

A. Name and Andrew ID

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B. Describe the strategy you implemented for having each player work toward a monopoly. Write this in prose so that a non-technical person would understand the approach you took for trading toward a monopoly. (200 words maximum)

A snapshot will show after every round. The monopoly strategy the program is used is:

1. The player get acknowledge of the monopoly card when the player received the marker message for every first time in every round. The monopoly card is the card with largest number the user has at that time. When the card number is same, choose the monopoly card as the first card the player has seen when checking the card. As long as the monopoly card is set, the monopoly card at that round will not change.
2. Decide whether to accept the trade from other trader based on the trade card type. If it matches the prior set monopoly card accept the trade. If not, reject it.
3. Every player only make the trade with the others using the card with the least number storage the player current has. When the card number is same, choose the card as the first card the player has seen when checking the card.
4. If reach monopoly stage, the player keeps playing the game using the same old rule (rule 3) by trading the monopoly card of the user until the player hit the 20000 trading number.

C. Looking at your sequences of 10 snapshots, perhaps run several or many times, describe what you find interesting about any patterns of players moving toward achieving monopolies. How well did these patterns match or not match what you expected of your strategy? How well did your strategy result in one more players achieving monopolies? (400 words maximum)

In the snapshots, there were 6 players trades with 6 different type of cards: Wheat, Corn, Coffee, Soybeans, Oats, Barley, each with amount of 12.

Based on the rule, each player is expected to reach a stable state that the player will monopoly a kind of cards. However, to continue the trading, they will trade with one of their monopoly card. In this way, when reach a stable state pattern, the player will get their monopoly card number as 11 or 12, and other type of cards with number 1 or 0.

Take player 2 as example, the snapshot result of perfectly matches the expectation of the strategy. After the first snapshot, the card type with the largest number is corn as same as barley. According to the rule, the player kept the monopoly card as the corn, as corn is checked before barley and only accept the corn card when receiving the trade request and make trade with other players used the card with least number (for the first trade made, he will trade with others using coffee with the least card amount 1). Then,

in the second round, corn still owns the most amount of the card number and continue played as monopoly card. When it comes to the third round, the amount of corn has reached 9 which is much larger than the other type of cards the user owns. Play as monopoly card all the time, the player enters a stable state with corn in round 9.

However, sometimes the user may made trade with others using his monopoly card, as the user has no other cards. If the trade is accepted by others, the user may acquire the card other than the monopoly card. In this way, the monopoly card may change which made player took a longer time to reach stable state. For player 3, the situation happened in the 6 and 9 round, the monopoly card change from soybeans to wheat.

Because of this, all the players expect player 3 reached a stable state. Due to the limit of the snap shots, the player 3 did not reach the stable state. However, the card the player 3 owns is 10 wheat card, 1 soybeans card an 1 oats card. If there a few snap shots available, the player 3 will reach the stable state like the other players with his wheat monopoly card.