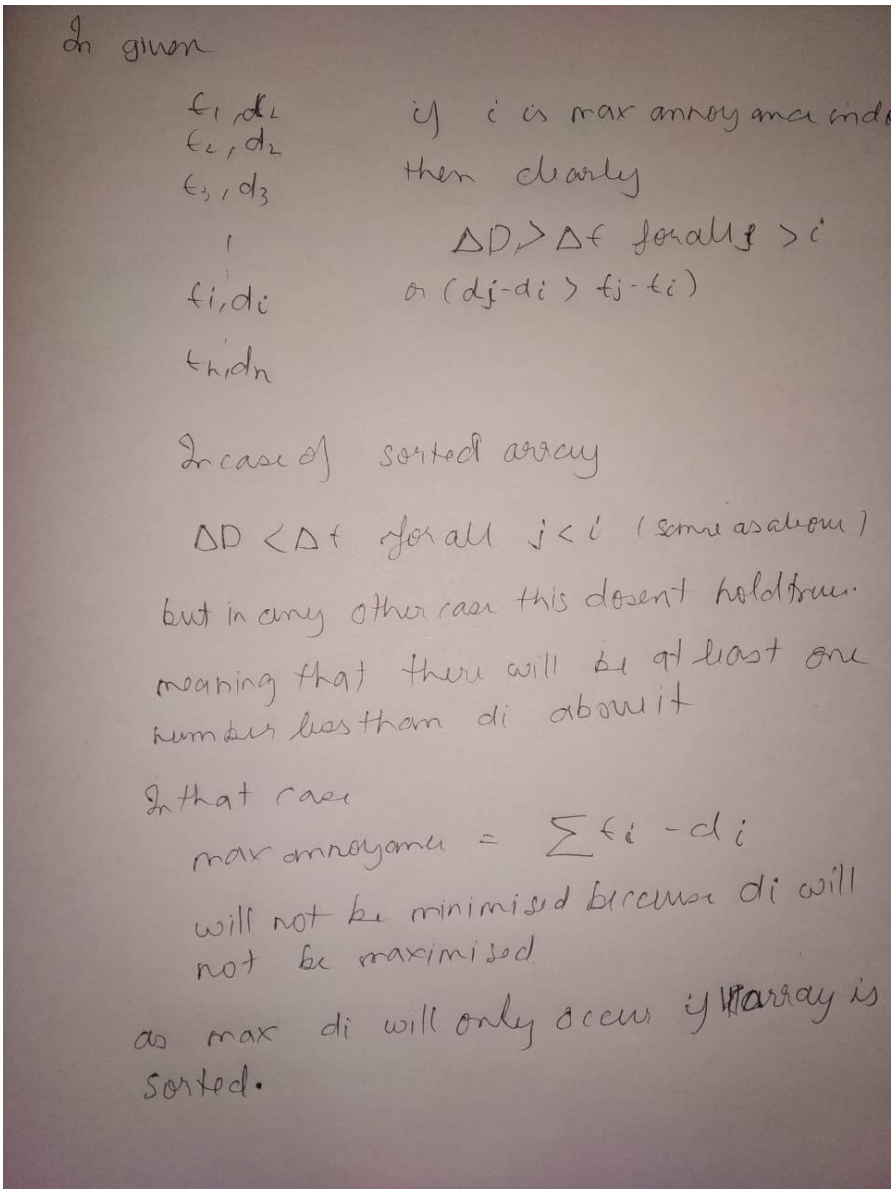
Proof for question 1

Consider a series of inputs

(T_j, D_j)

And let i be the index with max annoyance in a given output series. The minimum of max annoyance can be obtained if the array of professors is sorted in ascending order.

As,



In other words at the max annoyance i all difference above will be large so they will always lead to an annoyance smaller than what we have at i.

So for any given arrangement below index i the minimum of max annoyance is observed when D_i is maximum and that in turn is always true in sorted array granted there are other combinations which will lead to similar results but the case of sorted array always gives minimum value of max annoyance.

Therefore in my code hw_q1_B19EE004.c I have used qsort function of the stdlib.h library or sorting the array.