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PY371, Project Proposal (FINAL)

Ultrasonic Targeting Sentry Turret

ABSTRACT

The sentry turret will consist of a projectile launcher mounted on a wooden frame by way of a stepper motor. An ultrasonic sensor will be mounted atop the launcher and will provide targeting information to the Arduino. Another stepper motor will be used to fire and reload the launcher, while two regular DC motors will act as flywheels to launch the projectiles.

- Essential Concepts:
  - Using the ultrasonic sensor module, and learning how to interpret the data it gives in the code
  - Having a stepper motor oscillate across a selected span.
  - A toggle switch that will turn the program on and off (or pause the program using a while loop).
- Optional Concepts (due to time constraints)
  - Build a launcher that can shoot a projectile when a target is detected.
    - Even further, build a launcher that is capable of firing multiple projectiles.

PARTS REQUIRED

NOT IN LAB:

- HC-SR04 Ultrasonic Sensor ($3.95 -- https://www.sparkfun.com/products/15569)

- 2x DC Motor ($7.99 each --

  https://www.amazon.com/URBEST%C2%AEDC-6000RPM-Magnetic-Motor-Smart/dp/

  B00NN2YUWQ/ref=psdc_306577011_t2_B00NLBFOIS)

IN LAB:

- More wire

- Toggle switch (or switch of any kind)