04/01 – 04/07

Airbnb–全职–电面

有一个 2d array

[earth, america]

[america, south america, north acmerica]

[north america, canada, us]

[canada, ontario, quebec, calgary]

[us, california]

给你两个输入，找到他们的最近的 parent。比如输入为 california, canada，返回 north America

构造树 Dfs + hashmap

Corner case: node 没有 parent，孤立的点

Google–全职–现场面

给定一个矩形的长宽，用多少种方法可以从左上角走到右上角（每一步，只能向正右、右上或右下走）；

follow up：如果给矩形里的三个点，要求解决上述问题的同时，遍历这三个点；

follow up：如何判断这三个点是合理的，即存在遍历这三个点的路经；

follow up：如果给你一个 H，要求你的路径必须向下越过 H 这个界。

Dp/bfs/dfs

Follow up 1: 存路径，检验 3 个点在路径中

Follow up 2: 3 个点按 y 排序，检验 x? 随 y 增加而增加

Follow up 3: h 定义是啥？Y 值？如果 y 值太大，左上角可能回不到右上角，先按 y 值算 x 的限定值。E.g.在 x = x1 时，如果 y < h，dfs 需要返回上一级

Google–全职–现场面

给一个数组，要求尽可能多的切割这个数组，使得每一个小段分别 sort 之后，整个数组就 sort 了。

参考 http://www.1point3acres.com/bbs/thread-380867-1-1.html

区间之间需要按照大小排序，每个区间的最小值大于等于上一个区间的最大值。

从后向前扫一遍，找出每个位置之后的最小值，时空 O(n)。

再从前往后扫一边，如果某一个区间的最大值小于之后的所有值，那就切一刀。

Google-全职-现场面

一片森林，正中间有一个摄像头，摄像头能拍摄的角度是有限的，但是距离没有限制。少需要多少照片才能把整片森林拍摄完?

参考 http://www.1point3acres.com/bbs/thread-381178-1-1.html

*叙述很模糊，没有 input/output 没有思路

一片森林，正中间有一个摄像头，摄像头能拍摄的角度是有限的，但是距离没有限制。你可以理解成一个二维坐标系，原点处有一个摄像头可以 360°转，所有树木分布在四个象限里，摄像头每次只能拍摄一定角度的照片，问：最少需要多少照片才能把整片森林拍摄完。

问题转化成：0~360 的线段内，有好多点，用一个定长的线段去覆盖这些点，问最小几次能盖住所有有的点。注意，0~360 是一个圆圈，头尾相连。

Google-全职-现场面

在论坛发帖，有可能后面的人引用前面的内容，就这样层层引用，要求返回一个结构，记录谁引用了谁。

构造树

corner case 问清楚有没有 cycle

Google-全职-现场面

字符串化简。要求输入一串单词，返回一个 map 保存缩写与原词的对应关系。例如：internationalization -> i18n 就是只留头尾两个字符，中间用字符个数代替。但是会有这种情况：google -> g4e 与 goggle -> g4e 都对应成了一个缩写，这样的时候，就要扩展缩写长度，继续尝试，google -> g4e -> go3e -> goo2e -> goog1e。（PS：本例中 goggle 缩写成 g4e，google 缩写成 goo2g 就可以保证不重复了）。

参考 leetcode 527. Word Abbreviation

Make abbreviation for each word.

Then, check each word, if there are some strings which have same abbreviation with it, increase the prefix.

IBM-全职-电面

给一串数组，比如 1,1,3,2,1,5,3,4,10,4,2，找规律，在五个答案中选一个数作为下一个数的预测。

单纯找规律

Pure Storage-全职-电面

给平面上四个点，判断是否能组成一个正方形。每个点　　是由（x，y）坐标表示。follow up 是给 n 个点，问可以组成多少个 valid square，要求先 O(n^4)，再改进到 O(n^3)，最后改进到 O(n^2)。

参考 http://www.1point3acres.com/bbs/thread-205801-1-1.html

假设 ABCD 能组成一个正方形，AC, 和 BD 是对角线。

1. 首先先利用一个 HashSet, 把全部点加进去，这个一是除重，二是能达到 O(1) 查点的时间。

2. 写 helper function, input 是 AC 两点，计算对应的 B,D 点（对应的 BD 只有一种解）

3. 函数上写 for-i-j loop, i==j 跳过，然后算相应地 input, input[j]点对应的 BD 点在不在 set 里面，有就++。

1 是 O(N), 2 是 O(1), 3 是 O(N^2) 复杂度整体下来就是 O(N^2).空间的话使用 HashSet，应该是 O(N)复杂度。

Zillow-全职-电面

数据结构存储一个多项式，然后把两个多项式相加（合并）,例如

Expression A: 5x^3 + 8x^4 + 3x + 20

Expression B: 10x^3 + 7x^5 + 15

A + B: 15x^3 + 8x^4 + 7x^5 + 3x + 35。

Hashmap 假设 a b 已经合并指数相同的项

Amazon-全职-在线测试

假如有一个 target 单词和一堆骰子（每个骰子可能有 2-6 个不同的字母），问你能不能用这些骰子拼出 target 单词。每个骰子显然只能用一次。然后依然是 follow up，如果单词很长怎么优化，如果骰子很多怎么优化。

Dfs

String -> hashmap<char, int(frequency)>

dfs 每次对 map 操作，下一层递归后，还原 map

follow up：单词很长（先检验骰子数目，对骰子 dfs）；骰子多（对 map 递归，可以 sort string）

Oracle-全职-电面

判断最多允许删除一个字符的情况下，字符串是否构成回文。

Dfs+cache

若当前级 string 删 1 个 char / 不删构成回文的话，存 cache

base case: 1 个 char/空字符

返回两个链表中间的值相等的所有 common 节点。

Hashmap<int, int> –（value, frequency）

Corner case: 可能存在多个值相等

Bloombery-全职-在线测试

数组内部排序，要求原来是 string 的位置放 string，是 integer 的位置放 integer，同时要求实现 boolean isInteger(String s)的方法。比如 Input array [2, Bloomberg, 1, Apple, 3] –> output [1, Apple, 2, Bloomberg, 3]。

不懂题什么意思

设计一个纸牌游戏, initial a cards bag with constructor 然后 implement pick() 随机返回一张牌。参考 http://www.1point3acres.com/bbs/thread-386931-1-1.html

card class 有 symbol 和 number

2 个 array symbols 和 numbers

2 个 for 循环把 card 都加入 card bag 用 random 随机取

输出 string 数组中出现频率最高的 string,如果频率相同，按照首字母排序输出第一个 input array["apple", "IBM", "apple", "Bloomberg", "Bloomberg", "IBM", "Bloomberg"] output –> “Bloomberg”。

Hash map<string, int(frequency)>

Max_frequency 记录全局

Hashset <string> 保存 max_frequency 对应的 string 对 set 排序

04/08 – 04/14

Facebook-全职-电面

判断是否为 numeronym，比如

isNumeronym("f6k", "facebook") -> true

isNumeronym("f2e3k", "facebook") -> true

isNumeronym("f2e", "facebook") -> false

思路：

- 构建模型，扫描左侧字符串，进行比较，碰到数字则跳过右侧对应的个数。

考点：

- 能否想到数字代表跳过
- 注意长度超过 1 的数字
- 如何处理数字 0

Follow up

如果左右两侧都能够有数字缩写怎么办?

可以使用特殊的符号表示跳过

如果左右两侧同时出现超大数字怎么办?

不能进行遍历，需要计算 diff

给你一套规则，针对一个单词构建 numeronym?

使用构建模型进行判断。

给一个 array of points [[1,3], [2,5], [3,3], [1,0], [1,1], [5,5]], target = k，求 k nearest neighbors for (0, 0)

思路

- 每个点到原点是 sqrt(a^2+b^2)，可以用 heap 进行计算。

考点：

- 能否想通虽然是(x,y)，从距离来看，依然是一个数字

- 能否逐步从排序的 O(N*logN)，优化到 O(N*logK)
- 能否注意到可能的数字越界

Follow up

如何针对任何一个点进行距离排序?

一回事

如何只选择第 k 小的?

Quick-select

如果 N 特别大呢?

可以首先选择第 k 小的，然后对前 k 个排序，因此是 O(n+K*logK)

Facebook-全职-电面

对一个 integer array ，找所有两两组合的 bit difference 的 sum

思路

- 因为计算的是具体的 bit 位的情况，因此我们可以统计每个具体的比特上 0 或者 1 的个数，从而用排列组合得到这一位的最终值，然后求和。

考点:

- 能否按照 bit 位进行拆解
- 能否想到 bit 位上排列组合的数学公式

Follow up

如果是三三组合进行 xor 呢?

只是更改组合函数

如果是一个 3 进制的数进行计算，要怎么做呢?

本质是一样的，只是组合的 case 有所变化

给一个 matrix，给你两个坐标点，求通过这两点切割出的两个区间的元素的个数

思路

- 可以找出这条切割线，然后每一行都进行判断，这样复杂度是 O(n)

- 可以进一步利用数学的方式判断节点在哪一侧

考点

- 能够想到每一行的判断
- 能够用数学公式进行优化
- 能够处理横着一条线，或者竖着一条线的情况

Follow up

如果是两条线进行切割，求每一个范围内节点的个数?

每一行最多有三个区间

Amazon-全职-电面

[LeetCode,763]A string S of lowercase letters is given. We want to partition this string into as many parts as possible so that each letter appears in at most one part, and return a list of integers representing the size of these parts. 给定一个小写字母的字符串 S。我们希望将该字符串分割成尽可能多的部分，以便每个字母在大多数情况下出现，并返回代表这些部分大小的整数列表。

思路

- 因为每个字母只能出现在一个范围内，因此可以求出每个字母出现的开头和结尾
- 然后从左向右开始遍历，碰到一个字母，更新 max 的 ending
- 直到扫描到一个 max ending，表示切割出了一个区间

考点

- 能否想到字母的 begin 和 end 的范围
- 能否想到如何进行区间扫描
- 注意处理只有一个区间的 corner case

Follow up

如果要求每个字母最多在两个区间呢?

给一个 sorted array 和一个 target， 找到里面等于 target 的元素的个数：举例：[1,2,3,3,3,3,3,5,6,7]和 3，你要返回 5。要求时间复杂度 logn

思路

- 二分查找小于一个数的最后一个位置

- 可以扫描 target 和 targer+1
- 然后组合出来区间

考点

- 能否想到二分查找的变体
- 能否想到是两个二分查找
- 能否处理死循环和没有解的 corner case

Follow up

如何求的是[begin, end]区间内的所有数的范围呢?

扫描 begin 和 end+1

TuSimple-实习-电面

LeetCode,50]实现 pow(x, n)

思路

- 切换成二进制的组合运算

考点

- 能否想到 log 的 bit 思路
- 如何进行 bit 位拆解

Follow up

如果 n 能够为负数怎么办?

同样的思路

实现 log(n)

思路

- 可以使用二分查找

考点

- 能否把计算问题转换成一个搜索问题
- 如何实现不断二分的代码

Follow up

如何实现 log(n,2)+log(n,5)

longest common subsequence，求最大共同子序列

思路

- 构建二维数组的动态规划，尾部拼接

考点

- 能否想到动态规划
- 能否想到尾部拼接
- 能否空间压缩

Follow up：

如果求的是 k 个字符串的 LSC 呢?

可以构建一个 k 维数组进行动态规划

PoketGem–实习–在线测试

[LeetCode,13]给定一个罗马数字，将其转换为整数。输入的范围从 1 到 3999。比如 I = 1, IX = 9

思路

– 罗马数字转换的模拟题

考点

– 注意转换规则，重复的上限、右加左减

– 注意特殊的限制规则

Follow up

– 给罗马字符，转换成数字，要注意非法组合

Facebook–全职–电面

[LeetCode,56]给定一组间隔，合并所有重叠的间隔。例如，输入[1,3]，[2,6]，[8,10]，[15,18]，返回[1,6]，[8,10]，[15,18]

思路

- 最直接的思路是两两比较不断合并，但是复杂度很高
- 进一步可以对起始点进行排序
- 不断的扫描，看看能否合并

考点

- 能否想到排序
- 能否想到扫描

- 如何处理遇到终点和起点的情况
- 注意处理终点起点在同一个值的情况

Follow up

果要求每一个节点最多和一个区间合并呢?

同样的扫描只是有一个合并就要后移第一个指针

如果要求去掉区间，让区间不会重复呢?

可以扫描后去除重复的区间

如果要求去掉最少的区间，让区间不重复呢?

按照每个点的位置逐渐后移，判断在一个点上的 max 存在的区间的个数

Amazon–全职–电面

[LeetCode,42] 给定 n 个非负整数组成一个海拔图，其中每个条形图的宽度为 1，计算出在下雨后能存储多少水。例如，给定[0,1,0,2,1,0,1,3,2,1,2,1]，返回 6。

上面的高程图是由数组表示的[0,1,0,2,1,0,1,3,2,1,2,1]。在这种情况下，能储存 6 个单位的雨水(蓝色部分)。

思路

- 缓存之前的高度
- 每次碰到更高的，可以增加蓄水量
- 或者也能从两侧向中间看

考点

- 能否想到缓存高度，因为需要注意右侧的情况
- 如何想到 stack 的保存方式
- 如何处理不能蓄水等 corner 的情况

Follow up

如果我们知道会在哪个地方下多少雨，那么我们要怎么做呢?

可以记录每个蓄水池的蓄水量，然后进行填充

Facebook-全职-现场面

给一个质数数组，没有重复元素，比如[2, 3, 5]，要求返回所有元素之间可能的乘积，比如结果是[2, 3, 5, 6, 10, 15, 30]，每个数最多用一次，结果不一定需要是有序的

思路

- 因为我们会有多个元素的乘积。但是我们可以使用动态规划的推理，当我们求出前 k 个元素的结果后，针对第 k+1 个，只需要用它乘以之前 k 的结果，然后拼接即可

考点

- 能否想到 DP 的演绎思想
- 如何保存之前的结果
- 如何进行拼接

Follow up

如果最多要求使用 t 个元素呢?

可以额外记录一下一个元素的 t 的个数

Google-全职-电面

有一组坐标，每个坐标原本的格式是（1.3， 0.5）这样， 但是里面的逗号和小数点都不见了，只剩下一串数，让你还原所有的可能的组合。比如说 123，可能的有（1, 23）（1, 2.3）（12，3) (1.2, 3)

Wayfair-全职-电面

给一个 string，like “15 + 2d4 - 3d2”， 2d4 means 投一个四面的色子两次，15 就是 15， 最后算出式子 output (random 的)

Bloomberg–全职–电面+现场面

找到字符串里第一个在该字符串中只出现一次的字符。

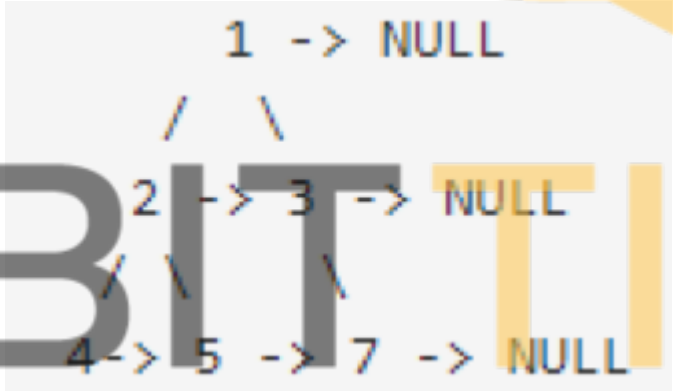
买股票，输入每次交股票名和该次购买数量，最后输出每支股票平均购买价格。

压缩和解压字符串，举例 aaabbca–>a3b2ca

设计一个拍卖的 class，支持如下几个功能：加入某 id 的新出价；返回某 id 最高出价；返回所有人 10 个最高出价的均值

[LeetCode,117] 在每个节点中填充下一个右指针，只能使用常数空间。举例：

方法执行后得到的二叉树变为：



[LeetCode,380] 设计一个支持下列所有操作的平均时间复杂度是 O(1)的数据结构：

insert(val): 如果不存在 val，则插入 val 的值；remove(val):删除 val；getRandom: 随机返回一个当前序列中的 val 值，要求每个值的概率都是一样的。

Bloomberg–全职–电面

[LeetCode,1] 给定一个整数数组，返回两个数字索引使数字索引对应的数组元素相加之和等于给

定的值。可以假设每个输入都只有一个解决方案，并且不会两次使用相同的元素。

今日头条-实习-电面

1) [LeetCode,260]反转一个单向链表

2) [LeetCode,92] 将一个链表从 m 位置反向到 n，就地完成，一步到位。

SquarePoint-实习-电面

1) 一个电梯里有十个人，一共有十层，每个人随机按一层（对于一个人，按到某一层的概率是 0.1），问期望有多少层被按到过?

2) [LeetCode,1]同上

meridianLink-全职-现场面

如何在一个无向图中找从 source 到 target 的最短距离，这个无向图每个边的 cost 是相等的。

Amazon-全职-电面-社招

1) [LeetCode,716] Design a max stack that supports push, pop, top, peekMax and popMax.

push(x) -- Push element x onto stack.

pop() -- Remove the element on top of the stack and return it.

top() -- Get the element on the top.

peekMax() -- Retrieve the maximum element in the stack.

popMax() -- Retrieve the maximum element in the stack, and remove it. If you find more than one maximum elements, only remove the top-most one.

2) 输入是一个 list of objects 类似如下：

StartTime	EndTime	BandwidthUse
10:00:01 AM	10:00:28 AM	100
10:00:06 AM	10:00:16 AM	50
10:00:10 AM	10:00:30 AM	150

求 Peak BandwidthUse，比如上面例子就是 300，在 10:00:10 AM 和 10:00:16 AM 这个 Interval 里，要自己定义 Object 表示输入。

Facebook-全职-电面-社招

1) 给一个数组，每个元素是一个 TreeNode，TreeNode 的左右子分别指向数组中其他元素。问

这个数组可否形成一颗二叉树

2) [LeetCode,716] Given an array of meeting time intervals consisting of start and end times [[s1,e1],[s2,e2],...] (si < ei), find the minimum number of conference rooms required.

roblox-全职-电面-社招

Write a function that takes this input as a parameter and returns a data structure containing the number of hits that were recorded on each domain AND each domain under it. For example, an impression on "sports.yahoo.com" counts for "sports.yahoo.com", "yahoo.com", and "com". (Subdomains are added to the left of their parent domain. So "sports" and "sports.yahoo" are not valid domains.)

Expected output (in any order):

1320 com
900 google.com
410 yahoo.com
60 mail.yahoo.com
10 mobile.sports.yahoo.com
50 sports.yahoo.com
10 stackoverflow.com
3 org
3 wikipedia.org
2 en.wikipedia.org
1 es.wikipedia.org

Google-全职-电面-社招

给一个 array，decending order，ex: [5, 5, 5, 4, 4, 2, 1, 1, 1, 0, 0]，找出有数字有变化的 index, in this example return [3, 5, 6, 9]

Pinterest-全职-电面-校招

Add these operations to your library: Addition, dot product, and cosine. Formulae for each are provided below; we're more interested in you writing the code than whether you've memorized the formula. For each operation, your code should throw an error if the two input vectors are not equal length.

Sample input/output:

//Note: This is pseudocode. Your actual syntax will vary by language.

v1 = new vector(5)

v1[0] = 4.0

v1[1] = 5.0

v2 = new vector(5)

v2[1] = 2.0

v2[3] = 3.0

v3 = new vector(2)

print v1.add(v2) //should print [4.0, 7.0, 0.0, 3.0, 0.0]

print v1.add(v3) //error -- vector lengths don't match

print v1.dot(v2) //should print 10

print v1.dot(v3) //error -- vector lengths don't match.

print v1.cos(v2) //should print 0.433

print v1.cos(v3) //error -- vector lengths don't match

Formulae:

Addition

a.add(b) = [a[0]+b[0], a[1]+b[1], a[2]+b[2], ...]

Dot product

a.dot(b) = a[0]*b[0] + a[1]*b[1] + a[2]*b[2] + ...

Cosine

a.cos(b) = a.dot(b) / (norm(a) * norm(b))

//norm(a) = sqrt(a[0]^2 + a[1]^2 + a[2]^2 + ...)

Facebook-全职-电面-社招

[LeetCode,716] Given two non-negative integers num1 and num2 represented as strings, return the product of num1 and num2, also represented as a string.

Google-全职-电面-校招

1) 写一个 iterator class， 不仅要 implement iterator 原有的 method， 还要筛选出符合给定条件的 element.

2) 求一个 string 是不是另一个 string 的 subsequence

rubrik-全职-现场-校招

找出一串 packet 中最大的那个 dataflow，size 大于所有 size 的 50%

比如： A A A B B C 2 2 2 3 1 1

最大的 dataflow 是 A.

VMWare 全职-在线-社招

1) create binary tree from array and output insert function counter;

2) counting set bit and output their positions, leftmost set bit position will be 1

3) check is ipv4 or ipv6 or neither

4) unique integer in array and return sum of them

Google-全职-电面-社招

1) Find the length of the longest path in a binarytree, where a path is a sequence of distinct nodes and consecutive nodes in thesequence are connected by an edge.

2) Given an unbalanced unsorted binary tree of integers. Find all levels which sum to k.

3) Given a large 2D space of alarge number of points. Find the k closest points to an arbitrary Point p.

4) Implement an LRU cache withthese public methods.

public class Cache {

void Insert(int key, int value);

Integer Get(int key);

// null value means cache miss}

Hulu-全职-电面-社招

1) 25 horses, 5 tracks, each time 5 horse run, get rank of each race, but no time data avaliable.What is the minimum races numbers to find fastest 3 horses?

2) find intersection of 2 list:ex, A = [1, 1, 1, 1] B =[4, 5, 8, 1, 1]. return [1,1]

Facebook-全职-电面-社招

a,b 两队，6 局 4 胜，求 p（6 game played）

Wepay–全职–电面–社招

1) given a ducument of animals, each time find the alphbetical next one. do it inO(1)

2) flaten a nested list probability 1: average length of stay for employee, given that 20% employees leave during a year

Wish–全职–电面–社招

1) After Users signups, there are two groups, Make a purchase or not, what can you do on them?

2) After users make a purchase, what can you do?

3) Given table for purchase activity and signup event, Questions: for Weekly new users, what's

a) The activation rate in the 1st week within signup time?

b) Retention rate in the 1st month?

04/15 – 04/21

Amazon –全职–电面–社招

1.[LeetCode,200] Given a 2d grid map of '1's (land) and '0's (water), count the number of islands. An island is surrounded by water and is formed by connecting adjacent lands horizontally or vertically. You may assume all four edges of the grid are all surrounded by water.

思路

- 遍历每个节点，如果为 1，并且没有访问过，则进行 DFS 染色，并且把 island 数量加一

Follow up

- DFS 会有什么潜在问题？如果连接的 1 比较多，可能栈溢出
- 如何应对？用 iteration 的方法来写

2.[LeetCode 70] Given a string S and a string T, find the minimum window in S which will contain all the characters in T in complexity O(n).

Input: S = "ADOBECODEBANC", T = "ABC"

Output: "BANC"

思路

- 动态规划尾部拼接，记录终点为 k 时，最近的起点
- 可以构建一个吊桶来保存一个区间内两个字符串字母的差

Follow up

- 如果要求出现 k 次怎么办？只是把吊桶的记数乘以 k 即可

Snapchat–全职–电面–社招

1.给一个单词的字符串，每个单词用逗号隔开，按出现次数多少以及字母顺序输出所有单词。

思路

- 可以直接 sort
- 可以吊桶排序
- 可以使用 tri 来优化

Follow up

- 如果文件超大怎么办？可以分布式的排序，也可以 sharding

2.给一个包含括号和单词的字符串，根据括号进行分层打印并且用不同的 indentation 表示不同层。比如：(hot dog(hello word!(you) here)),输出

```
(
    Hot
    dog
    (
        hello
        word!
        (
            you
        )
        here
    )
)
```

思路

- 构建题，每遇到左括号，层数+1；遇到右括号，层数–1

Follow up

- 如何判断输入是否合法？左括号和右括号要对应上，中间判断是否有多余的右括号，最后判断括号是否都使用完，可以使用 stack

Dropbox-全职-电面-社招

You're given an elevation map for a rectangular area of land. The map is represented by 2-D array of numbers where each cell contains the elevation above sea level of the corresponding area of the map.

You need a path that connects the west edge of the map with the east edge of the map. Starting at the west edge of the map you can only move in single cell steps east, southeast, or northeast.

You need to find how much can the sea level rise before submerging all such paths. Write a function that takes in a 2-D array and returns a single number.

Example

North

```
-------------------
| 1 | 2 | 3 | 9 |
-------------------
| 8 | 6 | 10 | 8 |
-------------------
| 9 | 4| 11| 12|
-------------------
```

South

Sea = 6

思路

- 构建题，每遇到左括号，层数+1；遇到右括号，层数-1

Follow up

- 如何判断输入是否合法？左括号和右括号要对应上，中间判断是否有多余的右括号，最后判断括号是否都使用完，可以使用 stack

Facebook–全职–现场–社招

[LeetCode,239] Given an array nums, there is a sliding window of size k which is moving from the very left of the array to the very right. You can only see the k numbers in the window. Each time the sliding window moves right by one position.

思路

- 记录当前窗口内的最大值，新元素加入后，去掉之前的元素并且进行相关的比较
- 也可以维持一个 BST
- 也可以维持一个递减的 stack，从而实现 O(n)复杂度

Follow up

- 如果要求的是求出一个区间内元素的范围呢？可以分开计算 max 和 min 即可

字符串排序题：排序“ABC”“CAC”“AB”但已知 C > A > B 这种。

思路

- 自定义比较函数
- 可以使用 Tri 排序

Follow up

- 如果数据特别大怎么办？可以根据首字母 Sharding

Google–全职–现场–社招

1.给一个 list of points， 求这些点可以组成的 rectangle 的面积最小是多少， rectangle 的边跟轴平行

思路

- 枚举对角的两个点，查询剩下两个点是否存在
- 把节点按照 x 排序，然后扫描所有的节点，当两个节点的 x 相同，保存他们能够构成的 y 的 pair。最后扫描所有的 pair 情况，推理面积

Follow up

- 如果计算的是棱形呢？第二个方法依然可行，但是需要记录的是 length，而不是两个 y 的 pair

2．给一个 list of int， 然后给我一个 query with start and end index， 问我这个区间的最小值是多少

思路

- 最简单的是 O(n)的查找
- 也可以使用线段树

Follow up

- 如果可以更新数值呢？也需要更新相应的树

3.给一个 list of int， 找出其中最小 cycle 的长度。比如 1， 2， 1， 2， cycle 的长度就是 2。然后 1， 2， 1， 2， 1 的最小长度也是 2。 然后 1， 2， 1， 2， 3 的长度应该是 5， 因为整个 list 没有在 repeat。 然后 1， 2， 1， 2， 1， 2，1，2 的最小长度也是 2

思路

- 从长度为 1 开始判断，逐步增加
- 也可以记录通过前 k 个元素的最小长度，然后推理使用前 k+1 个的最小元素

Follow up

- 如果要求求出所有可行的环呢？找出一个 k，那么 tk 都是可行的

Adobe–全职–现场–社招

[LeetCode,354] You have a number of envelopes with widths and heights given as a pair of integers (w, h). One envelope can fit into another if and only if both the width and height of one envelope is greater than the width and height of the other envelope.

What is the maximum number of envelopes can you Russian doll? (put one inside other)

思路

- 按照 width 排序，记录每个信访可以放的最多个数，推理

Follow up

- 如何输出所有可行的组合？每个信封都需要记录自己可行的 combination

Bloomberg–全职–电面–社招

[LeetCode,117] Given a binary tree

```
struct TreeLinkNode {
  TreeLinkNode *left;
  TreeLinkNode *right;
  TreeLinkNode *next;
}
```

Populate each next pointer to point to its next right node. If there is no next right node, the next pointer should be set to NULL.

Initially, all next pointers are set to NULL.

思路

- 层次遍历，保存即可

Follow up

- 如果是多叉树怎么办？修改一个节点内的指向关系组合，其它的依然一样

IXL Learning-全职-在线-社招

1.[LeetCode,592] Given a string representing an expression of fraction addition and subtraction, you need to return the calculation result in string format. The final result should be irreducible fraction. If your final result is an integer, say 2, you need to change it to the format of fraction that has denominator 1. So in this case, 2 should be converted to 2/1.

思路

- 模拟题，核心是约分

Follow up

- 如果是一个更复杂的加减法呢？做法一样，减法的本质就是加法

2.[LeetCode,598] Given an m * n matrix M initialized with all 0's and several update operations. Operations are represented by a 2D array, and each operation is represented by an array with two positive integers a and b, which means M[i][j] should be added by one for all 0 <= i < a and 0 <= j < b. You need to count and return the number of maximum integers in the matrix after performing all the operations.

