Interactive Wheel of Fortune

Week 1
03/20/07

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Work Completed

During this week, I was able to finish debugging the program and install the program onto the PIC16F874. Even though there were no errors occurring during the installation, I wanted to make sure that the program was doing everything correctly. So, I built a sample circuit with the motion sensor connected to one of the input pins (Rb0) and attached the output pin (RC2) to the oscilloscope to see if I saw a sinusoidal output come out every time a motion was sensed. I did see a waveform, but it was not perfectly sinusoidal and it did not run for a time period I accepted it to run (between 3 to 5 seconds). So, I had to rebuild the circuit using the ICD2 connection and the PIC start, which allowed me to see how my program reacted when I initiated the motion sensor. Everything worked as I thought, but the output was not what I expected. So, I met with Dr. Fox to go over the program and make sure it was right. We were able to fix few of the misunderstandings in the program and I was able to get the correct response. However, he advised me to get rid of Sp03 program I wrote and use a simpler concept of parallel port communication rather than using the I2C concept. Using this concept, I can make Port D of the microcontroller a parallel port and send a bit command to the SP03. Since there are only 30 possible commands that can be installed onto the Sp03 chip, we only need to use the first 5 bits of PortD to communicate. So the first bits of PortD will be connected to SEL0 through SEL 4 pins of the Sp03. However, since this concept is similar to how the LED works, I will use the LED to see if I get the right output instead of using the $100 chip that might get ruined in the process of debugging.

Future work

The primary objective for next week is to put the whole circuit together with the motion sensor and the function module attached to the microcontroller pins RB0 and RB4. Attach the output from pin RC2 to the motor circuit that was built and also attach the first 5 bits of PortD to the SEL0 through SEL 4 pins of the Sp03. This will mark the termination of the debugging process and the following we should order the PCB board for the main circuit and also for the amplifier circuit for the speaker that still needs to be built. This circuit will be tested with wheel as soon as the coupling system for the motor is built. This will allow us the time if needed to buy a better motor that can spin our wheel.

Progress Report

This week was very slow because the program was not working correctly. Now that the program is working with the exception of the SP03, I will be able to put everything together by the end of next week and order our PCB board. Also, the painting for the
wheel of the game was initiated by Meghan and Kristen and will be completed in the near future. After all the major things are completed, we will be able to put the game together within the next few weeks, most likely by the due date.

Hours Worked

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