Reinforcing Blackjack: A Machine Learning approach to Gambling how to get escorted out of the casino

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I. ABSTRACT

Note: use plain text.
Can prob just use AI to assist in this once done.

II. INTRODUCTION

Blackjack, also known as twenty-one, is the most widely played casino game in the world. ... There are many variations to the game, but for the purposes of this project, the sequence of play was as follows:

1. A card is dealt to the player with value C_1.

2. For n iterations, or until a total score of 21 is exceeded, the player can make one of two choices;

   (a) Stick, and end the game.

   (b) Hit, and receive another card with value C_{n+1}.

3. The final score is calculated using

$$\text{Score} = \begin{cases} (\sum C_n)^2 & \text{if } \sum C_n \leq 21 \\ 0 & \text{if } \sum C_n > 21 \end{cases} \quad (1)$$

Note that the dealer was passive, meaning
Here, we answer the question; how can I get kicked out of the casino?

III. METHODOLOGY

In training an agent to play Blackjack, an iterative Q-Learning approach has been taken. Q-Learning aims to learn the optimal 'q-value' for given state-action pairs in an environment, i.e., the respective value of making a certain move in a certain environmental state. ... further description

This approach was selected because it does not require direct

$$Q_{new}(s,a) = Q_{old}(s,a) + \overbrace{\alpha}^{\text{Learning Rate}}(R(s,a) + \underbrace{\gamma}_{\text{Discount rate}} MaxQ(s',a') + Q_{old}(s,a)) \quad (2)$$
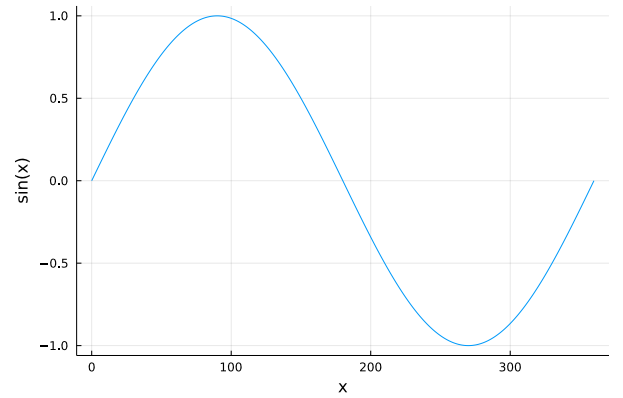

FIG. 1. Shows an example of a figure.

IV. RESULTS

Here, one can display figures, such as in Figure 1.

V. CONCLUSIONS

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