LAB :- 7(Dictionary)

Q1. Common Elements

Given two integer arrays, A and B of size N and M, respectively. Your task is to find all the common elements in both the array.

NOTE:

- Each element in the result should appear as many times as it appears in both arrays.
- The result can be in any order.

Example Input

Input 1:

```
A = [1, 2, 2, 1]
```

```
 B = [2, 3, 1, 2]
```

Input 2:

```
A = [2, 1, 4, 10]
```

```
B = [3, 6, 2, 10, 10]
```

Example Output

Output 1:

```
[1, 2, 2]
```

Output 2:

```
[2, 10]
```

Example Explanation

Explanation 1:

```
Elements (1, 2, 2) appears in both the array. Note 2 appears
twice in both the array.
```

Explantion 2:

```
Elements (2, 10) appears in both the array.
```

Q2. First Repeating element

Given an integer array A of size N, find the first repeating element in it.

We need to find the element that occurs more than once and whose index of the first occurrence is the smallest.

If there is no repeating element, print -1.

Example Input

Input 1:

```
A = [10, 5, 3, 4, 3, 5, 6]
```

Input 2:

```
A = [6, 10, 5, 4, 9, 120]
```

Example Output

Output 1:

```
5
```

Output 2:

```
-1
```

Example Explanation

Explanation 1:

```
5 is the first element that repeats
```

Explanation 2:

```
There is no repeating element, output -1
```

Q3. Check Palindrome

Given a string A consisting of lowercase characters.

Check if characters of the given string can be rearranged to form a palindrome.

Print 1 if it is possible to rearrange the characters of the string A such that it becomes a palindrome else print 0.

Example Input

Input 1:

```
A = "abcde"
```

Input 2:

```
A = "abbaee"
```

Example Output

Output 1:

```
0
```

Output 2:

```
1
```

Example Explanation

Explanation 1:

```
No possible rearrangement to make the string palindrome.
```

Explanation 2:

```
Given string "abbaee" can be rearranged to "aebbea" to form a
palindrome.
```

Q4. K Occurrences

Groot has N trees lined up in front of him where the height of the i'th tree is denoted by H[i].

He wants to select some trees to replace his broken branches.

But he wants uniformity in his selection of trees.

So he picks only those trees whose heights have frequency B.

He then sums up the heights that occur B times. (He adds the height only once to the sum and not B times).

In case no such cluster exists, Groot becomes sad and prints -1.

Input:

```
N=5 ,B=2 ,C=[1 2 2 3 3]
```

Output:

```
5
```

Explanation:

Explain

```
There are 3 distinct numbers in the array which are 1,2,3.
```

```
Out of these, only 2 and 3 occur twice. Therefore the answer
is sum of 2 and 3 which is 5.
```

Q5.Shaggy and distances

Shaggy has an array A consisting of N elements. We call a pair of distinct indices in that array a special if elements at those indices in the array are equal.

Shaggy wants you to find a special pair such that the distance between that pair is minimum. Distance between two indices is defined as |i-j|. If there is no special pair in the array, then return -1.

Example Input

Input 1:

```
A = [7, 1, 3, 4, 1, 7]
```

Input 2:

```
A = [1, 1]
```

Example Output

Output 1:

```
3
```

Output 2:

```
1
```

Example Explanation

Explanation 1:

```
Here we have 2 options:
```

```
1. A[1] and A[4] are both 1 so (1,4) is a special pair and
|1-4|=3.
```

```
2. A[0] and A[5] are both 7 so (0,5) is a special pair and
|0-5|=5.
```

```
Therefore the minimum possible distance is 3.
```

Explanation 2:

```
Only possibility is choosing A[1] and A[2].
```