Homework 7
Due at the beginning of the final exam

1. Use the hill climbing strategy discussed in class to solve the following bin packing problem.

Capacity of each bin is 10.

The height of the items are 2, 4, 3, 7, 5, 6, 8, 3, 4

2. Using the simulated annealing strategy described in class to see if you can find a better solution than the hill climbing strategy using 5 iterations. Here is what you’ll need to know:
   a. T = 5 initially. It decreased by 1 after each iteration
   b. You decide (randomly) whether to merge or split
   c. You decide (randomly) which bin to split (and how) or which two bins to merge
   d. Here are the random numbers that you’ll need to decide if you need to reject:

   0.4
   0.85
   0.6
   0.9
   0.01

   You reject if <insert random number> is greater than e^(-\Delta B/T)

   Clearly explain your random choices.
   Clearly indicate your steps and the 5 iterations.

3. [Extra Credit] Describe the overall steps and their motivation of an evolutionary algorithm.