

TEACHING ASSISTANTS



Background

It's time for picking TA's again! This year there were 100 students who applied to 60 positions. Preference lists for all students and professors are given in the files **StudentPreferences.data** and **ProfPreferences.data**. Students cannot be assigned to courses that they have not applied for and professors may not pick students who did not apply to their courses. Every student and professor must order all positions that they have applied to and all students that they have received applications from respectively, no ties allowed.

Question

Assign a student to each course such that there are no student/professor pair who **both** prefer each other than their current choices.

For example, given the preference lists of students 1, 2 and professors 1,2 as below

Professor 1: 2,1 **Student 1:** 1, 2

Professor 2: 2,1 **Student 2:** 2, 1

Assigning **Student 2** to **Professor 1** and **Student 1** to **Professor 2** is not valid since both **Professor 2** and **Student 2** prefer each other than their current chosen partners.

Datasets Provided

StudentPreferences.data - Students' preference lists

A table with 100 preference lists of different length.

For example, in row 1, the entries are 48 41 5 19, this means student 1 prefers position 48 over 41 over 5 and over 19.

ProfPreferences.data - Professors' preference lists

A table with 60 preference lists of different length.

Solution Requirements

A list of students that is assigned to each course with the first entry being course 1, second entry being course 2, etc in a space separated **.data** or **.txt** or **.csv** file.