

# Final Hack Proposal

Andy Wong  
Glen Chou  
Lydia Lee

Due: April 15, 2015

## Contents

<b>1</b>	<b>Features</b>	<b>2</b>
1.1	Motorized Rubber Band Gun . . . . .	2
1.2	Rotating Platform . . . . .	2
1.3	Turret Control . . . . .	2
<b>2</b>	<b>Schematics</b>	<b>3</b>
2.1	Potentiometer Control . . . . .	3
2.2	Button Control . . . . .	3
2.3	Potentiometer Sensor . . . . .	3
2.4	Table Motor . . . . .	4
2.5	Firing Motor . . . . .	4
<b>3</b>	<b>Code Flowchart</b>	<b>5</b>

# 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

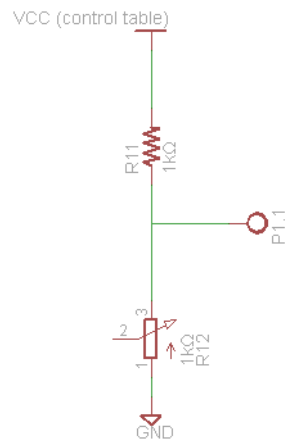


Figure 1: Potentiometer Control. The potentiometer has a linear taper.

### 2.2 Button Control



Figure 2: Button Control

### 2.3 Potentiometer Sensor

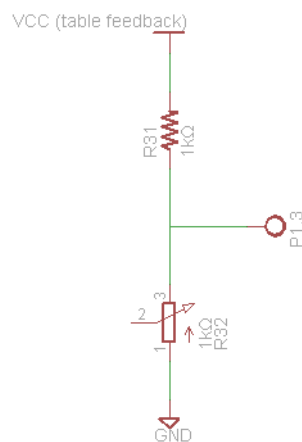


Figure 3: Potentiometer Sensor. The potentiometer has a linear taper.

## 2.4 Table Motor

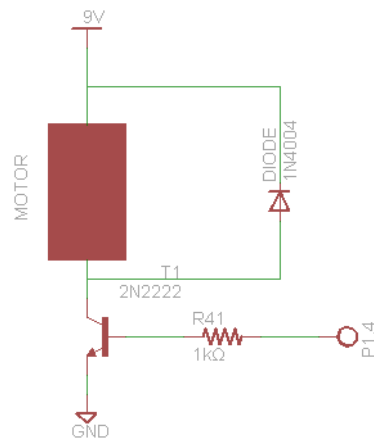


Figure 4: Table Motor

## 2.5 Firing Motor

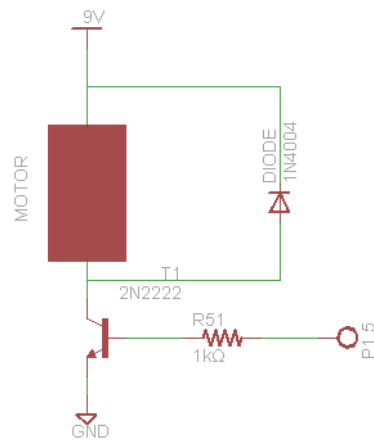


Figure 5: Firing Motor

### 3 Code Flowchart

