Final Hack Proposal

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Contents

1 Features

1.1 Motorized Rubber Band Gun

1 motor will serve as the rotating mechanism for the rubber band gun (see below).

1.2 Rotating Platform

1 motor will be controlled with proportional and integral controls (PID). The joystick (described under 1.3 Turret Control) will allow user control over the turret's rotation.

1.3 Turret Control

The rotating platform's angle will be determined via a wired joystick with a potentiometer. The potentiometers are used to calculate the difference between the joystick and the platform angle of rotation (see code flowchart below). An attached button will function as a remote trigger to fire the rubber band gun.

2 Schematics

2.1 Potentiometer Control

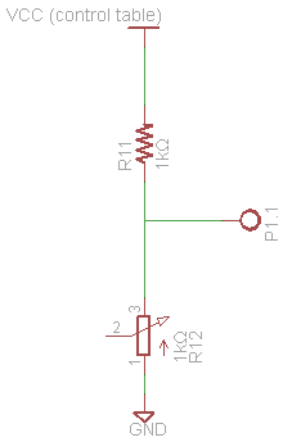

Figure 1: Potentiometer Control. The potentiometer has a linear taper.

2.2 Button Control

Figure 2: Button Control

2.3 Potentiometer Sensor

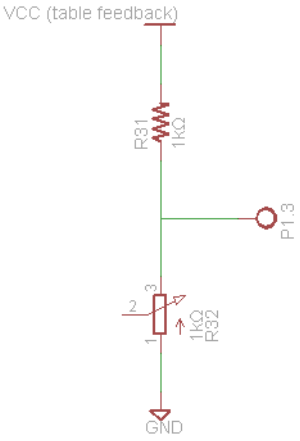

Figure 3: Potentiometer Sensor. The potentiometer has a linear taper.

2.4 Table Motor

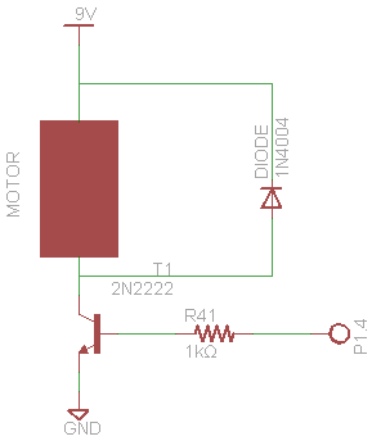

Figure 4: Table Motor

2.5 Firing Motor

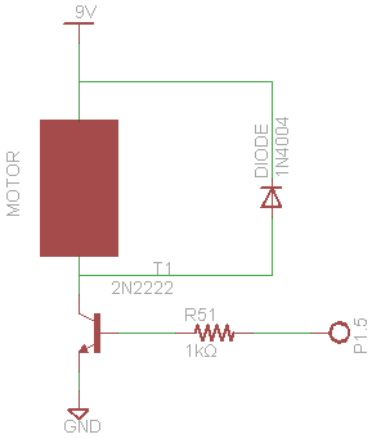

Figure 5: Firing Motor

3 Code Flowchart