PhD Course on "The Stable Marriage Problem"

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Abstract

The Stable Marriage Problem is widely studied in mathematics, economics and computer science; it consists of searching for algorithms that can find a stable matching between two sets of elements given a set of preferences for each element. More specifically: given a group with the same number of elements (say, women and men), such that each one strictly ranks all of the members of the opposite sex by preference, we want to find an algorithm that can produce a stable matching, where no couple would break-off the marriage because nobody could do better, i.e., there is no man and woman who symmetrically prefer each other over their partners. David Gale and Lloyd Shapley proved, in 1962, that it is always possible to solve the Stable Marriage Problem. In this short course we probe the Stable Marriage Problem and its variants as a rich source of problems and ideas that illustrate both the design and analysis of efficient algorithms.

Among the wide range of applications are assignment of medical doctors to hospitals, college admission, internet server allocation, and many others.

In 2012, the Nobel Prize in Economics was awarded to Lloyd Shapley and Alvin Roth "for the theory of stable allocations and the practice of market design."

CLASS MEETING

25 MARZO – AULA L   9.30-11.30

26 MARZO – AULA I   13.30-15.30

27 MARZO – AULA G   16.30-18.30

29 MARZO – AULA H   14.00-16.00

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