### SIENA COLLEGE

**24th Annual**

### High School Programming Contest

##### April 8, 2011

###### **Problem #6: Poker Hands**

Background Information: In the card game poker, a hand consists of five cards and is ranked from lowest to highest in the following way:

High Card: Highest value card.

One Pair: Two cards of the same value.

Two Pairs: Two different pairs.

Three of a Kind: Three cards of the same value.

Straight: Five cards with consecutive values.

Flush: Five cards with the same suit.

Full House: Three cards of the same value and two other cards of the same value.

Four of a Kind: Four cards of the same value.

Straight Flush: All cards are consecutive values of the same suit.

Royal Flush: Ten, Jack, Queen, King, Ace in the same suit.

In our programming contest version of poker there will be one wild card in the deck, a joker. If a player is “dealt” this card it may be used as any card that is not one of the four cards in the player’s hand.

For this problem, you will be given two hands of five cards each. You must determine which hand is the highest. It’s possible to have two hands with no winner (a tie). Examples of ties can be found below. Cards will be input with a value (2, 3, 4, 5, 6, 7, 8, 9, T, J, Q, K, A) followed by one letter for the suit (C, D, H, S). So the pair TH indicates that the card is the ten of hearts. The joker will be input as JK.

###### Programming Problem:

Input: Ten cards, five cards per line for the two poker hands

of Player 1 and Player 2, respectively.

Output: The cards of Player 1 followed by a description of the hand followed

by a second line with the cards of Player 2 with a description of the hand

followed by a third line with either Player 1 or Player 2 indicating which

player has the higher hand.

###### Example 1: Input: 5H 6S 7S 5C KD

2C 3S 8S 8D QH

###### Output: 5H 6S 7S 5C KD One Pair

2C 3S 8S 8D QH One Pair

Player 2 wins.

###### Example 2: Input: 5H 6S 7S 5C KD

7C 6D 5S 5D KH

###### Output: 5H 6S 7S 5C KD One Pair

7C 6D 5S 5D KH One Pair

Tie Game!

###### Example 3: Input: 9H KH TH JK JH

5S 9D 5D 9S 5H

###### Output: 9H KH TH JK JH Straight Flush

5S 9D 5D 9S 5H Full House

Player 1 wins.

###### Example 4: Input: 2H 4S 6S 8C TD

3C 5D 7S 9D JH

###### Output: 2H 4S 6S 8C TD High Card

3C 5D 7S 9D JH High Card

Player 2 wins.

###### Example 5: Input: 2S 4S 6S 8S 9S

9D 8D 6D 4D 2D

###### Output: 2S 4S 6S 8S 9S Flush

9D 8D 6D 4D 2D Flush

Tie Game!

###### Example 6: Input: 2S 4S 6S 8S QS

9D 8D 6D 4D 2D

###### Output: 2S 4S 6S 8S QS Flush

9D 8D 6D 4D 2D Flush

Player 1 wins.

###### Example 7: Input: 8S 8D 8C KS KH

5S 9D 5D 9S 9H

###### Output: 8S 8D 8C KS KH Full House

5S 9D 5D 9S 9H Full House

Player 2 wins.

###### Example 8: Input: AS 2H 3D 4C 5S

5S 6H 7S 8H 9C

###### Output: AS 2H 3D 4C 5S Straight

5S 6H 7S 8H 9C Straight

Player 2 wins.