RobotArm

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File Index

1.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 2

File Documentation

2.1 /home/user/Dropbox/CSCI3308/Project/Methods-Tools_ProjectFall2015/Source_-Code/Final_Demo_Code.ino File Reference

This is the final demo code.

```
#include <Wire.h>
#include <Adafruit_PWMServoDriver.h>
```

Macros

- #define SERVOMINBASE 150

  Minimum rotation in pulse length(pwm) for Servo motors at base.
- #define SERVOMAXBASE 300

  Maximum rotation in pulse length(pwm) for Servo motors at base.
- #define SERVOMINUP 150

  Minimum rotation in pulse length for Servo motors at upperarm and claw.
- #define SERVOMAXUP 250

  Maximum rotation in pulse length for Servo motors at upperarm and claw.

Functions

- void setup ()

  This sets up the Arduino code.
- void sweep (Adafruit_PWMServoDriver pwm, uint8_t channel, uint16_t start, uint16_t stop, uint16_t increment)

  Sweeps a servo a specified distance on a specified channel.
- void loop ()

  This code loops through every cycle.

Variables

- Adafruit_PWMServoDriver pwm = Adafruit_PWMServoDriver()

  Driver for Servo Shield.

2.1.1 Detailed Description

This is the final demo code. We used this in the presentation.

This code sweeps the base of the robot, then the upper arm, then the claw. The code loops infinitely until power is cut from the arduino or the shield.

2.1.2 Function Documentation

2.1.2.1 void loop ( )

This code loops through every cycle.

keeps cycling until power is disconnected.

Calls the sweep function twice for each joint. There are delays in between each loop to ensure that the servo doesn't move too fast and burn out. There are different servo min and maxes based on the physical arcitecture of the arm. We ensured that each part moved within range of the table, etc.

Parameters

void	

Returns

void

2.1.2.2 void setup ( )

This sets up the Arduino code.

Runs only once at the beginning.

Sets up the serial monitor for debugging and initializes the driver for the Servo Shield.

Parameters

void	

Returns

void

2.1.2.3 void sweep (Adafruit_PWMServoDriver *pwm,* uint8_t *channel,* uint16_t *start,* uint16_t *stop,* uint16_t *increment*)

Sweeps a servo a specified distance on a specified channel.

Parameters

pwm	The driver for the Servo Shield.
channel	The channel the Servo is connected to on the Shield.
start	The starting position in pulse length.
stop	The stopping position in pulse length.
increment	The amount to increase/decrease the pulse length every cycle of the loop.

Returns

void

2.1.3 Variable Documentation

2.1.3.1 Adafruit_PWMServoDriver pwm = Adafruit_PWMServoDriver()

Driver for Servo Shield.

It acts as the interface between the Servo Shield and the Arduino

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