

The Gale-Shapley stable matching algorithm

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The Gale-Shapley Algorithm - men proposing version

Input: the preference lists of n men and n women

Initially: everyone labeled “free”

If there is a free man: select one, say m

- m proposes to W , the highest ranked woman on his preference list to whom he has not yet proposed
- **If** W is not engaged, she and m become engaged
- **If** W is engaged to man m' who is higher on her preference list than m , then she rejects m and stays engaged to m'
- **If** W is engaged to man m' who is lower on her preference list than m , then she breaks her engagement with m' and becomes engaged to m

If there is no free man: all engaged pairs are matched, and algorithm ends