思路

- 计算左上角矩阵的大小

Follow up

- 如果是改为一个矩阵范围呢？可以排序整个范围，然后扫描推理

Google-全职-现场-社招

1.n*n 的 digit matrix，从一个点开始，往周围八个方向都可以走，走出一个数字，然后求这个 digit matrix 里面出现次数最多的素数，boolean isPrime()不用写

思路

- 可以暴力计算
- 也可以倒着走来进行部分加速

Follow up

- 如果求的是出现最多的数呢？同样可以暴力求解

2.有一个 b-tree，其中有且只有一个节点有两个父节点，也就是两个父节点有同样的儿子，找到这个错误的节点并返回一个正确的树。

思路

- 记录一个节点是否被访问过

Follow up

- 如果是 BST 呢？一样判断

3.spellcheck，给你一个词，返回词典里所有和它 edit distance <= 2 的词，如果词典里有了，那就只返回它本身

思路

- 可以构建 Tri-Tree，然后记录 mismatch 的数量进行遍历

Follow up

- 如果给你的是一个句子呢，句子里面能有最多两个 char 不同？也是一样，但是每次新 word 都要从头继续扫一遍，我们可以记录之前的情况有几个 diff

Bloomberg-全职-电面-应届

OS 的进程树崩了，留下个 log，每项包含该进程的 id 还有它的子进程的 id，让找到导致崩溃的 root 的 id，比如

id: 1, children:[2,3]

id: 2, children: [4]

id: 3, children: []

id: 4, children: []

id: 5, children: [1]

return: 5

思路

- 可以找到没有出现在 children 的进程

Follow up

- 如果要求你构建这个树呢？一边扫描一边构建

给字符串，删除连续三个或以上重复的

AABBBAC –>AAAC –> C

AAABBBA–>BBBA–>A

思路

- 每次删除后，记得继续向前 check

Follow up

- 如果 ABCABCABC 也算是一种重复呢？需要构建更长的扫描方式

Google–全职–电面–应届

balance point，[1, 2, 9, 4, –1], 找出 idx，使得该节点左边的数字之和与右边数字之和尽可能相等

思路

- 扫描的时候，更新一个节点左侧的和与右侧的和

Follow up

- 如果要求是左右长度为 k 的区间进行比较呢？同理，只是和的更新变了

Apple-全职-电面-社招

分析 log 文件，很多行 log，找某些字符后面的数字，判断数字是否在范围内，不在范围内报错。

思路

- 模拟题：可以设计状态机更新

Follow up

- 如果是判断 log 是否正确呢？可以基于状态机设计规则

Linkedin-全职-电面-社招

1.[LeetCode,20]Given a string containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.

An input string is valid if:

Open brackets must be closed by the same type of brackets.

Open brackets must be closed in the correct order.

Note that an empty string is also considered valid.

2.[LeetCode,339]Given a nested list of integers, return the sum of all integers in the list weighted by their depth.

Each element is either an integer, or a list -- whose elements may also be integers or other lists.

3.[LeetCode,100]Given two binary trees, write a function to check if they are the same or not.Two binary trees are considered the same if they are structurally identical and the nodes have the same value.

Linkedin-全职-电面-社招

已知[0，1]的随机 uniform 分布函数 01Uniform， 求用它来写[0，6]的随机 uniform 分布函数。

aqr-全职-在线-应届

a 是一个 array, b 是一个数，遍历 a 里面的数字，如果和当前的 b 相同，b 翻倍， 最后返回最大的 b。

Yahoo-全职-电面-应届

给两个 integer list，做加法，然后返回结果，ex: list 1: 1 1 2　list 2: 1 1 3　返回 2 2 5

Amazon-全职-在线-社招

1.找大小为 k 的子串，使刚好有一個字符被重复一次。要求输出所有可能子串。

2.输入 list of character，要求找出分割这些字符的最短长度，要求相同字符必须被划分到一起。例如[a,b,c]输出[1,1,1]; [a,b,c,d,a]输出[5]（a 必须在一起，因此五个字符必须连一起）。

Twitch-全职-电面-社招

给出一个 list of chat log 比如:"A: hello", "B: hi"，找出这些 log 里的 top n frequent user 并且 output 出 list of user names from most frequent to least (only n users).

Bloomberg-全职-在线-应届

input: arr[], int n, int k. 找所有长度为 k 的组合, n 是 arr 的长度。arr[]中数字没有重复。eg：[1，2，3]，　k = 2, n =3 result：[[1,2],[1,3],[2,3]]。follow up：arr[]中数字有重复。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=402752&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-电面-社招

1.[LeetCode,243]Given a list of words and two words word1 and word2, return the shortest distance between these two words in the list.

For example, Assume that words = ["practice", "makes", "perfect", "coding", "makes"].

Given word1 = “coding”, word2 = “practice”, return 3.

Given word1 = "makes", word2 = "coding", return 1.

Note: You may assume that word1 does not equal to word2, and word1 and word2 are both in the list.

2.[LeetCode,244] This is a follow up of Shortest Word Distance. The only difference is now you are given the list of words and your method will be called repeatedly many times with different parameters. How would you optimize it?

Design a class which receives a list of words in the constructor, and implements a method that takes two words word1 and word2 and return the shortest distance between these two words in the list.

For example,

Assume that words = ["practice", "makes", "perfect", "coding", "makes"].

Given word1 = “coding”, word2 = “practice”, return 3.

Given word1 = "makes", word2 = "coding", return 1.

Note: You may assume that word1 does not equal to word2, and word1 and word2 are both in the list.

3.[LeetCode,33] Suppose an array sorted in ascending order is rotated at some pivot unknown to you beforehand.

(i.e., [0,1,2,4,5,6,7] might become [4,5,6,7,0,1,2]).

You are given a target value to search. If found in the array return its index, otherwise return –1.

You may assume no duplicate exists in the array.

Your algorithm's runtime complexity must be in the order of O(log n).

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=402804&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-电面-应届

将一个二叉树从左到右按列输出，不管每列的 order。比如说：

```
      9
     / \
    3   2
   / \   \
  4   1   6
```

。输出[4 3 9 1 2 6]或者[4 3 1 9 2 6]

follow up：如果对每列 order 有要求该怎么做?

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=402823&extra=page%

3D4%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-电面+现场-应届

1.[LeetCode,33] Given an array of integers, return indices of the two numbers such that they add up to a specific target.You may assume that each input would have exactly one solution, and you may not use the same element twice.

2.[LeetCode,160] Write a program to find the node at which the intersection of two singly linked lists begins.

For example, the following two linked lists:

A: a1 → a2

↘

c1 → c2 → c3

↗

B: b1 → b2 → b3

begin to intersect at node c1.

Notes:

If the two linked lists have no intersection at all, return null.

The linked lists must retain their original structure after the function returns.

You may assume there are no cycles anywhere in the entire linked structure.

Your code should preferably run in O(n) time and use only O(1) memory.

3.[LeetCode,387] Given a string, find the first non-repeating character in it and return it's index. If it doesn't exist, return -1.

Examples:

s = "leetcode"

return 0.

s = "loveleetcode",

return 2.

Note: You may assume the string contain only lowercase letters.

4. 给一个字符串 s，一个字符 ch，要求 s 里每一个字符离最近的 ch 的距离。举例,s="bloomberg",ch='b',输出为[0,1,2,2,1,0,1,2,3]

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=402928&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Google-全职-电面+现场-应届

1. 给一个时间 t，问下一个跟该时间 t 有同样数字的时间是什么时候。举例,t="11:00",输出"00:11";t="23:59",输出"23:59"

2.[Leetcode,683] There is a garden with N slots. In each slot, there is a flower. The N flowers will bloom one by one in N days. In each day, there will be exactly one flower blooming and it will be in the status of blooming since then.

Given an array flowers consists of number from 1 to N. Each number in the array represents the place where the flower will open in that day.

For example, flowers[i] = x means that the unique flower that blooms at day i will be at position x, where i and x will be in the range from 1 to N.

Also given an integer k, you need to output in which day there exists two flowers in the status of blooming, and also the number of flowers between them is k and these flowers are not blooming.

If there isn't such day, output -1.

3. 给一个字符串 s, 一些 forbidden words，把 s 中的 forbidden words 替换为"***"

4. [Leetcode,157] The API: int read4(char *buf) reads 4 characters at a time from a file.

The return value is the actual number of characters read. For example, it returns 3 if there is only 3 characters left in the file.

By using the read4 API, implement the function int read(char *buf, int n) that reads n characters from the file.

Note: The read function will only be called once for each test case.

5. 两个数组 guess, real，长度相同，对应位置的数字相同称为一个 black-match，除此之外的存在数字相同的为 white-match。给定 guess, real，算有多少个 black-match 和 white-match。举例,guess=[1,5,3,4], real=[1,3,2,4]，输出[2,1]（2 个 black-match，1 个 white-match）。follow-up 是给定一个数组 guess，对该数组的评判结果 score(score[0]=black-match, score[1]=white-match)，问一个新的数组 newGuess 可不可能是 real

6. 给定一个字符串 s1,问可不可以变换成另外一个字符串 s2。变换的规则是：所有 s1 中的同一个字符都必须统一变换成另外一个相同字符。举例，'abc'->'cba', true; 'bab'->'abc', false。

7. 按 left most, right most, second left most, second right most...的方式遍历一个 BST 第 L 层的所有元素

8. 一个 NxN 的矩阵，横行纵列都是有序的，求第 k 小的元素

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=402928&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Airbnb-全职-电面-社招

菜单 menu sum, 比如：白菜: 2.4，青菜:2.5，西红柿: 5.2，总价 15 问可以有几种组合 并打印出来

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=402916&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Apple-全职-电面-社招

已知一个有向图的所有边，HashMap<String, Set<String>>, 求图。 自定义 interface。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=402890&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-其他-社招

[Leetcode,301] Remove the minimum number of invalid parentheses in order to make the input string valid. Return all possible results.

Note: The input string may contain letters other than the parentheses (and).

Examples:

"()())()" -> ["()()()", "(())()"]

"(a())()" -> ["(a)()()", "(a())()"]

")(" -> [""]

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=404760&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Zillow-全职-电面+现场-社招

1.[Leetcode,236] Given a binary tree, find the lowest common ancestor (LCA) of two given nodes in the tree.

According to the definition of LCA on Wikipedia: “The lowest common ancestor is defined between two nodes v and w as the lowest node in T that has both v and w as descendants (where we allow a node to be a descendant of itself).”

For example, the lowest common ancestor (LCA) of nodes 5 and 1 is 3. Another example is LCA of nodes 5 and 4 is 5, since a node can be a descendant of itself according to the LCA definition.

2. 给一个 log stream，里面有用户信息和用户浏览的网站信息以及时间信息，分析这个 stream 返回出当前最热门的网站排名。follow up：怎么 scale

3. 输入一个整数 N，返回 Nth 斐波那契数值。follow up：1. 如果这是个 API，怎么设计，怎么改代码，使得时间最 optimize。2. 如果已知 N 的范围，又需要怎么设计和变化。分别比较各种方法和数据结构的优缺点。

4. [Leetcode,221] Given a 2D binary matrix filled with 0's and 1's, find the largest square containing only 1's and return its area.

For example, given the following matrix:

1 0 1 0 0

1 0 1 1 1

1 1 1 1 1

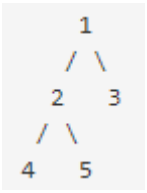
1 0 0 1 0

Return 4.

5. [Leetcode,366] Given a binary tree, find all leaves and then remove those leaves. Then repeat the previous steps until the tree is empty.

Example:

Given binary tree



Returns [4, 5, 3], [2], [1].

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=404575&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-电面-社招

1.[Leetcode,283] Given an array nums, write a function to move all 0's to the end of it while maintaining the relative order of the non-zero elements.

For example, given nums = [0, 1, 0, 3, 12], after calling your function, nums should be [1, 3, 12, 0, 0].

Note:

You must do this in-place without making a copy of the array.

Minimize the total number of operations.

2. 给一个数组，问有多少个集合，满足这个集合中的最大最小值之和小于 k，k 是输入的一个参数

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=404505&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

petuum-全职-电面-应届

[Leetcode,204] Count the number of prime numbers less than a non-negative number, n.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=404192&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Uber –全职–电面–社招

From a given 2D matrix of 0's and 1's, find an index that when toggled will result in creation of a single largest island.Island is a group of adjascent 1's.

e.g [[0,1,1,0], [0,0,0,0], [1,0,0,0], [1,0,0,1], [0,0,0,0], [0,0,1,1]].

In the given example they are 4 islands. (2) (0,1),(0,2) (2) (2,0),(3,0) (1) (3,3) (2) (5,2),(5,3)Find all the islands, number of elements in each Island and there indices.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=403735&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

枚举 0，链接区域

Follow up：如何能够让最大的最小呢?

1111101
1111111
1111101

AmazonAudible–实习–电面–其他]

1. 假设 1 对应 a, 2–>b, 3–>c,..., 26–>z, 给定一串数字，输出所有可能的字母组合。举个例子，123 可能的组合为，abc, lc, aw.

2. 给定一个整数数组, 输入数组长度可能很大 判断是否是合法的 byte 表示。

比如

00001010 合法

11001001 10011011 合法，因为第一个 byte 开头两个 1，第二个 byte 开头是 10.

11100110 10100101 10001001 合法，因为开头 3 个 1， 二三 byte 开头是 10.

11110000 10001000 11001001 10100011 不合法，因为第三个 byte 开头不是 10

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=403450&extra=page%

3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-现场-社招

1.[Leetcode,204] Given a collection of candidate numbers (candidates) and a target number (target), find all unique combinations in candidates where the candidate numbers sums to target.

Each number in candidates may only be used once in the combination.

Note:

All numbers (including target) will be positive integers.

The solution set must not contain duplicate combinations.

2.[Leetcode,716]Design a max stack that supports push, pop, top, peekMax and popMax.

push(x) -- Push element x onto stack.

pop() -- Remove the element on top of the stack and return it.

top() -- Get the element on the top.

peekMax() -- Retrieve the maximum element in the stack.

popMax() -- Retrieve the maximum element in the stack, and remove it. If you find more than one maximum elements, only remove the top-most one.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=403443&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-现场-社招

1. 给两个 string，找第二个 string 在第一个 string 里面出现的次数，要求是 substring

Rabin-karp: needle... haystack

Incremental hash...

2. 一个简单的 binary search 题，给了输入的范围，0 到 10000，要求找到 target。

3.给一个单向链表，要求删除所有的有重复数值的节点 unsorted...

4. [Leetcode,317]You want to build a house on an empty land which reaches all buildings in the shortest amount of distance. You can only move up, down, left and right. You are given a 2D grid of values 0, 1 or 2, where:

Each 0 marks an empty land which you can pass by freely.

Each 1 marks a building which you cannot pass through.

Each 2 marks an obstacle which you cannot pass through.

For example, given three buildings at (0,0), (0,4), (2,2), and an obstacle at (0,2):

The point (1,2) is an ideal empty land to build a house, as the total travel distance of 3+3+1=7 is minimal. So return 7.

Note:There will be at least one building. If it is not possible to build such house according to the above rules, return -1.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=403282&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Quip-全职-电面+现场-应届

1. 给两个 array, 假设 a 的容量够放入所有的 b elements, 要求 inplace merge 这两个 array：a = {2,4,6,7,_,_,_,_}, b = {1,5,9,11}; sort...

2. [Leetcode,151]Given an input string, reverse the string word by word.

For example,

Given s = "the sky is blue",

return "blue is sky the".

3. [Leetcode,240] Write an efficient algorithm that searches for a value in an m x n matrix. This matrix has the following properties:

Integers in each row are sorted in ascending from left to right.

Integers in each column are sorted in ascending from top to bottom.

For example,

Consider the following matrix:

```
[
  [1,   4,  7, 11, 15],
  [2,   5,  8, 12, 19],
  [3,   6,  9, 16, 22],
  [10, 13, 14, 17, 24],
  [18, 21, 23, 26, 30]
]
```

Given target = 5, return true.

Given target = 20, return false.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=403065&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Snapchat-全职-电面-社招

1. [Leetcode,714] Your are given an array of integers prices, for which the i-th element is the price of a given stock on day i; and a non-negative integer fee representing a transaction fee.

You may complete as many transactions as you like, but you need to pay the transaction fee for each transaction. You may not buy more than 1 share of a stock at a time (ie. you must sell the stock share before you buy again.)

Return the maximum profit you can make.

Example 1:

Input: prices = [1, 3, 2, 8, 4, 9], fee = 2

Output: 8

Explanation: The maximum profit can be achieved by:

Buying at prices[0] = 1

Selling at prices[3] = 8

Buying at prices[4] = 4 Selling at prices[5] = 9

The total profit is ((8 – 1) – 2) + ((9 – 4) – 2) = 8.

Note:

0 < prices.length <= 50000.

0 < prices[i] < 50000.

0 <= fee < 50000.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=403064&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

Hulu-全职-电面-社招

1. Design a FizzBuzz game: 两个人轮流说一个数，从 1 开始，说到 3 和 3 的倍数的人要说 Fizz，说到 5 和 5 的倍数的人要说 Buzz，说到 3 和 5 一起的倍数的人要说 FizzBuzz。

2. OOP：design class or data structure used for movies like "Avengers" or TV shows.

多态，继承

如何村数据库

序列化

Google Play 的电视剧，season、演员，tv，导演

3. Find all emails from a block of text.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=405610&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

qinyuan@bittiger.io;q@gmail.com s@gmail.com

q@gmail.com@gmail.com

RE @a@a@a@b.com

有限状态机：finite state machine

Dropbox-全职-电面-社招

给一个 file path 和一个 string。看这个 string 在不在这个 file 里面。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=405556&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

File too big
Linux related
build index, pre-process
Shell

Quip-全职-电面-应届

1. [Leetcode,17] Given a string containing digits from 2-9 inclusive, return all possible letter combinations that the number could represent.
A mapping of digit to letters (just like on the telephone buttons) is given below. Note that 1 does not map to any letters.

Example:
Input: "23"
Output: ["ad", "ae", "af", "bd", "be", "bf", "cd", "ce", "cf"].
Note:
Although the above answer is in lexicographical order, your answer could be in any order you want.

2.[Leetcode,285]Given a binary search tree and a node in it, find the in-order successor of that node in the BST.
Note: If the given node has no in-order successor in the tree, return null.
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=405519&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26dateline%3D604800%26sortid%3D311%26dateline%3D604800%26sortid%3D311%26orderby%3Ddateline

04/22 – 04/28

Bloomberg–全职–技术电面–社招

1.有一些机场 ABCD，两两之间有一些航班

A<-->B

A<-->C

C<-->D，写个算法列出所有的路径，自己要建立 graph，并且举例 start 和 dest

2．Given an ascii string containing parentheses and other characters, write a function that balances the parentheses by removing the minimum number of unnecessary parentheses.

Examples:

")())((honey badger))())()" –> "()((honey badger))()()"

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=416250&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Lyft–全职–在线笔试–社招

一个 array, [8，–2, –1，–10,3,4,5,6,7,9,10，0，1，2]. 找到最长的 consecutive sequence，注意不是返回长度，而是数组本身

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=416203&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook–全职–Onsite–社招

[LeetCode,772]Implement a basic calculator to evaluate a simple expression string.

The expression string may contain open (and closing parentheses), the plus + or minus sign –, non–negative integers and empty spaces .

The expression string contains only non–negative integers, +, –, *, / operators , open (and closing parentheses) and empty spaces . The integer division should truncate toward zero.

You may assume that the given expression is always valid.

Some examples:

```
"1 + 1" = 2
" 6-4 / 2 " = 4
"2*(5+5*2)/3+(6/2+8)" = 21
"(2+6* 3+5- (3*14/7+2)*5)+3"=-12
```

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=416199&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft–全职–在线笔试–社招

[LeetCode,21] Merge two sorted linked lists and return it as a new list. The new list should be made by splicing together the nodes of the first two lists.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415748&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

eBay–全职–技术电面+Onsite–社招

电面

1.reverse linked list

2. [LeetCode,34] Given an array of integers nums sorted in ascending order, find the starting and ending position of a given target value.

Your algorithm's runtime complexity must be in the order of O(log n).

If the target is not found in the array, return [–1, –1].

Onsite

1.check if a string is a rotated string of another string."abcde" "cdeab" true.

Follow–up: 如果 string 很大不能使用额外空间怎么办?

2. [LeetCode,240] Write an efficient algorithm that searches for a value in an m x n matrix. This matrix has the following properties:

Integers in each row are sorted in ascending from left to right.

Integers in each column are sorted in ascending from top to bottom.

For example,

```
[
  [1,   4,  7, 11, 15],
  [2,   5,  8, 12, 19],
  [3,   6,  9, 16, 22],
  [10, 13, 14, 17, 24],
  [18, 21, 23, 26, 30]
]
```

Consider the following matrix:

Given target = 5, return true.

Given target = 20, return false.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415736&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Oracle-全职-技术电面-社招

[LeetCode,1] Given an array of integers, return indices of the two numbers such that they add up to a specific target.

You may assume that each input would have exactly one solution, and you may not use the same element twice.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415721&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面+Onsite-社招

电面

如何判断一个 tree 是 balanced BST

onsite

1.[LeetCode,212] Given a 2D board and a list of words from the dictionary, find all words in the board.

Each word must be constructed from letters of sequentially adjacent cell, where "adjacent" cells are those horizontally or vertically neighboring. The same letter cell may not be used more than once in a word.

For example,

Given words = ["oath","pea","eat","rain"] and board =

```
[
  ['o','a','a','n'],
  ['e','t','a','e'],
  ['i','h','k','r'],
  ['i','f','l','v']
]
```

Return ["eat","oath"].

2.假设有个 streaming data,如何找到出现次数最多的三个字母的组合

比如 ABCBCABC

所有的组合包括:

ABC

BCB

CBC

BCA

CAB

ABC 出现了两次,所以答案就是 ABC

地址:

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415719&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面+Onsite-社招

电面:

给一个树，删掉一些 nod，形成一些新的树

onsite

1.find peak in an array 可能有重复, [12 3 4 4 5 2 1] 找到 peak 是 5

2.给一个数组,找到一个 x 使得所有小于 x 的数就等于本身 大于它的数等于 x,所有数字相加最接近一个 target

比如 [1 3 5 7 9] target=24, answer is8. 因为当 x=8,数组里面只有 9>8,所以 1+3+5+7+8=24 最接近 target

地址:

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415717&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

ASML-全职-Onsite+在线笔试-应届

在线笔试

1.类似婚礼的那种酒杯摆设，第一层 1 个杯子，第二层 2 个，第三层 3 个。。。。现在给一个数字 n, 问多少酒杯里面有酒，分别有多少。每个杯子里面可能有 0.5，0.25 这么多需要考虑杯子摆设

2.如何两个 sorted array,合并成一个，第一个 array 足够大。

Onsite

[LeetCode,202]Write an algorithm to determine if a number is "happy".

A happy number is a number defined by the following process: Starting with any positive integer, replace the number by the sum of the squares of its digits, and repeat the process until the number equals 1 (where it will stay), or it loops endlessly in a cycle which does not include 1. Those numbers for which this process ends in 1 are happy numbers.

Example:

```
Input: 19
Output: true
Explanation:
1^2 + 9^2 = 82
8^2 + 2^2 = 68
6^2 + 8^2 = 100
1^2 + 0^2 + 0^2 = 1
```

地址:

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415482&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-社招

1. reverse string iteratively and reversely

2. print an integer vertically

3. [LeetCode,117]Given a binary tree

```
struct TreeLinkNode {
  TreeLinkNode *left;
  TreeLinkNode *right;
  TreeLinkNode *next;
}
```

Populate each next pointer to point to its next right node. If there is no next right node, the next pointer should be set to NULL.

Initially, all next pointers are set to NULL.

Ps:面试要求 o(n)时间和 o(1)空间

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415431&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Airbnb-全职-技术电面-社招

Display Page (Pagination)

stem, system-ui, &quot">Given an array of CSV strings representing search results, output results sorted by a score initially. A given host may have several listings that show up in these results. Suppose we want to show 12 results per page, but we don't want the same host to dominate the results.

Write a function that will reorder the list so that a host shows up at most once on a page if possible, but otherwise preserves the ordering. Your program should return the new array and print out the results in blocks representing the pages.

Given an array of csv strings, output results separated by a blank line.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415426&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-实习-在线笔试-应届

1.[LeetCode,686] Given two strings A and B, find the minimum number of times A has to be repeated such that B is a substring of it. If no such solution, return -1.

For example, with A = "abcd" and B = "cdabcdab".Return 3, because by repeating A three times (“abcdabcdabcd”), B is a substring of it; and B is not a substring of A repeated two times ("abcdabcd").

Note:The length of A and B will be between 1 and 10000.

2. 求二叉树中值相同相连的节点的最大数量（其实是 edge 数，节点数要减一）

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415388&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

SalesForce-全职-技术电面-社招

1. 在 Binary search tree 中找到第一个比 given node 大的 node，但是不让用 traverse。 此 BST 每个 node 有个指针指向它的 parent node，就是 TreeNode 定义有 4 个 member： val, left， right，parent。这题要注意分情况讨论。

2. merge 两个 array， 第二个 array 的 space 足够 hold 两个 array 所有的元素，要求 in place。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415353&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Nvidia-全职-技术电面-社招

1. 计算两个数的 average， 要求用多种方法，然后分析溢出、code 经过 compiler 之后的效率等问题，比如要尽量避免 if else 等，因为在 assembly 里面是 branch。最佳答案是用 bit manipulation，直接左移来做除以 2 的操作。

2. 给了一个 foo 的 class， 然后有一个 pointer 指向这个 class 的一个 object，如果这个 pointer 的值是 a，问 foo+5 的值是什么。答案是 a+5*sizeof（foo）。

3. [LeetCode,75]Given an array with n objects colored red, white or blue, sort them in-place so that objects of the same color are adjacent, with the colors in the order red, white and blue.Here, we will use the integers 0, 1, and 2 to represent the color red, white,

and blue respectively.Note: You are not suppose to use the library's sort function for this problem.

PS:要求必须 O(n)时间复杂度并且只能过一遍。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=415348&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-在线笔试-应届

[LeetCode,15]Given an array nums of n integers, are there elements a, b, c in nums such that a + b + c = 0? Find all unique triplets in the array which gives the sum of zero.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414870&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

AQR-全职-在线笔试-社招

1. 给一段字符串， 给出最少插入次数使得 string 变成回文， 不是 LC 开头和结尾插入，可以中间插入， dp

2. 小明每天跑步，有 n 个里程碑, 他教练告诉他 【2,5,11,4,2】 就是从 2->5 ， 5->11，11->4，4->5 问哪一个是最多被跑到的，答案 5。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414831&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

C 三 LOT-全职-在线笔试-社招

Given a Timeseries that keeps information about Temperature readings for a city,
return a Timeseries that tells you, for a given day,
how long has its value been the largest running value?
eg: For temperature readings [30,50,60,20,10,40,60,90],
the transformed time series would be [1, 2, 3, 1, 1, 3, 7, 8]

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414675&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-社招

1. 找一个无序数组的最大两个数值的和
2. 给一系列朋友之间的关系，让你判断 A 和 B 两个人是否是朋友

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414611&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Spotify-全职-技术电面-社招

1.给一个 playlist，生成一个 random list 返回。这题本质上就是 N 个数字随机取 K 个，不要求 reservior sampling。
2.给一个 doc 和一个 target，返回 boolean 是否可以 makeTarget。这里 doc 和 target 都可以视作是字符串。
3.假设输入的数组是[1, 2, 98, 99, 99]，target 要求和是 100，要求的输出是
-> [2,98] [1,99] [1,99]
4.假设输入是一堆 log 文件，每个 entry 里有 user, soundtrack, timestamp，代表在某个时间某个 user 放了什么歌，求播放频率最高的连续三首歌序列。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414586&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

HBO-全职-Onsite-社招

1.[LeetCode,46] Given a collection of distinct integers, return all possible permutations.
Example:

```
Input: [1,2,3]
Output:
[
  [1,2,3],
  [1,3,2],
  [2,1,3],
  [2,3,1],
  [3,1,2],
  [3,2,1]
]
```

2. [LeetCode,47] Given a collection of numbers that might contain duplicates, return all possible unique permutations.

Example:

```
Input: [1,1,2]
Output:
[
  [1,1,2],
  [1,2,1],
  [2,1,1]
]
```

3. [LeetCode,322] You are given coins of different denominations and a total amount of money amount. Write a function to compute the fewest number of coins that you need to make up that amount. If that amount of money cannot be made up by any combination of the coins, return -1.

Example 1:

coins = [1, 2, 5], amount = 11 return 3 (11 = 5 + 5 + 1)

Example 2:

coins = [2], amount = 3 return -1.

Note:You may assume that you have an infinite number of each kind of coin.

4. [LeetCode,518] You are given coins of different denominations and a total amount of money. Write a function to compute the number of combinations that make up that amount. You may assume that you have infinite number of each kind of coin.

