Twitter Online Assessment (OA) 2021 | Weird Faculty

```java
public static int exam(List<Integer> v) {
    int totalSum = 0;
    for(int score: v) {
        if (score == 0) totalSum -= 1;
        else totalSum += 1;
    }

    int currSum = 0;
    for(int i =0; i < v.size(); i++) {
        if (currSum > totalSum) return i;
        currSum += v.get(i) == 0 ? -1 : 1;
        totalSum -= v.get(i) == 0 ? -1 : 1;
    }
    return v.size();
}
```

Twitter Online Assessment (OA) - Unique Twitter User ID Set

```java
public int minIncrementForUnique(int[] nums) {
    Arrays.sort(nums);
    int sum = nums[0];
    int low = nums[0];
    for(int i=1;i<nums.length;i++){
        if(low<nums[i]){
            low = nums[i];
        }else{
            low++;
        }
        sum += low;
    }
    return sum;
}
```

945. Minimum Increment to Make Array Unique

```
class Solution {
    public int minIncrementForUnique(int[] nums) {
        Arrays.sort(nums);
        int step = 0;
        int low = nums[0];
        for(int i=1;i<nums.length;i++){
            if(low<nums[i]){
                low = nums[i];
            }else{
                low++;
                step+=low-nums[i];
            }
        }
        return step;
    }
```

Twitter Online Assessment (OA) - K-different Pairs in an Array

532. K-diff Pairs in an Array

Need to be unique!

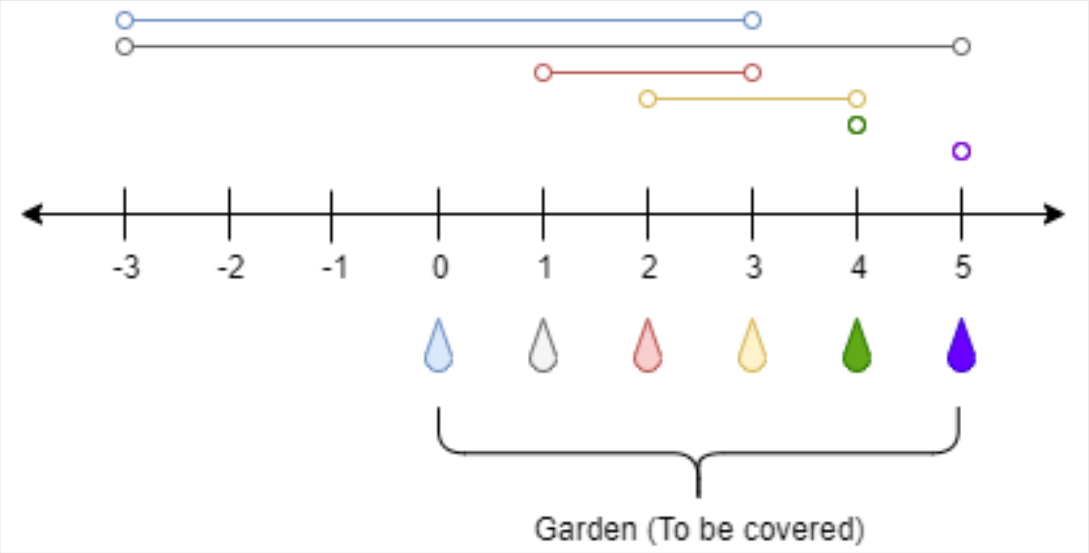
Sequence does not matter!

```
class Solution {
    public int findPairs(int[] nums, int k) {

        int result = 0;

        HashMap <Integer,Integer> counter = new HashMap<>();
        for (int n: nums) {
            counter.put(n, counter.getOrDefault(n, 0)+1);
        }


        for (Map.Entry <Integer, Integer> entry: counter.entrySet()) {
            int x = entry.getKey();
            int val = entry.getValue();
            if (k > 0 && counter.containsKey(x + k)) {
                result++;
            } else if (k == 0 && val > 1) {
                result++;
            }
        }
        return result;
    }
```

