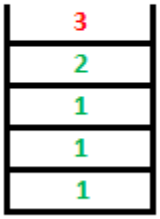
**Assignment-67**
**Greedy Algorithm**

1. Write a Program of Efficient Huffman Coding for Sorted Input.
2. Write a Program for Activity Selection Problem
3. You are given an array A ,of n elements.You have to remove exactly n/2 elements from an array and add it to another array B (initially empty).Find the maximum and minimum values of difference between these two arrays.The difference between those two arrays is sum(abs(A[i]-B[i]).
4. Given the arrival and departure times of all trains that reach a railway station, the task is to find the minimum number of platforms required for the railway station so that no train waits. We are given two arrays that represent the arrival and departure times of trains that stop.
5. Given are N ropes of different lengths, the task is to connect these ropes into one rope with minimum cost, such that the cost to connect two ropes is equal to the sum of their lengths.
6. Given the weights and values of N items, in the form of {value, weight} put these items in a knapsack of capacity W to get the maximum total value in the knapsack. In Fractional Knapsack, we can break items for maximizing the total value of the knapsack
7. Given a number of friends who have to give or take some amount of money from one another. Design an algorithm by which the total cash flow among all the friends is minimized.
8. In a candy store, there are N different types of candies available and the prices of all the N different types of candies are provided. There is also an attractive offer by the candy store. We can buy a single candy from the store and get at most K other candies (all are different types) for free.
    - Find the minimum amount of money we have to spend to buy all the N different candies.
    - Find the maximum amount of money we have to spend to buy all the N different candies.

    **Input :**
    **price[] = {3, 2, 1, 4}**
    **k = 2**
    **Output :**
    **Min = 3, Max = 7**

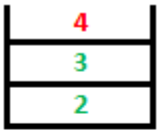
9. Given three stacks of the positive numbers, the task is to find the possible equal maximum sum of the stacks with the removal of top elements allowed. Stacks are represented as an array, and the first index of the array represents the top element of the stack.

**Input** **Output**



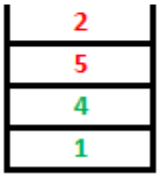

**By removing 3 of stack1, sum of stack1 =**

8 - 3 = 5




**By removing 4 of stack2, sum of stack2 =**

9 - 4 = 5




**By removing 2 and 5 of stack3, sum of stack3 =**

12 - 5 - 2 = 5

10. Given a graph and a source vertex in the graph, find the shortest paths from the source to all vertices in the given graph.