Cairo University	**Advanced Programming Techniques**
Faculty of Engineering	
Computer Engineering Department	**MPI Thursday Requirement**

Build a program that sums a big array (for example 1000 elements) over four processes using collective communication:

➢ **Process with rank 0:**

      o   Reads array from a file.

      o   Send each process its share of the array (the array should be divided among the four processes).

      o   Calculate the sum of its share of elements.

      o   Receive the summation result from each process.

      o   Calculate the final sum and print it.

➢ **Other processes :**

      o   Receive its share of the array.

      o   Calculate the sum.

      o   Send it to the root (process with rank 0).

      o   Print the local sum and exit.