1. each S_i crosse 1π each day

    so $NM\pi$ crosses.

2. Invariant: $\nexists S_i$ S_i rejected by U_i

    $\longrightarrow U_i$ has a better suitor.

    if at some day U_i ~~~~ gets $h_i \longrightarrow$ best

    h_i will remain and rest go home.

3. Proof by ✗. if S_i gets rejected

    by $\forall u \longrightarrow$ Shortage of $S \longrightarrow S_7$ rejected. ✗

4. ~~$\nexists ✗ U_i, ✗✗✗✗✗✗✗$~~ i ✓

5. ✓

6. assume for ✗ that $S_i - U_i$ is rogue.

Case1. S_i didn't apply

Case2. U_i rejected.

7. by WOP first day of U_{opt} rejecting

    $S_m \quad\quad S' \overset{!}{\underset{2}{\rule{3cm}{0.4pt}}} U_{opt} \quad ✗ \quad\quad$ they'd be rogue.

           $S_m{}' \quad\quad U$