

Sep 5

Reminder: Q2 on HW 0 \Rightarrow $n!$ perfect matching for n men/women.

Def (Preference Lists) $\forall w \in W, L_w$: total ranking of all $m \in M$

Ex: $n=2$

$\forall m \in M, L_m$: _____ $w \in W$

L_{BP} : $AJ > JA$

L_{JA} : $BP > BBT$

$\rightarrow 2n$ preference lists

L_{BBT} : $AJ > JA$

L_{AJ} : $BP > BBT$

$\rightarrow 2n^2$ elements in all lists

Def: A stable matching is (1) a perfect matching and (2) has NO instability.

Def: Instability: Given $2n$ preference lists, a perfect matching S , a pair $(m, w) \notin S$ is an instability IFF

(1) $w > w'$ in L_m AND $m > m'$ in L_w



Consider:



Q: (BBT, JA) an instability?

A: NO!

Q: (BP, AJ) an instability? Yes!

\Rightarrow is NOT a stable matching.