

1992 ACM MID-CENTRAL REGIONAL

PROGRAMMING CONTEST

Problem #4 - Cribbage Scores

Program File: **CRIBBAGE.PAS** or **CRIBBAGE.C**

Input File: **CRIBBAGE.IN**

Output File: **CRIBBAGE.OUT**

The object of this problem is to count the points in a hand of Cribbage. A Cribbage hand consists of 1 card which is for both players (the "extra card") and 4 cards that each player holds.

Scoring a cribbage hand is somewhat complicated. It goes as follows:

1. 2 points for each distinct pair within the 5 cards. (A pair is 2 cards of the same face value, disregarding suit.)
2. 4 points if all 4 cards that a player is holding have the same suit. 5 points if all 4 + the extra card are the same. (A flush)
3. 3, 4, or 5 points for each distinct straight of 3, 4, or 5 cards. (Note 1: Points are not awarded for a run completely contained in a larger run, ie. a 5 card run only gets 5 points, not $5 + 2*4 + 3*3$. You don't get to count the 4 and 3 card runs contained within the 5 card run.) (Note 2: Aces are always low.)
4. 2 points for each distinct combination of cards whose face values add up to 15. (Aces count 1, Ten and face cards count 10, all other cards count their face value.)
5. 1 point if your hand contains the Jack of the same suit as the extra card.

(IMPORTANT: Note the word "distinct" in rules 3 and 4.)

The input file will be as follows:

One or more lines each containing the representations for 5 cards. Each card will be represented by a 2 character code. The first letter code represents the face value and the second code represents the suit. The first card on each line is to be considered the "extra card". Each of the cards will be separated from the others by 1 space.

Your program should continue to read cribbage hands and report scores until the end-of-file is detected. One line of output for each cribbage hand found in the input file.

The face value codes are, in increasing order of value: A, 2, 3, 4, 5, 6, 7, 8, 9, T, J, Q, K.

The suit codes are: H, D, C, S.

Example Input:

TS 5C 4C 6C JS
<EOF>

Scoring the above hand would go as follows:

3 points for straight (3,4,5)

6 points for 15's (T,5) (J,5) (4,5,6)

1 point for the correct jack

Thus, the point total equals 10.

The output in the file CRIBBAGE.OUT should be of the form:

The point total is : 10