

This assignment focuses on implementing the algorithms designed in the previous one. (So please refer to that assignment for many details.) The **goal** is to gain more experience in implementing and evaluating algorithms.

Questions

1. (150 pts.) Implement the algorithm. Test and document your work carefully and submit your packaged source code and supporting documentation.
2. (20 pts.) Conduct a brief experimental study of your implementation, measuring the running time for a suitable collection of inputs. Include your test code in your electronic submission, with suitable documentation.
3. (30 pts.) Summarize your experimental results by making effective use of charts and tables. Comment on how well the experimental results match the predictions based on your answer to Question 6 of HW04. Highlight any significant differences and explain them the best you can. Include these results, comments, and explanations as a single PDF file in your submission.

IO format Your program should read from *standard input* and write to *standard output*. The **input** is a sequence of whitespace-delimited numbers. Each number denotes an available pole of that length. Your program's **output** should consist of one or more lines. The first line consists of just one integer r , which is the number of arrangements of poles that satisfy the requirements noted earlier. This line is followed by r lines, where each line lists the lengths of the poles used for the ruby, garnet, and beryl crystals (in that order) separated by single spaces. These r lines should appear in lexicographically sorted order.

Example If the input is

```
3 5 10 2 1
```

then the desired output is

```
2
1 2 3
1 3 5
```

Submission: Follow the submission procedure used for the previous assignment, replacing `hw02` with `hw03` in the obvious places.

Reminders Recall, from the previous assignment, policies on collaboration and the use of external resources. Ask for clarifications if anything is unclear. The suggestions in the previous assignment apply to this one too. Use the newsgroup for all questions and discussions unless the matter is private.