Note: You can assume that

0 <= amount <= 5000

1 <= coin <= 5000

the number of coins is less than 500

the answer is guaranteed to fit into signed 32-bit integer

Example:

```
Input: amount = 5, coins = [1, 2, 5]
Output: 4
Explanation: there are four ways to make up the amount:
5=5
5=2+2+1
5=2+1+1+1
5=1+1+1+1+1
```

5. [LeetCode,8] mplement atoi which converts a string to an integer.

The function first discards as many whitespace characters as necessary until the first non-whitespace character is found. Then, starting from this character, takes an optional initial plus or minus sign followed by as many numerical digits as possible, and interprets them as a numerical value.

The string can contain additional characters after those that form the integral number, which are ignored and have no effect on the behavior of this function.

If the first sequence of non-whitespace characters in str is not a valid integral number, or if no such sequence exists because either str is empty or it contains only whitespace characters, no conversion is performed.

If no valid conversion could be performed, a zero value is returned.

Note:

Only the space character ' ' is considered as whitespace character.

Assume we are dealing with an environment which could only store integers within the 32-bit signed integer range: [-2^{31}, $2^{31} - 1$]. If the numerical value is out of the range of representable values, INT_MAX ($2^{31} - 1$) or INT_MIN (-2^{31}) is returned.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414474&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

ForUsAll-全职-在线笔试-应届

1.下棋，只能向左上和右上击杀。算最多能连杀多少次。

2. We say that a character is unique in string S if it occurs exactly once in it. For example, in string S = "ACAX", the only unique characters are "C" and "X".

Let's define UNI(S) as the number of unique characters in string S. For example, UNI("ACAX") equals 2.

Given a string S, calculate the sum of UNI(S') over all non-empty substrings S'. If there are two or more equal substrings at different positions in S, we consider them different.

Since the answer can be very large, provide it modulo 1,000,000,007 (109 + 7).

Write a function:

class Solution { public int solution(String S); }

that, given a non-empty string S consisting of uppercase letters, returns the sum of UNI(S') over all non-empty substrings S' of S modulo 1,000,000,007.

For example, given "ACAX", your function should return 16, as explained visually as follows:

UNI("A") = 1

UNI("AC") = 2

UNI("ACA") = 1

UNI("ACAX") = 2

UNI("C") = 1

UNI("CA") = 2

UNI("CAX") = 3

UNI("A") = 1

UNI("AX") = 2

UNI("X") = 1

Total: 16

Given "CODILITY", your function should return 96.

Assume that:

the length of S is within the range [4..100,000];

string S consists only of uppercase letters (A–Z).

Complexity:

expected worst-case time complexity is O(N);

expected worst-case space complexity is O(N) (not counting the storage required for input arguments).

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414222&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-技术电面+Onsite-社招

电面：LC 原题武林，雾散，药物贰。

1.[LeetCode,50] Implement pow(x, n), which calculates x raised to the power n (x^n).

2.[LeetCode,35] Given a sorted array and a target value, return the index if the target is found. If not, return the index where it would be if it were inserted in order.

You may assume no duplicates in the array.

Example:

```
Input: [1,3,5,6], 5
Output: 2
```

3.[LeetCode,152] Given an integer array nums, find the contiguous subarray within an array (containing at least one number) which has the largest product.

Example：

```
Input: [2,3,-2,4]
Output: 6
Explanation: [2,3] has the largest product 6.
```

Onsite：

1.[LeetCode,516]。Given a string s, find the longest palindromic subsequence's length in s. You may assume that the maximum length of s is 1000.

2.[LeetCode,373 变形] You are given two integer arrays **nums1** and **nums2** sorted in ascending order and an integer **k**.

Define a pair **(u,v)** which consists of one element from the first array and one element from the second array.

Find the k pairs $(u_1,v_1),(u_2,v_2)$ ...(u_k,v_k) with the smallest **products.**

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=414008&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

VMWare-全职-技术电面-社招

1. 用 STACK 实现 QUEUE

2 .如何判断两个 STRING 是 ANAGRAMS，

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413975&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Zillow–全职–技术电面–社招

string split into array of strings, ex. "abc,bc\,de," => ["abc", "bc,de", ""]

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413949&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg–全职–Onsite–应届

1. 找 array 里最小的两个数，follow up：k 个最小的数

2. 给 stream of 股票<name, price>，怎样设计数据结构，随时返回当日最大，当日浮动最大，按价格排序，按字母排序。。。

3.给一个二叉树，返回最底下那一层的最左边的 node，先用 bfs 写的，又被要求用 dfs 写。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413774&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google–全职–Onsite–社招

1. 带 4 的数字被认为不吉利，楼层编号会略过带 4 的数字；给一个顶层 n，问实际有多少层；比如 n=20，那就是 18 层【去掉 4、14】

2.给一个五子棋棋盘，检验是否合法

3.给一个黑白棋棋盘，如果当前轮到黑子，问有多少个合法落子位置

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413766&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-Onsite-应届

1.判断两个 string 是否是 anagram

2.依然是两个 string，判断对第二个 string，需要替换几个字母，能让他们成为 anagram。

3.给出一个单词，需要返回利用单词中所有字母可能的排列组合，分析时间复杂度， 空间复杂度，如何优化到最优解。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413713&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Apple-全职-Onsite-其他

1.max stack 只要实现 O（1）pop push peekmax；followup：优化 space complexity

2. [LeetCode,151] Given an input string, reverse the string word by word.

Example:

```
Input: "the sky is blue",
Output: "blue is sky the".
```

Note:

- A word is defined as a sequence of non-space characters.
- Input string may contain leading or trailing spaces. However, your reversed string should not contain leading or trailing spaces.
- You need to reduce multiple spaces between two words to a single space in the reversed string.

Follow up: For C programmers, try to solve it in-place in O(1) space.

3.给一个 string，找到第一个 unique word。

4.max3 elements in an array。

followup:

1)输入是数据流怎么办

2)thread safe

3)数据量很大，大集群如何加锁？答的 zk，问了很多细节，不过不难

4)zk 如果被设置了最大 qps 怎么办？答得信号量，然后面试官说不行，他是要在极限 qps 下依然提高集群性能。最后面试官告诉我标准答案了，好像是 caching
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413706&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Pinterest–全职–技术电面–社招

输入是一组 int[][] parentChildPairs = {{1, 3}, {2, 3}, {3, 6}, {5, 6}, {5, 7}, {4, 5}, {4, 8}, {8, 9}}，表示 1 是 3 的 parent，2 是 3 的 parent，如此类推下去。画成图形就是：

```
1 2   4
\ /   /\
3   5 8
 \ / \  \
  6 7  9
```

1) 第 1 个问就是返回所有 no parents 的 person 和只有 1 个 parent 的 person，即 {{1, 2, 4}, {5, 8, 7, 9}}。
2) 第二个问题就是给 input (int[][] parentChildPairs, int person1, int person2)，返回 person1 和 person2 有没有共同的 ancestor，比如 (5, 8) => true; (3, 5) => false
3) 给 input(int[][] parentChildPairs, int person)，找出 person 最远的 ancestor。比如 对于 6，其“最远”的 ancestor 是 1，2，4，那么返回其中任何一个即可；对于 9，其“最远”的 ancestor 是 4，return 4 就可以。如果没有 ancestor，return –1 即可。
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413627&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

RichRelevance–全职–技术电面–社招

[LeetCode,4] There are two sorted arrays **nums1** and **nums2** of size m and n respectively. Find the median of the two sorted arrays. The overall run time complexity should be O(log (m+n)).

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413618&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-社招

会过期的 hash map，里面每一个元素出了 value 之外有一个 live time，要你实现 get 和 put 函数.

follow up:在 put 函数还是在 get 函数做 clean up，如何选择。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413564&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-技术电面+Onsite-社招

电面

1. 在环状链表中删除一个节点

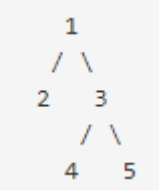
2. insertRule(first, second)， first 必须在 second 之前出现，如果 conflict，return false， no conflict 的话把新的 rule 加进去并返回 true

Onsite

1. [LeetCode,297] Serialization is the process of converting a data structure or object into a sequence of bits so that it can be stored in a file or memory buffer, or transmitted across a network connection link to be reconstructed later in the same or another computer environment.

Design an algorithm to serialize and deserialize a binary tree. There is no restriction on how your serialization/deserialization algorithm should work. You just need to ensure that a binary tree can be serialized to a string and this string can be deserialized to the original tree structure.

For example, you may serialize the following tree



as "[1,2,3,null,null,4,5]", just the same as how LeetCode OJ serializes a binary tree. You do not necessarily need to follow this format, so please be creative and come up with different approaches yourself.

Note: Do not use class member/global/static variables to store states. Your serialize and deserialize algorithms should be stateless.

2. 未排序数组去重，follow up：如果数据很多无法放进内存怎么办

3. 排序后但被移位的数组中找最小的元素.

4. [LeetCode,403] A frog is crossing a river. The river is divided into x units and at each unit there may or may not exist a stone. The frog can jump on a stone, but it must not jump into the water.

Given a list of stones' positions (in units) in sorted ascending order, determine if the frog is able to cross the river by landing on the last stone. Initially, the frog is on the first stone and assume the first jump must be 1 unit.

If the frog's last jump was k units, then its next jump must be either k – 1, k, or k + 1 units. Note that the frog can only jump in the forward direction.

Note:

- The number of stones is ⩾ 2 and is < 1,100.
- Each stone's position will be a non–negative integer < 2^{31}.
- The first stone's position is always 0.

Example:

```
[0,1,3,5,6,8,12,17]

There are a total of 8 stones.
The first stone at the 0th unit, second stone at the 1st unit,
third stone at the 3rd unit, and so on...
The last stone at the 17th unit.

Return true. The frog can jump to the last stone by jumping
1 unit to the 2nd stone, then 2 units to the 3rd stone, then
2 units to the 4th stone, then 3 units to the 6th stone,
4 units to the 7th stone, and 5 units to the 8th stone.
```

5. 判断链表是否有环， 问为什么俩指针的速度是 2 倍关系而不是三倍或者四倍...

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413557&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Dropbox–全职–技术电面–社招

给你一个文件夹,找到里面内容相同的文件

follow up: 咋整比较快?

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413450&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft+Azure–全职– Onsite –社招

Microsoft Onsite

给定一个 unsorted int array A，给定另一个 range array B，一开始 range array 很简单就[50, 80]，把 lte 50 的数排一起，[50, 80)排一起，gte 80 的排一起，不能用额外空间。O(n)复杂度。

followup: 区间变成 k 个数，但是 k 还是常数数量级；

followup2: k 跟 n 同级，可以用额外空间。我说设 k 个指针代表每个区间当前位置，先走一遍数组确定每个区间的个数，然后就知道每个指针的初始位置，之后第二次遍历原数组做 swap，这里一个优化是因为区间是有序的，所以用 bst 直接 logn 找应该对应哪个指针，就不用过 n 个 if else 去找目标指针了。

Azure Onsite

1.实现 isPrime.

Followup: 有很多数，但是都集中在 1 到 1000 区间，我说先 preprocess 1 到 1000 的 prime number 用 set 存，后续查询就是 O(1)了。然后让我写代码生成这个素数表。我说给定区间的话可以用欧拉筛法，跟她解释了一下她表示很好，我就写了个欧拉筛的代码.

2. 给两个 sorted 数组 A，B，计算出 match 的数量。比如[1,2,3,4]和[3,3,4,5,6] match 就是 2。每个数 match 一次就不能再用了。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413408&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

input:

syn = [('google', 'bestcompany'), ('america', 'us')]

queries = [('google in us', 'bestcompany in america')

('google in u.s.', 'bestcompany in america')]

return: [True, False]

让 check queries 里的每个 tuple 是不是 synonym queries。如果 query 里按顺序每个词相同，或者是 synonym 就 return True。

地址:

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413389&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Apple-全职-Onsite-应届

1 给一堆点组成的一个大圆，再给一个圆圈外面的点，找出圆周边上距离那个点最近的点。输入输出自己写，点怎么给也是自己写。写好后自己写 Test case 讨论复杂度和 corner case。

2. [LeetCode,46]Given a collection of **distinct** integers, return all possible permutations.

Example:

```
Input: [1,2,3]
Output:
[
  [1,2,3],
  [1,3,2],
  [2,1,3],
  [2,3,1],
  [3,1,2],
  [3,2,1]
]
```

3. [LeetCode,224]Implement a basic calculator to evaluate a simple expression string.

The expression string may contain open (and closing parentheses), the plus + or minus sign -, **non-negative** integers and empty spaces .

You may assume that the given expression is always valid.

Some examples:

```
"1 + 1" = 2
" 2-1 + 2 " = 3
"(1+(4+5+2)-3)+(6+8)" = 23
```

Note: Do not use the eval built-in library function.

地址：

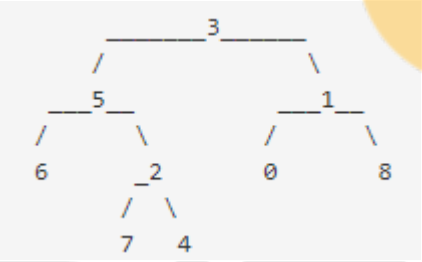
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413362&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-Onsite-应届

1.Implement a hash table with put and get function

2.[LeetCode,236]Given a binary tree, find the lowest common ancestor (LCA) of two given nodes in the tree.

According to the definition of LCA on Wikipedia: “The lowest common ancestor is defined between two nodes v and w as the lowest node in T that has both v and w as descendants (where we allow **a node to be a descendant of itself**).”



For example, the lowest common ancestor (LCA) of nodes 5 and 1 is 3. Another example is LCA of nodes 5and 4 is 5, since a node can be a descendant of itself according to the LCA definition.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413277&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-在线笔试-社招

1. [LeetCode, 283] Given an array nums, write a function to move all 0's to the end of it while maintaining the relative order of the non-zero elements.

For example, given nums = [0, 1, 0, 3, 12], after calling your function, nums should be [1, 3, 12, 0, 0].

Note:

1. You must do this **in-place** without making a copy of the array.
2. Minimize the total number of operations.

2.离原点最近的 K 个点：用一个 size 为 K 的 heap 来存结果

3. Given a sorted dictionary (array of words) of an alien language, find order of characters in the language.

Examples:

```
Input:  words[] = {"baa", "abcd", "abca", "cab", "cad"}
Output: Order of characters is 'b', 'd', 'a', 'c'
Note that words are sorted and in the given language "baa"
comes before "abcd", therefore 'b' is before 'a' in output.
Similarly we can find other orders.

Input:  words[] = {"caa", "aaa", "aab"}
Output: Order of characters is 'c', 'a', 'b'
```

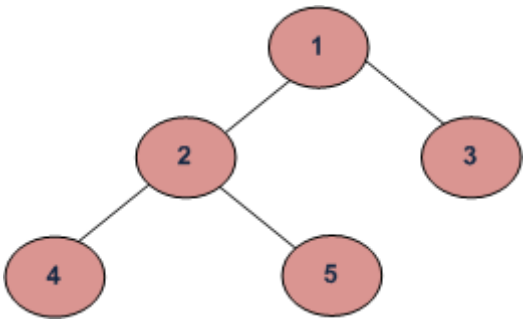
地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=413184&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Alluxio-全职-技术电面-社招

1. Given a binary tree in which nodes are numbered from 1 to n. Given a node and a positive integer K. We have to print the K-th ancestor of the given node in the binary tree. If there does not exist any such ancestor then print -1.

For example in the below given binary tree, 2nd ancestor of node 4 and 5 is 1. 3rd ancestor of node 4 will be -1.



地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=412877&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Airbnb-全职-技术电面+Onsite-社招

电面

1.10 个巫师编号 0-9，给定每个巫师认识的其它巫师，需要介绍 0 号和 9 号认识，每次介绍的费用是编号之差的平方，求最小费用

Onsite

1. [LeetCode,155] Design a stack that supports push, pop, top, and retrieving the minimum element in constant time.

- push(x) -- Push element x onto stack.
- pop() -- Removes the element on top of the stack.
- top() -- Get the top element.
- getMin() -- Retrieve the minimum element in the stack.

Example:

```
MinStack minStack = new MinStack();
minStack.push(-2);
minStack.push(0);
minStack.push(-3);
minStack.getMin();   --> Returns -3.
minStack.pop();
minStack.top();      --> Returns 0.
minStack.getMin();   --> Returns -2.
```

3. [LeetCode,269] There is a new alien language which uses the latin alphabet. However, the order among letters are unknown to you. You receive a list of words from the dictionary, where **words are sorted lexicographically by the rules of this new language**. Derive the order of letters in this language.

For example,

```
[
  "wrt",
  "wrf",
  "er",
  "ett",
  "rftt"
]
```

Given the following words in dictionary,

The correct order is: "wertf".

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=412533&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Uber-全职-技术电面-社招

[LeetCode,154] Suppose an array sorted in ascending order is rotated at some pivot unknown to you beforehand.

(i.e., [0,1,2,4,5,6,7] might become [4,5,6,7,0,1,2]).

Find the minimum element.

The array may contain duplicates.

Example:

```
Input: [1,3,5]
Output: 1
```

Note:

- This is a follow up for "Find Minimum in Rotated Sorted Array".
- Would allow duplicates affect the run-time complexity? How and why?

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=412510&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

quip-全职-技术电面-应届

1.[LeetCode,17] Given a string containing digits from 2-9 inclusive, return all possible letter combinations that the number could represent.

A mapping of digit to letters (just like on the telephone buttons) is given below. Note that 1 does not map to any letters.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=412299&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-合同工-技术电面-应届

1.输入是一个数组[2,3,4,2] 写一个 iterator，使得输出是[2,2,2,4,4] 这样，实现 next 和 hasnext

2.输入是一个二叉树，删掉不合法的 edge

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=412145&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-Onsite-社招

onsite：

1.经典的岛屿（0，1 二维矩阵）个数，改成不返回岛屿个数，返回每个岛屿的一个点。

follow up:input 矩阵太大了 只能一块一块 load 怎么办。

2.硬币组合问题，最少的硬币得到一个 amount,可以重复使用。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411991&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Xcalar-全职-在线笔试-应届

1.一堆字符串，每个字符串可以有很多子串，找出所有字符串子串的并集，然后找里面第 k 大的。

2.给两个 vector，一堆任务的 deadline 和对应任务需要的时间，让你输出最优安排时每个任务的超时时间。比如给你 deadline（1,2）和 duration（2,2），则输出（0,1）。第一个可以按时做完（时间起点为 0），即先用两个单位时间做第一个，再用两个做第二个，第二个任务超时 1 个单位）。

3.一串很长的 ACGT 的 DNA 序列，长度为 N，说如果 ACGT 分别各占 N/4 长度，那么序列为 stable 的。题目让你找最短的一段子序列，使得替换这段子序列之后（可以随意替换），updated 的 DNA 序列为 stable 的。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411566&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Rubrik–全职–技术电面–应届

给一个矩阵大小为 N，代表有 N 个灯泡，实现两个操作:

1. flip(i, j) 表示从第 i 到第 j 个灯泡都翻转一次(开变关/关变开)

2. is_on(i) 查询第 i 个灯泡是开还是关

flip 操作随意实现，只要 is_on 的结果都是对的就行

follow up:如果 flip 执行次数远大于 is_on 怎么改会更好?

follow up 2:flip 和 is_on 都执行很多次怎么办?

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411416&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook–全职–在线笔试–社招

given two strings，return whether these two strings reperent the same tree structure. ignore the sort of children node " node_a(node_b, node_c, node_d(node_d1, node_d2), node_e) "

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411282&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

forusall–全职–技术电面–应届

1. [LeetCode,227]Implement a basic calculator to evaluate a simple expression string.

The expression string contains only non-negative integers, +, -, *, / operators and empty spaces . The integer division should truncate toward zero.

You may assume that the given expression is always valid.

Some examples:

```
"3+2*2" = 7
" 3/2 " = 1
" 3+5 / 2 " = 5
```

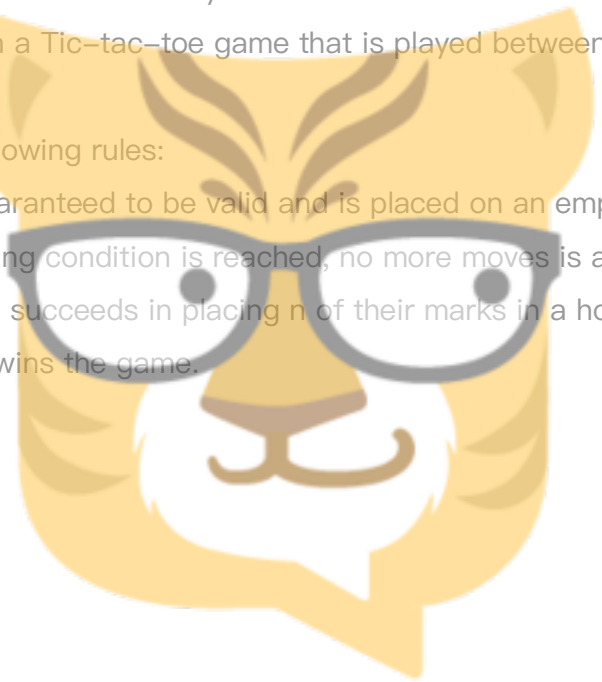
Note: Do not use the eval built-in library function.

2. [LeetCode,348]Design a Tic-tac-toe game that is played between two players on a n x n grid.

You may assume the following rules:

1. A move is guaranteed to be valid and is placed on an empty block.
2. Once a winning condition is reached, no more moves is allowed.
3. A player who succeeds in placing n of their marks in a horizontal, vertical, or diagonal row wins the game.

Example:



```
Given n = 3, assume that player 1 is "X" and player 2 is "O" in the board.

TicTacToe toe = new TicTacToe(3);

toe.move(0, 0, 1); -> Returns 0 (no one wins)
|X| | |
| | | |    // Player 1 makes a move at (0, 0).
| | | |

toe.move(0, 2, 2); -> Returns 0 (no one wins)
|X| |O|
| | | |    // Player 2 makes a move at (0, 2).
| | | |

toe.move(2, 2, 1); -> Returns 0 (no one wins)
|X| |O|
| | | |    // Player 1 makes a move at (2, 2).
| | |X|

toe.move(1, 1, 2); -> Returns 0 (no one wins)
|X| |O|
| |O| |    // Player 2 makes a move at (1, 1).
| | |X|

toe.move(2, 0, 1); -> Returns 0 (no one wins)
|X| |O|
| |O| |    // Player 1 makes a move at (2, 0).
|X| |X|

toe.move(1, 0, 2); -> Returns 0 (no one wins)
|X| |O|
|O|O| |    // Player 2 makes a move at (1, 0).
|X| |X|

toe.move(2, 1, 1); -> Returns 1 (player 1 wins)
|X| |O|
|O|O| |    // Player 1 makes a move at (2, 1).
|X|X|X|
```

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411269&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

C3 IoT-全职-技术电面-应届

1.给两个数组 AB，取 1）in all, 均在 AB 里的数返回 2）in one，只在 A 或 B 里的数返回.

2.给一个数组，找出所有能组成三角形三遍的组合

3.模拟电梯调度

4.给一个数组表示每天气温，找出每个元素从前往后数保持是最大值的天数，例如[13,21,18,27,23,25]，返回[0,1,0,3（27 比 21,18,13 大）,0,1].

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411263&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

goldman sachs-全职-技术电面-社招

给你一堆 interval（start，end，price），interval 之间有重合，输出各个时间段的最小 price.

比如输入(1,5,20)(3,6,15)(2,8,25).

输出（1，3，20）（3，6，15）（6，8，25）

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411200&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

题目是给一个二叉树的 root，返回值是一个节点。要求是，保持原来的结构，把二叉树的所有节点随机置换一遍，要修改节点本身而不是修改 value。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411072&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Unity-全职-技术电面-应届

1. [LeetCode,54] Given a matrix of m x n elements (m rows, n columns), return all elements of the matrix in spiral order.

Example:

```
Input:
[
 [ 1, 2, 3 ],
 [ 4, 5, 6 ],
 [ 7, 8, 9 ]
]
Output: [1,2,3,6,9,8,7,4,5]
```

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=411005&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-Onsite-社招

1. 平移一个数组，好比[1,2,3,4,5],移动 3 位变成[4,5,1,2,3]

2.[LeetCode,53]Given an integer array nums, find the contiguous subarray (containing at least one number) which has the largest sum and return its sum.

Example:

```
Input: [-2,1,-3,4,-1,2,1,-5,4],
Output: 6
Explanation: [4,-1,2,1] has the largest sum = 6.
```

3. 垂直打印一个数字

4.在一个字符串里面找出所有的数字。(自己做的时候忘记问要不要考虑浮点数了，而且也没有问是不是十进制什么的) follow up 就是字符串很大该怎么办。

5.在一个朋友关系圈里面，找到从 A 到 B 连接人数最短的路径。面试官想要的是，加一个最大步数，比如说超过 5 个人才能连接 A 到 B，那就不再找了。

6. [LeetCode,23]Merge k sorted linked lists and return it as one sorted list. Analyze and describe its complexity.

Example:

```
Input:
[
  1->4->5,
  1->3->4,
  2->6
]
Output: 1->1->2->3->4->4->5->6
```

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410990&extra=page%

3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-技术电面-社招

[LeetCode,364] Given a nested list of integers, return the sum of all integers in the list weighted by their depth.

Each element is either an integer, or a list -- whose elements may also be integers or other lists.

Different from the previous question where weight is increasing from root to leaf, now the weight is defined from bottom up. i.e., the leaf level integers have weight 1, and the root level integers have the largest weight.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410911&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Pinterest-全职-Onsite-社招

1. [LeetCode,277] Suppose you are at a party with n people (labeled from 0 to n – 1) and among them, there may exist one celebrity. The definition of a celebrity is that all the other n – 1 people know him/her but he/she does not know any of them.

Now you want to find out who the celebrity is or verify that there is not one. The only thing you are allowed to do is to ask questions like: "Hi, A. Do you know B?" to get information of whether A knows B. You need to find out the celebrity (or verify there is not one) by asking as few questions as possible (in the asymptotic sense).

You are given a helper function bool knows(a, b) which tells you whether A knows B. Implement a function int findCelebrity(n), your function should minimize the number of calls to knows.

Note: There will be exactly one celebrity if he/she is in the party. Return the celebrity's label if there is a celebrity in the party. If there is no celebrity, return –1.

2. [LeetCode,759] We are given a list avail of employees, which represents the free time for each employee.

Each employee has a list of non-overlapping Intervals, and these intervals are in sorted order.

Return the list of finite intervals representing **common, positive-length free time** for all employees, also in sorted order.

Example :

```
Input: avails = [[[1,2],[5,6]],[[1,3]],[[4,10]]]
Output: [[3,4]]
Explanation:
There are a total of three employees, and all common
free time intervals would be [-inf, 1], [3, 4], [10, inf].
We discard any intervals that contain inf as they aren't finite.
```

3.sorte integer array, 找 occurence 大于 n/4 的 elements,然后扩展到 n/k,然后扩展到 array 特别大。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410807&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-社招

1.count 0 and 1 in an integer

2.union two sorted list with distinct value

3.[LeetCode,44] Given an input string (s) and a pattern (p), implement wildcard pattern matching with support for '?' and '*'.

'?' Matches any single character.

'*' Matches any sequence of characters (including the empty sequence).

The matching should cover the **entire** input string (not partial).

Note:

- s could be empty and contains only lowercase letters a-z.
- p could be empty and contains only lowercase letters a-z, and characters like ? or *.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410317&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-校园招聘会-应届

1.给一个 string，根据字母出现的频率和字母顺序重新排序，Input: bloomberg, Output: bbooeglmr.

2.用两个 linkedlist 表示的数相加，输出结果。input: 1->2->3, 4->5, Output: 1->6->8

3. [LeetCode,42] Given n non-negative integers representing an elevation map where the width of each bar is 1, compute how much water it is able to trap after raining.

The above elevation map is represented by array [0,1,0,2,1,0,1,3,2,1,2,1]. In this case, 6 units of rain water (blue section) are being trapped. Thanks Marcos for contributing this image!

