Assignment 1

30.08.2024

Task 1

A matching is stable if no two people prefer each other over their current partners.
→ There's no pair who would both rather be matched with each other than with the partners they have.

Task 2

Assume x and y are ranked first on each others preference lists. Suppose there's a stable matching S where x and y are not matched together:

* x → z
* y → w

Since x and y prefer each other they form a blocking pair
⇒ This contradicts stable matching so the statement is TRUE

Task 3

yes, a perfect matching with this notion stability always exists.

GS can be adapted to handle ties in preferences. This does not result in unstable pairs => will always produce stable matching.