ITERATED PRISONERS DILEMMA - TOURNAMENT

IPD tournament rules - 24-4-2013

Short explanation: Each player needs to bring a strategy. This strategy will be used to play an IPD against other players. The number of rounds is unknown. Total average payoff will be calculated. Each contestant will get 10 points added to the exercise points. The winner of the tournament will get an extra point added to the exam points (max from the exam is 24. In addition max. 6 points from exercises, 1 point from winning the tournament). Bring a calculator if you have one!
Read the detailed instructions below! Especially the rules!

More detailed instructions:

Place and time: Tournament will be held during the lecture on Wednesday 24.4.2013.

Rules: The game played will be the iterated prisoners dilemma (with no mistakes) with the following stage-game payoff matrix

	C	D
C	3, 3	0, 5
D	$5, 0$	$1, 1$

We have thus $T = 5, R = 3, P = 1, S = 0$.

Each contestant will have to construct a strategy satisfying the following:

(1) It has to be written clearly on a paper size A4 (the normal size). You can use text editing programs or it can be handwritten.

(2) Give the strategy a name. Any name is good as long as no two players will have the same name!

(3) It has to be written either in the form (i) $s_{t,i} : H_t \to A$ as defined in the lecture notes (pg. 52), or (ii) verbal explanation. If you use verbal explanation, then it has to be defined precisely enough that any other player should be able to use that strategy.

(4) The action at each round may depend on the whole history of the game (at each round the player may remember all the past moves of both players).

How the game will proceed:

(1) The organizer will let you know how many rounds will be played each game. This number will be different each game.

(2) Each player will play against his/her own strategy.

(3) Each player will play against a random strategy given by the organizer.

(4) Each player will play against all the other players (for example, if there are 8 contestants, each player will play $2 + 7 = 9$ games)

(5) At each game both players will calculate the *average payoff*. That is, the total payoff divided by the number of rounds.

(6) After all the games are played, each contestant will calculate the average payoff of all the games. That is, the sum of average payoffs with each contestant divided by the number of contestants. It might be good to have a calculator.

(7) All the average payoffs against all opponents and the total average payoffs will be written clearly on a piece of paper.

Important constraint: It is not allowed to use TFT-like strategies. More precisely, the strategy should have a TFT-rule at any stage of the game with probability 0. That is, the rule should *not* be: play C (or D) with probability $p > 0$ if the opponent played C (or D) previous round. (Of course it may happen that the response is C when opponent played C, but it should not be because of that rule!)

Reward: Each contestant will get 10 exercise credit points. The winner of the tournament will get an additional point which is added to the exam points.