

One way to pair Men and Women such that there won't be any rogue couple

Because of historical reason here we are sticking to the Men & Women convention. :(

Stable Marriage

Morning: man propose to the most preferred woman list

Afternoon: "maybe" to the man she likes the best, "never" to others.

Evening: man cross off woman who rejected him

The Stable Marriage algorithm Halts

Terminates with a pairing

Stable marriage always outputs a stable pairing.

Improvement Lemma

Male Optimal

Female Pessimal

Lemmas