ECE 375 PRELAB 2

Lab Time: Wednesday 10-12

Tu Lam

QUESTIONS

1. Suppose you want to configure Port B so that all 8 of its pins are configured as outputs. Which I/O register is used to make this configuration, and what 8-bit binary value must be written to configure all 8 pins as outputs?

   To configure all 8 pins of Port B as an output, we would be using the DDRx (Port x Data Direction Register) as assign to make the 8 pins as an output. Write out 1s in the DDRB to set up it as an output for all the 8 pins. In 8-bit binary value, it will be 11111111. Each placement in the binary value correlate with which pin is set on the Port B.

2. Suppose all 8 of Port D's pins have been configured as inputs. Which I/O register must be used to read the current state of Port D's pins?

   If in the scenario if all 8 of the Port D's pins have been configure as input, the I/O register to use to read the current state is using the PINx (Port x Input Pins). In this case it would label as PIND and use it to read the current state.

3. Does the function of a PORTx register differ depending on the setting of its corresponding DDRx register? If so, explain any differences.

   Yes, the PORTx register does differ depending on the setting of its corresponding DDRx register. If the DDRx register is set to 0s (Input), PORTx will set as 1s and it is activating the pull-up resistor to send information/data to the pins. If the DDRX is set to 1s (Output), PORTx will store the data of the output physically on the pin of that PORTx.

REFERENCE

Computer Organization and Assembly Language Programming: Embedded Systems Perspective by Ben Lee