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Poker Incremental Model

Preliminary Phase

1. Research rules of Poker
   1. Will use this to decide on 5 Card Stud of Texas Hold’em.
      1. Texas Hold’em has more movement and complexities, therefore I will choose 5 Card Stud
2. Research the Poker Python library
   1. Python has a prebuilt library to aide in constructing a poker game and therefore I believe I can work with it.
3. Continue learning basics of Python

Phase 1: Playing a hand

1. I want the first phase to simply play a hand. The game will start with 3 simulated players that all have the same behavior.
   1. Figure out how to instantiate and deal cards
      1. Must use multiple decks in casino poker
   2. Set up basic structure (i.e. – Ante, Deal, Bet, Trade, Bet, Show)
2. Set up player class to be elaborated on later
   1. Will hardcode 3 players in Version 1

Phase 2: Selecting a winner

1. Once a hand can be played it is imperative that a winner can be properly selected
   1. Build function that determines your hand and selects the best hand
2. This will include a decision for the player to bet on their hand, check, or fold
3. Pay winner with the Ante

Phase 3: Elaborate players for simulation

1. Since multiple styles of player must be implemented, create different kinds of players
   1. Randomize difficulty, buy in, balance on creation
      1. High difficulty = 25k – 50k buy in, 150k - 200k balance
      2. Medium Difficulty = 5k – 10k buy in, 20k – 50k balance
      3. Low Difficulty = 500 – 2k buy in, 1k – 5k balance
   2. Keep track of wins, losses, winnings/losings
2. Add player creation and deletion over time
   1. Make a function that randomly adds or removes a player from the game. That player can be added at a random difficulty and any player can leave.
   2. The minimum players is 3
   3. The maximum players is 8

Phase 4: Create Simulation environment

1. Create a menu that allows the user to passively watch the game play in normal time or automatically simulate a desired number of games.
2. This will show statistics on the casino and all of the games players over time
   1. May be placed in a Database so that the leaderboard can reference it later