COMPUTER ARCHITECTURES (02LSEOV)

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Problem solving session nº3
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1. Write a program for writing the characters ‘O’ and ‘K’ on port A and B of 8255, respectively (address 0x80). Then, the program acquires the binary value from port C and copies it to the variable **reading**.

2. Realize a program for writing the decreasing values from 255 to 0. The values are written alternatively to port A and B of Intel 8255.

   A ← 255
   B ← 254
   A ← 253
   B ← 252
   […]
   B ← 0

3. Configure Intel 8255 in mode 0 for groups A and B, with ports A and C in *input*, and port B in *output*.
   Write a procedure for reading one *byte* from port A. If this byte corresponds to a lowercase character, the procedure capitalizes it and writes it to port B.
   Afterwards, write a program for querying port C. When a transition 0→1 of the least significant bit is recognized, the program calls the previous procedure.

4. Write a program for reading two bytes **a** and **b** from port A and port B, respectively. Then, compute the following logic operation:

   NOT (**a** XOR **b**)

   The result must be saved in the variable **res**. Then, **res** must be written on port C by means of the Single Bit Set/Reset mode, starting from the least significant bit.