First in-class project: coding a rank-order assignment algorithm

Goal: The goal of the project will be to write a piece of software (possible languages are Python, Julia, and MATLAB), that matches N patients with K doctors. Each patient is allowed to provide a ranked list of their preference for doctors, however doctors are prohibited from displaying preferences for patients. Thus the code should takes in the following:
- A list of ranked preferences, 1 list for each patient
- A maximum capacity for each doctor (can initially assume the same capacity - note the total capacity should exceed the number of patients

And the code should return:
- A list of assignments indicating which doctors are to take care of which patients

Details: For this assignment please work in groups of at most 3 individuals. Teams can choose to implement a classical algorithm, such as the Hungarian algorithm, however other algorithms are also acceptable, including any of a number of auction or transport optimization algorithms in the literature. The code should be include:
1. A Github repository housing all the code synced amongst the group
2. Commented and documented code, including references and an explanation of the algorithm implemented
3. A functioning demo script (can be a jupyter notebook)

Purpose: The purpose of this project is to identify strengths and weaknesses of the class in scientific coding. Performance and questions during this in-class assignment will help guide the introductory weeks and which additional materials might be addressed in more detail.

Due date: A link to the Github with your code and documentation is due no later than the beginning of class on **9/7/2022.** Code should be documented, including relevant design decisions and model assumptions, and a list of names of all group members! Links should be sent to me via Slack.