

Laboratory Report

Laboratory Exercise No.:	5	Date Performed:	September 30, 2025
Laboratory Exercise Title:	I/O Interfacing (Address Decoding and I/O Ports)		
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Activity #3

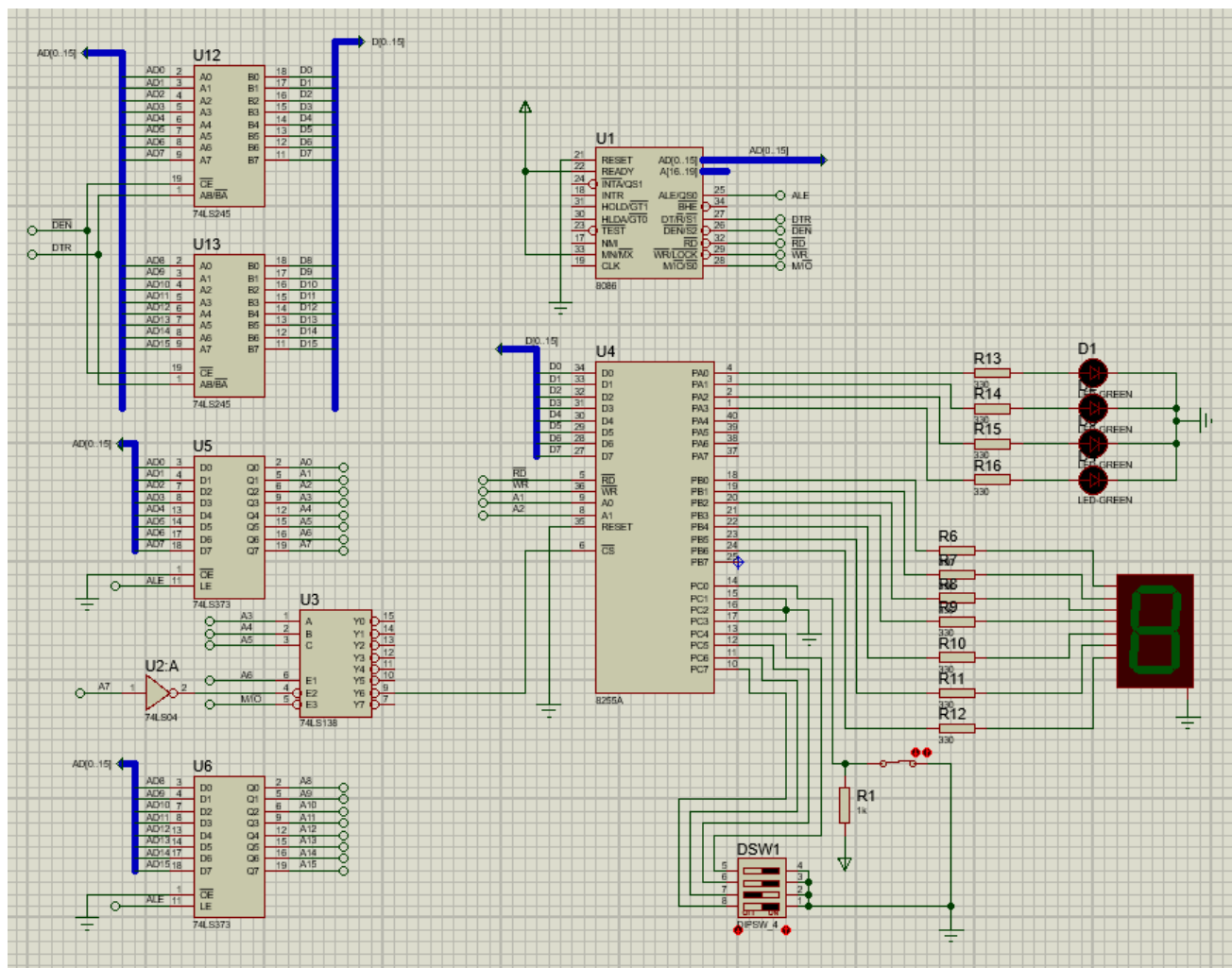


Figure 1. Schematic Diagram of 8086 and 8255

With the I/O address range from C0H-FEH, determine the address of PORTA, PORTB, PORTC and Command Register from Figure 1.

Address: PORTA: 0F0H PORTB: 0F2H

PORTC: 0F4H COM_REG: 0F6H

To program the 8255, set the address to access the command register (COM_REG). Then send an 8-bit command to that address. Refer to Figure 8 for bit configuration of the command bytes A and B. Determine the command byte if PORTA and PORTB are set as output and PORTC as input. All ports should operate in Mode 0.

Command byte (in binary): **10001001b**

Based on Activity #3, what can you say about the 8255 Programmable Peripheral Interface (PPI)?

- The 8255 PPI is a programmable I/O device that consists of 8-bit bidirectional I/O ports that can be programmed to transfer data.

What do you think are the advantages and disadvantages of using the 8255 from the simple latches and buffers as I/O ports?

- The advantage of using 8255 is that it minimizes the use of logic gates, latches, and buffers. It makes the circuit more compact and simpler. The disadvantage is that if in any case wherein only a few ports are going to be utilized, the 8255 cannot be used to its full potential. The 74ls373 IC is more flexible to be used in that kind of situation.