Stable matching problem Topics:

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1) What is an input/output for the stable matching problem?

- 2 Sets of groups both of size n

- 2 preference lists both of size nxn

- A solution set S that contains all elements from group 1 and 2

2) What makes an unstable pair

- when you have 2 elements Mi, Wk who are not paired with each other in the solution

- But both elements prefer each other over their current matches

- i and k can be different, and they can be equal

3) What makes a stable match?

- When there exists no 2 elements that prefer each other over their current matches

- It is ok for 1 element to unstable, as long as there are not 2 elements that prefer

- each other over their current matches

4) About the Gale-Shapely Algorithm

- Check the posted pseudocode on discord and canvas

- Big-O run-time: O(n^2)

- The Gale-Shapley Algorithm returns on 1 solution (biased to the proposer)

5) The GSA is Biased to proposers and Lying

- The person proposing during the GSA will get their best possible outcome.

- If the person being proposed to lies they either can stay the same or get worse