Stable matching

Given a set of presences among employers and applicants, can we assign applicants to employers so that for every employer E, and every applicant A who is not scheduled to work for E, at least one of the following two things is the case?

1. E prefers every one of its accepted applicants to A; or
2. A prefers her current situation over working for employer E.

If this holds, the outcome is table: individual self-interest will prevent any applicant/ employer ideal from being made behind the scenes.

Initially all m M and w W are free

While there is a man m who is free and has’t proposed to every woman

Choose such a man m

Let w be the highest-ranked woman in m’s preference lis to who m has not yet proposed

If w is free then

(m, w) become engaged

Else w is currently engaged to m’

If w prefers ,’ to m then m remains free

Else w prefers m to m’

(m,w) become engaged

M’ becomes free

Endif

End if

End while

Return the set S of engaged pairs.