Twitter Online Assessment (OA) 2021 | Efficient Job Processing Service

```java
public class EfficientJobProcessingService_14 {
        int[][] dp = new int[tasks.length + 1][p / 2 + 1];      // task will be processed double of weight, hence halve p
//        for (int i = 0; i < tasks.length; i++) {
//            tasks[i] *= 2;
//        }

        for (int i = 1; i < dp.length; i++) {
            for (int j = 1; j < dp[0].length; j++) {
                if (j < tasks[i - 1]) {
                    dp[i][j] = dp[i - 1][j];
                } else {
                    dp[i][j] = Math.max(dp[i - 1][j], dp[i - 1][j - tasks[i - 1]] + weights[i - 1]);
                }
            }
        }

        return dp[tasks.length][p / 2];
    }
```

Twitter Online Assessment (OA) 2021 | Activate Fountain
1326. Minimum Number of Taps to Open to Water a Garden



Trans into Jumping Game!
First trans garden arr
How to treat 0?

```java
  int[] newRanges = new int[ranges.length];
  for(int i=0;i<ranges.length;i++){
      if(ranges[i]==0) continue;
      int idx = Math.max(0,i-ranges[i]);
      int val = Math.min(n,i+ranges[i]);
      newRanges[idx] = Math.max(val,newRanges[idx]);
  }
```

Jumping Game II

```
int farthest = 0;
int step = 0;
int end = 0;
for(int i=0;i<newRanges.length;i++){
    if(farthest<i) return -1;
    farthest = Math.max(farthest,newRanges[i]);
    if(end==i){
        end = farthest;
        step++;
    }
}
return step-1;
```

!! Pay attention to the final step!

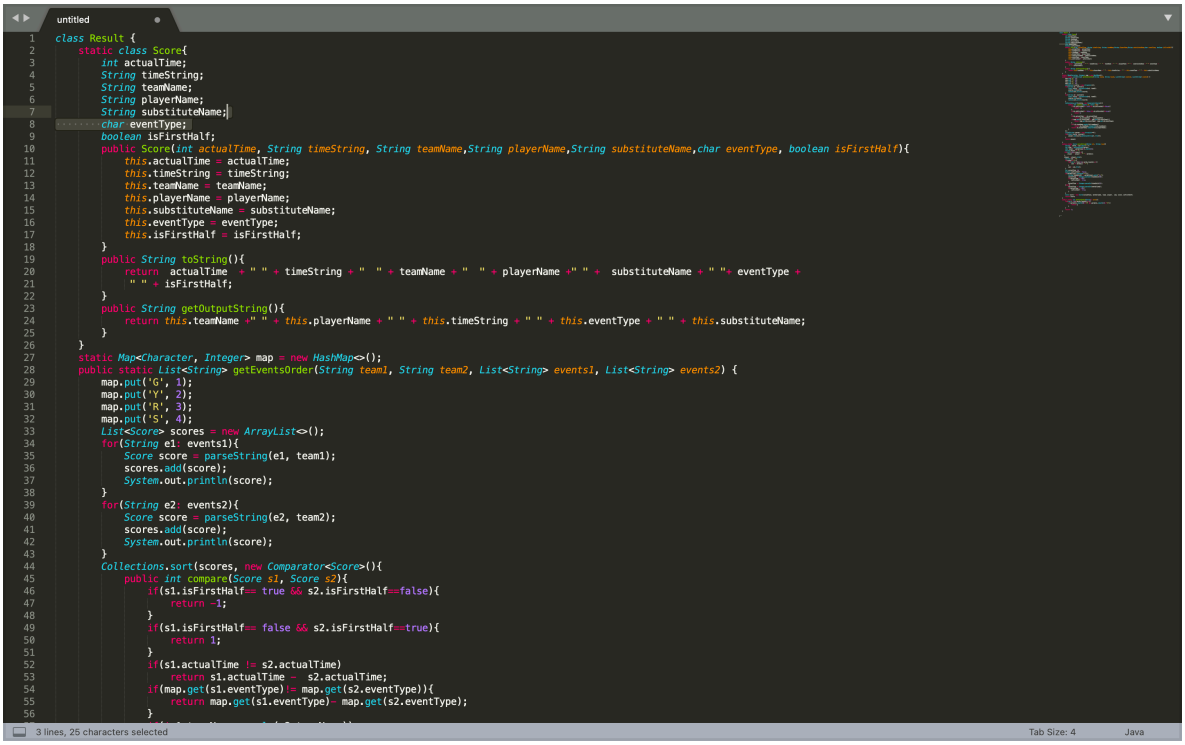
Twitter Online Assessment (OA) 2021 | Partition Array
"make sure numbers.length is divisible by k and no element appears more than numbers.length/k times".

