit you to doing it.

Ideas from the web

- Beat box
- Carrot box
- multiple tones

- Tone library
- secret knock

6 easier projects

1. plant water meter. This is easy. In addition to the kit you need 2 plants (or at least 2 pots of soil). The circuit is similar to the photosensor (instead of the photosensor you poke the wires into the dirt). Use Serial.println to compare the readings of dry soil and moist soil. Write some code to turn on an LED when the plant needs watering. (or 3 leds - too dry, too wet, just right).

2. following eyes. (~60xp) In addition to the kit you will need one additional photosensor (I have extras - just ask). The arrangement on the board will look like this:

   ```
   LED 1              LED 2

   SENSOR 1           SENSOR 2
   ```

   When the light (flashlight) is on the left sensor 1 will read higher than sensor 2. In that case light up LED 1. When the light is in the middle, light up both LEDs. When on the right, light up LED 2.

3.