Queue Questions

Question 1 :

Generate Binary Numbers

Given a number N. The task is to generate and print all binary numbers with decimal values from 1 to N.

Sample Input 1 : N =2
Sample Output 1 : 1 10

Sample Input 2 : 5.
Sample Output 2 : 1 10 11 100 101

Question 2 :

Connect n ropes with minimum cost

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.

Sample Input 1 : N = 4, arr = [4 3 2 6]
Sample Output 1 : 29

Sample Input 2 : N = 2, arr = [1 2 3]
Sample Output 2 : 9

Question 3 :

Job Sequencing Problem

We have an array of jobs where every job has a deadline and associated profit if the job is finished before the deadline. It is also given that every job takes a single unit of time, so the minimum possible deadline for any job is 1. Maximize the total profit if only one job can be scheduled at a time.

Sample Input 1 :

JobID	Deadline	Profit
a	4	20
b	1	10
c	1	40
d	1	30

Sample Output 1 : c, a

Question 4 :

Reversing the first K elements of a Queue

We have an integer k and a queue of integers, we need to reverse the order of the first k elements of the queue, leaving the other elements in the same relative order.

Sample Input 1 : `Q = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100] ,k=5`

Sample Output 1 : Q = [50, 40, 30, 20, 10, 60, 70, 80, 90, 100]

Question 5 :

Maximum of all subarrays of size k

We have an array arr[] of size N and an integer K. Find the maximum for each and every contiguous subarray of size K.

Sample Input 1 : `N=9, K=3 arr= 1 2 3 1 4 5 2 3 6`

Sample Output 1 : `3 3 4 5 5 5 6`