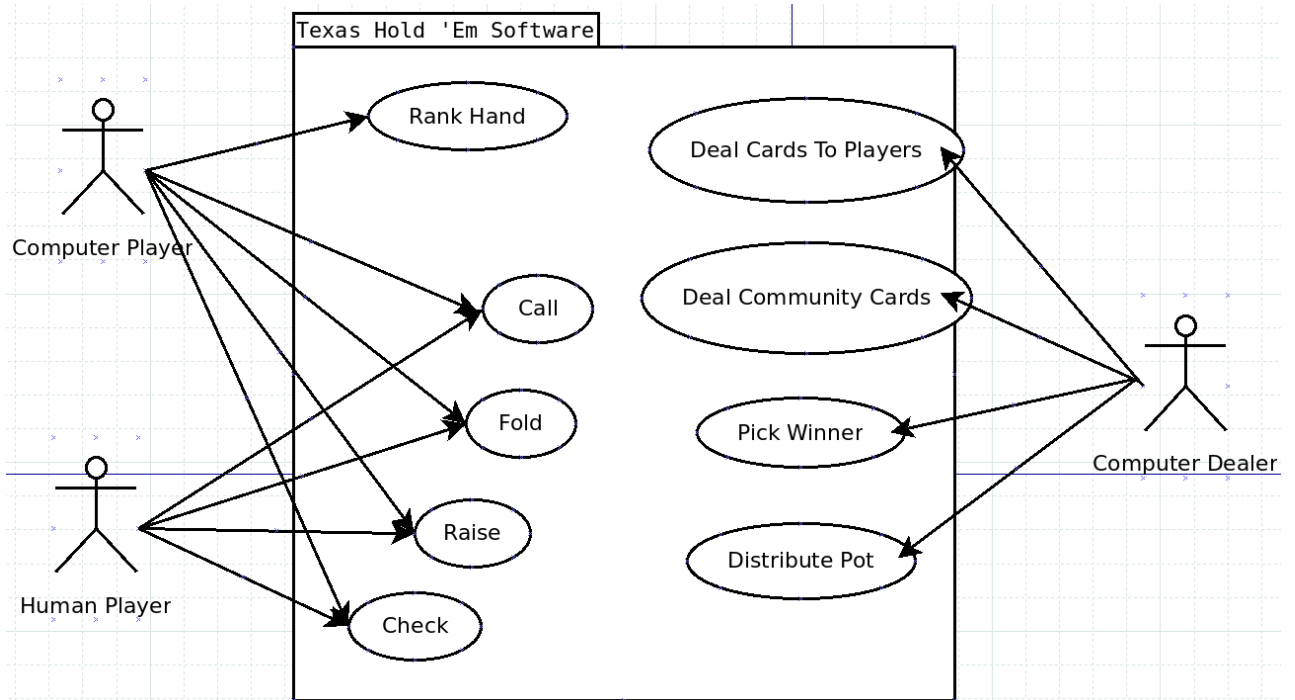# Texas Hold 'Em Description and Rules:

Texas Hold 'Em is a multi-player card game that consists of each player being dealt a hand, followed by a subsequent dealing of community cards(consisting of the flop, turn, river) separated by betting stages. The winner is determined by the player with the highest hand as determined by a universal poker ranking system.

Rules:
1) Blinds(large and small) are static values throughout the game and rotate through players clockwise.
2) Dealer controls a standard deck of 52 playing cards, shuffled thoroughly in between hands
3) Each player(including computerized players) is dealt two private cards.
4) After each player has been dealt two cards, first round betting occurs starting with player immediately following the two blinds.
5) A player can check, fold, raise, or call during each betting phase if they are still in the round/game.
6) After first round of betting, the dealer puts down the flop, which are 3 cards in the center that can be used by any player to be part of their best 5 card hand.
7) The second betting round occurs then there is another card added to the center, the turn.
8) The third betting round occurs, and then the final center card is added, called the river.
9) The final betting round occurs, and then each hand is compared with one another to determine the winner.
10) The player deemed the winner is awarded all the money in the pot, and the next hand begins.
11) If any player cannot meet the minimum ante requirements or has no money, they are automatically kicked out of the game.
12) This process repeats until the human player wins, loses, or quits.

Use Case Diagram

Texas Hold 'Em Software

Computer Player

Rank Hand

Deal Cards To Players

Call

Deal Community Cards

Fold

Pick Winner

Raise

Distribute Pot

Human Player

Check

Computer Dealer

Class Diagram

Player Class

+hand: Card[]
+wallet: int

+scoreHand(): int
+bet(amount:int): boolean
+raise(amount:int): boolean
+check(): boolean
+call(): boolean
+fold(): void
+allIn(): boolean
-containsStraight(): boolean
-containsFlush(): boolean

Dealer Class

+deck: Deck
+community: Card[]
+pot: int
+players: Player[]
+currentPlayer: Player
+smallBlindHolder: Player

+determineWinner(): Player[]
+dealHands(): void
+dealFlop(): void
+dealRiver(): void
+dealTurn(): void
+kick(playerToKick:Player): void
+startGame(): void
+endGame(): void
+restartGame(): void
+userStillAlive(): boolean

Deck Class

+cards: Card[]

+shuffle(): void
+reset(): void
+deal(): Card

Computer Class

+decideMove(): void
+decideBetAmount(): int

User Class

Card Class

+suit: enum
+value: int

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Table Class

+drawHands(): void
+drawDeal(): void
+drawCommunity(): void
+drawPot()(): void