Calculating final grades:
The final grade will be 0.5 * final exam + 0.5 * hw grade.
Calculating homework grade: Let h be the average of your eight best hw grades (in hw2 take grade/0.80 and in hw3 take grade/1.2).
HW grade = min(100, h+5)

You don’t have to submit this homework if you are satisfied with your first 8.

1. (30 points) In class we argued that EDD rule is optimal for minimizing the maximal tardiness on one machine (1∥T_{max}, slides 16). Prove that the problem P2∥T_{max} is NP-hard (same problem, two identical machines).


3. (35 points) Consider a multimedia on demand system in which each client wants to listen to one song, and a single broadcast channel can transmit the songs. For each client, j, we know the length p_j of the song he wishes to hear. All the clients arrive at the same time.
The problem is to minimize the average waiting time of a client.
The waiting time is the time elapsing until the song transmission starts (whereas the completion time is the time in which the song is over).

Select (a) or (b):
(a) Prove that the problem is NP-Hard.
(b) Give (and prove) an optimal poly-time algorithm for the problem.