Introduction to Multi-Agent-Programming

B. Nebel, A. Kleiner
C. Dornhege, D. Zhang
Winter Semester 2009/2010

University of Freiburg
Department of Computer Science

Exercise Sheet 9

Due: January 18th, 2010

Exercise 9.1 (Game Theory: Nash Equilibrium (1.5 pt))
Consider the following two-player (a, b) game

	b_1	b_2	b_3	b_4	b_5
a_1	2,1	4,2	7,5	12,3	11,6
a_2	4,10	6,10	12,5	5,4	10,3

(a) Which strategies are strongly or weakly dominated?

(b) What are the rational solutions for the game?

(c) Find the pure-strategy Nash equilibrium.

Exercise 9.2 (Programming (1.5 pt))
Searching for the Nash Equilibrium(s) in two-player games

A game is defined in a text file. e.g. The game in *exercise 9.1* is defined at grpX@augusta:/home/dapeng/public/gameEx9.txt. The first line defines the number of actions of each player. The following lines are the rewards.

Implement an algorithm for searching ALL the NE(s) in a game. The input is a game text file. We consider only two-player games, and each player has less than 10 actions. The results should be PRINTED on the screen.

Either c++ or java can be used for the programming. It needs to be compiled and run in "augusta".

Please put the programming part in your group directory in augusta
The written part should be submitted during the lecture on Monday (Jan. 18th)