CS3230 Tutorial 7

AY 25/26 Sem 1 — github/omgeta

Q1). (b); Only pairs that can exist on the same CD (i.e. such as in the optimal soln) can fit the formula.

Q2). (a); Exchange smallest file f with smallest in existing pair (f_1, f_2) keeping the same CD count.
(b); Pairing smallest and largest files which fit on the same CD does not increase the CD count.

Q3). Sort in $\Theta(n \log n)$ then iterate through current smallest a_i and largest a_j. If $a_i + a_j \leq 100MB$ then burn both and keep iterating, else burn a_j in a CD and decrement j.

For the test case, we get 4

Q4). (a); Picking last start leaves all intervals before free for inclusion

Q5). Sort by end time in $\Theta(n \log n)$. Iterate through each activity, add it if the start $\geq$ last selected interval's end time.