ASSIGNMENT

Problem1: Design a MessageProcessor module that reads UDP messages from multiple files with following format without any gap (i.e. no sequence numbers will be missing) but the packets may be duplicated and out of sequence.

Field	DataType	Sample value
Msg Type	Char	'A'
SeqNumber	Unsigned long	329231
Side	Char	'B'
Size	Unsigned long	2000
Ticker	String	"ABC"
Price	Double	23.23

Message Processor should be able to read multiple out of sequence messages files (infile1.txt, infile2.txt) and write back sequenced messages removing duplication in single file outfile.txt.

Example :

File	SeqNumber
Infile1.txt	3,4,12,9,1,2,2
Infile2.txt	2,5,6,8,7,10,11
Outfile.txt	1,2,3,4,5,6,7,8,9,10,11,12

Problem2: Enhance MessageProcessor module that can track the message receiving rate i.e. it should not process more than X requests in Y seconds.

MessageProcessor should be efficient in reprocessing the request once the request is blocked due to max message processed in that particular second.

Guidelines for test completion

- Test to complete with C++ language. (prefer using C++11/14)
- Follow C++ idioms/design patterns and coding conventions
- Cmake is preferable, but you can use build tool of your choice
- Please work on the problem individually
- please avoid using 3rd party libraries.

Send a single tar of your source code, README and supporting documentation/files required to execute your code (no object file required). Your solution will be judged for

1) Design
2) Correctness
3) data structure choice
4) multithreading
5) unit testing
6) documentation