**Poker Showdown User Guide**

**Problem Description**  
Poker is a common card game with many variations. We would like to build a library which will take poker hands as input and output the player with the winning hand for a particular showdown.

**Input**

The library accepts data input in the following format:

<Name>

<Hand>

There are two lines of data, where <Name> is the name of the player (as a string of text) and <Hand> is a five-card poker hand in the following format:

* A comma separated list of cards
* Each card is up to three characters – one or two characters for the card value and a single character for the suit
* Card values are represented by the following values: 2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K, A
* Suites are listed as S, C, D, H for Spades, Clubs, Diamonds and Hearts respectively

**Example Input:**

Joe

AD, 5C, JH, 7S, 4C

*(interpreted as: Joe has a hand consisting of the following cards: Ace of Diamonds, Five of Clubs, Jack of Hearts, Seven of Spades and Four of Clubs)*

**Constraints:**

* Each player has only one hand of cards
* Each hand only has 5 cards
* Each card can only exist in one player’s hand
* Ace is considered the highest card value

**Basic Algorithm:**

The basic algorithm for solving this problem is described as follows:

Read the input one player at a time (read two lines of data)

Create a player using the name and cards to build the hand

Evaluate the rank of the player’s hand

Add the player to the showdown

Compare the newest player’s hand to the current winner

If the newest player’s hand ranks higher they become the current winner

Repeat until there are no more players to add to the showdown

Output the name of the current winner

**References:**

Poker is a well studied game with plenty of resources available for implementing Poker evaluation algorithms. I’d like to reference the following URL’s I used as part of my research and implementation for this project:

ADDA52 poker rules

<https://www.adda52.com/poker/poker-rules/cash-game-rules/tie-breaker-rules>

Nick Sayer’s blog - Algorithm for Evaluating Poker Hands

<http://nsayer.blogspot.com/2007/07/algorithm-for-evaluating-poker-hands.html>

Emory University Computer Science 170 course – Designing the Poker library: Checking for Poker hands

<http://www.mathcs.emory.edu/~cheung/Courses/170/Syllabus/10/pokerCheck.html>

Stack Overflow – Simple histogram generation of integer data in C#

<https://stackoverflow.com/questions/926067/simple-histogram-generation-of-integer-data-in-c-sharp>

Stack Overflow – Algorithm that gives hand strength in poker

<https://stackoverflow.com/questions/43482791/algorithm-that-gives-hand-strength-in-poker>

Stack Overflow – The simplest algorithm for poker hand evaluation

<https://stackoverflow.com/questions/10363927/the-simplest-algorithm-for-poker-hand-evaluation>

Wikipedia – Glossary of Poker Terms

<https://en.wikipedia.org/wiki/Glossary_of_poker_terms>