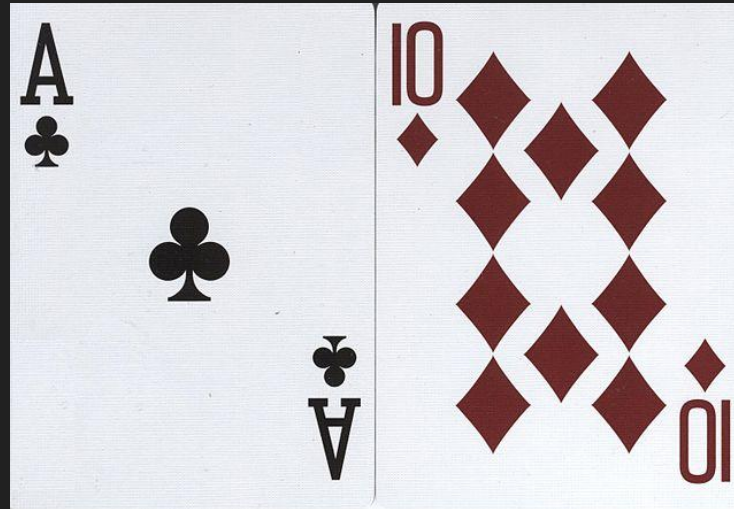


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How well does GPT-4o play Blackjack?



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AutoGro 

Project Goal

Determine how well ChatGPT-4o plays Blackjack by image alone

GPT must determine card type / value by image

GPT will not be given any Blackjack rules

Measure results empirically

Create a framework that allows many games to be played in series



ChatGPT

Methodology

Create a program that simulates the Blackjack experience

No betting will be done

GPT-4o is the player and the dealer is automated by standard game rules

Card images are programmatically assembled

Multiple test runs will take place automatically

Results will be scored and reported

Implementation

The program was written in Python

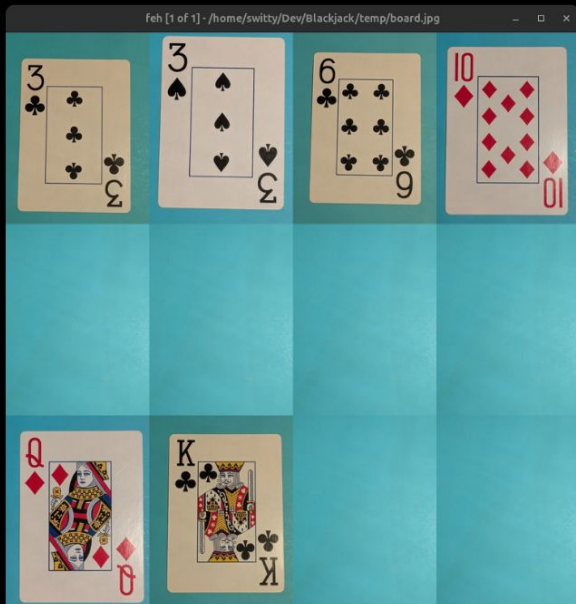
52 card photos were taken with a Pixel 6a

A single standard card deck was simulated

Shuffles took place between each game using a random number function

Card images were combined as needed and submitted to GPT as a single file





```
switty@shark: ~/Dev/Blackjack
***** Starting a new game. Game number: 77

GPT is thinking.....
Player STANDS
Dealer went bust
>>>>>>> Player Wins

['C3', 'S3', 'C6', 'D0'] Dealer Value: 22
['DQ', 'CK'] Player Value: 20
█
```

Prompt

You are an expert blackjack player. You are playing blackjack. The game has already started. In the supplied image, the top cards are the house dealer's and the bottom cards are yours. Your goal is to win the game by making the best decision. Do you want to be dealt another card? Provide back the answer as YES or NO between {}. For example, if the answer is YES then reply back with {YES}. Also, list the cards in your hand and the dealer's hand.

Results

Test run of 1000 games

GPT wins:	443 (44.3%)
Dealer wins:	475 (47.5%)
Pushes:	82 (8.2%)

Blackjack theoretical odds

Player wins:	42.22%
Dealer wins:	49.1%
Pushes:	8.48%