

Name, student id

Points, grade of 10 points **grade:**

Exercise 1 (Utility space). Start GENIUS. For this exercise, use **profiles 1 and 3 from the movie domain**. Please first calculate the **normalized utilities** for every bid and fill them in the following table. FN stands for "Finding Nemo" and GBU for "The Good, the Bad and the Ugly". Use these values to answer the questions below.

Table 1: Normalized Utilities for all bids

Step1: Normalization

	Profile 1	profile 3
Pathé, FN	1 3.8, 0.704	5,
Wolff, FN	0.9333 3.6, 0.667	1.8, 0.33
Pathé, GBU	0.8 3, 0.56	5.4, 1
Wolff, GBU	0.7333 2.8, 0.519	2.2, 0.41

- What is the sum of all normalized utilities in the table?
 A) 27,6 B) ☒ 6,133 C) 4 D) 3,667 E) 1
- Which bid(s) is (or are) Pareto?
 A) All bids
 B) All, except [Wolff, GBU]
 C) All, except [Wolff, FN]
 D) [Pathé, FN] and [Pathé, GBU] ☒
 E) [Pathé, FN]
- Which bid is Nash optimal?
 A) [Pathé, FN] ☒
 B) [Wolff, GBU]
 C) [Wolff, FN]
 D) [Pathé, FN]
 E) none of the bids
- Which bid is Kalai-Smorodinsky optimal?
 A) [Pathé, FN] ☒
 B) [Wolff, GBU] Do not need to be the same, should choose the closer one.
 C) [Wolff, FN]
 D) [Pathé, FN]
 E) none of the bids ☒

Exercise 2 (Multi-Party Tournament). In GENIUS, consider a multi-party tournament.

5. Consider a multi-party tournament where three specific preferences need to be represented by 3 agents per session. We want 5 agents to participate in this tournament. How many negotiation sessions make up the tournaments if agent repetition is allowed? And how many if it is not allowed?
- A) 1250 with repetition, 120 without repetition
B) 1250 with repetition, 15 without repetition
C) 125 with repetition, 60 without repetition
D) 125 with repetition, 15 without repetition
E) 60 with repetition, 15 without repetition

Table 2: results of a three-party tournament

Agents			Utilities		
PhoenixParty	CUHKAgent2015	ParsAgent	0.9166659	0.8215109	0.8522747
PhoenixParty	ParsAgent	CUHKAgent2015	0.8809516	0.8935857	0.8636021
ParsAgent	PhoenixParty	CUHKAgent2015	0.9047611	0.8205772	0.8447577
ParsAgent	CUHKAgent2015	PhoenixParty	0.9285706	0.8054735	0.8741305
CUHKAgent2015	ParsAgent	PhoenixParty	0.9285706	0.8054735	0.8741305
CUHKAgent2015	PhoenixParty	ParsAgent	0.8690469	0.8933523	0.8560851

6. Consider Table 2. Which agent has won most often?
A) ParsAgent B) CUHKAgent2015 C) PhoenixParty
7. Consider Table 2. Which agent has the highest average utility?
A) ParsAgent B) CUHKAgent2015 C) PhoenixParty

Exercise 3 (Multi-Party Negotiation). Consider the multi-party negotiation of Figure 1. Three different agents are negotiating: "A" is a conceder, "B" concedes only minimally and "C" is a random agent.

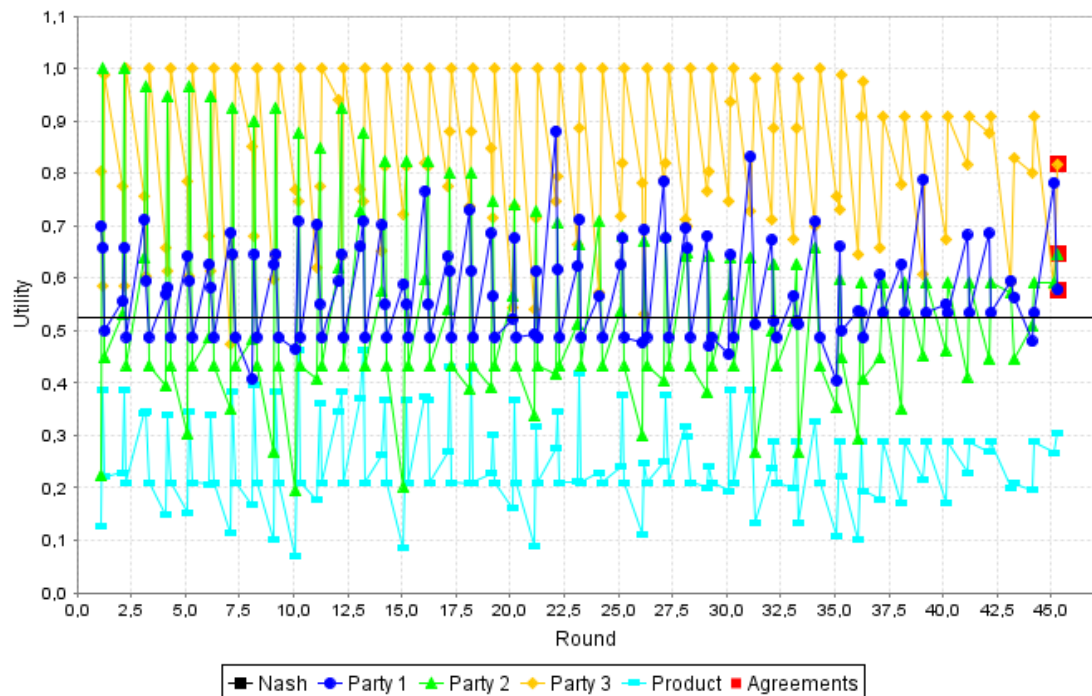


Figure 1: A three-party negotiation session.

8. Identify which agent (A,B,C) corresponds to which negotiating party (1,2,3) in the figure.
 - A) A=1 B=2 C=3
 - B) A=1 B=3 C=2
 - C) A=2 B=3 C=1
 - D) A=2 B=1 C=3
 - E) A=3 B=2 C=1
9. What mostly causes the high frequent zigzag pattern in the utilities over time.
 - A) The conceding behavior of agent A
 - B) The non-conceding behavior of agent B
 - C) The random behavior of agent C
 - D) The stacked alternating offers protocol
 - E) The approaching deadline
10. Run a multi-party negotiation sessions with three times the ANAC2015-3-ParsAgent strategy. As preference profiles use the first three party#.utility.xml from the Party domain. Run this negotiation session with three different deadlines: 15 rounds, 50 rounds and 100 rounds. Does it take the deadline into account in its strategy?
 - A) Yes
 - B) No

change round