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409723&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

1.判断一个数字里的重复数字。

2.扫地机器人，给了几个 api，clean(), turnLeft(), move(), 要求设计一个算法打扫房间。

3.给一个函数 getPrice(int x), 输入要购买的商品数量 x，会返回买 x 个商品需要多少钱，问你有 y 元预算，最多买多少件商品。因为 hr 假设买多了会打折什么的，所以不能直接总价/单价，最后两次二分做的。

4.给一个字典， 输入 Chi，补全 China 等在字典中的单词， 用 trie tree。 follow up 是怎么给多个补全结果排序。

5.给一个二维矩阵，随机一个出发点，盘旋向外输出，当第一次碰到边界时停止。

6.给一个棋盘，一枚棋子从原点开始走，每次只能选上下左右一个方向走一格，当坐标 x、y 的数字和超过 15 的点不能走，比如 x=13， y=29，和=1+3+2+9=15，（13，29）这个点就不能走。问棋盘上任意一个点，棋子可以到达的概率是多少。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410274&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-社招

1.找一个数组中最大的两个，返回两者之和
2.判断两者是否是直接或者间接盆友，比如 a b 是盆友，bc 是盆友，那么 ac 就是朋友
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410261&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

TwoSigma-全职-在线笔试-社招

1.[LeetCode,547] There are **N** students in a class. Some of them are friends, while some are not. Their friendship is transitive in nature. For example, if A is a **direct** friend of B, and B is a **direct** friend of C, then A is an **indirect** friend of C. And we defined a friend circle is a group of students who are direct or indirect friends.
Given a **N*N** matrix **M** representing the friend relationship between students in the class. If M[i][j] = 1, then the i_{th} and j_{th} students are **direct** friends with each other, otherwise not. And you have to output the total number of friend circles among all the students.
2. [LeetCode,646] You are given n pairs of numbers. In every pair, the first number is always smaller than the second number.
Now, we define a pair (c, d) can follow another pair (a, b) if and only if b < c. Chain of pairs can be formed in this fashion.
Given a set of pairs, find the length longest chain which can be formed. You needn't use up all the given pairs. You can select pairs in any order.
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410148&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-应届

[LeetCode,628]Given an integer array, find three numbers whose product is maximum and output the maximum product.

follow up: maximum product of k numbers

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410076&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1. Given a stream of data that only contians integer, you need to calculate the average of numbers in a time window. Assume you have multiple replicated numbers, how could you transfer the stream from producer to consumer efficiently while maintaining the order?

2. Election voting. Given a list of records that have timestamp and candidates, and each record represents one vote. Get the top candidate. Conner case: tie

3. Given a n*n board, a start point and a end point. The board contains only 0 or 1, 0 stands for empty space, 1 stands for the wall. Calculate the shortest path between these two points.

> Follow up: If you have only one chance to change 1 to 0, what is the length of the shortest path?

4. Given a file path and a int value K. The file contains all messages from users in a hangout chatting session. Find the top k talktive users.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=410047&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

ixl learning-全职-技术电面-应届

1.一棵含有 string 的二叉树，找出其中一个出现在最多层数的 string 并返回。

2.一个二维数组，看成是有很多已经排序的一维数组组成，把它们合并成一维数组并返回。时间复杂度并优化。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409934&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.求问一个数组最低的 bid 价格，该价格不能重复，hashmap 就可以。Follow up 是依次的最低价格，要求 nlogn。
2.在一个 histogram 里面最大的矩形面积，可以用分治法实现 nlogn。最优是 O(n)
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409797&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1. [LeetCode,312]Given n balloons, indexed from 0 to n-1. Each balloon is painted with a number on it represented by array nums. You are asked to burst all the balloons. If the you burst balloon i you will get nums[left] * nums[i] * nums[right] coins. Here left and right are adjacent indices of i. After the burst, the left and right then becomes adjacent.
Find the maximum coins you can collect by bursting the balloons wisely.
Note:
(1) You may imagine nums[-1] = nums[n] = 1. They are not real therefore you can not burst them.
(2) 0 ≤ n ≤ 500, 0 ≤ nums[i] ≤ 100
Example:
Given [3, 1, 5, 8] Return 167
2. [LeetCode,727]Given strings S and T, find the minimum (contiguous) **substring** W of S, so that T is a **subsequence** of W.
If there is no such window in S that covers all characters in T, return the empty string "". If there are multiple such minimum-length windows, return the one with the left-most starting index.
Example:

Input:

S = "abcdebdde", T = "bde"

Output: "bcde"

Explanation:

"bcde" is the answer because it occurs before "bdde" which has the same length.

"deb" is not a smaller window because the elements of T in the window must occur in order.

Note:

All the strings in the input will only contain lowercase letters.The length of S will be in the range [1, 20000].The length of T will be in the range [1, 100].

3. [LeetCode,805] In a given integer array A, we must move every element of A to either list B or list C. (B and C initially start empty.)

Return true if and only if after such a move, it is possible that the average value of B is equal to the average value of C, and B and C are both non-empty.

Example :

Input:

[1,2,3,4,5,6,7,8]

Output: true

Explanation: We can split the array into [1,4,5,8] and [2,3,6,7], and both of them have the average of 4.5.

Note:

- The length of A will be in the range [1, 30].
- A[i] will be in the range of [0, 10000].

4. [LeetCode,815] We have a list of bus routes. Each routes[i] is a bus route that the i-th bus repeats forever. For example if routes[0] = [1, 5, 7], this means that the first bus (0-th indexed) travels in the sequence 1->5->7->1->5->7->1->... forever.

We start at bus stop S (initially not on a bus), and we want to go to bus stop T. Travelling by buses only, what is the least number of buses we must take to reach our destination? Return -1 if it is not possible.

Example:

Input:

routes = [[1, 2, 7], [3, 6, 7]]

S = 1

T = 6

Output: 2

Explanation:

The best strategy is take the first bus to the bus stop 7, then take the second bus to the bus stop 6.

Note:

- 1 <= routes.length <= 500.
- 1 <= routes[i].length <= 500.
- 0 <= routes[i][j] < 10 ^ 6.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409786&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-应届

1. move zeros 要求保持原来非 0 元素的顺序。1,0 ,-1,2,0,4,6 变成 0,0,1,-1,2,4,6 以及复杂度

2.给一个十进制数，判断它的二进制表示是不是 palindrome，比如：5 -》101 -》是， 4-》100-》不是以及复杂度

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409692&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

给定一个无向带权图 G 和给定节点 N 求从 N 出发经过图中所有点且最终回到 N 的最短路径，节点可以多次访问

给定 Source 和 Target，求从 Source 出发经过图中所有点且最到达 Target 的最短路径

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409678&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.一个 image 以 2D byte array 的方式储存（byte[][] image），每个象素点是 1 个 bit（0 或 1）。现在要求每行的象素点做对称翻转。

2. game of life 变形，一个 2D matrix 只有 0 或 1，要求把所有上下左右被 1 包围的 1 变成 0。先给了个 space O（n^2）暴力解，然后让优化空间，就说了用两个 bit 存放前后 state 的方法，space 变 O（1），但面试官说假设每个格子只有一个 bit 空间怎么办？答三行三行做，他说行。

3.设计一个 interface 实现有 timestamp 的 hashmap，即（key，value，time），写出 get 和 put 方法。过期的 key value pair 不能被 get。

4. 面经题，给一个国王家的 family tree （n-ary tree），王位继承是先传国王最年长的儿子，假如最年长儿子死了，就传给他最年长的儿子。。。如果这些人都不存在，再考虑国王次年长的儿子，以此类推。要求设计这样一棵树，死掉的人不要求删除，实现 birth（）和输出王位继承顺序的 method（死掉的人不在继承顺序结果里）。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409626&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

petuum-全职-技术电面-应届

1， binary tree ，写一个删除函数：不在[low, high]范围里的 node->，叶子节点的话，将 node 的值置为 null，非叶子节点保持该 node；

2. list 里写两个函数：1.插入一个数，2.return median；

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409622&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-Onsite-社招

1. 在字符串中找出数字，并输出，例如 12ABC45 输出{12, 45}.

2. [LeetCode,207]There are a total of n courses you have to take, labeled from 0 to n-1. Some courses may have prerequisites, for example to take course 0 you have to first take course 1, which is expressed as a pair: [0,1]

Given the total number of courses and a list of prerequisite **pairs**, is it possible for you to finish all courses?

Example:

```
Input: 2, [[1,0]]
Output: true
Explanation: There are a total of 2 courses to take.
             To take course 1 you should have finished course 0. So it is possible.
```

3. 关系网变种，类似于一个图的题，A–B–C 有关系，找 A 到 C 的最短距离=2，并输出最短路径， BFS + DFS 可解。

follow up，若 AC 没关系怎么办？答：设置最大搜索 level。类似于 linkedin 的好友推荐相关度最大到 3

follow up, 能只用 BFS 解么？答： 可以，每次搜索存储一个 Listnode，记录当前点的前面一个 Node，找到 target Node 以后，trace back 输出答案。A->B->C

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409547&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Oracle–全职–技术电面–社招

[LeetCode,73]Given a m x n matrix, if an element is 0, set its entire row and column to 0. Do it **in–place**.

Example:

Input:

[
  [1,1,1],
  [1,0,1],
  [1,1,1]
]

Output:

[
  [1,0,1],
  [0,0,0],
  [1,0,1]

]

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409014&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-Onsite-社招

在一个无序的数列里面，找到所有的 subsets 的 min 和 max 的和小于等于 target，返回 subsets 的个数。可以优化到 O(n).

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=409008&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

opendoor-全职-Onsite-社招

1. 给一 Map<String, List<String>>, map 里面 key 是年份，value 是一串排过名次的名字，保证是 unique 的，可以理解成 index 0，代表这个名字排名第 0 位。

要求给你一个人名，返回这个人名字所在的年份和对应的名次。

follow up 是 给你个人名的 prefix，要求返回所有对应人名的年份，名次，名字，数据结构自己设计。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408985&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

倒排索引

Microsoft-全职-Onsite-社招

1. 在一个矩阵里, 找到所有行都出现的数字

Hash < Hashset...>

Set & set & set & set & …

Follow up: Sorted line

2. Top K frequency words.

3. 外部排序 (一个 pair <ID, data>) 也用外部排序按照 ID 排好序. ID 的 range 是 0 到 m, 要求空间复杂度是 m.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408917&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

External sort ... ??? merge sort (distributed version)

forusall-全职-技术电面-应届

1. [LeetCode,270]Given a non-empty binary search tree and a target value, find the value in the BST that is closest to the target.

Note:

- Given target value is a floating point.
- You are guaranteed to have only one unique value in the BST that is closest to the target.

2. [LeetCode,272] Given a non-empty binary search tree and a target value, find k values in the BST that are closest to the target.

Note:

- Given target value is a floating point.
- You may assume k is always valid, that is: k ≤ total nodes.
- You are guaranteed to have only one unique set of k values in the BST that are closest to the target.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408722&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-合同工-技术电面-应届

[LeetCode,307] Given an integer array nums, find the sum of the elements between indices i and j (i ≤ j), inclusive.

The update(i, val) function modifies nums by updating the element at index i to val.

Example:

Given nums = [1, 3, 5]

sumRange(0, 2) -> 9

update(1, 2)

sumRange(0, 2) -> 8

Note:

1. The array is only modifiable by the update function.
2. You may assume the number of calls to update and sumRange function is distributed evenly.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408665&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Flexport-全职-Onsite-社招

1.[LeetCode,91] A message containing letters from A-Z is being encoded to numbers using the following mapping:

'A' -> 1

'B' -> 2

...

'Z' -> 26

Given a non-empty string containing only digits, determine the total number of ways to decode it.

Example:

Input: "12"

Output: 2

Explanation: It could be decoded as "AB" (1 2) or "L" (12).

2. [LeetCode,56]Given a collection of intervals, merge all overlapping intervals.

Example 1:

Input: [[1,3],[2,6],[8,10],[15,18]]

Output: [[1,6],[8,10],[15,18]]

Explanation: Since intervals [1,3] and [2,6] overlaps, merge them into [1,6].

Example 2:

Input: [[1,4],[4,5]]

Output: [[1,5]]

Explanation: Intervals [1,4] and [4,5] are considered overlapping.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408586&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Roblox-全职-Onsite-社招

1. [LeetCode,162]A peak element is an element that is greater than its neighbors.

Given an input array nums, where num[i] ≠ num[i+1], find a peak element and return its index.

The array may contain multiple peaks, in that case return the index to any one of the peaks is fine.

You may imagine that num[-1] = num[n] = -∞.

Example:

Input: nums = [1,2,3,1]

Output: 2

Explanation: 3 is a peak element and your function should return the index number

2.给定一个表格，每个格子有一个字母，再给定一个 dictionary, 里面有很多 words, 找出所有在这个 board 上面出现的 word。 走过的格子可以重复走，例如：

DAC

RGE

YHJ

{“DAD”,”AGE”} 两个都要 return (D 走到 A 再走回 D)

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408545&extra=page%

3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-社招

[LeetCode,697]Given a non-empty array of non-negative integers nums, the **degree** of this array is defined as the maximum frequency of any one of its elements.

Your task is to find the smallest possible length of a (contiguous) subarray of nums, that has the same degree as nums.

Example 1:

Input: [1, 2, 2, 3, 1]

Output: 2

Explanation:

The input array has a degree of 2 because both elements 1 and 2 appear twice.

Of the subarrays that have the same degree:

[1, 2, 2, 3, 1], [1, 2, 2, 3], [2, 2, 3, 1], [1, 2, 2], [2, 2, 3], [2, 2]

The shortest length is 2. So return 2.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408371&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-应届

1.一个整数数列 包含 1-->N 乱序，但是有一个缺失数字，让找到这个缺失数字。比如：

[2,4,1,5,3,7] -> return 6

Xor or Sum

Follow up：如果这个数列是排序好，要比 O(n)快。

Binary Search

2.判断一个字符串中的括号是否平衡。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=408322&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline
Stack...

c3 Iot-全职-在线笔试-应届

1. sum 一个 array 里面所有 unique 的数， 如果出现过就加一.
如何 check unique: hashtable, bloomfilter?

2.一个数组中，某个数前后的 sum 相同的，返回最小的 index
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=407627&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

先求和，一个一个问

Microsoft-全职-在线笔试-社招

1. Reformat phone numbers in a String array, 123-456-7890 => 456-123-7890
? ?

2. Reverse first N elements of a singly-linked list.
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=407427&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

For ...
Corner case: 正好 length = N (dummy)

Visa-全职-在线笔试-应届

1.根据 Bit 为 1 的数量 sort 一个 array, 如： 3,4 sort 后为 4,3 因为 3–>011, 有 2 个 1，4–>100 有 1 个 1

Compare...

2. 把一个 linkedlist 插入到另一个 Linkedlist

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=407411&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

如何插入?

Amazon–全职–在线笔试–社招

给你一个 String（I am Jack and my father is Jimmy. I like wearing Jack and Jone's.）， 一个 exclude list， 让你给出出现频率最高或者并列高的词(不 Case sensitive, Jack 和 jack 算一个词，都出现的话等于算 jack 出现两次).

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=406753&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

字符串频率统计

PayPal–全职–技术电面–应届

[LeetCode,345] Write a function that takes a string as input and reverse only the vowels of a string.

Example 1:

Given s = "hello", return "holle".

Example 2:

Given s = "leetcode", return "leotcede".

Note: The vowels does not include the letter "y".

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=393830&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

双指针，左右向中间扫，碰到则交换

Google–全职–技术电面–社招

两人玩拿硬币游戏，比如桌子上有 5 个硬币 10,50,100,5,20，A 先取，然后 B 取，A 和 B 只能取现有的第一个或是最后一个，如果假设 A 和 B 都 play smart，问最后 A 能取到的最大值是多少？这个例子中 A 能取到的最大值是 75

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=406490&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

DP: 2D 1D (你可以 reduce 掉)

Addepar–全职–技术电面–社招

given a 3*3 matrix filling by unique numbers from 1 to 9. You can only switch 9 with 9's up/down/left/right neighbours. Each switch is counted as a step. Question: what's the minimum number of steps to reach the state that the matrix is like

1 2 3
4 5 6
7 8 9

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=406270&extra=page%3D5%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

BFS/A*/Hash save the 9 number state...

04/29 – 05/05

Microsoft–全职–技术电面+Onsite–社招

1.给一长串输入流（可以理解为字符串，但是必须从头读到位），找到最后一句话的第一个单词。

2. [LeetCode,621] Given a char array representing tasks CPU need to do. It contains capital letters A to Z where different letters represent different tasks.Tasks could be done without original order. Each task could be done in one interval. For each interval, CPU could finish one task or just be idle.

However, there is a non-negative cooling interval n that means between two **same tasks**, there must be at least n intervals that CPU are doing different tasks or just be idle.

You need to return the **least** number of intervals the CPU will take to finish all the given tasks.

Example 1:

Input: tasks = ["A","A","A","B","B","B"], n = 2

Output: 8

Explanation: A -> B -> idle -> A -> B -> idle -> A -> B.

Note:

1. The number of tasks is in the range [1, 10000].
2. The integer n is in the range [0, 100].

3.给一个树中的两个节点，找他们的最低公共 ancient。树的节点包含三个 pointer，分别是 parent，left，right。要求 O（lgn）时间复杂度+O（1）空间复杂度。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=422744&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook–全职–Onsite–社招

1. [LeetCode,212]Given a 2D board and a list of words from the dictionary, find all words in the board.

Each word must be constructed from letters of sequentially adjacent cell, where "adjacent" cells are those horizontally or vertically neighboring. The same letter cell may not be used more than once in a word.

Example:

Input:

words = ["oath","pea","eat","rain"] and **board** =

[

['o','a','a','n'],

['e','t','a','e'],

['i','h','k','r'],

['i','f','l','v']

]

Output: ["eat","oath"]

Note:

You may assume that all inputs are consist of lowercase letters a-z.

2. 将一个双向链表转二叉平衡树

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=422530&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-社招

1.Given a matrix, perform a transpose action in place

A company has a bunch of employees; each employee has a single direct manager. There is a stream of actions:

set_manager(A, B) –> Set B's direct manager to A

set_peer(A, B) –> set A and B's direct manager to the same

query_manager(A,B) –> returns true if A is on the management chain of B, false otherwise.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=422437&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg–全职–技术电面+Onsite–社招

电面

1. [LeetCode,20]Given a string containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.

An input string is valid if:

1. Open brackets must be closed by the same type of brackets.
2. Open brackets must be closed in the correct order.

Note that an empty string is also considered valid.

2.输入一些公司和交易量，求交易量最高的 k 个公司（Bloomberg 的经典题）。

3.给一个带有 0 和 1 的矩阵，请返回所有全 0 的路，并且路径需要有一边是矩阵边界。提示，考虑从边界开始。

Onsite

1.[LeetCode,445]You are given two **non–empty** linked lists representing two non–negative integers. The most significant digit comes first and each of their nodes contain a single digit. Add the two numbers and return it as a linked list.

You may assume the two numbers do not contain any leading zero, except the number 0 itself.

Follow up:

What if you cannot modify the input lists? In other words, reversing the lists is not allowed.

Example:

Input: (7 -> 2 -> 4 -> 3) + (5 -> 6 -> 4)

Output: 7 -> 8 -> 0 -> 7

面试要求：不允许使用栈

2.给你一个数字三角形，每个点都是整数（正负不限），求最大的路径和，一条从顶点到底边路径。
follow-up：请找出来和最大的这条路径。

3.给一个 API 去确认两个点组成的区域里有没有船只的存在，然后让你写出一个函数利用这个 API 去计算在给定的两点之间到底有多少船只。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=422348&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Yelp-全职-Onsite-社招

1.[LeetCode,341]Given a nested list of integers, implement an iterator to flatten it.
Each element is either an integer, or a list -- whose elements may also be integers or other lists.
Example 1:
Given the list [[1,1],2,[1,1]],
By calling next repeatedly until hasNext returns false, the order of elements returned by next should be: [1,1,2,1,1].
Example 2:
Given the list [1,[4,[6]]],
By calling next repeatedly until hasNext returns false, the order of elements returned by next should be: [1,4,6].

2. [LeetCode,348]（井字棋）Design a Tic-tac-toe game that is played between two players on a n x n grid.

You may assume the following rules:

1. A move is guaranteed to be valid and is placed on an empty block.
2. Once a winning condition is reached, no more moves is allowed.
3. A player who succeeds in placing n of their marks in a horizontal, vertical, or diagonal row wins the game.

面试要求：时间复杂度 O(n)

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=422223&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-社招

1.给单向链表和 int x, 删掉链表里所有大于 x 的节点

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=422101&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-Onsite-社招

1. [LeetCode,460]Design and implement a data structure for Least Frequently Used (LFU) cache. It should support the following operations: get and put.

get(key) - Get the value (will always be positive) of the key if the key exists in the cache, otherwise return -1.

put(key, value) - Set or insert the value if the key is not already present. When the cache reaches its capacity, it should invalidate the least frequently used item before inserting a new item. For the purpose of this problem, when there is a tie (i.e., two or more keys that have the same frequency), the least **recently** used key would be evicted.

Follow up:

Could you do both operations in **O(1)** time complexity?

Example:

```
LFUCache cache = new LFUCache( 2 /* capacity */ );

cache.put(1, 1);

cache.put(2, 2);

cache.get(1);    // returns 1

cache.put(3, 3);          // evicts key 2

cache.get(2);    // returns -1 (not found)

cache.get(3);    // returns 3.

cache.put(4, 4);          // evicts key 1.

cache.get(1);    // returns -1 (not found)

cache.get(3);    // returns 3

cache.get(4);    // returns 4
```

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=421877&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面+Onsite-社招

电面

1. [LeetCode,31]Implement **next permutation**, which rearranges numbers into the lexicographically next greater permutation of numbers.

If such arrangement is not possible, it must rearrange it as the lowest possible order (ie, sorted in ascending order).

The replacement must be **in-place** and use only constant extra memory.

Here are some examples. Inputs are in the left-hand column and its corresponding outputs are in the right-hand column.

1,2,3 → 1,3,2

3,2,1 → 1,2,3

1,1,5 → 1,5,1

Onsite

1.[LeetCode,23] Merge k sorted linked lists and return it as one sorted list. Analyze and describe its complexity.

Example:

Input:

[

1–>4–>5,

1–>3–>4,

2–>6

]

Output: 1–>1–>2–>3–>4–>4–>5–>6

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=421740&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Pinterest–全职–技术电面–社招

1.[LeetCode,67] Given two binary strings, return their sum (also a binary string).

The input strings are both **non–empty** and contains only characters 1 or 0.

Example 1:

Input: a = "11", b = "1"

Output: "100"

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=421707&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-Onsite-应届

1.两个 linkedlist 分别代表两个数字，对这两个数字做加法处理

2. [LeetCode,698] Given an array of integers nums and a positive integer k, find whether it's possible to divide this array into k non-empty subsets whose sums are all equal.

Example 1:

Input: nums = [4, 3, 2, 3, 5, 2, 1], k = 4

Output: True

Explanation: It's possible to divide it into 4 subsets (5), (1, 4), (2,3), (2,3) with equal sums.

Note:

- 1 <= k <= len(nums) <= 16.
- 0 < nums[i] < 10000.

3.给一个 dictionary 里面放着很多 word，再给一个 char array 里面放着可以用的 letter，每个 letter 只能用一次，但是这个 array 中会有重复 letter。问这些 letter 能组成的在 dictionary 里面的最长单词是什么。

4. [LeetCode,138] A linked list is given such that each node contains an additional random pointer which could point to any node in the list or null.

Return a deep copy of the list.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=421492&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-Onsite-应届

1.棋盘中被挖去了一些格子，问剩余的部分能否用 1*2 的长方形完全覆盖，不能重复，1*2 的长方形可以旋转。

2.第一象限有一些点，允许排序一次，求面积最小的正方形，盖住 k 个点，要求时间线性

3. [LeetCode,76]Given a string S and a string T, find the minimum window in S which will contain all the characters in T in complexity O(n).

Example:

Input: S = "ADOBECODEBANC", T = "ABC"

Output: "BANC"

Note:

- If there is no such window in S that covers all characters in T, return the empty string "".
- If there is such window, you are guaranteed that there will always be only one unique minimum window in S.

followup 如果要求的不是字母而是单词怎么办

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=421491&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-Onsite-社招

1. [LeetCode,143]Given a singly linked list L: $L_0 \rightarrow L_1 \rightarrow \dots \rightarrow L_{n-1} \rightarrow L_n$, reorder it to: $L_0 \rightarrow L_n \rightarrow L_1 \rightarrow L_{n-1} \rightarrow L_2 \rightarrow L_{n-2} \rightarrow \dots$

You may **not** modify the values in the list's nodes, only nodes itself may be changed.

Example 1:

Given 1->2->3->4, reorder it to 1->4->2->3.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=421125&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Viagogo-全职-技术电面-应届

1. find a hole in a sorted array (if 0 exists, the list always starts from 0)

ex: nums = [0,1,2,4,5,6,7], ans = 3.

ex: nums = [0,1,2,3,4,5], ans = 6.

ex: nums = [1,2,3,4], ans = 0

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=421121&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1. 给一个黑名单的 list，里面都是 ip address，ip address 里可能包含通配符字符 "*", 问如果现在有一个 ip address，返回它是否在 list 里。ip address 都是合法的，而通配符只会出现每个地址的最后。例子：List“192.168.0.*”，输入“192.168.0.1”，输出这个 ip 在 list 中。

2. 给一个数组代表一个跑道，数组上的数字表示为车速。如果前面的车比后面的车慢，则会 block 后面的车，这时会形成一个 cluster。比如[1, 2, 3]是一个 cluster， [2, 3, 1, 2] 这里有[2, 3] 和 [1, 2]两个 cluster, 而[2, 3, 2, 2]这里有 1 个 cluster, 要求输出每个 cluster 的 size. 这题的本质其实就是找出第一个比前一个 cluster 开头的数小的数，其中第一个 cluster 的开头肯定是数组的第一个数。
Follow up：如果现在在数组上插入一个数，这个数比数组上的任意一个数字都大，问每个 cluster 的 size 会有什么影响。显然这时插入数组的开头会形成一个新的 cluster，而其他位置都不会影响原来 cluster 的 size。

3.已知 screen 的高和宽，给你最小和最大的 fontSize，要求将一个给定的 string 用尽可能大的 fontSize 显示在 screen 里。已知两个 API getHeight(int fontSize), getWidth(char c, int fontSize)，可以得到每个 character 在不同 fontSize 下的高和宽。string 可以拆分成几行显示在 screen 中。

4. 给定一个范围，比如 1–100，输出所有翻转 180 度后还在这个范围内，且不等于它本身的数。这个是 leetcode 248 的变形。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420963&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon–全职–技术电面–社招

1. [LeetCode,295]Median is the middle value in an ordered integer list. If the size of the list is even, there is no middle value. So the median is the mean of the two middle value.

Examples:

[2,3,4] , the median is 3

[2,3], the median is (2 + 3) / 2 = 2.5

Design a data structure that supports the following two operations:

- void addNum(int num) – Add a integer number from the data stream to the data structure.
- double findMedian() – Return the median of all elements so far.

For example:

addNum(1)

addNum(2)

findMedian() –> 1.5

addNum(3)

findMedian() –> 2

follow up 比如内存有限装不下要怎么办，结合 LRU 怎么改

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420807&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Zillow-全职-Onsite-社招

1. [LeetCode,26] Given a sorted array nums, remove the duplicates **in-place** such that each element appear only once and return the new length.

Do not allocate extra space for another array, you must do this by **modifying the input array in-place** with O(1) extra memory.

Example 1:

Given nums = **[1,1,2]**,

Your function should return length = **2**, with the first two elements of nums being **1** and **2** respectively.

It doesn't matter what you leave beyond the returned length.

2.把前缀表达式还原成正常的表达式，然后计算结果。举个例子就是+12 变成 1+2，最后输出 3。Followup：如果给你的表达式不一定正确。第二轮：三哥 HM

3. [LeetCode,98] Given a binary tree, determine if it is a valid binary search tree (BST).

Assume a BST is defined as follows:

- The left subtree of a node contains only nodes with keys **less than** the node's key.
- The right subtree of a node contains only nodes with keys **greater than** the node's key.
- Both the left and right subtrees must also be binary search trees.

Example 1:

Input:

```
  2
 / \
1   3
```

Output: true

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420491&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面-社招

1. 检查 target 是不是被 source 包括，S: "abc" T: "abbcc" -> True; S : "abb", T : "ab" -> False

2. [LeetCode,487] Given a binary array, find the maximum number of consecutive 1s in this array if you can flip at most one 0.

Example 1:

Input: [1,0,1,1,0]

Output: 4

Explanation: Flip the first zero will get the the maximum number of consecutive 1s.

After flipping, the maximum number of consecutive 1s is 4.

Note:

- The input array will only contain 0 and 1.
- The length of input array is a positive integer and will not exceed 10,000

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420358&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面-社招

1. [LeetCode,117] Given a binary tree

```
struct TreeLinkNode {
  TreeLinkNode *left;
  TreeLinkNode *right;
  TreeLinkNode *next;
```

}

Populate each next pointer to point to its next right node. If there is no next right node, the next pointer should be set to NULL.

Initially, all next pointers are set to NULL.

思路

- 层次遍历，保存即可

Follow up

- 如果是多叉树怎么办？修改一个节点内的指向关系组合，其它的依然一样

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420246&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Rubrik-全职-技术电面-应届

1. [LeetCode,775] We have some permutation A of [0, 1, ..., N - 1], where N is the length of A.

The number of (global) inversions is the number of i < j with 0 <= i < j < N and A[i] > A[j].

The number of local inversions is the number of i with 0 <= i < N and A[i] > A[i+1].

Return true if and only if the number of global inversions is equal to the number of local inversions.

Example 1:

Input: A = [1,0,2]

Output: true

Explanation: There is 1 global inversion, and 1 local inversion.

