

MATH 100 : Project on ‘Stable Matchings’
Fall 2006

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 is “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? Research this problem and its related algorithm (that is actually used in real-life). Write a paper and give a presentation. This project is for two students.

Contact Information: Hemanshu Kaul, 234B E1. (kaul@math.iit.edu)