CSL 356: Analysis and Design of Algorithms
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1. Consider the following greedy algorithm for the minimum makespan problem discussed in class:

   > Sort the jobs in decreasing order of their duration. Consider jobs in this order and schedule a job on a machine with the smallest current load.

   By a simple argument, you can show that the above algorithm gives a 3/2 approximation factor. You have to use a more clever argument to show that this algorithm gives a $\left(\frac{4}{3} - \frac{1}{3m}\right)$ approximation factor.

2. Given a sorted array A containing distinct integers, you want to find if there is an index such that $A[i] = i$. Design an algorithm.