

# Report

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## 1 Introduction

I've tried using both ChatGPT and Gemini. Comparatively, Gemini was better in understanding the problem statement and the rules. ChatGPT couldn't understand it on the first try, and I had to explain it many times. When it comes to code, both Gemini and ChatGPT had errors, but Gemini rectified its errors a bit faster (in 3-4 attempts), whereas ChatGPT kept providing the same code repeatedly and was unable to solve its syntactical errors. Gemini gave me the code for playing with computer and in-person 2-3 players game where as chatgpt only gave in person code and couldn't solve it's errors for the nth time for computer.

## 2 The rules of the game

Number of Players: 2-3 players

Cards:

Standard deck of cards, with one suit (excluding diamonds) removed for each player. Deck of diamond cards shuffled and placed facedown.

Gameplay:

Deal Cards: Each player receives all the cards from a single remaining suit (e.g., hearts, spades, clubs).

Diamond Auction:

The banker reveals the top diamond card. Each player secretly bids one card from their hand face down. The banker reveals all bids simultaneously. The player with the highest bid (according to card ranking - 2 < 3 < 4... A) wins the auction. If multiple players have the highest bid with the same card: The points from the diamond card are divided equally among them. Each player collects their bidding cards back.

The winning player:

Adds the point value of the diamond card to their score (point value corresponds to card rank). (Optional) Keeps the diamond card (variation for end-game scoring). Repeat: Steps 2a-2e are repeated until all diamond cards are auctioned. Winning: The player with the most points at the end of the auction wins the game.

Variations:

End-Game Scoring with Diamonds: Instead of keeping the diamond cards, players could keep track of the point value of all diamonds they win throughout the auction. The player with the highest total score from both points accumulated and diamonds won is the winner.

Strategic Considerations:

Players need to balance bidding high enough to win valuable diamonds while keeping strong cards for future bids. Knowing which cards your opponents might value can help you decide what to bid with. Bluffing with lower-value cards can be a tactic to discourage opponents from going all-in on valuable diamonds.

### 3 Teaching genAI the game

I felt that both the ChatGPT and Gemini understood the same thing when I gave the first prompt, and they both provided a positive response. When I asked what they understood, they gave decent responses, but they definitely made a few wrong assumptions, which I had to correct. When I asked for the strategy, both AI models gave similar responses. Then, I asked if I could play with them, and for the first time, both gave similar responses, saying 'I'm an AI and I can't play.' However, Gemini somehow figured it out and did play with me. It was pretty decent while playing, and whenever I asked it to help me, it did.

### 4 The strategy discussed and the code

ChatGPT was very disappointing when it came to code, but it was pretty good with strategy. Gemini was decent with both. Yes, it did make a few mistakes in code, but when I gave it the errors, it solved them and provided the correct code. However, ChatGPT couldn't solve its errors.

### 5 Conclusion

I personally feel Gemini was good. I really liked the way it gave responses; it was structured well. When it came to strategies, it divided them into three sections: early rounds, mid rounds, and late rounds. Whenever I was playing with it, in between, I asked for suggestions on which card to bid, and it did provide a few suggestions.

Overall, Gemini was better.

### 6 Colab and Transcript

Colab:google colab Gemini: Gemini