

Q: How tight is this upper bound?

Exercise 3-1:

Create two examples where the obtained makespan T is always the same as T^* . (Easy examples for the greedy algorithm).

Exercise 3-2:

Create two example where the obtained makespan T strongly depends on the order of jobs (i.e., the obtained makespan is much larger than T^* for some orders of jobs and the same as T^* for some other orders of jobs).

Exercise 3-3:

For each of the following three cases (i) $m = 2$ and $n = 3$, (ii) $m = 4$ and $n = 7$, and (iii) a general case with m machines and n jobs, create an example where the value of T/T^* is very large for the obtained makespan T by the greedy algorithm using a particular order of jobs. (If you can create an example where T/T^* is 2 (or approximately equal to 2), we can say that the upper bound $2T^*$ is tight).