Programming Problems for InfyTQ Round 2

Q1. Given an integer array **arr** of size **N** and two integers **K** and **M**, the task is to find **M** largest sums of **K** sized subarrays.

Input:
1. The first line of the input contains a single integer **T** denoting the number of test cases. The description of **T** test cases follows.
2. The first line of each test case contains three integers **N, K,** and **M.**
3. The next line contains **N** space-separated integers.

Output: For each test case, print **M** space-separated integers (Print the sums from the maximum to minimum)

Constraints:
1. $1 <= T <= 100$
2. $1 <= K <= N <= 10^4$
3. $1 <= M <= N - K + 1$
4. $1 <= arr[i] <= 10^5$

Example:
Input:
2
5 2 3
10 11 10 11 12
5 5 1
1 2 3 4 5

Output:
23 21 21
15

Explanation:
Test Case 1: 2 sized subarray sum are {21, 21, 21, 21, 23}, We need to print 3 largest sums from maximum to minimum

Q2. There are N students in a class. Each student got arr[i] (1 <= i <= N) marks in mathematics exam. Infy loves mathematics and he got X marks. Now Infy is curious to know, how many students in his class got marks greater than that of Infy's.

Input:
1. The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows.
2. The first line of each test case contains two space-separated integers N and X.
3. The second line contains N space-separated positive integers represents array arr.

Output: For each test case, print the count of students who got marks greater than X.

Constraints:
1 <= T <= 10
1 <= N <= 100000
1 <= arr[i], K <= 100000

Example:
Sample Input:
2
3 2
4 1 3
4 9
4 8 1 2

Sample Output:
2
0

Explanation:
Testcase 1: Students with marks 4 and 3 got higher marks than Infy who got 2 marks.

Q3. There are N students in a class. Each student got arr[i] (1 <= i <= N) marks in mathematics exam. Infy loves mathematics, so, he wanted to solve the questions. But to his surprise, he got different marks every time he solved. There are Q queries, each query represents a number X. For each query, your task is to find the sum of the marks of students who got marks greater than X.

Input:
1. The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows.
2. The first line of each test case contains a single integer represents N
3. Next line contains N space-separated integers
4. The next line contains a single integer represents Q.
5. Next, Q lines contain a single integer X.

Output: For each query, print the sum of the marks of students who got marks greater than X.

Constraints:
1. $1 <= T <= 5$
2. $1 <= N, Q <= 100000$
3. $1 <= arr[i], X <= 10^9$

Example:
Input:
1
3
4 1 3
4
1
2
3
4

Output:
7
7
4
0

Q4. Infy went to a grocery shop with a bag in his hand, this can hold at most K products. He wanted to fill his bag with K products. As Infy is greedy, he wanted to fill his bag such that he spends a lesser amount. If two products have the same price then Infy chooses the lexicographically smaller named product.

Given N products with their prices, help the Infy to choose K products.

Input:
1. The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows.
2. The first line of each test case contains two space-separated integers N and K.
3. Next N lines contain a string (contains English lower case letters) and an integer separated by a space.

Output: For each test case, print the product names in the order they have chosen.

Constraints:
1. $1 <= T <= 10$
2. $1 <= K <= N <= 100000$
3. $1 <= $ product prices $ <= 100000$
4. $1 <= $ size of prodcut name $ <= 10$

Example:
Input:
2
3 2
maggi 10
pasta 50
noodles 30
3 2
cake 20
butter 30
bread 30

Output:
maggi noodles
cake bread