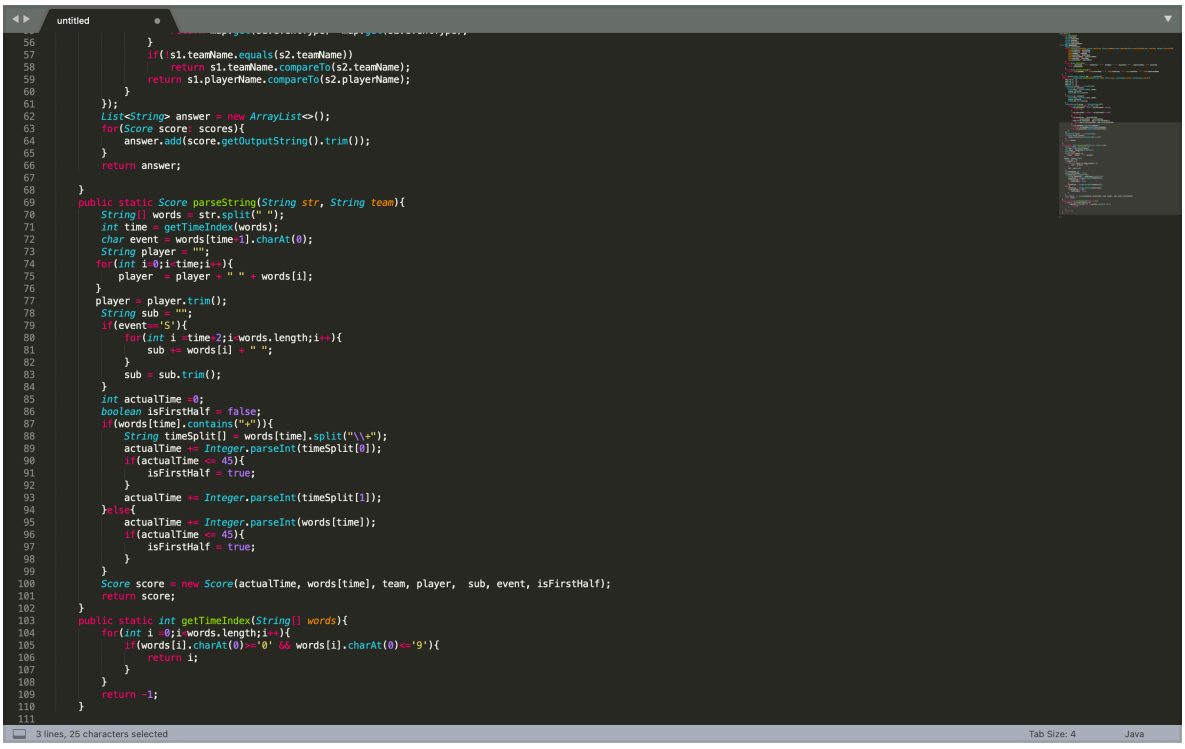
```
public static boolean partitionArrayUnique(int[] nums, int k){
    if(nums.length % k != 0){
        return false;
    }

    HashMap<Integer, Integer> map = new HashMap<>();
    int max = 0;
    for(int num: nums){
        map.put(num, map.getOrDefault(num, 0) + 1);
        if(map.get(num) > max){
            max = map.get(num);
        }
    }

    return max <= (nums.length / k);
}
```

Amazon | OA 2020 | Transaction logs

```java
static List<String> processLogs(List<String> logs, int threshold) {
    Map<String, Integer> map = new HashMap<>();
    for (String logLine : logs) {
        String[] log = logLine.split(" ");
        map.put(log[0], map.getOrDefault(log[0], 0) + 1);
        if (log[0] != log[1]) {
            map.put(log[1], map.getOrDefault(log[1], 0) + 1);
        }
    }

    List<String> userIds = new ArrayList<>();
    for (Map.Entry<String, Integer> entry : map.entrySet()) {
        if (entry.getValue() >= threshold) {
            userIds.add(entry.getKey());
        }
    }

    Collections.sort(userIds,new Comparator<String>() {
        @Override
        public int compare(String s1, String s2) {
            return Integer.parseInt(s1) - Integer.parseInt(s2);
        }
    });

    return userIds;
}
```

