


```

        movf      datbyt, w          ; get ready to output data in datbyt
        call     output              ;
        bcf      PORTC, cs          ; bring chip select low to
        retlw    0
Start
        bcf      STATUS, RP0        ; need to set bank 0
        clrf    PORTC               ; initialize port c
        bsf      STATUS, RP0        ; need to set bank 1
        movlw   0x10                ; all bits are outputs except SDI
        movwf   TRISC               ; for SPI input
        clrf    PIE1                ; disables all peripheral ints
        clrf    INTCON              ; disables all interrupts
        bcf      STATUS, RP0        ; need to set bank 0
        clrf    SSPCON              ; clear SSP control register
        movlw   0x31                ; SPI master, clk/16, ckp=1
        movwf   SSPCON              ; SSPEN enabled
        call    EWEN                ; output EWEN for enabling writes

```

I also worked with Matt to understand the communication protocols required to do text-to-speech conversion with the speech module. Using the SP03.exe software and a RS232 port monitor we were able to read what the demonstration software was sending to the module. We tried to recreate this communication using LabView to ensure the data was being sent properly but encountered problems. The module is receiving a command but is not correctly speaking the phrase.

Mike was able to get the filters working for the glucose circuit this week. I connected my microprocessor A/D setup to his glucose circuit and ran a sample measurement. The voltage spike at the initial part of the test was detected and converted properly by the A/D. The decaying signal was also shown decreasing on the LED's connected to the output of the A/D.

Future Work

This week I will continue to work to integrate the speech module to the microprocessor using both the SPI/UART and the parallel data inputs. The parallel data will allow us to speak the 30 preprogrammed phrases and the SPI/UART will allow us to speak the test result value in conjunction with the preprogrammed phrases. I am also going to try and get some help from Professor Fox with the microprocessor programming. My goals for this week are to successfully communicate with the speech module using both the SPI and the parallel data.

Project Review

The project is moving a bit slower than expected. Programming a microprocessor with no experience in the area proves to be a challenging and slow process. Some outside help from someone with experience will help speed development. There were numerous roadblocks that were discovered this week and will be worked out in the next week dealing with the speech module and the programming. Mike's progress on Friday with the filters has gotten us to a usable glucose circuit that communicates properly with the microprocessor. Having the glucose circuit integrated with the microprocessor will allow me to focus completely on the speech module and eventually the LCD screen. Mike will work this week to finally obtain a glucose-voltage relationship once the solutions arrive from Lifescan. Matt will work on learning some LCD programming to help me with my development as well as work with the speech module. By the end of the week we need to have a glucose-voltage curve and text-to-speech communication working correctly. In two weeks we need to have a solid understanding and communication with the LCD screen. After spring break all three systems will be integrated and the individual code blocks be written together to finalize the software. Development of the vial scanner and printed circuit boards will proceed after the break.

Hours Worked

Hours spent on the project for Week 5: **28 Hours**