Reorganize The Array

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Platform	GeeksForGeeks
difficulty	Easy
tags	Array Vector
language	C++
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link	https://www.geeksforgeeks.org/problems/reorganize-the-array4810/1
Completion	☑

Intuition

The task is to rearrange elements in such a way that each element `arr[i]` is placed at index `i` if possible, otherwise, the index remains `-1`. If `arr[i] = j`, then `j` should be placed at index `j` in the resultant array. If `arr[i] == -1`, no change is made to the corresponding index, which remains `-1`.

Approach

1. Initialize a new vector `answer` with size equal to the input array and fill it with `1`, which will represent empty spots.
2. Iterate over the input array. For each element, if the value is not `1` and is a valid index within the range of the array, place the value at the index corresponding to its value in the `answer` vector.
3. Return the rearranged `answer` vector.

Complexity

Time Complexity:

The time complexity is O(n), where n is the size of the input array. We traverse the array once to rearrange the elements.

Space Complexity:

The space complexity is O(n) due to the additional space used by the `answer` array to store the rearranged elements.

Code

```
class Solution {
  public:
    vector<int> rearrange(const vector<int>& arr) {
        int n = arr.size();
        vector<int> answer(n, -1);
        for (int i = 0; i < n; i++) {
            if (arr[i] != -1 && arr[i] < n) {
                answer[arr[i]] = arr[i];
            }
```

```
        }
        return answer;
    }
};
```