

M.Sc. IN HIGH-PERFORMANCE COMPUTING

5613 - C PROGRAMMING

ASSIGNMENT 7

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RULES

To submit, make a single tar-ball with all your code and a pdf of any written part you want to include. Submit this via msc.tchpc.tcd.ie by the end of **Friday December 16th**. Attempt all parts. Marks will be given for the efficiency of your implementation. Late submissions without prior arrangement or a valid explanation will result in reduced marks.

QUESTION

Write a C program that will load n points ($n < 100000$) inside the unit square from the text file `points.dat`. An example text file with $n = 100000$ points is available on the course web-pages: [points.dat](#).

Your program should find and print the co-ordinates of the pair of points that are closest together to an output file `closest.dat` containing a single line with the coordinates of the closest pair of points.

Assume the number of lines in the input file, $n < 100000$, is not known a priori, therefore your program should read the points until the end of file is reached. If possible, your program should complete the task for the example input file in less than one second.
