HashSets

Assignment Questions

PW SKILLS

Q1. Given an array of size n filled with numbers from 1 to n-1 in random order. The array has only one repetitive element. The task is to find the repetitive element. (Easy)

Input1:
n = 5
a[] = {1, 3, 2, 3, 4}
Output1:
3
Input2:
n = 6
a[] = {1, 5, 1, 2, 3, 4}
Output2:
1

Q2. Given two arrays of length n, print union and intersections that contain union and intersection of the elements present in the given arrays. Order of elements in output doesn't matter. (Medium)

Input1:
n = 4
arr1[] = {10, 15, 4, 20}
arr2[] = {8, 4, 2, 10}

Output1:
Intersection List: 4 10
Union List: 2 8 20 4 15 10

Input2:
n = 4
arr1[] = {1, 2, 3, 4}
arr2[] = {3, 4, 8, 10}

Output2:
Intersection List: 3 4
Union List: 1 2 3 4 8 10

Q3. Given a person who is at position current_pos and a binary string path which is the moves the person took, if path[i] = '0' then the person moved one step left, and if path[i] = '1' then the person moved one step to the right. The task is to find the count of distinct positions the person visited. (Medium)

Input1:
current_pos = 5
path = "011101"
Output1:
4
Explanation:
Given moves are left, right, right, right, left and right
i.e. 5 -> 4 -> 5 -> 6 -> 7 -> 6 -> 7
The number of distinct positions are 4 (4, 5, 6 and 7).

Input2:
current_pos = 3
path = "110100"
Output2:
3

Q4. Given the number of questions as n, and marks for the correct answer as p and q marks for the incorrect answer. One can either attempt to solve the question in an examination and get either p marks if the answer is right, or q marks if the answer is wrong, or leave the question unattended and get 0 marks. The task is to find the count of all the different possible marks that one can score in the examination. (Medium)

Input1:
n = 4, p = 2, q = -1
Output1:
12

Input2:
n = 2, p = 1, q = -1
Output2:
5
Explanation:
The different possible marks are: -2, -1, 0, 1, 2

Q5. Given n integers(can be duplicates), print the second smallest integer. If it does not exist, print -1. (Medium)

Input1:
n = 4
1 2 2 -4
Output1:
1
Input2:
n = 5
1 2 3 1 1
Output2:
2