Game theory

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Exercise Sheet 7

Due: Monday, June 17, 2013

Exercise 7.1 (Linear Complementarity Problem, 2+4 points)

The *picnic game* works as follows: Two players independently decide for one of five popular picnic places $p_1, \ldots, p_5$. For $i \neq j$ the profile (p_i, p_j) for the first player has the utility i and for the second player the utility j. If, however, $i = j$, then both players' utility is 0.

(a) Formalize the picnic game as a strategic game and state its corresponding Linear Complementarity Problem.

(b) Implement the naïve algorithm to solve LCPs and use it to determine five different Nash equilibria of the picnic game. Make use of `lp_solve` to solve the linear programs that come up during the process. On your solutions sheet *only* state the five Nash-equilibria and mail your program by email to `alkhazry@informatik.uni-freiburg.de`.

If you want to use another programming language than C++, Java, or Python, discuss this wish by sending an email to the above mentioned address before you start. Also, make sure to document your code and give instructions on how to compile and run it.

Exercise 7.2 (Games and Behavior, 2 points)

Please complete the second set of games that are now activated for one week at the website:
`http://gametheory.tau.ac.il/student/`
After logging in with the same account information as before, you will be directed to the new games automatically. As before, we won't be able to track your individual answers, but we will access and report on global statistics during the Thursday tutorial session.
Have fun!