Web Development – Mr. Turner

Project – Bluff Stuff

Project Overview

The game of Bluff Stuff is a game of trying to fool your opponents into believing that you're playing the right cards, whether you are or you're not.

The object of the game is to empty your hand.

All of the cards are dealt out to all of the players.

Play goes in order around the table with each player taking cards from their hand and laying them face down on top of the stack in the center.

When it is your turn, you will be assigned a specific card rank. The ranks go up as play proceeds. The first player will be assigned aces, the second player twos, the third player threes, and so on. After Kings, the ranks wrap around to Ace.

The player with the Ace of Spades begins the game, but may play other aces (or bluff) when playing that card.

When placing cards, you're *supposed* to play only cards of your assigned rank, however, since the cards are placed face down, you can bluff and use the opportunity to get rid of extra cards from your hand.

If you feel a player is bluffing, you can call the bluff (and other players can call your bluff). When a bluff is called, the cards just placed are flipped face up. If all of the cards match the assigned rank, the player didn't bluff and the person who called it must collect the pile. If one or more cards **does not** match the assigned rank, the player did bluff and (s)he collects the pile.

The game is over when one player has played out his or her last card and does not have to collect the pile because of a called bluff.

Display

The list below includes the essential elements of the page.

- The home screen
    - The home screen should have a splash page with a nice title and image.
    - There must be a control that allows the player to select 3 to 5 computer opponents.
    - On the home screen should be a button that allows the user to start the game.
    - There should be rules of the game and instructions regarding the interface.
- The Game Screen

- At the bottom of the screen will be the player's hand. Since the size of the hand will vary, your page will need to add and remove images on the fly.
  - Cards should be sorted by rank.
  - You can have a scrolling view for when the hand is too large to fit on screen.
  - In order to save space, you can "stack" cards of the same rank. Show one of the cards and a number that displays how many of those are in the player's hand.
- There should be an "end turn"/ "call bluff" button for the player.
- The other players' hands should appear as a single cardback image with a number next to it. That number will represent the number of cards in the other players' hands.
- The center of the screen represents the play area. A single cardback represents the pile. There should be a number next to it that represents how many cards are in the pile.
- Also in the play area there should be a display of the current rank of card being played.
- On one side of the screen there should be a log of plays. The log should list who played how many cards of which rank, and whether or not someone called a bluff.
- There should be a reset button that returns the player to the home screen.

Functionality

Start the game with a single, shuffled standard deck of cards.

A single human will play against 3 to 5 computer opponents, as determined by his or her selection.

Deal out an even number of cards to each player. Leftover cards should be distributed randomly.

The computer should determine who has the Ace of Spades and declare that as the first player.

Player Turn

- The player has a point and click interface. On their turn, the player should click on cards to add them to the pile.
- The player should not be allowed to add more than 4 cards to the pile.
- If the player wants to retrieve played cards (s)he can click the pile and those cards will come back to the hand.
- The player cannot retrieve cards (s)he did not play.
- When the player is finished playing cards, (s)he needs to click the "end turn" button.
- The player should not be able to click the button if (s)he has not played at least one card.
- Once the button is clicked, the button should convert to a "call bluff" button.

Computer Turn

- During the computer's turn, the player will not be able to click on cards or on the button.
- If the computer has 2 or more cards matching its assigned rank, it will play them.
- If the computer has only 1 card matching its assigned rank, there is a 10% chance that it will add a second card to its play. The second card will be chosen at random.
- If the computer doesn't have any cards matching its assigned rank, it will play just 1 card, chosen randomly.

Calling Bluffs

- Between each turn, there will be a 5 second pause before the next player goes. If the next player is the human, the button will not convert back to an "end turn" button until this time is up.
- The computer players will wait 3 seconds before calling a bluff in order to give the player a chance to react.
- The computer will always call a bluff if it is impossible for the person to play the stated rank (the computer player has all 4 of the card or enough so that its cards and the played cards are more than 4.
- If the computer's cards plus the played cards is exactly 4, there is a 50% chance that the computer will call a bluff.
- If the computer's cards plus the cards played is exactly 3, there is a 5% chance that it will call the bluff.
- Since it is possible for more than one computer player to be in position to call a bluff, you'll have to test them all and decide who makes the call (if anyone).
- When a bluff is called, show all of the last cards played. If they **all** match the current rank then add the pile to the hand of the player who called the bluff. If even one card does not match the rank then add the pile to the bluffer's hand. Play then continues with the next player and the next rank.

Don't forget to check for a winner after each turn. If there's a winner, display the information and disable everything except the reset button.

Enhancements

Create AI for the computer players. Though you are encouraged to come up with your own AI algorithms, here are a few simple ones:

Mr. Caution will always throw only 1 card. If Mr. Caution has the proper rank, he will throw it. Otherwise, he will throw 1 card of whatever he has the most of. Mr. Caution will only call a bluff if he has all 4 of the card allegedly played.

Ms. Aggressive will play all 4 of one rank if she has it. Otherwise, she will play 3 or less cards, depending on the number of cards she has of the rank. She will always choose 1 additional card at random if she is

throwing less than 3 cards. Ms. Aggressive will always call a bluff if she has 2 or more of the called rank in her hand.

The Wise Guy will never throw more than 2 cards and never more than he has of the particular rank. But he will never throw the right cards. He will choose 1 or 2 cards at random to throw in their place. He will *never* throw cards that he would otherwise need to throw on his next turn. The Wise Guy will call a bluff only if someone throws 3 or 4 cards and only if he has **none** of those cards in his own hand.