İTÜ Faculty of Computer & Informatics
Microprocessor Systems Homework
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We have an **EDU-PIA** connected to **Motorola 6800 based microprocessor system**. The base address of the PIA is **$E0E0**. We need to read **1 bit value** from **56 different location**. (Suppose that those locations are alarm sensors which generate logic 0 or 1 in the case of an alarm event.) As you may realize that we have only one port in the EDU-PIA (look at the lecturer note: IO_PIA), so we need to design a logic system connected to PIA which will allow us to read one location at each time by the software based on the logic design.

You are expected to do followings:

- Design the address decoder of EDU-PIA. The base address is $E0E0.

- Design a logic circuit interfaced to EDU-PIA to read a location of 56's at each time. You may use any logic components such as AND/ OR gates, Three State buffer, decoder, encoder, mux etc.

- Write a subroutine that reads a given location. The subroutine is called as READLOC. On the call subroutine, **accumulator A** holds **the location address** and, on the exit from subroutine **accumulator A** holds **the value of the given location**. Remember, the software you developed must be based on your logic design.

- Write a program that reads all location and stores them to an array starting at $2000

No computer printouts, everything must be hand written.

Clear explanations and drawings will be advantages.