Twitter Online Assessment (OA) 2021 | Game Events





Birthday Card collection

Disk Space Analysis

```
int segment(int x, vector<space>){
    int n = space.size();
    if(n==1)
        return space[0];

    int count = 0;
    int currMin = INT_MAX;
    int globMax = -1;
    for(int i=0; i<n; i++){
        if(count<x){
            currMin = min(currMin, space[i]);
        }else{
            globMax = max(globMax, currMin);
            if(space[i-count]==currMin){
                currMin = space[i-count+1];
                int j = i-count+1;
                while(j<=i){
                    currMin = min(currMin, space[j]);
                    j++;
                }
            }else{
                currMin = min(currMin, space[i]);
            }
        }
    }
    globMax = globMax == -1?currMin:globMax;
    return globMax;
}
```

Balancing Parantheses

```java
public int minAddToMakeValid(String s) {
    int left = 0;
    int ans = 0;
    for(char each:s.toCharArray()){
        if(each=='('){
            left++;
        }else{
            if(left==0){
                ans++;
                continue;
            }else{
                left--;
            }
        }
    }
    return ans+left;
}
```

String Reduction

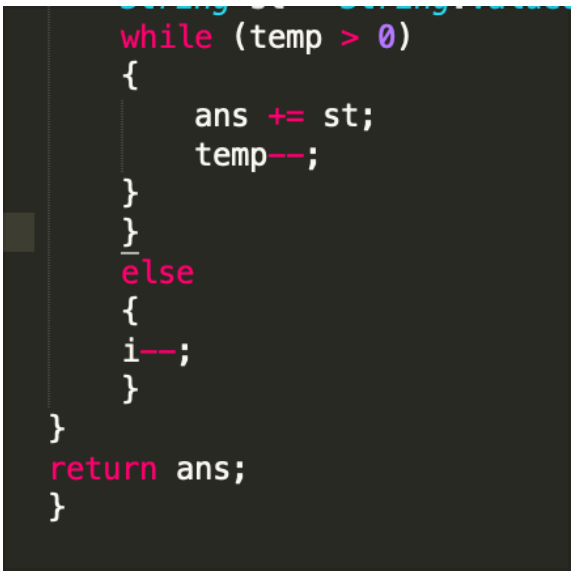
Eg : s = "abab" substr = { a , b , ab , ba , aba , bab , abab }.
output : Delete one 'a' and one 'b' - > return 2

- return len(string) - len(set(string)) -> one liner

- How many sentences?

- Largest lexicographical string with at most K consecutive elements

```java
static String getLargestString(String s,int k){

int []frequency_array = new int[26];
for (int i = 0;i < s.length(); i++) frequency_array[s.charAt(i) - 'a']++;

String ans = "";

for (int i = 25; i >= 0;i--){
    if (frequency_array[i] > k)
    {
        int temp = k;
        String st = String.valueOf((char)(i + 'a'));
        while (temp > 0)
        {
            ans += st;
            temp--;
        }

        frequency_array[i] -= k;
        int j = i - 1;

        while (frequency_array[j] <= 0 &&
                j >= 0)
        {
            j--;
        }
        if (frequency_array[j] > 0 &&
            j >= 0)
        {
            String str = String.valueOf((char)(j + 'a'));
            ans += str;
            frequency_array[j] -= 1;
        }
        else
        {
            break;
        }
    }
    else if (frequency_array[i] > 0)
    {
    int temp = frequency_array[i];
    frequency_array[i] -= temp;
    String st = String.valueOf((char)(i + 'a'));
    while (temp > 0)
    {
        ans += st;
        temp--;
```



```
    while (temp > 0)
    {
        ans += st;
        temp--;
    }
    }
    else
    {
    i--;
    }
}
return ans;
}
```

Twitter | OA 2019 | Get Set Go

```java
private static boolean isPossibleDfs(int[] nums, int target) {
    return dfs(nums, target, 0);
}

private static boolean dfs(int[] nums, int target, int i) {
    if(target < 0 || i >= nums.length)
        return false;
    if(target == 0)
        return true;
    if(dfs(nums, target - nums[i], i+1) || dfs(nums, target, i+1))
        return true;
    return false;
}

private static boolean isPossible(int[] nums, int target) {
    Arrays.sort(nums);
    boolean[][] dp = new boolean[nums.length+1][target + 1];
    for(int i=0;i<dp.length;i++) {
        dp[i][0] = true;
    }
    for(int i=1;i<dp.length;i++) {
        for(int j=1;j<dp[0].length;j++) {
            if(j >= nums[i-1])
                dp[i][j] |= dp[i-1][j] | dp[i-1][j-nums[i-1]];
            else
                dp[i][j] |= dp[i-1][j];
        }
    }
    return dp[dp.length-1][dp[0].length-1];
}
```

