

### **Strategic Analysis**

1. Which strategy performed best in the tournament? Why do you think this is?
  - The strategy that won the normal tournament was the Grim Trigger strategy, which is the agent that invests until betrayed once, and then undercuts forever. I think it won because it didn't give itself the chance to continue to be betrayed, and it decided to take away its risk of scoring 0 points.
2. How did your custom agent perform (IE. What was its rank in both tournaments)? What did you change about its strategy to improve its ranking?
  - In the first tournament, my agent got second place. In the noisy tournament, my agent got 3rd place overall in points, but had the 2nd most wins. To improve its ranking I played around with how many chances it would give the opponent to undercut it before it started always undercutting back, and I also made it so that when the opponent invests after undercutting, it builds trust back up so that my agent still can invest when it thinks it is smart.
3. Did your agent's rankings change significantly in the noisy tournament? How about other agents? Why might that be?
  - No they did not. It only went from 2nd to 3rd place. I think that was because I took noise into consideration in the first tournament as well.
4. Why do you think agents with the highest win percentage didn't place the best in the tournament? Think about what it takes to "Win", and whether that is actually always the optimal strategy.
  - I think this is because "winning" doesn't necessarily mean that their company benefitted the most that they could from the deal. They might have beat their competitor, but if they both would have invested, then they would be further ahead than they are now.

### **Real-World Applications**

5. Can you think of real business scenarios where these strategies might apply?
  - One example from the reading that stood out to me was the airline ticket pricing. I often am looking into flight costs, so it made me think about how when prices for a ticket I've been tracking go down, if that is because of these strategies.
6. The agent you built this unit is a Rules-Based (Heuristic) agent. How do you think a learning or hybrid agent might improve on this heuristic baseline?

- I think a hybrid or learning model would improve this baseline because it could probably learn about the competitor as it was happening, so it could pick up on how the competitor is acting and base its decisions on live feedback.

### **Ethical Considerations**

7. Is the "Always Undercut" strategy ever justified in real business?
  - I would personally say that if I were the business owner, I would feel uncomfortable with this strategy, but I can understand and see why it may be ethical in situations where you are in a pinch and will go out of business if you don't earn money quickly, or if the opponent continues to only undercut you and you are suffering as a result of that.
8. What role should reputation and long-term relationships play in business strategy?
  - I think reputation and long-term relationships should play a large roll in business strategy. When you form strong networking relationships there is mutual benefit, and could lead you to more connections that help your company to flourish.