Note:

- A will be a permutation of [0, 1, ..., A.length - 1].
- A will have length in range [1, 5000].
- The time limit for this problem has been reduced.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420188&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.给一个 target string， 一个 input 要求 replace 掉 从 given index 之后的单词 a->b 如：
target string：“Hello world!”
input：{s:0, a:Hello b: Goodbye}
output:"Goodbye world!"
要求就是 input 一次性给好几个需要被改的单词 如：{{s:0,a:Hello,b:Goodbye},{s:11,a:!,b:?},{s:6 a:world,b:friend}}.
并且每次修改的 index 都是基于原来未被修改的 target string 所以最终结果就是“Goodbye friend? ”。还要处理 invalid input。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420178&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Oracle-全职-技术电面+Onsite-社招

电面
1. stack 实现 queue 加如何实现 O（1）的读取速度 （记得貌似是用 3 个 stack）
2. 判断 tree 是对称的
Onsite
1. [LeetCode,343] Given a positive integer n, break it into the sum of **at least** two positive integers and maximize the product of those integers. Return the maximum product you can get.
For example, given n = 2, return 1 (2 = 1 + 1); given n = 10, return 36 (10 = 3 + 3 + 4).
Note: You may assume that n is not less than 2 and not larger than 58.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=420052&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-其他

1.一个机器人在一个未知的房间，自己也不知道自己一开始在什么位置。提供了四个 API：
turnRight，turnLeft： 向右，向左转
move：向目前的方向走一格，不是墙返回 true，是墙就留在在原地，返回 false，
clean：清理当前格子。
用这些 API 来清理整个未知的房间，最后返回原点。

2.给你一个迷宫，里面有很多门，很多房间，房间里面有很多锁，求能不能到达终点。corner case 是你现在到了一个门可能打不开，可是未来如果拿到了这个门的钥匙要回去那个门打开说不定能到终点。

3.字典中所有单词长度为 5 而且每个单词都没有重复字母，实现一个 function 可以生成下一个猜测的词。就是每次你猜一个词，然后会得到有几个字母匹配的结果，然后你再猜下一个词，直到猜中为止，希望能尽可能的少猜

4.Choose a random point from one single rectangle. Choose a random point from multiple rectangles, if there isno overlapping among them. Choose a random point from multiple rectangles, if there isoverlapping among them.

5.定义说两个 string 是 buddies 如果他们只有两个字母不一样且这两个字母交换后就可以变成一样的，比如 converse 和 conserve 这样，然后让写一个 func 判断两个 string 是不是 buddies，楼主就给了一个 O(n)的算法，写完之后小哥又问我要测我的代码的话我会选哪些 testcase

6.给一个 word list，有一个 char stream, 如果 stream 中出现 list 中的 word 要 return true。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=419417&extra=page%

3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Lyft-全职-技术电面-社招

1.输入为一句话和指定每行最多字符数 k。要求输出这句话换行后的结果。每个单词之间至少一个空格隔开。如果有多余的空间就两边对其，中间平均填充空格。最后一行要求靠左对齐。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=419289&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1. [LeetCode,337] The thief has found himself a new place for his thievery again. There is only one entrance to this area, called the "root." Besides the root, each house has one and only one parent house. After a tour, the smart thief realized that "all houses in this place forms a binary tree". It will automatically contact the police if two directly-linked houses were broken into on the same night.
Determine the maximum amount of money the thief can rob tonight without alerting the police.

Example 1:

```
     3
    / \
   2   3
    \   \
     3   1
```

Maximum amount of money the thief can rob = 3 + 3 + 1 = **7**.

2.给一个数组和一个 int k，找出第 k 个缺失的数据。比如 1，2，3，5，6，9，10，11，13，k=3，missing value 是 4，7，8，12 , 返回第 k 个 missing value。

A good follow up: Quick selection

3.设计一个开宝箱 class 要求 1.随机 2.这次开出来的东西在 k 次之后才能再开出来

4.a^3+b^3=c^3+d^3, abcd 属于 0 到 n，返回所有 abcd 排列

O(n^2) => Hash...

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=418912&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg–全职–技术电面–社招

1. [LeetCode,72]Given two words word1 and word2, find the minimum number of operations required to convert word1 to word2.

You have the following 3 operations permitted on a word:

1. Insert a character
2. Delete a character
3. Replace a character

Example 1:

Input: word1 = "horse", word2 = "ros"

Output: 3

Explanation:

horse -> rorse (replace 'h' with 'r')

rorse -> rose (remove 'r')

rose -> ros (remove 'e')

2. [LeetCode, 3]Given a string, find the length of the **longest substring** without repeating characters.

Examples:

Given "abcabcbb", the answer is "abc", which the length is 3.

Given "bbbbb", the answer is "b", with the length of 1.

Given "pwwkew", the answer is "wke", with the length of 3. Note that the answer must be a **substring**, "pwke" is a subsequence and not a substring.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=418804&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Zillow-全职-技术电面-应届

1.按 k 个节点作为一组来翻转链表，比如 1->2->3->4->5，k = 2，翻转后成为 2<- 1<- 4<- 3<- 5。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=418464&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

GoldmanSachs 高盛-全职-Onsite-社招

1.有一个 class, its constructor takes in a list of integers。然后要求实现 constructor 和一个函数：给两个数 A,B，return the number of all elements in the list of integers between (A,B), 但要求 O(1)时间复杂度。

2.实现一个函数：给两串字母。怎么通过 stack pop 或者 push 来吧第一串字母转化成第二串。比如： ABC, CBA 就是 push A, push B, push C, pop pop pop. 若无法转化返回 exception。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=418011&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Uber-全职-技术电面-社招

1.[LeetCode,759] We are given a list avail of employees, which represents the free time for each employee.

Each employee has a list of non-overlapping Intervals, and these intervals are in sorted order.

Return the list of finite intervals representing **common, positive-length free time** for all employees, also in sorted order.

Example :

Input: schedule = [[[1,2],[5,6]],[[1,3]],[[4,10]]]

Output: [[3,4]]

Explanation:

There are a total of three employees, and all common

free time intervals would be [-inf, 1], [3, 4], [10, inf].

We discard any intervals that contain inf as they aren't finite.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=417965&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Indeed-全职-Onsite-社招

1.从 n 个排序数组中找出出现频率超过 k 次的数字，结果按照频率排序，如果频率相同则按数字大小排序；

HashTable, sort

2. resume（resume 由 key 和 value 的集合组成，比如{name: 'xxx', skill: 'yyy'})版本更新功能，需要实现这么几个 API：

update(key, value) //生成一个新的 version，并存 key 和 value，如果前面版本当中 key 存在的话，新的 value 要覆盖前面版本已经存在的 value

getVersion(versionId) // 打印出某版本中所有的 key-value，按照 key 字母顺序排序，注意最新版本要继承前面版本的 key

getValue(versionId, key) // 打印某版本中某个 key 的值

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=417662&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.给一个 sorted key-value pairs，例如[1-43, 2-34, 6-23, 8-22, 11-90, 14-7, 18-20]，然后再给一个 list of range length，例如[5,10,5]，要求按照这个 range 长度把之前的 key 拆成三组：[0,5),[5,15),[15,20)，所以返回结果应该是[[1-43, 2-34], [6-23, 8-22, 11-90, 14-7], [18-20]]。
Followup：如果 value 不是数字怎么办，要求我改成 template。
Followup：如果 key 不是 sorted 怎么办。

LogK * N(倒过来放)

2.一个 binary tree 如果多了多余的 edge 变成了 graph，想办法把多余的 edge 删掉变成 valid binary tree。
Followup：用 bfs 实现。

3.有一个游乐园（2d matrix），有空地，也有已经建成了的游乐设施（对应的单个坐标标记上），还有障碍物（对应的单个坐标不能走），然后在游乐园里面走路只能上下左右。问如果新建一个游乐设施，怎样让它距离已有的游乐设施距离总和最短。

4.如果有一个 n*n 的正方形，里面有多少个小正方形（包括本身）。
followup 如果是 m*n 的长方形呢
followup 如果这个长方形里面有些格子是灰色的，然后灰色的格子不能出现在小正方形里面怎么办。

5.要找一个 binary tree 最大的两个 identical subtree。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=417466&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

merkle tree

Google-全职-技术电面-社招

1.给出一个数组，求所有数的平均数

Followup：数组很大怎么办

Followup：求数组求中位数

Followup：数组很大怎么办

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=417422&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Median of Median

Zillow-全职-技术电面-其他

1.[LeetCode,33] Given an array of integers, return indices of the two numbers such that they add up to a specific target.You may assume that each input would have exactly one solution, and you may not use the same element twice.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=417378&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Lyft-全职-Onsite-社招

1.找到一个数组里面最大的数字，返回他的坐标。

这个数字的坐标可能有好几个，以相等的概率返回。

比如[1 ,5, 2, 5, ,5] 以相同概率返回 1,3,4

2.给出一个数组，问这个数组是不是存在一个数字，它的个数超过 N/2

3.一个 3X3 的 board。每个里面有一盏灯，每个灯都有个按钮控制。按下去按钮，按钮所在行列的灯都 switch 一下。给一个初始的 board 的样子，和一个要达到的目标 board 的样子，问最少需要多少步可以达到目标 board 的样子。并且把这个 sequence 打印出来。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=416713&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.判断两个 string 是不是合法 encoded，即一一对应。比如“abcc”encode 成“bcdd”是合法的，第一个 string 中的 a 对应第二个 string 中的 b，b 对应 c，c 对应 d。
Follow up 如果有一大堆 secret strings，需要快速判断 test string 是否能 encode 成其中任何一个。

2.检验一棵 binary tree 是否合法的。

3.一块土地上有很多区域，这些区域有可以使用和不能使用的，要找出最大的一块连续区域。
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=416440&extra=page%3D4%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

05/06 – 05/12

AQR-全职-在线笔试-应届

1. You are a renowned thief who has recently switched from stealing precious metals to stealing cakes because of the insane profit margins. You end up hitting the jackpot, breaking into the world's largest privately owned stock of cakes—the vault of the Queen of England.While Queen Elizabeth has a limited number of types of cake, she has an unlimited supply of each type.Each type of cake has a weight and a value, stored in a tuple with two indices:

1. An integer representing the weight of the cake in kilograms
2. An integer representing the monetary value of the cake in British shillings

For example:

Weighs 7 kilograms and has a value of 160 shillings
(7, 160)
Weighs 3 kilograms and has a value of 90 shillings
(3, 90)

You brought a duffel bag that can hold limited weight, and you want to make off with the most valuable haul possible.

遍历模型：经典的背包问题，可以使用性价比进行剪枝搜索

演绎模型：基于重量<=k 的最大价值，推导出重量为 k+1 的最大值

2.给定一个数 a，和一个数组 b，如果 b 里面有和 a 一样的数字，就把 a 翻倍，直到 b 里面没有当前的 a 的值，就输出 a 就好了。

备忘模型：提前优化数组 b，每个元素都指向不断乘以 2 的最后位置

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424719&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面-社招

1 Write function to reverse the byte order of a 32-bit unsigned integer.

ex: input = 0x12345678, output = 0x78563412

遍历模型：按照 bit 扫描并构建

2. [LeetCode,287] Given an array nums containing n + 1 integers where each integer is between 1 and n (inclusive), prove that at least one duplicate number must exist. Assume that there is only one duplicate number, find the duplicate one.

Example 1:

Input: [1,3,4,2,2]

Output: 2

Example 2:

Input: [3,1,3,4,2]

Output: 3

Note:

1. You **must not** modify the array (assume the array is read only).
2. You must use only constant, O(1) extra space.
3. Your runtime complexity should be less than $O(n^2)$.
4. There is only one duplicate number in the array, but it could be repeated more than once.

遍历模型：每个位置上的数字类似于一个指向下一个位置的指针，因为存在重复数字，所以会出现环。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424698&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Tableau-全职-Onsite-社招

1.一个树的 label 有 0 1 2 三个状态，如果他所有的 Children 都是 0 那么他的 label 也是 0，如果都是 1 那么他就是 1，如果有 1 有 0 那他的 label 就是 2，如果把其中一个 node 改成 1 或者 0，更新整棵树的 label。

遍历模型：从这个节点开始向 root 更新

2. [LeetCode,815] We have a list of bus routes. Each routes[i] is a bus route that the i–th bus repeats forever. For example if routes[0] = [1, 5, 7], this means that the first bus (0–th indexed) travels in the sequence 1–>5–>7–>1–>5–>7–>1–>... forever.

We start at bus stop S (initially not on a bus), and we want to go to bus stop T. Travelling by buses only, what is the least number of buses we must take to reach our destination? Return –1 if it is not possible.

Example:

Input:

routes = [[1, 2, 7], [3, 6, 7]]

S = 1

T = 6

Output: 2

Explanation:

The best strategy is take the first bus to the bus stop 7, then take the second bus to the bus stop 6.

Note:

- 1 <= routes.length <= 500.
- 1 <= routes[i].length <= 500.
- 0 <= routes[i][j] < 10 ^ 6.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424695&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Apple–全职–技术电面–社招

1.给一堆点，问能不能找到一条跟 y 轴平行的线，使得这堆点对于这条线对称。

要求 O(N)

遍历模型

– 第一遍，寻找可能的 x 的值

– 第二遍，判断是否都对称

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424682&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Zillow–全职–技术电面–社招

1. [LeetCode,415] Given two non–negative integers num1 and num2 represented as string, return the sum of num1 and num2.

Note:

1. The length of both num1 and num2 is < 5100.
2. Both num1 and num2 contains only digits 0–9.
3. Both num1 and num2 does not contain any leading zero.
4. You **must not use any built–in BigInteger library** or **convert the inputs to integer** directly.

双针模型：从尾部开始扫描，并求和

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424614&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Samsung–全职–Onsite–社招

1.给定一个数组,全部是素数,但是只有一个素数出现了 2 次，把它找出来.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424613&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

备忘模型：Hash 保存

Pinterest-全职-技术电面-社招

1. [LeetCode,139] Given a **non-empty** string s and a dictionary wordDict containing a list of **non-empty** words, determine if s can be segmented into a space-separated sequence of one or more dictionary words.

Note:

- The same word in the dictionary may be reused multiple times in the segmentation.
- You may assume the dictionary does not contain duplicate words.

Example 1:

Input: s = "leetcode", wordDict = ["leet", "code"]

Output: true

Explanation: Return true because "leetcode" can be segmented as "leet code".

Example 2:

Input: s = "applepenapple", wordDict = ["apple", "pen"]

Output: true

Explanation: Return true because "applepenapple" can be segmented as "apple pen apple". Note that you are allowed to reuse a dictionary word.

Example 3:

Input: s = "catsandog", wordDict = ["cats", "dog", "sand", "and", "cat"]

Output: false

演绎模型：前 k 个字符可行

可以使用 Tri 树优化

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424540&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

LinkedIn-全职-技术电面-社招

1.[LeetCode,46] Given a collection of distinct integers, return all possible permutations.

Example:

Input: [1,2,3]

Output:

```
[
  [1,2,3],
  [1,3,2],
  [2,1,3],
  [2,3,1],
  [3,1,2],
  [3,2,1]
]
```

遍历模型：枚举遍历每个位置的可行

2.[LeetCode,339]Given a nested list of integers, return the sum of all integers in the list weighted by their depth.

Each element is either an integer, or a list -- whose elements may also be integers or other lists.

可以转换为 DFS 问题，记录层数为权重

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424535&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-Onsite-社招

1.[LeetCode,91] A message containing letters from A-Z is being encoded to numbers using the following mapping:

'A'

-> 1

'B'

-> 2

...

'Z'

-> 26

Given

a non-empty string containing only digits, determine the total number of ways to decode it.

Example:

Input:

"12"

Output:

2

Explanation:

It could be decoded as "AB" (1 2) or "L" (12).

演绎模型，memo[k]是前 k 个数字的可行组合数，然后基于 k 和 k-1 可以推理 k+1 的情况

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424528&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Guidewire-全职-在线笔试-社招

1.一个 array 已经 sorted, non-decreasing.for example: [1, 1, 1, 2, 3, 3]

给一个数组 k, 让你判断这个 array 是否只包含 1 到 k。 比如 k = 3, 判断 array 是否是有 1, 2, 3. 这个例子就返回 true

Binary Search，直到在区间内已经招全，否则继续二分

2，两个 non-negative 的 zip code A 和 B. 产生 zipcode C. C 的第一个数字是 A 的第一个数字，然后是 B 的第一个数字。如果 A 或者 B 完了，就把剩下的加到后面。

例如：A = 1234, B = 7896

output C = 17283946

A = 1, B = 234

output C = 1234

模拟题，直接输出

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424519&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-技术电面-应届

1.给你一个 probablity list, 比如{0.25, 0.25,0.5}，让你按照这个 probablity 随机生成相应的 N 个数，比如 N 等于 8 的话，那么 output list 就是{1 2 3 3 1 2 3 3}，output list 里边数字的顺序可以改变，比如{1 1 2 2 3 3 3 3}也行，满足那个概率分布就行。

follow up：如果 probablity list 很长，比如{0.0001, 0.0002, 0.0004, ...,}，怎么办?

直接模拟输出，如果概率很长直接输出 0-1 之间的一个数，然后 binary search 它的位置

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424490&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

VMWare-全职-技术电面-社招

1.[LeetCode,20]Given a string containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.

An input string is valid if:

Open brackets must be closed by the same type of brackets.

Open brackets must be closed in the correct order.

Note that an empty string is also considered valid.

保存一个比较的 stack，没有一个新的右括号和 stack 的 peek 比较

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424457&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

IXL_Learning-全职-技术电面-社招

1.[LeetCode,377]Given an integer array with all positive numbers and no duplicates, find the number of possible combinations that add up to a positive integer target.

Example:

nums = [1, 2, 3]

target = 4

The possible combination ways are:

(1, 1, 1, 1)

(1, 1, 2)

(1, 2, 1)

(1, 3)

(2, 1, 1)

(2, 2)

(3, 1)

Note that different sequences are counted as different combinations.

Therefore the output is 7.

Follow up:

What if negative numbers are allowed in the given array?

How does it change the problem?

What limitation we need to add to the question to allow negative numbers?

演绎模型：结果为 x 的组合数，可以枚举第一个数是什么来推导

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424453&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.给出一个二叉树, 有个地方两个 node 指向同一个儿子, 使这棵树有环找到哪里坏了并且改正。

Hash node 找到重复，或者遍历直到遇到环

2.给出一个整数数组, 在 k 距离里有没有两个相同数

演绎模型

3.给出一个整数数组, 找到那个左边所有数和右边所有数和相差最小的 index.

计算右侧的所有 sum，然后从第一个元素开始逐个计算比较

4.一个 file 里的 string, 找到 permutation 出现最多的词。比如"abc cbs cba bbb" result: [abc, cba]

字符 sort，hash 比较

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424432&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.找文章里出现频率最高的十个连续单词对。

Hash 保存，然后比较

2.有一个二叉树，每个边上有值，怎样选择边 cut，能够以最小代价 cut 掉所有叶子节点。

备忘模型，砍掉一个区间的最小代价

3.N 个人给 K 个 candidate 投票，N 个人给出 K 个 candidate 的偏好排序，得到一个矩阵：例如 4 个人给 3 个人投票：

[[1,2,3],

[1,3,2],

[2,1,3],

[3,1,3]]

然后选择第一列，找出得票最少的 candidate 排除，然后得到新的矩阵，继续上述步骤，直到最后返回最后剩下的 candidate。

举例：选票假如是

【1，2，3】

【1，3，2】

【2，3，1】

【2，1，3】.

那么第一次排除的是 3，不是 1 也不是 2。

Followup：如果 N 很大，K 很小怎么优化

可以不断的模拟这个过程， 如果选票多，第一次记录所有情况，每次只是更新 diff 即可

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424395&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

1. [LeetCode,734] Given two sentences words1, words2 (each represented as an array of strings), and a list of similar word pairs pairs, determine if two sentences are similar.

For example, “great acting skills” and “fine drama talent” are similar, if the similar word pairs are pairs = [["great", "fine"], ["acting","drama"], ["skills","talent"]].

Note that the similarity relation is not transitive. For example, if “great” and “fine” are similar, and “fine” and “good” are similar, “great” and “good” are not necessarily similar.

However, similarity is symmetric. For example, “great” and “fine” being similar is the same as “fine” and “great” being similar.

Also, a word is always similar with itself. For example, the sentences words1 = ["great"], words2 = ["great"], pairs = [] are similar, even though there are no specified similar word pairs.

Finally, sentences can only be similar if they have the same number of words. So a sentence like words1 = ["great"] can never be similar to words2 = ["doubleplus","good"].

Note:

1. The length of words1 and words2 will not exceed 1000.
2. The length of pairs will not exceed 2000.
3. The length of each pairs[i] will be 2.
4. The length of each words[i] and pairs[i][j] will be in the range [1, 20].

follow up：words1 和 words2 用空格分开的句子，如 "great fine", "acting drama"

构建 hash，进行比较

follow up：[LeetCode,737]Given two sentences words1, words2 (each represented as an array of strings), and a list of similar word pairs pairs, determine if two sentences are similar.

For example, words1 = ["great", "acting", "skills"] and words2 = ["fine", "drama", "talent"] are similar, if the similar word pairs are pairs = [["great", "good"], ["fine", "good"], ["acting","drama"], ["skills","talent"]].

Note that the similarity relation is transitive. For example, if "great" and "good" are similar, and "fine" and "good" are similar, then "great" and "fine" are similar.

Similarity is also symmetric. For example, "great" and "fine" being similar is the same as "fine" and "great" being similar.

Also, a word is always similar with itself. For example, the sentences words1 = ["great"], words2 = ["great"], pairs = [] are similar, even though there are no specified similar word pairs.

Finally, sentences can only be similar if they have the same number of words. So a sentence like words1 = ["great"] can never be similar to words2 = ["doubleplus","good"].

Note:

1. The length of words1 and words2 will not exceed 1000.
2. The length of pairs will not exceed 2000.
3. The length of each pairs[i] will be 2.
4. The length of each words[i] and pairs[i][j] will be in the range [1, 20].

首先进行传递合并，然后基于 hash 比较

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424386&extra=page%

3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-社招

1.[LeetCode,76]Given a string S and a string T, find the minimum window in S which will contain all the characters in T in complexity O(n).

Example:

Input: S = "ADOBECODEBANC", T = "ABC"

Output: "BANC"

Note:

1. If there is no such window in S that covers all characters in T, return the empty string "".
2. If there is such window, you are guaranteed that there will always be only one unique minimum window in S.

双针模型，针对一个 k，最靠后的起点

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424352&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-技术电面-社招

1.给一个 linked list，里面每个 node 加上一个 child 指针。需要写 iterator 来遍历整个 list，按照先 child 再 next 的顺序。

树的遍历

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424307&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面-社招

1. [LeetCode,463] You are given a map in form of a two-dimensional integer grid where 1 represents land and 0 represents water. Grid cells are connected horizontally/vertically (not diagonally). The grid is completely surrounded by water, and there is exactly one island (i.e., one or more connected land cells). The island doesn't have "lakes" (water inside that isn't connected to the water around the island). One cell is a square with side length 1. The grid is rectangular, width and height don't exceed 100. Determine the perimeter of the island.

Example:

[[0,1,0,0],
 [1,1,1,0],
 [0,1,0,0],
 [1,1,0,0]]

Answer: 16

遍历每个点，记录暴漏出来的边的数量；也可以只在外围转一圈

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424292&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1. 在一个 grid 里，给两个 list，分别是 bikes 和人的坐标，以及自己当前的坐标。grid 里的每个人都去拿距离自己最近的 bike。返回自己应该去取的自行车的坐标。

分治法求最近点对

2. [LeetCode,815] We have a list of bus routes. Each routes[i] is a bus route that the i-th bus repeats forever. For example if routes[0] = [1, 5, 7], this means that the first bus (0-th indexed) travels in the sequence 1->5->7->1->5->7->1->... forever.
We start at bus stop S (initially not on a bus), and we want to go to bus stop T. Travelling by buses only, what is the least number of buses we must take to reach our destination? Return -1 if it is not possible.

Example:

Input:

routes = [[1, 2, 7], [3, 6, 7]]

S = 1

T = 6

Output: 2

根据 bus 的停靠站的重合来构建遍，BFS 问题

3. [LeetCode,486]Given an array of scores that are non-negative integers. Player 1 picks one of the numbers from either end of the array followed by the player 2 and then player 1 and so on. Each time a player picks a number, that number will not be available for the next player. This continues until all the scores have been chosen. The player with the maximum score wins.

Given an array of scores, predict whether player 1 is the winner. You can assume each player plays to maximize his score.

Example 1:

Input: [1, 5, 2]

Output: False

Explanation: Initially, player 1 can choose between 1 and 2.

If he chooses 2 (or 1), then player 2 can choose from 1 (or 2) and 5. If player 2 chooses 5, then player 1 will be left with 1 (or 2).

So, final score of player 1 is 1 + 2 = 3, and player 2 is 5.

Hence, player 1 will never be the winner and you need to return False.

Example 2:

Input: [1, 5, 233, 7]

Output: True

Explanation: Player 1 first chooses 1. Then player 2 have to choose between 5 and 7. No matter which number player 2 choose, player 1 can choose 233.

Finally, player 1 has more score (234) than player 2 (12), so you need to return True representing player1 can win.

Note:

1. 1 <= length of the array <= 20.

2. Any scores in the given array are non-negative integers and will not exceed 10,000,000.
3. If the scores of both players are equal, then player 1 is still the winner.

演绎模型，对于区间[x,y]的最优解由取左边或者取右边决定

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424260&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-社招

1. [LeetCode, 63] A robot is located at the top-left corner of a m x n grid (marked 'Start' in the diagram below).
The robot can only move either down or right at any point in time. The robot is trying to reach the bottom-right corner of the grid (marked 'Finish' in the diagram below).
Now consider if some obstacles are added to the grids. How many unique paths would there be?
An obstacle and empty space is marked as 1 and 0 respectively in the grid.
Note: m and n will be at most 100.
Example 1:
Input:
[
[0,0,0],
[0,1,0],
[0,0,0]
]
Output: 2
Explanation:
There is one obstacle in the middle of the 3x3 grid above.
There are two ways to reach the bottom-right corner:
1. Right -> Right -> Down -> Down
2. Down -> Down -> Right -> Right

演绎模型：走到 point[x][y]的路径数由上面和左边的路径过来

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424258&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg–全职–技术电面–社招

1.几万个 Stock Ticker，每个 Ticker 有一个分数，分数是 Integer 的，从 1 到 100，客户需要实时获得 Top K 个股票 Ticker

吊桶排序，用分数对应股票

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424255&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Oscar Health–全职–技术电面+Onsite–社招

1. [LeetCode,13]给定一个罗马数字，将其转换为整数。输入的范围从 1 到 3999。比如 I = 1, IX = 9

思路

- 罗马数字转换的模拟题

考点

- 注意转换规则，重复的上限、右加左减
- 注意特殊的限制规则

模拟题，注意转换规则

2. [LeetCode,97]Given s1, s2, s3, find whether s3 is formed by the interleaving of s1 and s2.

Example 1:

Input: s1 = "aabcc", s2 = "dbbca", s3 = "aadbbcbcac"

Output: true

Example 2:

Input: s1 = "aabcc", s2 = "dbbca", s3 = "aadbbbaccc"

Output: false

演绎模型：memo[x][y]能否组成 s3 的 x+y

3. 有一个咖啡机，有几个按钮分别可以冲不同容量的杯子，求通过这些按钮能否冲出一些特定容量。

备忘模型，推理 x 能否可行，取决于最后一杯的状态的回退；也可以数学方法

4. [LeetCode,121]Say you have an array for which the i^{th} element is the price of a given stock on day i.

If you were only permitted to complete at most one transaction (i.e., buy one and sell one share of the stock), design an algorithm to find the maximum profit.

Note that you cannot sell a stock before you buy one.

Example 1:

Input: [7,1,5,3,6,4]

Output: 5

Explanation: Buy on day 2 (price = 1) and sell on day 5 (price = 6), profit = 6–1 = 5.

Not 7–1 = 6, as selling price needs to be larger than buying price.

Example 2:

Input: [7,6,4,3,1]

Output: 0

演绎模型：在第 k 天交易了 l 次的最大收益

5. [LeetCode,123] Say you have an array for which the i^{th} element is the price of a given stock on day i.

Design an algorithm to find the maximum profit. You may complete at most two transactions.

Note: You may not engage in multiple transactions at the same time (i.e., you must sell the stock before you buy again).

Example 1:

Input: [3,3,5,0,0,3,1,4]

Output: 6

Explanation: Buy on day 4 (price = 0) and sell on day 6 (price = 3), profit = 3-0 = 3.
Then buy on day 7 (price = 1) and sell on day 8 (price = 4), profit = 4-1 = 3.

演绎模型：在第 k 天交易了 l 次的最大收益

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424210&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-Onsite-社招

1. [LeetCode,159] Given a string, find the length of the longest substring T that contains at most 2 distinct characters.
For example, Given s = “eceba”,
T is "ece" which its length is 3.

