COMP3121 Social and Collaborative Computing

Homework 4

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Question 1

2 players (Country A and Country B)

Strategies: Both country A and B can either dam the river or fish the river

Payoff Situation:

Assume if both A and B choose to dam the river, they both get payoff of 5 (good for both). If A chooses to fish and B chooses to dam, then A gets payoff of 2, B gets pay off 8. Otherwise, if A chooses to dam and B chooses to fish, then B gets 8, B gets 2. If both A and B chose to fish, they can get payoff of 4. (Good for both, but not good as if they both dam)

Payoff Matrix:

	B fish	B dam
A fish	5, 5	2, 8
A dam	8, 2	4, 4

Question 2

3 players (agent A, B and C)

Strategies: All of agent A, B and C can have 2 actions (action 1, and action 2)

Payoff situation: If anyone choose action 1, then sign as 1 in choice matrix. If anyone choose action 2, then sign as 2 in choice matrix.

Choice Matrix:

	C (action 1)		C (action 2)	
	B (action 1)	B (action 2)	B (action 1)	B (action 2)
A (action 1)	1, 1, 1	1, 2, 1	1, 1, 2	1, 2, 2
A (action 2)	2, 1, 1	2, 2, 1	2, 1, 2	2, 2, 2

If one agent ends up in the minority (choose different action with other two's choice), then that agent wins, and get payoff 1, and other two agents get 0.

Payoff Matrix:

	C (action 1)		C (action 2)	
	B (action 1)	B (action 2)	B (action 1)	B (action 2)
A (action 1)	0, 0, 0	0, 1, 0	0, 0, 1	1, 0, 0
A (action 2)	1, 0, 0	0, 0, 1	0, 1, 0	0, 0, 0