HW 4 Final Report

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11/12/14

The System

The code runs using HW4.c file but I also use ADC.c U0_LCD_Driver.c and I have included the files in the zip file. The code at run time will start a full sweep of the room starting from 0 to about 180 degrees and will try to follow the light. If you wish to avoid the light press down on the joystick and to do a full sweep press the right button. The code will try and find the brightest spot and will try to follow the light as best as possible. When in full sweep mode the interrupts are shut off and the servo will sweep from 0 to about 180 degrees. When the code is in the local sweep the code will move back to the original position and if the light moved a certain way the code will pick it up save that position and after the servo moved back to the original position and waits a second the code will move the servo in the direction the light is either greatest or darkest

Testing

- following the light
- avoiding the light
- full sweep
- when in full sweep tried to hit up down and right and the servo kept in full sweep and did not change the setting it was originally in

Design Decisions and additional design specification

- On start up the code goes in full sweep mode
- setting set to follow the light
- up is follow the light
- down avoid the light
- Full sweep mode turns off interrupts and keeps the setting on follow or avoid the light depending on which setting it was on right before the full sweep was called.

User manual

Run the code using HW4.c the servo should start on a full sweep and will be trying to follow the light. If you press up on the joystick the code will follow the light. If you press down the code will avoid the light and if you press right the servo will full sweep and will either follow the light or avoid the light depending on what the code will originally set to. I have a warning on the itoa function but that warning doesn't matter because the code runs perfectly fine the itoa function is used to print the angle to the screen.