

Report for Homework 1

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- For compile and execute, first, type 'make' at the root directory, then run the script 'script.sh', it can execute for testing all cases.
- For every testcase, the analysis are shown below.

Initial Cut Size = 226

Final Cut Size = 6

FM Algorithm Run Time: 0.002248 sec

Total Run Time: 0.008839 sec

Initial Cut Size = 3385

Final Cut Size = 221

FM Algorithm Run Time: 0.067549 sec

Total Run Time: 0.12221 sec

Initial Cut Size = 68098

Final Cut Size = 1630

FM Algorithm Run Time: 1.86723 sec

Total Run Time: 2.8289 sec

Initial Cut Size = 121421

Final Cut Size = 46323

FM Algorithm Run Time: 8.89381 sec

Total Run Time: 10.8921 sec

Initial Cut Size = 160426

Final Cut Size = 125272

FM Algorithm Run Time: 5.53571 sec

Total Run Time: 10.9585 sec

- For the implementation, I find the materials in the GitHub, and did make a bucket list for *partA* and *partB*. As for the maximum partial sum, I use a 'max_flag' to mark, and a 'cell_stack' to restore the best situation. For IO, I did an improvement by using *ifstream* and *ofstream*.
- My solution quality is inferior, I think the parallelization may give it much improvement.
- I think the most valuable knowledge for learning the HW are being able to look up the materials on the Github, trying to use some C++ STL, using direct index in the *vector* for decreasing searching time.