双针模型，对于一个终点最靠前的起点；也可以理解为演绎模型，从 k 的情况推理 k+1 的情况

2. [LeetCode,253] Given an array of meeting time intervals consisting of start and end times [[s1,e1],[s2,e2],...] (si < ei), find the minimum number of conference rooms required.
For example,
Given [[0, 30],[5, 10],[15, 20]],
return 2.

排序所有的起点和终点，然后扫面，遇到起点和终点分别+1 和-1

3. [LeetCode,621] Given a char array representing tasks CPU need to do. It contains capital letters A to Z where different letters represent different tasks.Tasks could be done without original order. Each task could be done in one interval. For each interval, CPU could finish one task or just be idle.
However, there is a non-negative cooling interval **n** that means between two **same tasks**, there must be at least n intervals that CPU are doing different tasks or just be idle.
You need to return the **least** number of intervals the CPU will take to finish all the given tasks.
Example 1:

Input: tasks = ["A","A","A","B","B","B"], n = 2

Output: 8

Explanation: A -> B -> idle -> A -> B -> idle -> A -> B.

Note:

1. The number of tasks is in the range [1, 10000].
2. The integer n is in the range [0, 100].

*题目和后面的重复了，贪心策略首先填写频率最大的

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424119&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Zillow-全职-技术电面-社招

1.一道题，给一个长度 96 的数组，里面的数是 1 到 100，找出 missing 的四个数。

100bit 的记录，也可以用数学方法解：

- A + B + C + D = X1
- A^2 + B^2 + C^2 + D^2 = X2
- A^3 + B^3 + C^3 + D^3 = X3
- A^4 + B^4 + C^4 + D^4 = X4

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424100&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Quora-全职-技术电面-社招

1. 一个 array 在 1-n 之间，找到 max sum subset, 数字 k 和 k+1 不能同时在 subset 里面。

双针模型，针对一个终点找到最向前的起点。也可以理解为演绎模型，从前 m 个推理出前 m+1 个

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424099&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Uber-全职-技术电面-社招

1.大意是输入一个整数数组，有个机器人走呀走，每走一段向左转再走一段（这样走四次可以近似围城一个圈）问最后围成的亩最小（或者最大）是多少 。
*没看懂题

2. Given a stream of integers and a window size, calculate the moving average of all integers in the sliding window.
For example,
MovingAverage m = new MovingAverage(3);
m.next(1) = 1
m.next(10) = (1 + 10) / 2
m.next(3) = (1 + 10 + 3) / 3
m.next(5) = (10 + 3 + 5) / 3
模拟滑动窗口，直接输出

3.计算 x 指数 y 是多少
Bit 运算

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424063&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Oscar-全职-技术电面-社招

1. [LeetCode,97]Given s1, s2, s3, find whether s3 is formed by the interleaving of s1 and s2.
Example 1:
Input: s1 = "aabcc", s2 = "dbbca", s3 = "aadbbcbcac"

Output: true

Example 2:

Input: s1 = "aabcc", s2 = "dbbca", s3 = "aadbbbaccc"

Output: false

演绎模型，pos[x][y]是否能够组合成 x+y 的状态

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424020&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1. 两地之间有很多加油站，怎么走使停靠次数最少。

动态规划，第 k 个加油站停靠最少次数

2. 一个房间四面镜子，左下角有雷达发射器，其余三角有三个接收器，给发射器发射的方位，问哪一个接收器最先接收到信号。

类似于打台球，可以镜面扩展，最小公倍数

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424005&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-技术电面-社招

1.[LeetCode,33] Given an array of integers, return indices of the two numbers such that they add up to a specific target.You may assume that each input would have exactly one solution, and you may not use the same element twice.

Hash 寻找另一半

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423891&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

GoldmanSachs-全职-技术电面-社招

1. [LeetCode 64] Given a m x n grid filled with non-negative numbers, find a path from top left to bottom right which minimizes the sum of all numbers along its path.

Note: You can only move either down or right at any point in time.

Example:

Input:

```
[
  [1,3,1],
  [1,5,1],
  [4,2,1]
]
```

Output: 7

Explanation: Because the path 1→3→1→1→1 minimizes the sum.

演绎模型，走到(x,y)的最小值

2.[LeetCode 70] Given a string S and a string T, find the minimum window in S which will contain all the characters in T in complexity O(n).

Input: S = "ADOBECODEBANC", T = "ABC"

Output: "BANC"

动态规划尾部拼接，记录终点为 k 时，最近的起点；可以构建一个吊桶来保存一个区间内两个字符串字母的差。

如果要求出现 k 次怎么办？只是把吊桶的记数乘以 k 即可

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423865&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

蚂蚁金服（湾区）-全职-技术电面-社招

1. 给一堆点的坐标和一个当前坐标，找出离当前坐标最近的 10 个点

kdtree、GEOHASH

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423862&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.坐标系一堆点，找最大长方形面积是多少。

枚举斜线，hash 剩下两点

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423826&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-社招

1.Given one input string array:

"unit,unit,rate"

For example:

"m,cm,100",'usd,eur,0.84","lbs,kg,0.453592","km,m,1000"

Take a string as input

"unit,unit", return the exchange rate.

For example:

"km,cm" => 100000

"km,eur" => -1

如果转换路径唯一，则是一个搜索问题，如果转换不为一，那是一个优先搜索问题。如果能有正负数，那么每次优先扩展的时候，也需要保存 min 和 max

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423760&extra=page%

3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.定义 n-straight 指连续的 n 个数字, 输入是一个 integer array 和 n , 要求返回 array 满不满足 n-straight 的要求:

eg 3-straight [1,2,3,5,6,7]返回 true, [1,2,3,4,5] 返回 False

follow up: 如果 n-straight 指至少 n 个连续的数字, 应该怎么写函数

连续 n 个进行判断，followup 则在递增时一直向后走

2.给一个 integer array 表示不同符号的个数和输入 n，返回所有可能的 n 个符号的组合(不在乎顺序)

follow up: 返回这些组合的个数, 优化时间空间复杂度

组合输出

3.给一个 integer array, 表示每辆车在路上的速度, 假设他们都往同一个方向开, 开的快的会被开的慢的卡住，问你最后整个路上的车, 会被分成几组 ,每组有几辆车

follow up, 往这个车队里加一辆车(所有可能的位置), 返回所有可能的下一步的结果

寻找非递增序列，followup 看加入的车的速度位于非递增序列的哪个位置即可

4.两个字符串, 一个字符串比另一个多一个字母, 其余出现顺序相同,返回那个字母,

follow up: 出现顺序不一定相同, 返回那个字母

follow up: 如果字符串特别大, 怎么办?

可以 hash 比较，也可以 XOR

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423736&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-技术电面-其他

在 vector 中给你一个类似这样的["cabc", "ts", "erg"] 找 csg,return true。要保持顺序不变，不用额外空间。

*看不懂题目

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423734&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

nuro-全职-技术电面-应届

1.题目是给一个二维矩阵，“."代表路，“#”代表墙，字母代表一个机器人。union find 找出相互距离为 k 的机器人归类为一组，返回一共有几组。

首先计算两两点之间的距离，然后合并

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423714&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Zillow-全职-Onsite-社招

1. [LeetCode,49] Given an array of strings, group anagrams together.

Example:

Input: ["eat", "tea", "tan", "ate", "nat", "bat"],

Output:

[

["ate","eat","tea"],

["nat","tan"],

["bat"]

]

Note:

- All inputs will be in lowercase.
- The order of your output does not matter.

可以把每个单词的字母排序了，然后把整个单词数组排序，或者 hash 比较

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423533&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-其他-应届

1. 已知 screen 的高和宽，给你最小和最大的 fontSize，要求给定一个 string，将 string 用竟可能大的 fontSize 显示在 screen 里。已知两个 API getHeight(intfontSize), getWidth(char c, int fontSize)，可以得到每个 character 在不同 fontSize 下的高和宽。

二分搜索，直到找到一个恰好可行的 fontsize

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423513&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Yelp-全职-技术电面+在线笔试-社招

在线笔试

1. [LeetCode,59] Given a positive integer n, generate a square matrix filled with elements from 1 to n2 in spiral order.

Example:
Input: 3
Output:
[
[1, 2, 3],
[8, 9, 4],
[7, 6, 5]
]

模拟输出，按照外围旋转逐渐向内输出

电面

1. [LeetCode,273]Convert a non-negative integer to its english words representation. Given input is guaranteed to be less than $2^{31} - 1$.

Example 1:

Input: 123

Output: "One Hundred Twenty Three"

Example 2:

Input: 12345

Output: "Twelve Thousand Three Hundred Forty Five"

Example 3:

Input: 1234567

Output: "One Million Two Hundred Thirty Four Thousand Five Hundred Sixty Seven"

模拟输出，但是要注意英文拼写的规则和一些特别的数字

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423478&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面-社招

1.[LeetCode,621] Given a char array representing tasks CPU need to do. It contains capital letters A to Z where different letters represent different tasks.Tasks could be done without original order. Each task could be done in one interval. For each interval, CPU could finish one task or just be idle.

However,
there is a non-negative cooling interval **n** that means between
two **same tasks**, there must be at least n intervals that CPU are
doing different tasks or just be idle.

You
need to return the **least** number of intervals the CPU will take to finish
all the given tasks.

Example 1:

Input: tasks = ["A","A","A","B","B","B"], n = 2

Output: 8

Explanation: A -> B -> idle -> A -> B -> idle -> A -> B.

Note:

1. The number of tasks is in the range [1, 10000].
2. The integer n is in the range [0, 100].

贪心法首先填入频率最高的任务，然后依次填充

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423470&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面-社招

1. [LeetCode,120] Given a triangle, find the minimum path sum from top to bottom. Each step you may move to adjacent numbers on the row below.

For example, given the following triangle

```
[
     [2],
     [3,4],
   [6,5,7],
  [4,1,8,3]
]
```

The minimum path sum from top to bottom is 11 (i.e., 2 + 3 + 5 + 1 = 11).

Note:

Bonus point if you are able to do this using only O(n) extra space, where n is the total number of rows in the triangle.

演绎模型：推理从头部走到 x 位置的最短距离

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423454&extra=page%

3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

AkunaCapital–其他–在线笔试–其他

1.valid parentheses，匹配大中小括号，给的例子是：Return true if passed a string: (), [], [(){}()[{}]], Return false if passed a string: (,], (], ([)], [({}[]], {[}], }{. 整个 string 左右括号的数量和种类必须匹配，而且右括号出现时左边必须紧邻与之匹配的括号。

双针模型：维持一个 stack，每次出现右侧的符号，对 stack 头部的元素进行匹配。

2. watermelons in boxes，给的例子是：四个 boxes，每个的 size 是：[2, 1, 2, 2]，三个西瓜，每个 size 是：[2, 3, 2]。一个箱子只能放一个西瓜。可以选择任何一个西瓜开始（但不能循环，只能往右走），箱子必须从第一个开始，期间如果西瓜放不进某个箱子，可以等到下一个箱子再试。尽可能把更多的西瓜放进箱子。这个例子应该 return 的结果是 2，因为第二个西瓜绝对放不进任何箱子。

演绎模型，从第 i 个西瓜开始对应第 j 个盒子开始，下一个可以匹配的位置

3.给一条固定长度的 ribbon，和几个 rocks 的平面坐标，用绳子来圈石头，看最多能圈多少石头进来（不是经过多少石头）。给的例子是：ribbon 长度是 10，石头坐标：[[0,0], [0,3], [3,3]]。结果应该是 2，绳子长度不够把 3 个全圈进来。

实现一个函数，针对坐标的 list，求凸包，从而得到周长。然后使用枚举加剪枝的方法找到最多的石头数量

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=423453&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

05/13 – 05/19

Google-实习-在线笔试-其他

1. [LeetCode, 676] Implement a magic directory with buildDict, and search methods.
For the method buildDict, you'll be given a list of non-repetitive words to build a dictionary.
For the method search, you'll be given a word, and judge whether if you modify **exactly** one character into **another** character in this word, the modified word is in the dictionary you just built.

Example 1:

Input: buildDict(["hello", "leetcode"]), Output: Null

Input: search("hello"), Output: False

Input: search("hhllo"), Output: True

Input: search("hell"), Output: False

Input: search("leetcoded"), Output: False

Note:

1. You may assume that all the inputs are consist of lowercase letters a-z.
2. For contest purpose, the test data is rather small by now. You could think about highly efficient algorithm after the contest.
3. Please remember to **RESET** your class variables declared in class MagicDictionary, as static/class variables are **persisted across multiple test cases**.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426020&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-社招

1. [LeetCode, 676] Clone an undirected graph. Each node in the graph contains a label and a list of its neighbors.

OJ's undirected graph serialization:

Nodes are labeled uniquely.

We use # as a separator for each node, and , as a separator for node label and each neighbor of the node.

As an example, consider the serialized graph {0,1,2#1,2#2,2}.

The graph has a total of three nodes, and therefore contains three parts as separated by #.

1. First node is labeled as 0. Connect node 0 to both nodes 1 and 2.
2. Second node is labeled as 1. Connect node 1 to node 2.
3. Third node is labeled as 2. Connect node 2 to node 2 (itself), thus forming a self-cycle.

Visually, the graph looks like the following:

```
       1
      / \
     /   \
    0 --- 2
     / \
     \_/
```

2. [Leetcode,151]Given an input string, reverse the string word by word.

For example,

Input: "the sky is blue",

Output: "blue is sky the".

Note:

- A word is defined as a sequence of non-space characters.
- Input string may contain leading or trailing spaces. However, your reversed string should not contain leading or trailing spaces.
- You need to reduce multiple spaces between two words to a single space in the reversed string.

3. [Leetcode,285]Given a binary search tree and a node in it, find the in-order successor of that node in the BST.

Note: If the given node has no in-order successor in the tree, return null.

4. [Leetcode,402]Given a non-negative integer num represented as a string, remove k digits from the number so that the new number is the smallest possible.

Note:

- The length of num is less than 10002 and will be ≥ k.
- The given num does not contain any leading zero.

Example 1:

Input: num = "1432219", k = 3

Output: "1219"

Explanation: Remove the three digits 4, 3, and 2 to form the new number 1219 which is the smallest.

Example 2:

Input: num = "10200", k = 1

Output: "200"

Explanation: Remove the leading 1 and the number is 200. Note that the output must not contain leading zeroes.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425996&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

SalesForce-全职-Onsite-社招

1. [LeetCode, 207] There are a total of n courses you have to take, labeled from 0 to n-1. Some courses may have prerequisites, for example to take course 0 you have to first take course 1, which is expressed as a pair: [0,1]

Given the total number of courses and a list of prerequisite **pairs**, is it possible for you to finish all courses?

Example 1:

Input: 2, [[1,0]]

Output: true

Explanation: There are a total of 2 courses to take.

To take course 1 you should have finished course 0. So it is possible.

Note:

1. The input prerequisites is a graph represented by **a list of edges**, not adjacency matrices.
2. You may assume that there are no duplicate edges in the input prerequisites.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425995&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Snapchat–全职–技术电面–社招

1.给一段有很多 word 的 string，打印出每个 word 按照出现频率从高到低，再按字母顺序。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425972&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Expedia–全职–技术电面–社招

1. [LeetCode, 289] According to the Wikipedia's article: "The **Game of Life**, also known simply as **Life**, is a cellular automaton devised by the British mathematician John Horton Conway in 1970."

Given a board with m by n cells, each cell has an initial state live (1) or dead (0). Each cell interacts with its eight neighbors (horizontal, vertical, diagonal) using the following four rules (taken from the above Wikipedia article):

1. Any live cell with fewer than two live neighbors dies, as if caused by under–population.
2. Any live cell with two or three live neighbors lives on to the next generation.

3. Any live cell with more than three live neighbors dies, as if by over-population.
4. Any dead cell with exactly three live neighbors becomes a live cell, as if by reproduction.

Write a function to compute the next state (after one update) of the board given its current state.

Follow up:

1. Could you solve it in-place? Remember that the board needs to be updated at the same time: You cannot update some cells first and then use their updated values to update other cells.
2. In this question, we represent the board using a 2D array. In principle, the board is infinite, which would cause problems when the active area encroaches the border of the array. How would you address these problems?

2. In sorted positive unique number array, find all indices pairs that the sum of two numbers is equal to target (n)

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425968&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.给一个 String[] input 和 String[] order，如果 input 里的 string 在 order 里面，则按 order 的顺序排序，如果不在，就按字母顺序排。

input = ["a", "z", "q", "p"] order = ["z", "a"]

output = ["z", "a", "p", "q"]

a z 出现在 order 里面， z 在前面 a 在后面，没出现的就是字母顺序 p,q

2.一条直线上有很多加油站， int[] gasStation 表示每个加油站离原点的距离， int[] prices 表示每个加油站的油价， tankSize 表示油箱的容量(N unit)，起始油箱没有油.问应该怎么加油才能实现最便宜?

比如 A 到 B 的距离是 5， 就是 5 个 unit 的距离， A 的油价为$A，tankSize 为 10 的话，如果在 A 加满的花费是 10 * $A,这个 case 里至少要加 5 个 unit 这样才能到下一站。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425905&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.给一个直线，设计一个自动驾驶汽车，只有两个功能就是加速(A)和换方向(R)，起始速度为 1，向正无限走，每次 A 就走现在的方向和速度，然后把速度翻倍，每次 R 就停下来换方向不走，速度变为 1，比如 AAAR 就是走 1，走 2，走 4，停下来（速度是 1 方向是反方向），现在的位置就是 7，问设计一个算法给你一个 string (eg "AAARA")算现在的位置，
follow up: 给你一个位置，算最少需要多少个 command (A 和 R)能到

2.设置一个 target word，然后写一个 guess function 来猜这个词，这个 function 的作用是给一个 guess word 然后 return integer 代表有多少个字母一样(位置不一样也无所谓)
follow up 是给一个 dictionary，让你用最短的 guess call 找出 target word

4.设计一个预定系统，会有要求预定从几点到几点需要预留几把椅子，问最少需要准备多少椅子

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425891&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Dynamic Signal-全职-HR 筛选+技术电面-应届

1. [LeetCode, 425]Given a set of words (without duplicates), find all word squares you can build from them.
A sequence of words forms a valid word square if the kth row and column read the exact same string, where 0 ≤ k < max(numRows, numColumns).

For example, the word sequence ["ball","area","lead","lady"] forms a word square because each word reads the same both horizontally and vertically.

b a l l

a r e a

l e a d

l a d y

Note:

1. There are at least 1 and at most 1000 words.
2. All words will have the exact same length.
3. Word length is at least 1 and at most 5.
4. Each word contains only lowercase English alphabet a-z.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425858&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Vettery-全职-技术电面-应届

1. [LeetCode, 107] Given a binary tree, return the bottom-up level order traversal of its nodes' values. (ie, from left to right, level by level from leaf to root).

For example:

Given binary tree [3,9,20,null,null,15,7],

```
  3
 / \
9  20
  /  \
 15   7
```

return its bottom-up level order traversal as:

```
[
 [15,7],
```

[9,20],

[3]

]

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425837&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面-社招

1.给出一个整数数组，把这个数组分成和相等的两半

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425808&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-社招

1. [LeetCode,53]Given an integer array nums, find the contiguous subarray (containing at least one number) which has the largest sum and return its sum.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425684&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-在线笔试-其他

1. 一个排列的数组，让找出每一个数字出现的次数，比如[2,2,5,5,5,6,9,9,9]

返回：

2:2

5:3

6:1

9:3

2. 给 2 个 int 组成一个范围，让输出范围中的所有素数，比如给定 i = 2, j = 12

返回：2,3,5,7,11

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425635&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.给你一堆上百万级的长度为 5 的单词，猜一个数，返回两个值，对和不对以及有多少个字符存在 target 字符里。比如，目标值为 abcde，深入 abced， 返回 false，5；

2.给一个 string 和屏幕宽度 int，根据宽度将 string 变成一行一行，不能把一个 word 分成两行。

3.类似简单加密，“aabbc”和“cceed”这就是一一对应，每个字符只能对应一个，不能有一对多关系，输入一对字符串，返回是否符合。

4.给一个 int m，和 char 的 set （0，1，2，3，4，5，6，7，8，9）让你根据 set 里的字符实现一个 generate id 的函数，每次返回一个 string，但是必须唯一，并且满足同样的字符不能连续出现超过 m 次，比如 m = 3，“1000”有效，“0000”不有效。字符串越小越好。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425484&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-Onsite-社招

1. [LeetCode, 227]Implement a basic calculator to evaluate a simple expression string.

The expression string contains only **non-negative** integers, +, -, *, / operators and empty spaces . The integer division should truncate toward zero.

Example 1:

Input: "3+2*2"

Output: 7

2.给一首 music，music 有 popularity 值，还有和它 similar 的 musics。找出这首歌的所有 similar musics 里面最 popular 的 n 首 music(direct and indirect)

3. [LeetCode,49] Given an array of strings, group anagrams together.

Example:

Input: ["eat", "tea", "tan", "ate", "nat", "bat"],

Output:

[

["ate","eat","tea"],

["nat","tan"],

["bat"]

]

Note:

- All inputs will be in lowercase.
- The order of your output does not matter.

follow up：input 不限于 alphabetical character. 变成 utf-8

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425443&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

GoldmanSachs-全职-技术电面-社招

1.实现 pow_of_ten(n)，n 是整数，就是返回 10^n 的结果。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425434&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-社招

1.有一种二叉树，从第 0 层开始算，单数层的值是递减的，双数层的值是递增的，然后 input 一个树，让你判断符不符合这个标准。
DFS/BFS

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425432&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-Onsite-社招

1. [LeetCode, 676] Design and implement a data structure for Least Recently Used (LRU) cache. It should support the following operations: get and put.
get(key) – Get the value (will always be positive) of the key if the key exists in the cache, otherwise return –1.
put(key, value) – Set or insert the value if the key is not already present. When the cache reached its capacity, it should invalidate the least recently used item before inserting a new item.
Follow up:
Could you do both operations in **O(1)** time complexity?
Example:

```
LRUCache cache = new LRUCache( 2 /* capacity */ );

cache.put(1, 1);

cache.put(2, 2);

cache.get(1);    // returns 1

cache.put(3, 3);          // evicts key 2
```

```
cache.get(2);    // returns –1 (not found)
cache.put(4, 4);          // evicts key 1
cache.get(1);    // returns –1 (not found)
cache.get(3);    // returns 3
cache.get(4);    // returns 4
```

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425425&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google–全职–Onsite–应届

1.一堆卡片从一头拿，可以拿一二三张（有负数），两人轮流拿，求最高得分。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425410&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook–全职–技术电面–社招

1.Merge Interval，给两个 sorted list of interval，比如 [[1,3], [4,6]]和[[1,9], [11,12]]，返回 [[1,9], [11,12]]

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425399&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google–全职–Onsite–应届

1.给出一个 int array，找出其中一个 index 使得 index 左边所有的数加起来等于 index 右边所有的数加起来（左右 not inclusive）。时间复杂度要求 O(n)，空间复杂度 O(1)。

2.给定两个 string， 判断这两个 string 是否有且仅有两个字母调换了顺序，举例：abcd 和 acbd（b 和 c 调换），affhsgn 和 afghsfn（f 和 g 调换了）

3.给若干个 string 和 int k,得到所有 k 个 string 的组合，例子：{run，age，app, cat, dog} k = 3, output:[{run, age, app}, {run, age, cat}, {run, age, dog}, {run, app, cat} ....]

4.给一个 chars 的顺序，然后判断给定的 char array 里面的所有的 chars 之间是否满足这个顺序。举例：dict：[d, a, c, f, j] 满足顺序的 chars: {d, a, f, f, j} 不满足顺序的 chars：{a, c, c, d, j}或者{c, f, j, j, d, a}. 要求时间复杂度是 O（n），n 是 chars 的长度（假设 chars 的长度大于 dict 长度）。

5. [LeetCode, 676] Given n, how many structurally unique BST's (binary search trees) that store values 1 ... n?

Example:

Input: 3 **Output:** 5

Explanation: Given n = 3, there are a total of 5 unique BST's:

```
   1       3     3      2      1
    \     /     /      / \      \
     3   2     1      1   3      2
    /   /       \                 \
   2   1         2                 3
```


6.给定一个 multiple tree，以及需要删除的多个 nodes，要求返回一个 node 的 list，以便在 nodes 被删除之后可以找到这些 nodes 的 child。

例子：

```
          a
    /     /   \   \
   b  d      c   f
```

/ \ \
H z i

a
/ / \ \
b ->d -> c -> f ->
/ \
X -> y

假如删除 b 和 f，返回{a, d, c, h, z, i}
假如删除 a 和 b，返回{d, c, f, h, z, i}

7.给定一个 multiple tree，除了 parent 指向 child，同一层的 children：第一个 child 指向第二个，第二个指向第三个。。。以此类推，最后一个指向第一个，形成一个回路。求出最长的路径。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425363&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-Onsite-应届

1.[LeetCode,173] Implement an iterator over a binary search tree (BST). Your iterator will be initialized with the root node of a BST.
Calling next() will return the next smallest number in the BST.
Note: next() and hasNext() should run in average O(1) time and uses O(h) memory, where h is the height of the tree.
follow up：两个 BST，然后按顺序 iterate。

2. Given an array of integers and an integer **k**, you need to find the total number of continuous subarrays whose sum equals to **k**.
Example 1:
Input:nums = [1,1,1], k = 2

Output: 2

Note:

1. The length of the array is in range [1, 20,000].
2. The range of numbers in the array is [-1000, 1000] and the range of the integer **k** is [-1e7, 1e7].

Sum = ?

3. [LeetCode,543] Given a binary tree, you need to compute the length of the diameter of the tree. The diameter of a binary tree is the length of the **longest** path between any two nodes in a tree. This path may or may not pass through the root.

Example:

Given a binary tree

```
          1
         / \
        2   3
       / \
      4   5
```

Return **3**, which is the length of the path [4,2,1,3] or [5,2,1,3].

Note: The length of path between two nodes is represented by the number of edges between them.

要注意算法复杂度，需要 O(n)，n 为 node 的个数

follow up，将最长路径打印出来。

4.给一个 letters 的顺序，然后判断给定的 string array 里面的单词之间是否满足这个顺序。举例：letters：[d, a, c, f, j] 满足顺序的 strings: {dict, cat, finger} 不满足顺序的 strings：{dag，ddtt} 或者{jack，act}。

5.[LeetCode,543]There is a new alien language which uses the latin alphabet. However, the order among letters are unknown to you. You receive a list of words from the dictionary,

where **words are sorted lexicographically by the rules of this new language**. Derive the order of letters in this language.

For example,

Given the following words in dictionary,

```
[
  "wrt",
  "wrf",
  "er",
  "ett",
  "rftt"
]
```

The correct order is: "wertf".

Note:

1. You may assume all letters are in lowercase.
2. If the order is invalid, return an empty string.
3. There may be multiple valid order of letters, return any one of them is fine.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425348&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-实习-技术电面-应届

1. input 是有序数组 int[] nums 和 int value 找到 value 的前后索引,返回 value 的左边和右边，如果没有返回 -1,-1。

2.一个无序大于 0 小于 9 的数组，输入 k， 返回按顺序排列时，结果最大的 k 个数。 例如 9，2，4，5，3， k=3.需要返回 9，5，3。

Count sort

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425322&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1. [LeetCode, 659] You are given an integer array sorted in ascending order (may contain duplicates), you need to split them into several subsequences, where each subsequences consist of at least 3 consecutive integers. Return whether you can make such a split.

Example 1:

Input: [1,2,3,3,4,5]

Output: True

Explanation:

You can split them into two consecutive subsequences :

1, 2, 3

3, 4, 5

2. [LeetCode, 652] Given a binary tree, return all duplicate subtrees. For each kind of duplicate subtrees, you only need to return the root node of any **one** of them.

Two trees are duplicate if they have the same structure with same node values.

Example 1:

```
        1
      / \
     2  3
    /  / \
   4  2  4
     /
    4
```

The following are two duplicate subtrees:

```
      2
```

/

4

and

4

Therefore, you need to return above trees' root in the form of a list.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425304&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Snapchat-全职-Onsite-应届

1.[LeetCode,21] Merge two sorted linked lists and return it as a new list. The new list should be made by splicing together the nodes of the first two lists.

2. [LeetCode,23] Merge k sorted linked lists and return it as one sorted list. Analyze and describe its complexity.

Example:

Input:

[

1->4->5,

1->3->4,

2->6

]

Output: 1->1->2->3->4->4->5->6

2. [LeetCode,53] Given an integer array nums, find the contiguous subarray (containing at least one number) which has the largest sum and return its sum.

Example:

Input: [-2,1,-3,4,-1,2,1,-5,4],

Output: 6

Explanation: [4,–1,2,1] has the largest sum = 6.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425279&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Dropbox–全职–技术电面+Onsite–社招

1.[LeetCode,609] Given a list of directory info including directory path, and all the files with contents in this directory, you need to find out all the groups of duplicate files in the file system in terms of their paths.

A group of duplicate files consists of at least **two** files that have exactly the same content.

