

TDD Practice Part 2: PokerSpades Game

Do not try to code these functions! Only write test cases.

Suppose we have an enum of cards, all spades:

```
enum Card {  
    S2 = 2,  
    S3 = 3,  
    S4 = 4 ,  
    S5 = 5,  
    S6 = 6,  
    S7 = 7,  
    S8 = 8,  
    S9 = 9,  
    S10 = 10,  
    SJ = 11,  
    SQ = 12,  
    SK = 13,  
    SA = 14  
}
```

We will use this for hands of 3 cards, and a hand can have more than one of one card.

We have the following several game functions:

int CheckStraight(Card card1, Card card2, Card card3);

If the cards passed in are three cards in a sequence, this function returns the greatest value.

Otherwise it returns 0. For example, CheckStraight(S5,S6,S7) would return 7.

CheckStraight(S6, S5, S7) would also return 7. CheckStraight(S3,SQ,SK) would return 0.

Come up with several tests.

int Check3ofaKind(Card card1, Card card2, Card card3);

If the three cards passed in are all the same, return the value. Otherwise return 0. For example,

Check3ofaKind(S9, S9, S9) would return 9. Check3ofaKind(S2, S4, S2) would return 0.

bool isRoyalFlush(Card card1, Card card2, Card card3);

(The code in this function will make use of the CheckStraight function from earlier.) If the cards passed in are a straight with the value of 14, then this function returns true. Otherwise it returns false. For this one, you only need maybe three tests.

int PlayCards(Card left1, Card left2, Card left3, Card right1, Card right2, Card right3);

This method takes three cards for the left player and three cards for the right player and determines who wins.

- If left wins, it returns -1.
- If neither win (a draw), it returns 0.
- If right wins, it returns 1.

Here's how it determines the winner:

- If both players play a straight, the highest value wins. (If both straights have the same value, the game is a draw.)
- If both players have three-of-a-kind, the higher value wins. (If they're the same, it's a draw.)
- If one player plays a straight and the other has a three-of-a-kind, the straight wins.
- In all other cases, it's a draw.

What test cases would you send into this method? There are a LOT of possibilities, so think this through carefully.