

One-Handed Solitaire Documentation

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2017

1 The Game

1.1 Rules

You begin with a shuffled deck of cards face down in front of you, and begin by picking the top four cards. You now look for matches between the 1st and 4th cards. If their suits match, discard the middle two cards. If their values match, discard all four cards. Now, pick up more cards until you have 4 cards in your hand once more, and repeat the comparison. If no match is made, pick up one new card. You are now comparing the 2nd and 5th cards, and so on. Repeat this process until no cards remain in the deck. The number of cards remaining in your hand is your score.

1.2 Points worth noting

- Although value matches seem optimal, suit matches can cause a "run" of matches, because no new card is collected and you can continue to match cards further back without picking up.
- The game is won if you end on score zero, however it is often interpreted as running out of cards at any point. The former rule makes winning near-impossible, whereas the second makes winning one the first pick-up much more likely (more than a one in thirteen chance). I will use the former as the winning condition, but focus mainly on the winning score.
- The winning score will always be even in a 52 card deck
- It is also interesting to consider fantasy decks, with different numbers of suit and values. My implementation allows for these changes.

2 Implementation

2.1 Overview

For my implementation we create three decks of cards, the main deck, the hand and the discard pile. The game runs iteratively, moving cards between decks until the main deck is empty.

2.2 Objects

I have made created these as generally as possible, with the hope of having the reusable in other card game implementations in the future.

2.2.1 Cards

Cards have an integer suit value and value, and methods to print these values as appropriate strings (1=spade, 2=diamond and so on).

2.3 Decks

Decks contains an array of every card, and an integer value pointing to the current top of the deck. This value starts at 52, and decreases when the top card is removed. This allows us to add and remove cards easily without tracking every cards placement in the deck ongoing.