

## 1 Introduction

Hmm, difficult. VERY difficult.

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The Sorting Hat

Whoever played card games intensively knows that shuffling is not as trivial as some might think at first glance. By nature, many card games require the players to sort the cards e.g. in old maid one sorts for pairs with the same rank, in skat the cards in trick are sorted. Therefore, good shuffling techniques are necessary to avoid clumped up cards from the previous game. However, even more challenging than shuffling is sorting cards back to their initial order. It is already tedious for humans to order playing cards where the correct order is already known. So one can imagine the difficulties computers must have to sort a large set where the final order isn't known. In this paper, we describe and analyze two sorting algorithms, quicksort and heapsort.