A single directory info string in the **input** list has the following format:

"root/d1/d2/.../dm f1.txt(f1_content) f2.txt(f2_content) ... fn.txt(fn_content)"

It means there are **n** files (f1.txt, f2.txt ... fn.txt with content f1_content, f2_content ... fn_content, respectively) in directory root/d1/d2/.../dm. Note that n >= 1 and m >= 0. If m = 0, it means the directory is just the root directory.

The **output** is a list of group of duplicate file paths. For each group, it contains all the file paths of the files that have the same content. A file path is a string that has the following format:

"directory_path/file_name.txt"

Example 1:

Input:

["root/a 1.txt(abcd) 2.txt(efgh)", "root/c 3.txt(abcd)", "root/c/d 4.txt(efgh)", "root 4.txt(efgh)"]

Output:

[["root/a/2.txt","root/c/d/4.txt","root/4.txt"],["root/a/1.txt","root/c/3.txt"]]

Note:

1. No order is required for the final output.
2. You may assume the directory name, file name and file content only has letters and digits, and the length of file content is in the range of [1,50].

3. The number of files given is in the range of [1,20000].
4. You may assume no files or directories share the same name in the same directory.
5. You may assume each given directory info represents a unique directory. Directory path and file info are separated by a single blank space.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425264&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1[LeetCode,399] Equations are given in the format A / B = k, where A and B are variables represented as strings, and k is a real number (floating point number). Given some queries, return the answers. If the answer does not exist, return -1.0.

Example:

Given a / b = 2.0, b / c = 3.0.

queries are: a / c = ?, b / a = ?, a / e = ?, a / a = ?, x / x = ? .

return [6.0, 0.5, -1.0, 1.0, -1.0].

The input is: vector<pair<string, string>> equations, vector<double>& values, vector<pair<string, string>> queries , where equations.size() == values.size(), and the values are positive. This represents the equations. Return vector<double>.

According to the example above:

equations = [["a", "b"], ["b", "c"]],

values = [2.0, 3.0],

queries = [["a", "c"], ["b", "a"], ["a", "e"], ["a", "a"], ["x", "x"]].

The input is always valid. You may assume that evaluating the queries will result in no division by zero and there is no contradiction.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425238&extra=page%

3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Snapchat-全职-技术电面-社招

1. [LeetCode,295]Median is the middle value in an ordered integer list. If the size of the list is even, there is no middle value. So the median is the mean of the two middle value.

Examples:

[2,3,4] , the median is 3

[2,3], the median is (2 + 3) / 2 = 2.5

Design a data structure that supports the following two operations:

· void addNum(int num) – Add a integer number from the data stream to the data structure.

· double findMedian() – Return the median of all elements so far.

For example:

addNum(1)

addNum(2)

findMedian() –> 1.5

addNum(3)

findMedian() –> 2

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425234&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.有几条公交线路： 1. a–>b–>c –> d 2. a–> c–>e–>f 3, f–>s–>n： 问从某个起点： 比如 a 到 某个终点，比如 n 的最少转车次数

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425195&extra=page%

3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-社招

1. [LeetCode,117] [LeetCode,117] Given a binary tree

```
struct TreeLinkNode {
  TreeLinkNode *left;
  TreeLinkNode *right;
  TreeLinkNode *next;
}
```

Populate each next pointer to point to its next right node. If there is no next right node, the next pointer should be set to NULL.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425085&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-实习-在线笔试-应届

1.[LeetCode,686] Given two strings A and B, find the minimum number of times A has to be repeated such that B is a substring of it. If no such solution, return -1.
For
example, with A = "abcd" and B = "cdabcdab".Return 3,
because by repeating A three times (“abcdabcdabcd”), B is a substring of it;
and B is not a substring of A repeated two times ("abcdabcd").
Note:The
length of A and B will be between 1 and 10000.

2. [LeetCode,687] Given a binary tree, find the length of the longest path where each node in the path has the same value. This path may or may not pass through the root.

Note: The length of path between two nodes is represented by the number of edges between them.

Example 1:

Input:

```
        5
      / \
     4   5
    / \   \
   1   1   5
```

Output：2

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425051&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Pinterest–全职–HR 筛选–社招

1.一维数组每个 index 下的数字代表能向左或向右跳的步数，问给了起始位置，是否能跳到 target 位置

DFS/BFS

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425019&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Uber–全职–技术电面–社招

1.[LeetCode,686] Given the running logs of **n** functions that are executed in a nonpreemptive single threaded CPU, find the exclusive time of these functions.

Each function has a unique id, start from **0** to **n–1**. A function may be called recursively or by another function.

A log is a string has this format : function_id:start_or_end:timestamp. For example, "0:start:0" means function 0 starts from the very beginning of time 0. "0:end:0" means function 0 ends to the very end of time 0.

Exclusive time of a function is defined as the time spent within this function, the time spent by calling other functions should not be considered as this function's exclusive time. You should return the exclusive time of each function sorted by their function id.

Example 1:

Input:

n = 2

logs =

["0:start:0",

"1:start:2",

"1:end:5",

"0:end:6"]

Output:[3, 4]

Explanation:

Function 0 starts at time 0, then it executes 2 units of time and reaches the end of time 1.

Now function 0 **calls function 1**, function 1 starts at time 2, executes 4 units of time and end at time 5.

Function 0 is running again at time 6, and also end at the time 6, thus executes 1 unit of time.

So function 0 totally execute 2 + 1 = 3 units of time, and function 1 totally execute 4 units of time.

Note:

1. Input logs will be sorted by timestamp, NOT log id.
2. Your output should be sorted by function id, which means the 0th element of your output corresponds to the exclusive time of function 0.
3. Two functions won't start or end at the same time.

4. Functions could be called recursively, and will always end.
5. 1 <= n <= 100

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425013&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-实习-技术电面-应届

1.[LeetCode,444] Check whether the original sequence org can be uniquely reconstructed from the sequences in seqs. The org sequence is a permutation of the integers from 1 to n, with $1 \leqslant n \leqslant 10^4$. Reconstruction means building a shortest common supersequence of the sequences in seqs (i.e., a shortest sequence so that all sequences in seqs are subsequences of it). Determine whether there is only one sequence that can be reconstructed from seqs and it is the org sequence.

Example 1:

Input:

org: [1,2,3], seqs: [[1,2],[1,3]]

Output:

false

Explanation:

[1,2,3] is not the only one sequence that can be reconstructed, because [1,3,2] is also a valid sequence that can be reconstructed.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=425011&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Clarifai-全职-在线笔试-社招

1. waiting time of buying show tickets.要排队买 show 的 ticket，不论你想买多少张，一次只能买一张，买完如果想再买就回到队尾重新排队。

问题是 小明要排队买票，输入是 一个 int array 和一个 int。array 中每个 element 表示现在队里每个人需要买的票数，另一个输入是 小明在队尾中的位置，用 index 表示。

sample input: [2,3,4,1], 1。 表示有四个人要买票，第一个人要买两张，第二个就是小明，要买三张，第三个人要买四张，etc。每人次买一张票 需要花费 1 unit of time。问最后小明买到所需的所有票，需要花费多久。

n+-1

2. country population

给一个 url，可以 query by url to get countries information, which inlcude population, capital, and some other informaiton. the response of url is in the format of JSON. function input:

def get_population(str prefix, int k)

输入国家名字的 prefix，返回 match 国家名字的, 而且人口超过 k 的国家的数量。

get_populatin("un", 100) -> "United Kingdom" is one of countries that meets the rule.

Trie tree

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424871&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Oracle-全职-Onsite-社招

1. [LeetCode,138] A linked list is given such that each node contains an additional random pointer which could point to any node in the list or null.

Return a deep copy of the list.

2. [LeetCode,117] Given a binary tree

```
struct TreeLinkNode {
  TreeLinkNode *left;
  TreeLinkNode *right;
  TreeLinkNode *next;
```

}

Populate each next pointer to point to its next right node. If there is no next right node, the next pointer should be set to NULL.

Initially, all next pointers are set to NULL.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424824&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

TwoSigma-全职-技术电面+在线笔试-社招

1. [LeetCode,146]Design and implement a data structure for Least Recently Used (LRU) cache. It should support the following operations: get and put.

get(key) – Get the value (will always be positive) of the key if the key exists in the cache, otherwise return –1.

put(key, value) – Set or insert the value if the key is not already present. When the cache reached its capacity, it should invalidate the least recently used item before inserting a new item.

Example:

```
LRUCache cache = new LRUCache( 2 /* capacity */ );

cache.put(1, 1);

cache.put(2, 2);

cache.get(1);    // returns 1

cache.put(3, 3);          // evicts key 2

cache.get(2);    // returns –1 (not found)

cache.put(4, 4);          // evicts key 1

cache.get(1);    // returns –1 (not found)

cache.get(3);    // returns 3

cache.get(4);    // returns 4
```

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=424821&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

05/20 – 05/26

Google–实习–技术电面–应届

1. 给一个先序遍历的数组，每个元素包含一个等级和名字，表示公司里不同人的等级，要求构造树。例如 1 A, 2 B, 3 C, 3 D, 2 E。

2. 给一个 0–n 的乱序数组，要求找出所有 permutation 的轮转使得数组能变回递增顺序。例如 01234 就是有 5 个 cycle, 12340 就是 1 个 cycle(0–>1–>2–>3–>4)，13402 就是 2 个 cycle(0–>1–>3, 2–>4)

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427202&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google–全职–Onsite–社招

1.[LeetCode,399] Equations are given in the format A / B = k, where A and B are variables represented as strings, and k is a real number (floating point number). Given some queries, return the answers. If the answer does not exist, return –1.0.

Example:

Given a / b = 2.0, b / c = 3.0.

queries are: a / c = ?, b / a = ?, a / e = ?, a / a = ?, x / x = ? .

return [6.0, 0.5, –1.0, 1.0, –1.0].

The input is: vector<pair<string, string>> equations, vector<double>& values, vector<pair<string, string>> queries , where equations.size() == values.size(), and the values are positive. This represents the equations. Return vector<double>.
According to the example above:
equations = [["a", "b"], ["b", "c"]],

values = [2.0, 3.0],

queries = [["a", "c"], ["b", "a"], ["a", "e"], ["a", "a"], ["x", "x"]].

The input is always valid. You may assume that evaluating the queries will result in no division by zero and there is no contradiction.

2. 系统给一个 log 输入，每一条是时间，ID 和说的话，统计说话字数最多的人。

3.一个树有一个 edge 是多余的。找出并移除。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427167&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面-社招

1. 设计一个数据结构可以得到最新的股票价格。例如， input 是个 stream [google, 1000] [MS, 100] [Appl 180] [AMZN 1600] [MS 101]，然后 get （goog） 能拿到 1000， get （ms） 能拿到 101 ， 再 get（ms） 返回空

2. 写一个函数 找出所有组合使得 a^2+b^2+c^2+d^2 = k， k 是 input。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427166&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Netflix-全职-技术电面-社招

1. bucket sort 变种，一个大数组里面只有[0-100], 找里面的 top k，写完后问假如 input 数字的 range 不确定， 不能用 bucket sort 怎么办。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427163&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-HR 筛选-其他

1. [LeetCode,139] Given a **non-empty** string s and a dictionary wordDict containing a list of **non-empty** words, determine if s can be segmented into a space-separated sequence of one or more dictionary words.

Note:

- The same word in the dictionary may be reused multiple times in the segmentation.
- You may assume the dictionary does not contain duplicate words.

Example 1:

Input: s = "leetcode", wordDict = ["leet", "code"]

Output: true

Explanation: Return true because "leetcode" can be segmented as "leet code".

Example 2:

Input: s = "applepenapple", wordDict = ["apple", "pen"]

Output: true

Explanation: Return true because "applepenapple" can be segmented as "apple pen apple".

Note that you are allowed to reuse a dictionary word.

Example 3:

Input: s = "catsandog", wordDict = ["cats", "dog", "sand", "and", "cat"]

Output: false

2. [LeetCode,56]Given a collection of intervals, merge all overlapping intervals.

Example

1:

Input: [[1,3],[2,6],[8,10],[15,18]]

Output: [[1,6],[8,10],[15,18]]

Explanation: Since intervals [1,3] and [2,6]
overlaps, merge them into [1,6].

Example
2:

Input: [[1,4],[4,5]]

Output: [[1,5]]

Explanation: Intervals [1,4] and [4,5] are
considered overlapping.

3. [LeetCode,98] Given a binary tree,
determine if it is a valid binary search tree (BST).
Assume a BST is
defined as follows:
The left subtree of a node contains only nodes with keys **less than** the node's key.
The right subtree of a node contains only nodes with keys **greater than** the node's key.
Both the left and right subtrees must also be binary search trees.

Example
1:

Input:

```
  2
 / \
1
3
```

Output: true

4. [LeetCode,311] Given two sparse matrices A and B, return the result of AB.

You may assume that A's column number is equal to B's row number.

Example:

A = [

[1, 0, 0],

[–1, 0, 3]

]

B = [

[7, 0, 0],

[0, 0, 0],

[0, 0, 1]

]

| 1 0 0 | | 7 0 0 | | 7 0 0 |

AB = | –1 0 3 | x | 0 0 0 | = | –7 0 3 |

| 0 0 1 | | 0 0 1 |

5. [LeetCode, 67] Given two binary strings, return their sum (also a binary string).

The input strings are both **non-empty** and contains only characters 1 or 0.

Example 1:

Input: a = "11", b = "1"

Output: "100"

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427124&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-Onsite-社招

1. [LeetCode,49] Given an array of strings, group anagrams together.

Example:

Input: ["eat", "tea", "tan", "ate", "nat", "bat"],

Output:

```
[
  ["ate","eat","tea"],
  ["nat","tan"],
  ["bat"]
]
```

Note:

- All inputs will be in lowercase.
- The order of your output does not matter.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427100&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Uber-全职-技术电面-社招

1.题目是 Game of Go，让判断给定棋盘上某一个（白色）棋子是否完全被（黑色）包围，比如这两个 case，中间的 o 就被包围了

```
#       0 1 2 3 4 5
# 0  |.|.|.|.|.|.|
# 1  |.|.|x|.|.|.|
# 2  |.|x|o|x|.|.|
# 3  |.|.|x|.|.|.|
#       0 1 2 3 4 5
# 0  |.|.|.|.|.|.|
# 1  |.|.|x|.|.|.|
# 2  |x|x|o|x|.|.|
# 3  |.|x|o|o|x|.|
# 4  |.|.|x|x|.|.|
# 5  |.|.|.|.|.|.|
```

地址：

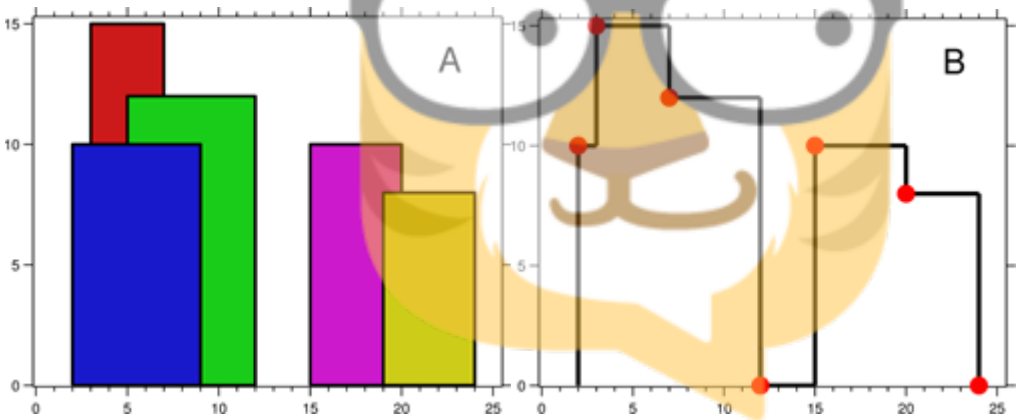
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427034&extra=page%

3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1. 题目是在一个坐标系里给很多离散的点，找到一条线将所有点分成两个数量相等的集合（在给定的所有点里面找两个点恰好把剩余所有点分成两组），不用考虑奇偶性或者多个点在一条线上的特殊情况。

2. [LeetCode,218]A city's skyline is the outer contour of the silhouette formed by all the buildings in that city when viewed from a distance. Now suppose you are **given the locations and height of all the buildings** as shown on a cityscape photo (Figure A), write a program to **output the skyline** formed by these buildings collectively (Figure B).



The geometric information of each building is represented by a triplet of integers [Li, Ri, Hi], where Li and Ri are the x coordinates of the left and right edge of the ith building, respectively, and Hi is its height. It is guaranteed that 0 ≤ Li, Ri ≤ INT_MAX, 0 < Hi ≤ INT_MAX, and Ri − Li > 0. You may assume all buildings are perfect rectangles grounded on an absolutely flat surface at height 0.

For instance, the dimensions of all buildings in Figure A are recorded as: [[2 9 10], [3 7 15], [5 12 12], [15 20 10], [19 24 8]] .

The output is a list of "**key points**" (red dots in Figure B) in the format of [[x1,y1], [x2, y2], [x3, y3], ...] that uniquely defines a skyline. **A key point is the left endpoint of a horizontal line segment**. Note that the last key point, where the rightmost building ends, is merely used to mark the termination of the skyline, and always has zero height. Also, the ground in between any two adjacent buildings should be considered part of the skyline contour.

For instance, the skyline in Figure B should be represented as:[[2 10], [3 15], [7 12], [12 0], [15 10], [20 8], [24, 0]].

Notes:

- The number of buildings in any input list is guaranteed to be in the range [0, 10000].
- The input list is already sorted in ascending order by the left x position Li.
- The output list must be sorted by the x position.
- There must be no consecutive horizontal lines of equal height in the output skyline. For instance, [...[2 3], [4 5], [7 5], [11 5], [12 7]...] is not acceptable; the three lines of height 5 should be merged into one in the final output as such: [...[2 3], [4 5], [12 7], ...]

3.题目是有一张长凳一开始分散的坐着一些人，每个新来的都想坐在最宽敞的一段的中间位置，问：如何模拟这一过程

follow up 是如果有多个长凳该怎么办？以及如果长凳的数据太大，内存装不下又该怎么办?

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426986&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面+Onsite-社招

1. [LeetCode,242]Given two strings s and t , write a function to determine if t is an anagram of s.

Example 1:

Input: s = "anagram", t = "nagaram"

Output: true

Note: You may assume the string contains only lowercase alphabets.

2. [LeetCode,32] Given a string containing just the characters '(' and ')', find the length of the longest valid (well-formed) parentheses substring.

Example 1:

Input: "(()"

Output: 2

Explanation: The longest valid parentheses substring is "()"

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426984&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.公交车站里面有若干公共汽车，类似这样 terminal:{bus1, bus2, bus3, ...}， bus 是一个类， 有 int id, String company name 和一个出发时间 int time. 然后让实现几个函数： add(bus) 向一个车站里加入一辆车，getnext() 得到下一辆出发的车， dispatch() 让下一辆车从车站出发，removeAll(company) 除掉车站中某一个公司的所有车。每个函数的时间复杂度。
follow up：自己实现 priority queue 来实现上面的每个函数。

2. 判断一个二叉树是否是完全二叉树。

3. 给一个 sorted array，构建完全二叉树。

4.A, B 两个人从左到右拿卡，每个卡上有分数，每个人能拿 1 – 3 张，问 A 最多能拿到的分数。分数可以是负数。

5.N 个很大的 file 里面都是数, 和无限多个 machine. 有一个函数：int computeSum(fileID, machineID) 可以让一个机器计算一个 file 里面数的和。 最后求所有 N 个 file 的总和。
follow up: machine 会有硬件原因卡住无法出结果， 然后 computeSum 会 return 多一个 status, 来告诉你是不是有故障。 问 code 如何改进来避免卡住超时。
follow up: computeSum 这个函数有 p 的概率计算结果是错的，如果改进让总结果错误率小于 p.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426968&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Pinterest-全职-Onsite-社招

1. 给一个字典 list of strings，和一个 2D 的 matrix，把 string 填到 matrix 里，使得 matrix 的每行每列都是字典里的单词。

2. [LeetCode,29] Given two integers dividend and divisor, divide two integers without using multiplication, division and mod operator.

Return the quotient after dividing dividend by divisor.

The integer division should truncate toward zero.

Example 1:

Input: dividend = 10, divisor = 3

Output: 3

Note:

- Both dividend and divisor will be 32-bit signed integers.
- The divisor will never be 0.
- Assume we are dealing with an environment which could only store integers within the 32-bit signed integer range: $[-2^{31}, 2^{31} - 1]$. For the purpose of this problem, assume that your function returns $2^{31} - 1$ when the division result overflows.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426959&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面-社招

1. [LeetCode,785]Given an undirected graph, return true if and only if it is bipartite.

Recall that a graph is bipartite if we can split it's set of nodes into two independent subsets A and B such that every edge in the graph has one node in A and another node in B.

The graph is given in the following form: graph[i] is a list of indexes j for which the edge between nodes iand j exists. Each node is an integer between 0 and graph.length – 1. There are no self edges or parallel edges: graph[i] does not contain i, and it doesn't contain any element twice.

Example 1:

Input: [[1,3], [0,2], [1,3], [0,2]]

Output: true

Explanation:

The graph looks like this:

0–––1

| |

| |

3–––2

We can divide the vertices into two groups: {0, 2} and {1, 3}.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426912&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Pinterest–全职–Onsite–社招

1. [LeetCode,698] Given an array of integers nums and a positive integer k, find whether it's possible to divide this array into k non–empty subsets whose sums are all equal.

Example 1:

Input: nums = [4, 3, 2, 3, 5, 2, 1], k = 4

Output: True

Explanation: It's possible to divide it into 4 subsets (5), (1, 4), (2,3), (2,3) with equal sums.

Note:

l 1 <= k <= len(nums) <= 16.

l 0 < nums[i] < 10000.

2.给定一个很长的数组 N，每个数字都是 0–255 的数值，和各种 pair 的 index 的数组 M （可能是[[1,100],[5,1000],etc]）。M 的长度最大是 N*(N–1)/2. 问求 M 中所有 pair 的 mean。
Follow up：相同的数组，求 M 中所有 pair 的 median，
Follow up：当 N 特别大的时候，我们无法存进内存中，给定一个压缩指标 K, K<<N， 问怎么在预处理的时候进行压缩

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426865&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google–全职–Onsite–社招

1.有一个迷宫，里面有各种墙，有一个起点和一个终点。这个迷宫的布局 起点终点的位置都是不可知的，但给定一个 API，输入一个序列，从起点上下左右不断走，如果这个使用序列最终能从起点走到终点，就返回 true, otherwise false。要求就是写一个函数，用来生成这个序列。

2.跑步排名问题，给一个数组，每个人都只能知道他前面的人的序号，第一名用–1 来代表。最终要生成整个跑步的排名。

3.从二维数组的一点到另一点总共有多少种路径，每次移动只能向右上，右和右下。

4.给定一个 CSS 里的颜色 RGB 编码，例如 #123456，将其改为离他最近的颜色，例如#113355

5.在一个按字典序排序的字符串数组中，数出有多少个字符串符合 match，有一个给定的 prefix（不用 trie）.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426864&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

DeepMind-全职-技术电面-社招

1.题目是根据一组 weight 和候选数，生成不同几率的随机数。e.g. weights： [0.1, 0.1, 0.8] 对应 [1，2，3] 那么要求随机数生成概率 1 是 10% 2 是 10% 3 是 80%

2.给 2 个 float 数组， 然后再给一个 float， 问这个单独的 float 属于哪个前面哪个数组。

3.设计一个函数 foo(func, y) 其中 func 是一个单调递增函数（如 y=x*x， y= x+5 etc.), y 是单调递增函数的结果, 要求 foo 输出 x 的值， x 是正整数。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426795&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-社招

1.给一行 string，比如说 I have an apple pie，再给一个 number，比如说 5，这样每行最多有 5 个 character，如何把这个 string 给分开？string 不可以从中间截断，但是可以从空格的地方截断
举个例子
divide_string("I have an apple pie", 5)
返回这样子，不用管 leading zero 和 tailing zero（不过后面 follow up 会问到，有没有什么 edge case，可以提一下 leading space 和 tailing space，不会让 implement)
"I have".
"an"
"apple".
"pie".

followup，如果 string 可以从中截断，该怎么办？以及怎么 implement 比较好.

follow up，比如说有一种字体，可能每个字母的宽度都不一样，有一个 API 可以查看每个字母的宽度, divide string 的时候，怎么才能尽可能少次数的调用这个函数

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426736&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-HR 筛选-应届

1.给一个 list, [8, 4, 3] 求 比他小的 permutation 里面最大的一个..

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426701&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-实习-技术电面-应届

1.给一个长度为 N 的数组 A，数组每个元素是 0 到 N-1 之间的整数，A[i] = j 表示数组 j 号元素的排名在 i 的前面，且 A[i] = -1 表示 i 是第一名。给出数组 A，求所有数组元素的完整排名。例如输入 A = [2,3,-1,0,1]，输出 B = [2,0,3,1,4]。
Follow up 1: 你原来的做法用了 hashmap（避免下标为-1 的情况），能否直接用数组来做?
Follow up 2: 如何不用计算完整排名，推出排名垫底的元素?

2.给两组坐标，例如 A 组(0,0), (0,1), (0,-1)，B 组(0,0), (0,2), 求一个坐标(x,y)，使 A 组的坐标偏移(x,y)之后尽可能多得和 B 组坐标相等。例如样例数据的结果是(0,1)，有两对坐标可以匹配。

3.给一组字符串，每个字符串有一个排名值 v，用 hashmap 表示就是 unordered_map<string,int>。给一个 input string，求以 input string 为前缀的 top 5 字符串。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426657&extra=page%

3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-Onsite+在线笔试-社招

1. Word count。给一段 text 然后返回出现频率最高的单词。

2.马里奥背景的题目，给一个叫 platform 的，全是坐标的数组[(x0, y0), (x1, y1), ..., (xn, yn)]，再给出一个整数叫 jump，马里奥可以从所在坐标跳到范围在 [(x – jump, y – jump), (x + jump, y + jump)] 的任意在 platform 里的坐标，再给出一个叫 ladder 数组[(a1, b1), (a2, b2)..., (an, bn)]，其中的元素表示从可以从 platform[an]直接转移到 platform[bn]. 问题是给一个马里奥的 index（比如 index 等于 1 的时候 mario 的坐标在（x1, y1））和公主的 index，马里奥能不能到达公主那里。

3. 大意是写一个函数 vector<int> func (int n); 其中 n > 0, 返回一个长度为 2n 的 vector，vector 内每个元素都是 1~n 的某个数，每个数出现两次（所以数组长度为 2n）。但是对于排列有如下要求：在相同数字之间的 gap 的长度必须是数字的值。举例：当 n = 3 时，输出[3,1,2,1,3,2]。可以看到两个 1 之间只有一个元素（2），两个 2 之间有两个元素（1,3），两个 3 之间有三个元素（1,2,1）。

4. [LeetCode,698]Given n points on a 2D plane, find the maximum number of points that lie on the same straight line.

Example 1:

Input: [[1,1],[2,2],[3,3]]

Output: 3

Explanation:

```
^
|
|        o
|     o
|  o
+------------->
0  1  2  3  4
```

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426496&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-Onsite-应届

1. [LeetCode,451]Given a string, sort it in decreasing order based on the frequency of characters.

Example 1:

Input:

"tree"

Output:

"eert"

Explanation:

'e' appears twice while 'r' and 't' both appear once.

So 'e' must appear before both 'r' and 't'. Therefore "eetr" is also a valid answer.

2.给个二维棋盘，每个位置有个正整数是这个格子的 cost，要找一条从左上到右下的路，每次可以往上下左右走，使得总 cost 最小。

3. [LeetCode 64] Given a m x n grid filled with non-negative numbers, find a path from top left to bottom right which minimizes the sum of all numbers along its path.

Note: You can only move either down or right at any point in time.

Example:

Input:

[

[1,3,1],

[1,5,1],

[4,2,1]

]

Output: 7

Explanation: Because the path 1→3→1→1→1 minimizes the sum.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426448&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Mathworks-全职-技术电面-应届

1.给定一个 2D matrix，每一列的数据是用不同的单位的，毫米厘米米公里，然后写 code 转成一样的单位.

2. Given a binary tree, imagine yourself standing on the right side of it, return the values of the nodes you can see ordered from top to bottom.

Example:

Input: [1,2,3,null,5,null,4]

Output: [1, 3, 4]

Explanation:

```
   1            <---
 /   \
2     3         <---
 \     \
  5     4       <---
```

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426446&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面-社招

1. [LeetCode,15]Given an array nums of n integers, are there elements a, b, c in nums such that a + b + c = 0? Find all unique triplets in the array which gives the sum of zero.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426435&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-Onsite+在线笔试-社招

1. 给一堆 log，每个 log 有货物 id，supplier id 和 price 还有货物的数量，收集所有的 log 然后找到每个货物的价格，价格的标准就是哪个 supplier 的货物数量最多，就返回那个 supplier 的价格

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426423&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-在线笔试-应届

1. [LeetCode,681]Given a time represented in the format “HH:MM”, form the next closest time by reusing the current digits. There is no limit on how many times a digit can be reused.
You may assume the given input string is always valid. For example, “01:34”, “12:09” are all valid. “1:34”, “12:9” are all invalid.

