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PY371, Project Proposal

Soil Moisture Monitor

Abstract:

This project will utilize the Arduino microcontroller to monitor the soil moisture level of a plant, as well as alert you to when the plant needs watering. Using a soil moisture sensor, the Arduino will read the moisture level and display it on an LCD display. It will also control a single LED that will turn on when the soil moisture drops below a certain level, to indicate that the plant needs watering.

- Essential concepts:
    a. Setting up a soil moisture sensor which can effectively read the water content of the soil.
    b. Using the LCD display to show the exact moisture level read by the sensor.
    c. Setting up the condition which causes the LED light to turn on, indicating the plant's soil is dry.
- Optional, additional concepts:
    a. Include a buzzer that will buzz when the soil is too dry, rather than a simple LED light.
    b. Allow the user to change the moisture threshold that turns the LED on in order to fit all sorts of different plants' needs.

Parts Required:
- Breadboard
- Arduino Uno
- Soil moisture sensor (https://www.ebay.com/itm/233465007871) $2.36

- LCD screen display
  (https://www.ebay.com/itm/LCD-1602-Blue-screen-with-backlight-display-1602A-5v-module-for-arduino/382921423682?hash=item5927e53b42:g:1dAAAOSwdmdcwzg2)
  $3.95
- 1 LED or buzzer
- Plant test subject
- Wires
- Push button
- Potentiometer, 1K-10K

Block diagram: