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Project 4 Bin Packing

Data Structures and Algorithms II

**User’s Manual**

This program intelligently packs bins with items of a random size using both online and offline algorithms and compares the results of each algorithms performance. The algorithms used are: online first fit, online next fit, online best fit, offline first fit, and offline best fit.

In order to run this program, two input files are needed:

1. ‘bins.txt’ which contains 1000 integers, one per line, ranging from 50 to 100 representing the size of each bin. An example has been provided with the source code.

2. ‘binItems.txt’ which contains one integer per line representing the number of runs to make, followed by the number of items in the current run, followed by size of each item in that run, followed by the number of items in the next run, etc.. An example has been provided with the source code.

To run this program:

1. Ensure that all source files are in the same directory and type ‘make’ in the command line.

2. Ensure that ‘bins.txt’ and ‘binItems.txt are located in the same directory as the source code.

3. Type ‘./main’ to run the program.

The output will be a table after each run displaying the name of the algorithm and how many bins the algorithm used to pack all of the items in that run. Following the table will be the contents of each bin according to each algorithm. This output will repeat itself for every run specified in the ‘binItems.txt’ file.