Description: Each year, the graduates of medical schools submit preference lists of hospitals where they wish to be residents. Each hospital also has a preference list of the applicants for residency. Each hospital needs to be matched with an applicant in a way that's “stable”. Say, if hospital A is matched to a resident x and hospital B is matched to a resident y, but x prefers hospital B to A and hospital B prefers x to y, then B and x would break up their current matchings and pair up with each other instead. This would be an “unstable” matching.

How can we match hospitals to residents so that there are no “unhappy” pairs like B and x above?

The project will be to read and understand the mathematics and the related algorithm (which is used in real-life) of this problem. You would have to write a report and implement the algorithm using your favorite computer language (preferably MatLab), and give a presentation to your peers. This project is for 2-3 students.

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