CSCI 232: Lab Two
Due: March 3, 11:59pm

Overview

In this lab, you will write a program do *Bin Packing*, whose requirements are described here:

http://www.cs.princeton.edu/courses/archive/fall06/cos226/assignments/bins.html

Notes

- You can read more about the bin packing problem here:
  https://en.wikipedia.org/wiki/Bin_packing_problem
  (Since the problem is *NP-complete*, we (so far) cannot solve it optimally on large instances.)
- Relevant classes: MaxPQ, one of the BST classes such as RedBlackBST

- Your program should run from the command line:
  `java WorstFit < input.txt`
  where `input.txt` is in the format described
  (you will need `algs4.jar` in your CLASSPATH)
- You will be required to implement the *BestFitDecreasing* strategy, where you insert the next file in the disk that has the least remaining space among disks capable of storing the file. This is best down with with a binary search tree based symbol table. You can use RedBlackBST, **or**
  bonus question: *write your own binary search tree class.*
  In either case, use a **ceil(x)** method that takes a file size **x** and returns the disk whose remaining capacity is closest to **x** without going under.
- Some input files are provided; you should create simple ones first for testing.

Submission

Submit using the D2L dropbox prior to the due date. Files to submit:

`Disk.java`	
`WorstFit.java`	(must contain a main method)
`IntegerSorter.java`	(must contain a main method)
`BestFitDecreasing.java`	(must contain a main method)

(you can assume that algs4.jar is our CLASSPATH)

*Only one submission per group is required **BUT** you must put **ALL** group member names in the comments of your program.*