Cribbage Assistant Challenge

Cribbage is a classic card game with a unique system of scoring. You're going to write a program to try and give you an edge in your next cribbage match.

Cribbage is played with a standard 52-card deck. At the beginning of the game you are dealt a hand of 6 cards. You are then required to discard two of those cards (into the "crib") leaving you with a four card hand. Write a program to help you determine which cards you should discard to have the best four-card hand possible (ie the combination of 4 cards will give you the highest scoring hand)

Scoring in cribbage works as follows:

- A pair is worth 2 points
- A run is worth 1 point per card, minimum of 3 cards (can be any suit). A run cannot go “around the corner”. E.g. Q, K, A is not a valid run because king and ace cannot connect in a run.
- A flush is worth 1 point per card, minimum of 4 cards (must be same suit)
- A combination adding to 15 is worth two points

Combinations of 15 are formed by adding the point value of each card together (ace counts as 1 and face cards count as ten). You can use as many cards in your hard as possible to make a combination of 15. E.g. the below are valid combinations of 15.

- 7-hearts + 8-diamonds = 15
- Ace-spades (worth 1) + 4-diamonds + king-clubs (worth 10) = 15

Each card is unique in a point scoring combination. So for example, in cribbage, three of a kind is worth 6 points because it can be scored as three unique pairs. If you have three cards, 2H, 2C, 2S, that gets scored as [2H, 2C], [2H, 2S], and [2C, 2S].

Example 4-card hand and it's scoring broken down:

- Hand = ['7C', '8H', '8C', '9D']
- 8C + 8H = 2pts (pair)
- 7C + 8H + 9D = 3pts (run of three)
- 7C + 8C + 9D = 3pts (run of three, different combination than our first run)
- 7C + 8H = 2pts (combination of 15)
- 7C + 8C = 2pts (combination of 15, different combination than our first 15)
- Total point value: 12pts

The input to your program will be an array of 6 strings, which represent the cards you are dealt. The strings will be of the format '{card value}{suit}" where card value is a number in the set 1-13 (representing ace through king) and suit is one of 'C', 'D', 'H', or 'S'. The output should be a string of the 4 cards representing the best possible

hand and the hand point value

E.g. The input ['7S', '5C', '5H', '10S', '1C', '10D'] should output “The best hand is [‘5C', '5H', '10C', '10D'] and is worth 12 points”

There are more rules and nuances to cribbage, and if you're unfamiliar with the game I encourage you to check it out, but we've simplified things a bit here. After all, we don't want to be caught cheating, but just want a slight edge against our opponent.

When submitting your solution, please provide your program’s output for the following inputs:

1. ['7S', '5C', '5H', '10S', '1C','10D']
2. ['7C', '8H', '8C', '9D', '1C','10D']
3. ['7C', '8H', '8C', '9C', '1C','10C']
4. ['1C', '4H', '12C', '13C', '11D','8C']
5. ['1C', '4C', '12C', '13C', '11D','8C']
6. ['4H', '4C', '4D', '4S', '11D','8C']
7. ['7H', '8C', '8D', '9S', '8H','9H']
9. ['1S', '13S', '12D', '9S', '5H','9H']
10. ['1S', '13S', '12D', '9S', '5H','2H']