Introduction  For my game, I’d like to do an online version of the card game Blackjack. In the card game, the house deals all the players, including itself, two cards. One card is placed upward so that the other players can see it, while the other card is placed downward so only that player can look at it. The goal of the game is to get as close to twenty one without going over twenty one. If the player gets more points than the house, without going over twenty one, they will win twice the amount of money that they bet. Any amount of players can play blackjack at one time.

Game Directions  After the cards are dealt, the dealer goes clockwise around to the players and asks them if they would like to stay or hit. If the player chooses to hit, they receive another card face up. After they get that card, they can choose to hit again or stay. This continues until the player finally chooses to stay or goes over twenty one (which is called getting a bust). After the dealer handles all of the players, the dealer must choose to give a card(s) to themselves or stay. If the dealer has under 17 points, they are required to hit. If they are at 17 points or above, they must stay.

Scoring  Once the players and dealer have their final cards, they must compare cards to determine who wins or loses money. The players are only competing against the dealer and not each other. So if a player has more points than the dealer (ie. the player has 19 points and the dealer has 18 points), the player receives double the money that they bet. If the player has less points than the dealer, they lose all of their money that they bet. If the player and the deal earn the same number of points, the player gets to keep the money that they bet. In most cases, if a player busts, they lose all of their money. The only exception to this occurs when the dealer also busts. In this case, the player gets to keep the money that they bet.

Adapting Blackjack to the Computer- Placing Bets and Dealing Cards  The computer version of Blackjack would require several components. In this version, the computer serves as the dealer/house. The computer would have to store at least 52 ”cards” or multiple
decks of "cards". A card would be represented by its carnality followed by the first letter of its suite. For example, a seven of the diamond suite could be represented as a 7d. These cards could be stored in a data structure like an array or set. Before beginning the game, players would need to enter their bets into the computer. This could be done using the scan method. The computer would then need to randomly select two cards to give to each player and keep track of the point values of all the players. Once the computer gives out the cards, the players could type in whether they would like to stay or hit. If they choose to hit, the computer needs to randomly give them a card and update their point total. This would continue until the player types in to stay or they bust. The computer would then move on to the next player until it reaches all of the players. Then, the computer will deal themselves another card if their total is under 17 and continue randomly selecting a card (and consequentially updating their point total) until their total is over 18, at which point they should stay. The total point values of all the players could be kept in a hash table.

Adapting Blackjack to Computer- Calculating Money Earned or Lost. Throughout all rounds of Blackjack, the computer should be keeping track of each player’s money. At start of the game, before any rounds begin, each player receives five hundred dollars to use for betting. After each round is complete, the computer should look at all of the points of the players and compare these values to the points that the computer earned. If the player earned more points, the computer should double their bet and add that to their total money. (The money of each player could be kept in a hash table. When the player places a bet, their bet is subtracted from their money). If a player earns the same amount of points as the computer, the computer should add their bet back into their total money. If the player earns less points than the computer, they lose the bet so no money is added back into their total money account. The players can then choose whether or not they would like to play another round.