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Reading Material

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During the entire course of the game, all the cards held in the hand are always kept sorted.

Essentially, we are taking a small set of cards, which were originally kept as an unsorted pile on the table, and sorting the smaller subset. Due to this process of insertion, this process is called Insertion sorting. We will see more of this during the Insertion sort algorithm.

1.3.4 Greedy Algorithm

The Greedy design technique aims to arrive at a solution to a problem through a series of steps and at each step choosing the option that offers the best benefit. This technique of choosing the optimum solution at each stage without considering the larger problem, gives it the name Greedy Technique.

Classical examples of using this approach are the Knapsack problem, the coin exchange problem, Huffman trees and many optimization problems. The advantage of this technique is the ease of coming up with the algorithm since we are only making the choice at each step with the focus on the single step at that point. At the same time, a disadvantage of this technique is that the narrow focus on the sub-stages can sometimes lead to optimal sub-solutions that may not necessarily add up to an optimal overall solution in the long run. In other words, while this strategy may sometimes produce an optimal solution, sometimes it may not.

1.3.5 Dynamic Programming

The dynamic programming technique is used to solve problems with overlapping sub-problems. It solves the problem by combining solutions for the sub-problems.

While it may sound like the Divide and Conquer technique, the key difference between Divide and Conquer and Dynamic Programming is that the Divide and Conquer technique considers every sub-problem as disjoint while the Dynamic Programming technique considers them as overlapping.

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