Homework 4 - Lecture 4

Issued Lecture 4 – Due Lecture 5

1. Draw a schematic diagram for interfacing the 8255 and the DAC0832. Use an LF353 op-amp configured as a current-to-voltage amplifier. The diagram should ensure the LF353 delivers voltages ranging from –5 to +5 volts. Include working Turbo C code that will output a voltage given a decimal number input. (5 points)

2. Draw a schematic diagram for interfacing the 8255 to an ADC0848. Include answers to the following:
   a. What’s the MUX?
   b. The MUX table
   c. The MUX loading timing table
   d. What is the 8255’s Mode 2? Consequently what control word would you use?
   e. Using Mode 2, include working Turbo C temperature-reading program, where an LM34 thermister is single-ended connected. (10 points)

3. What’s wrong with the following If...End If statement: (5 points)

   ```
   If B = 3
       B = 2
   End If
   ```

4. Suppose that the variable MyVariable is currently equal to 3. What will be the contents of the lblMyLabel label after the following code is executed? (5 points)

   ```
   Select Case MyVariable
       Case 0
           lblMyLabel.Caption = "Hi, have a nice day"
       Case 1
           lblMyLabel.Caption = ""
       Case 2
           lblMyLabel.Caption = "Are you having fun?"
       Case 3
           lblMyLabel.Caption = "Good bye"
       Case 4
           lblMyLabel.Caption = "Good Morning"
   End Select
   ```

5. What is wrong with the following function? (5 points)

   ```
   Public Function HowMuch (X As Integer)
       Dim Z
       Z = X * 100
   End Function
   ```

6. What is a virtual device driver (do some web research) and when and why is it used? Discuss potential advantages/disadvantages over using DLL’s (10 points)