# ECE 375 PRELAB 2

**Lab Time: Friday 2-4**

*Hao Truong*

## 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?

   Port B Data Direction Register (DDRB) can be configured as output. This is done by writing 1 into DDRBn (11111111)

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?

   Port D Input Pins (PIND) must be used to read the current state of Port D's pins.

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

   Yes. If we write a 0 on DDRxn, this causes the output of Tri-state Buffer 4 between Pxn and PORTxn to be open circuit allowing the signal on Pxn to be latched onto PINxn. On the other hand, writing a 1 into DDRxn enables Tri-state Buffer 4 providing a direct connection between PORTxn and Pxn.

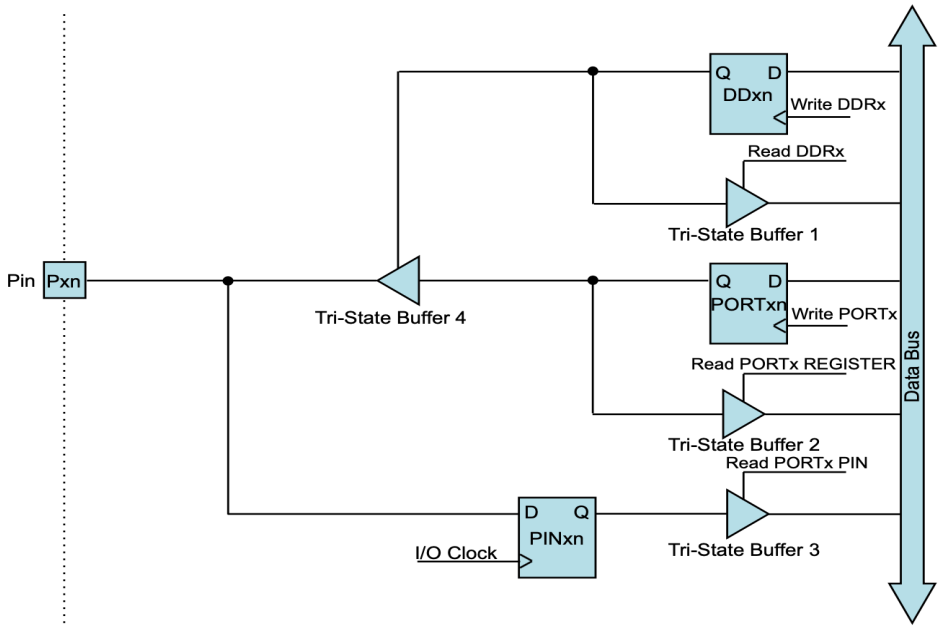


Figure 5.4: A simplified diagram of a single pin of a port.

## REFERENCE

Computer Organization and Assembly Language Programming: Embedded Systems Perspective