1. Comparison of greedy Method and dynamic Programming.

Greedy Algorithm is an algorithmic Paradigm that builds up a solution Piecey Piece, always choosing the next Piece that offers the most obvious and ~~Imter~~ immdiate benefit. So the Problems where choosing locally optimal also leads to a global Solution are best fit for Greedy. For example Consider the Fractional Knapsack Problem. The local optimal Strategy is to choose the item that has maximum value Vs weight ratio. This strategy is tochoose the item that has hr This Strategy also leads to global optimal Solution because we allowed taking fractions of an item Dynamic Programming is mainly an optimization over pla in recursion

whenever we see a recursive solution that has repeated calls for the same inputs, we can optimize it using Dynamic Programming. The idea is to simply store the results of subproblems so that we do not have to recompute them when needed later. This simple Optimization reduces time complexities from exponential to Polinomial. For example, if we write a simple recursive solution for Fibanocci Numbers, we get exponential time complexity. and if we optimize it by storing solutions of subproblems, time complexity reduces to linear.

2. Real world Applications of Sorting:

Merge Sort : Databases use an external Merge Sort to sort sets of data that are to be loaded entirely into memory. The driving factor in this sort is the reduction in the number of disk I/Os

Bubble Sort : Bubble Sort is used in Programming TV remote to sort channels on the basis of longer Viewing time

Heap Sort : it is used in reading barcodes on plastic cards. The service allows to communicate with the database to Constantly run checks to ensure that they were all still online and had to constantly report statistics on which readers were performing the worst, which ones got the most/least user activity, etc. ..

QuickSort : Shoots scores are organised by quick sort on the basis of win-loss ratio

Radix Sort : eBay allows to sort listings by the current Bid amount leveraging radix sort

Selection Sort: K12 education Postal allows sorting list of Pupils alphabetically through Selection sort.