Stable Matching Report

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Results

Our implementation produces the expected results on all input–output file pairs, however we have a different ordering of the outputted matches. This is due to the data structure we use to keep track of the proposers. We use a Stack for this purpose.

Implementation details

The men's preferences are stored in a HashMap, where the key is the ID of the specific man and the value is an ArrayDeque composed of their preferences. The women's preferences are stored in a HashMap where the key is the ID of the specific woman. The value is another HashMap where the key is the ID of the man and the value is the rank of given by the woman to the man.

We can find a free man who has not proposed to every woman in time $O(1)$, because we store free men in an ArrayDeque.

With these data structures, our implementation runs in time $O(n^2)$ on inputs with n men and n women.