Twitter | OA 2019 | Final Discounted Price

```java
private static void getTotalCost(int[] prices) {
    int[] tmp = new int[prices.length];
    for(int i=0;i<tmp.length;i++) {
        tmp[i] = prices[i];
    }
    Stack<Integer> s = new Stack<>();
    for(int i=0;i<prices.length;i++) {
        while(!s.isEmpty() && prices[s.peek()] >= prices[i]) {
            int pre = s.pop();
            tmp[pre] = prices[pre] - prices[i];
        }
        s.push(i);
    }
    int res = 0;
    for(int t : tmp)
        res += t;
    System.out.println(res);
    System.out.println(Arrays.toString(tmp));
}
```

Twitter | OA 2019 | Authentication Tokens

```java
public static int numberOfTokens(int expiryLimit, List<List<Integer>> commands) {
           if(commands == null || commands.isEmpty()) {
               //invalid input
               return 0;
           }
           //maintain tokenid with expiry in a map
           Map<Integer, Integer> tokenIdToTokenExpiry = new HashMap<>();

           for (List<Integer> token : commands) {
               if(token.size() != 3){
                   //invalid input
                   return 0;
               }
               //tokenCommand can be either 0 (get) or 1 (reset)
               Integer tokenCommand = token.get(0);
               Integer tokenId = token.get(1);
               Integer tokenTime = token.get(2);

               if(tokenCommand == 0){
                   // Get command
                   tokenIdToTokenExpiry.put(tokenId, tokenTime + expiryLimit);
               } else {
                   //Reset command
                   if(tokenIdToTokenExpiry.containsKey(tokenId)){
                       if(tokenTime <= tokenIdToTokenExpiry.get(tokenId)){
                           //If not expired, update token time with new value
                           tokenIdToTokenExpiry.put(tokenId, tokenTime + expiryLimit);
                       } else {
                           //if expired, remove token from map
                           tokenIdToTokenExpiry.remove(tokenId);
                       }
                   }
               }
           }

           //find the last inputed tokentime and filter data based on expiry
           Integer lastTime = commands.get(commands.size() - 1).get(2);
           return (int) tokenIdToTokenExpiry.values().stream().filter(tokenTime ->  tokenTime >= lastTime).count();
       }
```

Twitter | OA 2019 | Parking Dilemma

```python
def ParkingDilemma(self, cars, k):
    # write your code here
    cars.sort()
    n = len(cars)
    res = float('inf')
    for i in range(n-k+1):
        res = min(res, cars[i+k-1] - cars[i])
    return res+1
```

Twitter | OA 2019 | Social Network

```java
static Map<Integer, Node> graph = new HashMap<>();
    static class Node {
        int rank;
        Node parent;
        Node() {
            rank = 0;
            parent = this;
        }
    }
    private static Node findParent(Node node) {
        if (node == node.parent) return node;
        node.parent = findParent(node.parent);
        return node.parent;
    }
    private static void union(Node node1, Node node2) {
        Node p1 = findParent(node1);
        Node p2 = findParent(node2);

        if (p1 == p2) return;
        if (p1.rank >= p2.rank) {
            p2.parent = p1;
            p1.rank += 1;
        } else {
            p1.parent = p2;
            p2.rank += 1;
        }
    }
    public static int countGroups(List<String> related) {
        for(int i = 0; i < related.size(); i++) {
            graph.put(i, new Node());
        }

        for(int i = 0; i < related.size(); i++) {
            for(int j = i+1; j < related.size(); j++) {
                if (related.get(i).charAt(j) == '1') {
                    union(graph.get(i), graph.get(j));
                }
            }
        }
        Set<Node> set = new HashSet<>();
        for(int i = 0; i < related.size(); i++) {
            set.add(findParent(graph.get(i)));
        }
        return set.size();
    }
```

