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PY 681, Project Proposal

Title:

Automatic Watering System

Abstract of Concept:

My project is to make an automatic watering system for a succulent. The project will utilize the Arduino

microcontroller to periodically send a signal for a relay to power a pump that will send water to the

plant. The quantity of water pumped can tuned by how long a signal is sent to the pump, and the period

of the signal can be tuned with the delay command.
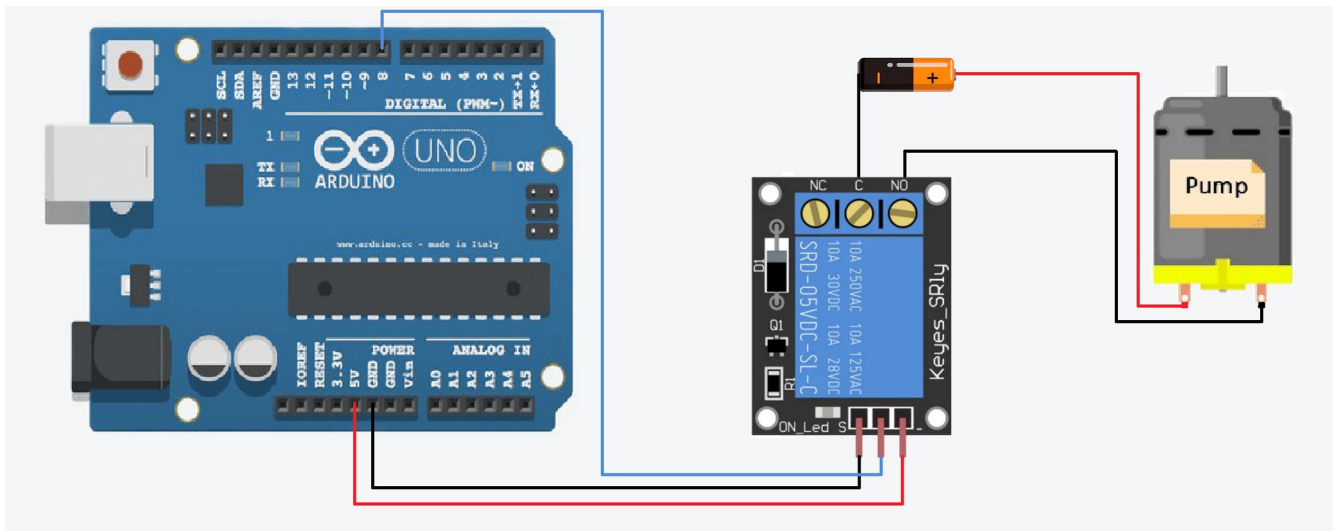
Essential Concepts:

1. Assembling pump and tubing

2. Controlling a relay and battery with an Arduino

3. Using the Arduino to periodically send a signal to the relay

Optional Concepts (time permitting):

1. Using a temperature sensor to monitor and record the ambient temperature around the plant

2. Using a humidity sensor to monitor and record the ambient humidity around the plant

Part Required:

- Arduino Microcontroller Board: Part of E-Lab Kit

- 5V DC Relay $6.59 [1]

- Pump $7.49 [2]

- Tubing $8.76 [3]

- AA Battery Holder $5.88 [4]

Optional Parts:

- Temperature & Humidity Sensor $5.99 [5]

Note that I haven't included a soil moisture sensor like some previous projects have because I intend to use this project to water a succulent. As succulents prefer dry soil the reading on the sensor would almost constantly be that the soil is dry, and I don't think that this would be a good trigger for when to water the plant.

Links to Parts:

[1] https://www.amazon.com/Excelity%C2%AE-Channel-Module-Arduino-Raspberry/dp/B01D4VFS6M/ref=sr_1_4?dchild=1

[2] https://www.amazon.com/gp/product/B07RN3LKK7/ref=as_li_tl?ie=UTF8&camp=1789&creative=9325&creativeASIN=B07F8JV7CT&linkCode=as2&tag=cyberomele&th=1

[3] https://www.amazon.com/gp/product/B0002AQI9A/ref=oh_aui_detailpage_o04_s00?ie=UTF8&psc=1&tag=cyberomelette-20

[4] https://www.amazon.com/LAMPVPATH-Pack-Battery-Holder-Bundle/dp/B07ZG8CC15/ref=sxbs_sxwds-stvp?cv_ct_cx=AA+battery+holder&dchild=1

[5] https://www.amazon.com/Temperature-Humidity-Digital-3-3V-5V-Raspberry/dp/B07WT2HJ4F/ref=sr_1_7?dchild=1