2. [LeetCode,605]Suppose you have a long flowerbed in which some of the plots are planted and some are not. However, flowers cannot be planted in adjacent plots – they would compete for water and both would die.
Given a flowerbed (represented as an array containing 0 and 1, where 0 means empty and 1 means not empty), and a number n, return if n new flowers can be planted in it without violating the no-adjacent-flowers rule.
Example 1:
Input: flowerbed = [1,0,0,0,1], n = 1
Output: True
Example 2:
Input: flowerbed = [1,0,0,0,1], n = 2

Output: False

Note:

The input array won't violate no-adjacent-flowers rule.

The input array size is in the range of [1, 20000].

n is a non-negative integer which won't exceed the input array size.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426337&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.given a list of rectangles, write a method to choose a random point uniformly in the list of rectangles （maybe overlapped）

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426300&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-Onsite-社招

1.拿不规则硬币（相当于给你一个函数 f，输出 1 或 0，其中 0 或 1 的概率不知）模拟一个正常的色子（每一面的概率都是 1/6）

2.一条线上落着一堆点，找一个点离其他所有点的距离最近

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426264&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.Input: "I am {0} {2}." 和 {“ very”, “apple”, "happy"}, Ouput: "I am very happy" 要自己分析各种 corner case。

2.Hangman Game，两个玩家：player1 出题，player2 通过 call 一个叫做 guess(char letter)解答。已经有一个 dictionary 包含了所有的英文单词，player2 要猜 hangman 里有那些词的话，最坏情况把 a-z 全部猜一遍。所以这题要求：1. 想一个数据结构来减少到 disctionary search 的时间 2. 优化 guess(char letter)的效率，想办法让 player2 尽可能减少猜的次数。

3. [LeetCode,394]Given an encoded string, return it's decoded string.
The encoding rule is: k[encoded_string], where the encoded_string inside the square brackets is being repeated exactly k times. Note that k is guaranteed to be a positive integer.
You may assume that the input string is always valid; No extra white spaces, square brackets are well-formed, etc.
Furthermore, you may assume that the original data does not contain any digits and that digits are only for those repeat numbers, k. For example, there won't be input like 3a or 2[4].
Examples:
s = "3[a]2[bc]", return "aaabcbc".
s = "3[a2[c]]", return "accaccacc".
s = "2[abc]3[cd]ef", return "abcabccdcdcdef".

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=426249&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

05/27 – 06/02

Facebook-全职-技术电面-应届

1. [LeetCode,29] Given two integers dividend and divisor, divide two integers without using multiplication, division and mod operator.

Return the quotient after dividing dividend by divisor.

The integer division should truncate toward zero.

Example 1:

Input: dividend = 10, divisor = 3

Output: 3

Note:

- Both dividend and divisor will be 32-bit signed integers.
- The divisor will never be 0.
- Assume we are dealing with an environment which could only store integers within the 32-bit signed integer range: [−231, 231 − 1]. For the purpose of this problem, assume that your function returns 231 − 1 when the division result overflows.

面试要求不能用除法和 mod 运算

2. [LeetCode,560]Given an array of integers and an integer **k**, you need to find the total number of continuous subarrays whose sum equals to **k**.

Example 1:

Input:nums = [1,1,1], k = 2

Output: 2

Note:

1. The length of the array is in range [1, 20,000].
2. The range of numbers in the array is [-1000, 1000] and the range of the integer **k** is [-1e7, 1e7].

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428278&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Tetration-全职-技术电面+Onsite-应届

1.一个用 String 表示的数字，要求去掉 k 位，使其变成最小的数并返回。比如“1345”去掉 2 位返回“13”。“10010”去掉 1 位是“0010”返回“10”。

2.给一个 n，一个 k，要求返回一个 n 位的 string。这个 string 由 a 和 b 构成，每一对 a 在 b 之前出现的时候计作一个 pair，比如 aab 就有 2 个 pair，aabb 就有 4 个 pair。最后要求返回的 string 里面必须有 k 个 pair。

3. [LeetCode,572] Given two non-empty binary trees **s** and **t**, check whether tree **t** has exactly the same structure and node values with a subtree of **s**. A subtree of **s** is a tree consists of a node in **s** and all of this node's descendants. The tree **s** could also be considered as a subtree of itself.

Example 1:

Given tree s:

```
     3
    / \
   4   5
  / \
 1   2
```

Given tree t:

```
   4
  / \
 1   2
```

Return **true**, because t has the same structure and node values with a subtree of s.

Example 2:

Given tree s:

```
     3
    / \
   4   5
  /  \
 1    2
     /
    0
```

Given tree t:

```
   4
  / \
 1   2
```

Return **false**.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428264&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面+Onsite-社招

1. 有一个曲线，曲线的形状是先递减再增加，找曲线的最低点，如果只考虑 int 怎么做，如果考虑 double 怎么做

2. 一堆自行车和一些人在一个 2D 的 matrix 里，要每个人 match 到一辆自行车，人和自行车的距离越短越好

3. 给了一堆 log，log 里有用户 id，resource id 以 resource 在某个起始时间和终止时间的使用量，比如用户 abc 在 1 到 5 秒钟使用了 CPU 的数量是 2，用户 abc 在 2 到 3 秒使用的 CPU 数量是 4，也就是一个用户对某个 resource 的使用在某个时间是可以叠加的，给定一个 resource id，根据用户对这个 resource 的 peak 使用量，找到 top k 的用户。上面的例子中 abc 的 CPU 的 peak 使用量是 2+4=6

4. 两道题，第一个是给一个数组，找到三个数字，他们相乘的乘积最大。 第二题是给一堆数组，数组中的每个数都是一对，只有一个是单独，同时相同的数字一定都是挨着的，找到单独的数字

5. 给一堆排好序的 non-overlapped interva，要插入一个数字，如果这个数字可以和某个 interval 的起始时间或者结束时间挨着，就要把这个数字 merge 到那个 interval 之中，如果不挨着，就把数字当成 interval 插入到那堆 interval 当中，比如给定的 interval 是[1,2], [4,5], [9,10]，插入 7 的话，结果是[1,2], [4,5], [7,7], [8, 9]，插入 3 的话，结果是[1,5], [9,10]

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428197&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-技术电面+在线笔试-社招

1.给一个 Matrix 只有 1 和 0 ， 1 代表可以走， 0 代表不能走， 给出 start point, end point， 打印出有效的 path

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428195&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Uber-全职-技术电面+Onsite-社招

电面：

1.[LeetCode,200] Given a 2d grid map of '1's (land) and '0's (water), count the number of islands. An island is surrounded by water and is formed by connecting adjacent lands horizontally or vertically. You may assume all four edges of the grid are all surrounded by water.

Onsite：

1. [LeetCode,23] Merge k sorted linked lists and return it as one sorted list. Analyze and describe its complexity.

Example:

Input:

[
  1->4->5,
  1->3->4,
  2->6
]

Output:

1->1->2->3->4->4->5->6

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428192&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Wayfair-全职-技术电面-社招

1.[LeetCode,121]Say you have an array for which the i^{th}

element is the price of a given stock on day i.

If

you were only permitted to complete at most one transaction (i.e., buy one and

sell one share of the stock), design an algorithm to find the maximum profit.

Note

that you cannot sell a stock before you buy one.

Example

1:

Input: [7,1,5,3,6,4]

Output: 5

Explanation: Buy on day 2 (price = 1) and

sell on day 5 (price = 6), profit = 6-1 = 5.

Not

7-1 = 6, as selling price needs to be larger than buying price.

Example

2:

Input: [7,6,4,3,1]

Output: 0

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428178&extra=page%

3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-实习-技术电面-其他

1.[LeetCode,33] Suppose an array sorted in ascending order is rotated at some pivot unknown to you beforehand.
(i.e., [0,1,2,4,5,6,7] might become [4,5,6,7,0,1,2]).
You are given a target value to search. If found in the array return its index, otherwise return -1.
You may assume no duplicate exists in the array.
Your algorithm's runtime complexity must be in the order of O(log n).

2.两个数组，返回两个一个数组中存在的而另一个数组中不存在的数组。

3.[LeetCode,22]Given n pairs of parentheses, write a function to generate all combinations of well-formed parentheses.
For example, given n = 3, a solution set is:

```
[
  "((()))",
  "(()())",
  "(())()",
  "()(())",
  "()()()"
]
```


地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428143&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-应届

1. [LeetCode,102]Given a binary tree, return the level order traversal of its nodes' values. (ie, from left to right, level by level).

For example:

Given binary tree [3,9,20,null,null,15,7],

```
    3
   / \
  9  20
     /  \
   15    7
```

return its level order traversal as:

```
[
  [3],
  [9,20],
  [15,7]
]
```

2. [LeetCode,103]Given a binary tree, return the zigzag level order traversal of its nodes' values. (ie, from left to right, then right to left for the next level and alternate between).

For example:

Given binary tree [3,9,20,null,null,15,7],

```
    3
   / \
  9  20
     /  \
   15    7
```

return its zigzag level order traversal as:

```
[
  [3],
  [20,9],
  [15,7]
]
```

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428129&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Linkedin-全职-技术电面-社招

1. [LeetCode,68]Given an array of words and a width maxWidth, format the text such that each line has exactly maxWidth characters and is fully (left and right) justified.
You should pack your words in a greedy approach; that is, pack as many words as you can in each line. Pad extra spaces ' ' when necessary so that each line has exactly maxWidth characters.
Extra spaces between words should be distributed as evenly as possible. If the number of spaces on a line do not divide evenly between words, the empty slots on the left will be assigned more spaces than the slots on the right.
For the last line of text, it should be left justified and no extra space is inserted between words.
Note:

- A word is defined as a character sequence consisting of non-space characters only.
- Each word's length is guaranteed to be greater than 0 and not exceed maxWidth.
- The input array words contains at least one word.

Example 1:
Input:
words = ["This", "is", "an", "example", "of", "text", "justification."]
maxWidth = 16
Output:
[
"This is an",
"example of text",
"justification. "
]

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428125&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-Onsite-社招

1.实现把一个数字翻译成英语，比如 111， 输出 one hundred and eleven

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428118&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-应届

1.题目是 bipartite matching，每个 mentor 有几个理想的 intern 的 list，每个 intern 理想的 mentor 的 list，其中有人没有 perfect match 而且如果和别人换一下能得到更满意的 match。给出 mentor 的理想 list 和现在匹配的 intern，和 intern 的理想 mentor list 和现有 mentor，求可能的更优 match。

2.题目是键盘位移 String， 给 list of string, 求其中相互位移能够替换的 string， 比如 sea 和 hug 他们在键盘上的位置是可以通过横移几个位置互换的。注意顺序是一一对应的，s 是对应 h。follow up 是如何更快速. 一亩-三分-地，独家发布

3.题目是战船，给一个 board 和一堆船的位置和大小，判断这个布局是否 valid。要求是船只能是横着或竖着的 x*1 或者 1*x 的形状，船的每一个船体附近 8 个位置（上下左右对角线）都不能有其他船否则 invalid。此题雷很多，test case 会有船完全重叠，交叉，不在 board 里等，得先校验船位置的输入是否正确再做。

4.围棋求黑子是否被白子完全围死。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428115&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面-社招

1.题目是给一个 Log file , file 存的是一堆 record, 每一个 record 包括函数名，type 和 timestamp.让求出每一个函数执行的 cumulative time.

举例子 Foo() ,starts at 10

bar(), starts at 25,

bar() ends at 35,

baz() starts at 40,

baz() ends at 60,

Foo() ends at 70.

整个过程考虑单线程，所以 foo()最终一共执行了 30 的时间， bar 执行了 10， baz 执行 20.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428101&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面-社招

1.给一个 sentence,给一个 list of words(words_to_exclude),计算 sentence 中出现的频率最高的单词（如果频率相同返回最小的）。这些单词不能在 words_to_exclude 中。
words_to_exclude 如果有一个单词是 abc,sentence 中有一个单词是 ABC，那么认为这个单词在 words_to_exclude 中，本质上就是不考虑大小写。

2.实现一个 encrypt function，可以把一个 string 里面的每个字符向后移动 offset 位 s = 'fs', offset = 3, output = 'iv'
面试官的要求：
string 中不是字母的不要动
offset 可以为负数，那就是向前移动

follow up:实现一个 encrypt function，这次给一个段落 paragraph 和一个 offset. 这个段落中的句子只可能以句号、问号、感叹号结尾，第一个句子需要用 input 给的 offset 去 encrypt，之后每个句子的用来 encrypt 的 offset 通过：
上一个句子的最后字符 - 这个句子的第一个字符 来决定。
面试官的要求：
要处理 corner case,比如一个段落某些句子为空： I am happy!.how about you?

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428054&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

1. [LeetCode,155]
Design a stack that
supports push, pop, top, and retrieving the minimum element in constant time.

- push(x) -- Push element x onto stack.
- pop() -- Removes the element on top of the stack.
- top() -- Get the top element.
- getMin() -- Retrieve the minimum element in the stack

Example:

```
MinStack minStack = new MinStack();
minStack.push(-2);
minStack.push(0);
minStack.push(-3);
```

minStack.getMin(); --> Returns -3.
minStack.pop();
minStack.top(); --> Returns 0.
minStack.getMin(); --> Returns -2.

2. [LeetCode,169] Given an array of size n, find the majority element. The majority element is the element that appears **more than** ⌊ n/2 ⌋ times.
You may assume that the array is non-empty and the majority element always exist in the array.
Example 1:
Input: [3,2,3]
Output: 3
Example 2:
Input: [2,2,1,1,1,2,2]
Output: 2

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428017&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-HR 筛选-社招
1.Implemen an iterator class for pre-order of a binary tree. 实现 next（），hasNext()
Follow up：实现 remove, remove 要求删除 next（）last visited node and its subtree。
地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=428010&extra=page%3D1%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

1.题目是给一个 tree 里面的内容是 HTML，每个 Node 要么是标签要么是标签里的 text，给你一个 tree 和一个 string 要 return 包含 string 的所有 node。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427997&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-技术电面-应届

1.给一个 tree，每个 node 最多两个子 node, 删除其中的一些 edge 使其成为 binary tree.
例子：

```
    A
  /   \
B  -   C
```

删除 B->C。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427983&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-技术电面-社招

1.给你两个日期， 日期 1 = （年， 月， 日）， 日期 2 = （年， 月， 日）， 看两个日期是否相差小于等于一个月，如果是，返回 True， 如果不是，则返回 False。
比如： 2016/1/5 和 2016/2/5 返回 True，2018/2/4 和 2018/3/5 返回 False.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427867&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Cisco-全职-Onsite-社招

1. [LeetCode,127] Given two words (beginWord and endWord), and a dictionary's word list, find the length of shortest transformation sequence from beginWord to endWord, such that:

1. Only one letter can be changed at a time.
2. Each transformed word must exist in the word list. Note that beginWord is not a transformed word.

Note:

- Return 0 if there is no such transformation sequence.
- All words have the same length.
- All words contain only lowercase alphabetic characters.
- You may assume no duplicates in the word list.
- You may assume beginWord and endWord are non-empty and are not the same.

Example 1:

Input:

beginWord = "hit",

endWord = "cog",

wordList = ["hot","dot","dog","lot","log","cog"]

Output: 5

Explanation: As one shortest transformation is "hit" -> "hot" -> "dot" -> "dog" -> "cog", return its length 5.

2. [LeetCode,92]Reverse a linked list from position m to n. Do it in one-pass.

Note: 1 ≤ m ≤ n ≤ length of list.

Example:

Input: 1->2->3->4->5->NULL, m = 2, n = 4

Output: 1->4->3->2->5->NULL

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427864&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Microsoft-全职-Onsite-社招

1. 给了一堆输入输出的数字，问他们是怎么映射的。其实就是输入是十六进制，输出是十进制。然后让写一个方法来实现。注意 edge case 输入有可能是 ABCDEF

2. 输入一个 IP 地址，判断是否合法。注意各种 edge case

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427838&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Bloomberg-全职-技术电面-社招

1. [LeetCode,155]
Design a stack that
supports push, pop, top, and retrieving the minimum element in constant time.

- push(x) -- Push element x onto stack.
- pop() -- Removes the element on top of the stack.
- top() -- Get the top element.
- getMin() -- Retrieve the minimum element in the stack

Example:
MinStack minStack = new MinStack();
minStack.push(-2);
minStack.push(0);
minStack.push(-3);

minStack.getMin(); --> Returns -3.
minStack.pop();
minStack.top(); --> Returns 0.
minStack.getMin(); --> Returns -2.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427822&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Lyft-全职-技术电面-社招

1. [LeetCode,238] Given an array nums of n integers where n > 1, return an array output such that output[i] is equal to the product of all the elements of nums except nums[i].
Example:
Input: [1,2,3,4]
Output: [24,12,8,6]
Note: Please solve it **without division** and in O(n).
Follow up:
Could you solve it with constant space complexity? (The output array **does not** count as extra space for the purpose of space complexity analysis.)

2. [LeetCode,735] We are given an array asteroids of integers representing asteroids in a row.
For each asteroid, the absolute value represents its size, and the sign represents its direction (positive meaning right, negative meaning left). Each asteroid moves at the same speed.
Find out the state of the asteroids after all collisions. If two asteroids meet, the smaller one will explode. If both are the same size, both will explode. Two asteroids moving in the same direction will never meet.
Example 1:
Input:
asteroids = [5, 10, -5]

Output: [5, 10]

Explanation:

The 10 and –5 collide resulting in 10. The 5 and 10 never collide.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427801&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook–全职–Onsite–应届

1.给一个 Word list 和一个字母 list，要求按给定字母的顺序返回这个 list 是不是已经 sort。比如给了['cc','ab','ca']，['c','b','a']，返回 false 因为 ca 应该在 ab 前面。

2. [LeetCode, 67] Given two binary strings, return their sum (also a binary string).

The input strings are both non-empty and contains only characters 1 or 0.

Example 1:

Input: a = "11", b = "1"

Output: "100"

3. [LeetCode, 86]Given a linked list and a value x, partition it such that all nodes less than x come before nodes greater than or equal to x.

You should preserve the original relative order of the nodes in each of the two partitions.

Example:

Input: head = 1->4->3->2->5->2, x = 3

Output: 1->2->2->4->3->5

4. [LeetCode, 278]You are a product manager and currently leading a team to develop a new product. Unfortunately, the latest version of your product fails the quality check. Since each version is developed based on the previous version, all the versions after a bad version are also bad.

Suppose you have n versions [1, 2, ..., n] and you want to find out the first bad one, which causes all the following ones to be bad.

You are given an API bool isBadVersion(version) which will return whether version is bad. Implement a function to find the first bad version. You should minimize the number of calls to the API.

Example:

Given n = 5

call isBadVersion(3) -> false

call isBadVersion(5) -> true

call isBadVersion(4) -> true

Then 4 is the first bad version.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427770&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Oscar-全职-技术电面-社招

1.[LeetCode,67] Given two binary strings, return their sum (also a binary string).

The input strings are both **non-empty** and contains only characters 1 or 0.

Example 1:

Input: a = "11", b = "1"

Output: "100"

2. [LeetCode,415] Given two non-negative integers num1 and num2 represented as string, return the sum of num1 and num2.

Note:

1. The length of both num1 and num2 is < 5100.
2. Both num1 and num2 contains only digits 0-9.
3. Both num1 and num2 does not contain any leading zero.
4. You **must not use any built-in BigInteger library** or **convert the inputs to integer** directly.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427752&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Clari-全职-技术电面-社招

1.输入一个树，输出每一层的总和 – 如果有一层有缺，就用上一层的数。举个例子：

400

250 200

150 150

输出

L1 : 400

L2 : 450

L3: 500(150+150+200)

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427740&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Pinterest-全职-Onsite-应届

1.给一堆有序号的无限 block，给你一个读给定 index 的单个 block 的 API，每个 block 64MB，然后给你一个开始的 byte 位置(例如：3MB，就是从 index = 0 开始)，和要读的 byte 长度(例如：67MB)，如果返回读的结果。类似 read4 变种，不过挺简单的，楼主就分情况，慢慢写，先是第一个 block(可能，只是读部分)，然后中间连续读几个 block(计算一下就好)，最后一个 block 可能只读部分。 感觉整体就是玩 index。

2. [LeetCode,36]Determine if a 9x9 Sudoku board is valid. Only the filled cells need to be validated **according to the following rules**:

1. Each row must contain the digits 1–9 without repetition.
2. Each column must contain the digits 1–9 without repetition.

3. Each of the 9 3x3 sub-boxes of the grid must contain the digits 1-9 without repetition.

The Sudoku board could be partially filled, where empty cells are filled with the character '.'.

Example 1:

Input:

```
[
  ["5","3",".",".","7",".",".",".","."],
  ["6",".",".","1","9","5",".",".","."],
  [".","9","8",".",".",".",".","6","."],
  ["8",".",".",".","6",".",".",".","3"],
  ["4",".",".","8",".","3",".",".","1"],
  ["7",".",".",".",".","2",".",".","6"],
  [".","6",".",".",".",".","2","8","."],
  [".",".",".","4","1","9",".",".","5"],
  [".",".",".",".","8",".",".","7","9"]
]
```

Output: true

Note:

- A Sudoku board (partially filled) could be valid but is not necessarily solvable.
- Only the filled cells need to be validated according to the mentioned rules.
- The given board contain only digits 1-9 and the character '.'.
- The given board size is always 9x9.

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427590&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Quip-全职-技术电面-社招

1.求 Fibo， 三个数， 1， 1， 1， 3， 5， 9...

followup 是 overflow 怎么办，用了 BigInteger

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427585&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

quip-全职-Onsite-应届

1. [LeetCode,746]On a staircase, the i-th step has some non-negative cost cost[i] assigned (0 indexed).

Once you pay the cost, you can either climb one or two steps. You need to find minimum cost to reach the top of the floor, and you can either start from the step with index 0, or the step with index 1.

Example 1:

Input: cost = [10, 15, 20]

Output: 15

Explanation: Cheapest is start on cost[1], pay that cost and go to the top.

Example 2:

Input: cost = [1, 100, 1, 1, 1, 100, 1, 1, 100, 1]

Output: 6

Explanation: Cheapest is start on cost[0], and only step on 1s, skipping cost[3].

Note:

1. cost will have a length in the range [2, 1000].
2. Every cost[i] will be an integer in the range [0, 999].

2. [LeetCode,362]Design a hit counter which counts the number of hits received in the past 5 minutes.

Each function accepts a timestamp parameter (in seconds granularity) and you may assume that calls are being made to the system in chronological order (ie, the timestamp is monotonically increasing). You may assume that the earliest timestamp starts at 1.

It is possible that several hits arrive roughly at the same time.

Example:

HitCounter counter = new HitCounter();

```
// hit at timestamp 1.
counter.hit(1);
// hit at timestamp 2.
counter.hit(2);
// hit at timestamp 3.
counter.hit(3);
// get hits at timestamp 4, should return 3.
counter.getHits(4);
// hit at timestamp 300.
counter.hit(300);
// get hits at timestamp 300, should return 4.
counter.getHits(300);
// get hits at timestamp 301, should return 3.
counter.getHits(301);
```

3. [LeetCode,240]Write an efficient algorithm that searches for a value in an m x n matrix. This matrix has the following properties:

- Integers in each row are sorted in ascending from left to right.
- Integers in each column are sorted in ascending from top to bottom.

Consider the following matrix:

```
[
  [1,   4,  7, 11, 15],
  [2,   5,  8, 12, 19],
  [3,   6,  9, 16, 22],
  [10, 13, 14, 17, 24],
  [18, 21, 23, 26, 30]
]
```

Example 1:

Input: matrix, target = 5

Output: true

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427574&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

ForUsAll-全职-在线笔试-应届

1.给一个 array，连续数值相同的算一个 terrain，两边的 terrain 都比这个高，算一个 valley，都比他低，算一个 peak，最左最右算是 valley/peak，看一共有多少个 valley 和 peak. At worst case time complexity O(n), space complexity O(1)

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427542&extra=page%3D2%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Facebook-全职-技术电面-社招

1. [LeetCode,680]Given a non-empty string s, you may delete at **most** one character. Judge whether you can make it a palindrome.

Example 1:

Input: "aba"

Output: True

Example 2:

Input: "abca"

Output: True

Explanation: You could delete the character 'c'.

Note:

1. The string will only contain lowercase characters a-z. The maximum length of the string is 50000.

2. [LeetCode,301]Remove the minimum number of invalid parentheses in order to make the input string valid. Return all possible results.

Note: The input string may contain letters other than the parentheses (and).

Example 1:

Input: "()())()"

Output: ["()()()", "(())()"]

Example 2:

Input: "(a)())()"

Output: ["(a)()()", "(a())()"]

Example 3:

Input: ")("

Output: [""]

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427540&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-其他-社招

1.统计词频的，输入是一个文本，找出里面频度最高的词，注意，要区分大小写，而且 结果不一定是 1 个，多个的时候，要返回一个 list

2.第二题是 log 排序，log 的 id 是字母和数字组成的，log 的内容要么是字母组成的，要么是数字组成的。要求按照内容排序，如果内容一样，就按照 id 排序。数字的内容顺序不变放在最后。

地址：

http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427320&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-在线笔试-应届

1. [LeetCode,681]Given a time represented in the format “HH:MM”, form the next closest time by reusing the current digits. There is no limit on how many times a digit can be reused.

You
may assume the given input string is always valid. For example, “01:34”, “12:09” are all valid. “1:34”, “12:9” are all invalid.

2.[Leetcode,683] There is a garden with N slots. In each slot, there is a flower. The N flowers will bloom one by one in N days. In each day, there will be exactly one flower blooming and it will be in the status of blooming since then.
Given an array flowers consists of number from 1 to N. Each number in the array represents the place where the flower will open in that day.
For example, flowers[i] = x means that the unique flower that blooms at day i will be at position x, where i and x will be in the range from 1 to N.
Also given an integer k, you need to output in which day there exists two flowers in the status of blooming, and also the number of flowers between them is k and these flowers are not blooming.
If there isn't such day, output -1.

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427318&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Amazon-全职-在线笔试-社招

1. 给你一个字符串， 一个排除的清单， 让你给出出现频率最高或者并列高的词，这里要注意大小写。很多人的是不区分，但是我这里是要区分的，大家做的时候多注意。

2. 给一个日志的文件， 每行第一个字符串是 ID,由数字和字母组成。根据每一行的第二个字符串来进行排序，然后只排含字母的，如果含有数字的话全都放在最下面，顺序按照原顺序不变

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427296&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-实习-技术电面-应届

1.给一个先序遍历的数组，每个元素包含一个 level 和名字，表示公司里不同人的等级，要求构造树。例如 1 A, 2 B, 3 C, 3 D, 2 E。第二题是给一个 0-n 的乱序数组，要求找出所有 permutation 的轮转使得数组能变回递增顺序。例如 01234 就是有 5 个 cycle, 12340 就是 1 个 cycle(0->1->2->3->4)，13402 就是 2 个 cycle(0->1->3, 2->4)

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427202&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

veriflow-全职-Onsite-社招

1. given a list of tuples, 每个 tuple 是一组 bidirectional source，destination pair. 找特定点 x 到特定点 y 的最短路径。

2. 给一个已经排序过的数组，将每个数字求平方，返回所有平方值的排序。

3. given a list of tuples, [(A,B), (A,C), (B,D)]. 每一个 pair 表示 pair[0] 到 pair[1]有一个单向的连接。告诉你这是一个 Tree，让你把这个 tree print 出来。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427189&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline

Google-全职-Onsite-社招

1.[LeetCode,399] Equations are given in the format A / B = k, where A and B are variables represented as strings, and k is a real number (floating point number). Given some queries, return the answers. If the answer does not exist, return -1.0.

Example:

Given a / b = 2.0, b / c = 3.0.

queries are: a / c = ?, b / a = ?, a / e = ?, a / a = ?, x / x = ? .
return [6.0, 0.5, –1.0, 1.0, –1.0].
The input is: vector<pair<string, string>> equations, vector<double>& values, vector<pair<string, string>> queries , where equations.size() == values.size(), and the values are positive. This represents the equations. Return vector<double>.
According to the example above:
equations = [["a", "b"], ["b", "c"]],
values = [2.0, 3.0],
queries = [["a", "c"], ["b", "a"], ["a", "e"], ["a", "a"], ["x", "x"]].
The input is always valid. You may assume that evaluating the queries will result in no division by zero and there is no contradiction.

2.给了一个 pad，就是 26 个字母的顺序排列。给个单词，让你算出如何能打出单词。

3.给了一个树，打印最长路径。

4.系统给一个 log 输入，每一条是 时间， ID 和 words， 统说话字数最多的人。

5.一个树有一个 edge 是多余的。找出并移除。

地址：
http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=427167&extra=page%3D3%26filter%3Ddateline%26orderby%3Ddateline%26sortid%3D311%26sortid%3D311%26orderby%3Ddateline