Tasks Given by Eric

1. Function that will distribute a 52-card deck to make 4 13-card hands to distribute to the user and the 3 robots.   
   To make it easier when coding the game logic, Jack could be 11, Queen 12, King 13, Ace 14.  
   End product: each hand will be a sorted array by suit (C, D, H, S) and by strength (2, 3..., 13, 14)  
   The array names should be handNorth, handEast, handUser, handWest  
   Test: print each sorted hand and make sure everything seems right.
2. Function to make sure the card the user clicks on is valid.  
   If the first card played in the trick is a club, for example, the user must follow with a club if he has one  
   Otherwise, any other suit is allowed  
   Test: using function 1, play a random card from handEast. Type a card from handUser. If it is valid, confirm. Otherwise, say invalid and loop.
3. Function to score the outcome of the game.  
   \*\*Will send info on this later\*\*

**2/17/17**

**First task was easy. Created: Deck, Card, and player objects that interact in a way that will prepare more code for the bridge game. Hand sorting was also quite simple to accomplish by giving each card a certain value and giving more “weight” to the suit of the card.**

**Second tasks is a little vague and seems to skip certain steps that will be needed for the bridge game. I should prepare the bidding the system the AI will use when playing against a human player. I could skip the bidding system for now and implement a “trick system” that will validate plays, that’s seems to align with Eric’s vision.**

**Third task was given slightly late and will take more time to implement and polish.**

3rd Task Given by Eric

The third function that I want you to write is a function that will be able to score the outcome of each game the user plays.

**Lesson:**

Reminder that there are 13 tricks in a game where each person puts down a card.

Each contract is composed of a level from 1 to 7 and a suit (C, D, H, S, NT).

The “declaring partnership” is the partnership that makes the final bid.

A bid of 1NT means the declaring partnership thinks they can win 7 tricks with no trump suit.

A bid of 4H means the declaring partnership thinks they can win 10 tricks with Hearts being the trump.

In general, the declaring partnership must win 6+level tricks

A major suit is hearts or clubs.

A minor suit is clubs or diamonds.

There is a final **score bonus** at the end of each game if the declaring partnership wins.

Partscore (below game level) = +50 points

Game (3NT, 4Major, 5Minor) = +300 points

Small Slam (6Anything) = +500 points

Grand Slam (7Anything) = +1000 points

A partscore contract would include 1 or 2 NT, 1 or 2 or 3 Major, 1 or 2 or 3 or 4 Minor.

A game contract would include 3 or 4 or 5 NT, 4 or 5 Major, 5 Minor.

**Terms:**

The partnership bids 4S making 5. 4S requires 6+4=10 tricks to win. Making 5 means the partnership won 6+5=11 of the tricks = 1 overtrick. They made 1 more than what they needed (10).

The partnership bids 3C down 2. 3C requires 6+3=9 tricks to win. Down 2 means the partnership won 2 less tricks than were required. So they won 7 tricks and lost the game.

**Your coding Outline:**

The inputs to your function “score” will be the bid and the result.

The score will be in terms of the declaring partnership.

Make an array that contains the game contracts.

Ex:    score(contractLevel, contractSuit, tricksEarned)

Ex:    score(3, ”NT”, 9) meaning 3NT won 9 tricks = 3NT made 3

Ex:    score(2, ”H”, 5) meaning 2H won 5 tricks = 2H down 3 because 2H requires 8 tricks

**TEMPLATE: pretty much just follow this to code**

IF contractLevel + 6 - tricksEarned > 0  //aka the declaring partnership lost aka undertricks

    Score = -50\*(contractLevel + 6 - tricksEarned) //Each undertrick is worth 50 points for

the opponent

ELSE //Scoring can be divided into minor suits (C, D), major suits (H, S) and NoTrump (NT).

IF contractSuit = minor

    Score = 20\*(tricksEarned-5)

ELIF contractSuit = major

    Score = 30\*(tricksEarned-5)

ELSE //suit is NT

    Score = 40+30\*(tricksEarned-7)

IF contractLevel is a game contract // use the array you made above

    Score = score+300

ELIF contractLevel = 6

Score = score+500 //the bonus i talked about above

ELIF contractLevel = 7

Score = score+1000

ELSE // it is a partscore

    Score = score+50

And then print the score

Try some test cases and check it with the second link below. Keep in mind that “making 5” = winning 11 tricks. Your function will input the number 11, not 5.

If something isn’t matching up, tell me. What I wrote above might not be 100% right.

<http://www.bridgeguys.com/Conventions/ScoreDuplicateBridge.html>

<http://web2.acbl.org/documentLibrary/play/InstantScorer.pdf>

**For now, you will only take care of the undoubled, nonvulnerable contracts.**

**2/19/17**

**It seems the bidding system and the trick system would have to be complete to fully implement a way to score the game. Certain vocabulary seems out of place but that may be because of my limited understanding of bridge; even after playing bridge games for a couple of hours. A second person may need to work with me to expedite results.**