

Assignment 1, case 7: A kidney exchange problem

The data set "dataset7.xlsx" contains the data of patients and their preferences over the available kidneys and $\{w\}$. In the data set w is represented by the number 150. The set of patient-donor pairs is (k_i, w_i) . The patients are prioritized from in the natural order 1,2,3,4,...,149.

- a) Use the TTCC algorithm with chain selection rule (e) from the slides 29, lecture 2, to create a matching. Not only provide the final result, but also present a pseudo code that describes the procedure.

For practical reasons cycles are not allowed to be larger than size 3.

- b) Propose a modified TTCC algorithm that satisfies this practical condition and apply it to the data set. Not only provide the final result, but also present a pseudo code that describes the procedure.
- c) Investigate whether this modified algorithm is strategy proof and Pareto Efficient.

Deadline for assignment 1: **Monday, September 23.**

Send a pdf file that answers a), b), and c) and in a separate pdf file the code. Further send also the source code. E-mail to: H.J.M.Hamers@uvt.nl