Twitter | OA 2019 | New Office Design

```
int tallestHashtag(int[] positions, int[] heights){
    int max = 0;
    for(int i = 1; i < positions.length; i++){
        if(Math.abs(positions[i-1] - positions[i]) > 1){
                        max = Math.max(max, getMaxHeight(positions[i-1], positions[i], heights[i-1], heights[i]));
          }
     }
   return max;
}
int getMaxHeight(int t1, int t2, int h1, int h2){
    int shorter = Math.min(h1, h2);
    int taller = Math.max(h1, h2);
    int gap = Math.abs(t2 - t1) - 1;
        if(taller >= shorter + gap){
          return shorter + gap;
        } else {
          int top = shorter + gap;
              int down = taller + 1;
              return (top + down) / 2;
        }
}
```

Twitter | OA 2019 | Anagram Difference

```
public static List<int> getMinimumDifference(List<string> a, List<string> b)
{
  string s1 = "", s2 = "";
  List<int> result = new List<int>();
  int length = a.Count, i = 0;
  while (i < length)
  {
    s1 = a[i];
    s2 = b[i];
    result.Add(countManipulations(s1, s2));
    i++;
  }
  return result;
}

static int countManipulations(string s1,
                              string s2)
{
  if (s1.Length != s2.Length) return -1;
  int count = 0;

  // store the count of character
  int[] char_count = new int[26];

  // iterate though the first String
  // and update count
  for (int i = 0; i < s1.Length; i++)
    char_count[s1[i] - 'a']++;

  // iterate through the second string
  // update char_count.
  // if character is not found in
  // char_count then increase count
  for (int i = 0; i < s2.Length; i++)
    char_count[s2[i] - 'a']--;

  for (int i = 0; i < 26; ++i)
  {
    if (char_count[i] != 0)
    {
      count += Math.Abs(char_count[i]);
    }
  }
  return count / 2;
}
```

Twitter | OA 2019 | Balanced Sales Array

```java
public static int minIndex(int arr[]) {
    int totalSum=0;
    for(int i=0;i<arr.length;i++){
           totalSum+=arr[i];
        }
    int leftSum =0;
    for(int i=0;i<arr.length;i++){
        if(totalSum-arr[i]-leftSum == leftSum){
            return i;
        }
        leftSum+=arr[i];
    }
    return -1;
}
```

1. Twitter new office design
貌似是道数学题... https://leetcode.com/discuss/int ... r-New-Office-Design 169
2. Efficient Job Processing
经典的0/1背包问题，用DP解: https://leetcode.com/discuss/int ... -Processing-Service 107
3. Game Event
https://leetcode.com/discuss/int ... 2019-or-Game-Events 76
4. Unique Twitter User Id Set
https://leetcode.com/discuss/int ... Twitter-User-Id-Set 64
5. Partitioning Array
主要是判断1. len(numbers)%k !=0; 2. 是否有元素的个数> len(numbers)//k: https://leetcode.com/discuss/int ... -Partitioning-array 58
6. Autoscale Policy
https://leetcode.com/discuss/int ... or-Autoscale-Policy 919
7. Authentication Token
https://leetcode.com/discuss/int ... thentication-Tokens 117
8. K difference
LC伍叁贰
9. Buying show tickets
(这是唯一一个我们找到原题的...不好意思...)

10. Weird Faculty
https://leetcode.com/discuss/int ... 19-or-Weird-Faculty 39
11. Final discounted price
LC齐三久 变种
12. Reaching Points
LC岐拔灵 原
13. twitter social network
LC吴思琪 原
14.Activate fountain
算是greedy里比较经典的区间覆盖问题，可以转化成interval以后sort: https://leetcode.com/discuss/int ... r-Activate-Fountain 167
15. Coloring the blocks
LC而物流 原
16. Parking Dilemma
这个题LC讨论里的图非常不清楚，不过好像不难，用sliding window就好: https://leetcode.com/discuss/int ... -or-Parking-Dilemma 69
17. Get set on
LC似时 变种 不需要求全部可能，所以可以用set
18. Sub Palindrome
LC刘思琪 变种 需要找到unique substring，额外加一个set()检查一下就好
19.Restocking the Warehouse
这个不难...遍历一下就好
20.Balanced Sales Array
这个也不难，也是遍历就好
21. university career fair
https://leetcode.com/discuss/int ... versity-Career-Fair 74
22. Anagram Difference
Hacker上的题: https://www.hackerrank.com/challenges/anagram/problem 73