[solutions](https://www.evernote.com/OutboundRedirect.action?dest=https%3A%2F%2Fgist.github.com%2Fsac7e%2Ff5c434d286f5e8bb239b)

2016.3.11 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=178231&extra=page%3D1%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given a string, reverse all vowels.
* For example, “united states” -> “enated stitus”
* Given a string of digits, split it into 7-number lottery ticket, each number is from 1-59 and unique. return all possibilities
* Given a list of 3-number tuples (id,parent,weight), which describes a tree. print the weight of all subtrees.

2016.3.11 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=177612&extra=page%3D1%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given a file, remove duplicate lines
* *Follow up*: what if the file is big

2016.3.12 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=177919&extra=page%3D1%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given a list of numbers, return a pair of numbers so that their sum is the closest to zero

2016.3.13 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=178258&extra=page%3D1%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given an unsorted array of integers, find the length of longest increasing subsequence.
* Given a column title as appear in an Excel sheet, return its corresponding column number.
* Example:
* A -> 1, B -> 2, C -> 3…Z -> 26, AA -> 27, AB -> 28
* Given a string, return the longest palindrome consisting of the characters in the string.
* *Follow up* how many of such palindrome?

2016.3.10 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=177259&extra=page%3D1%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given a binary tree, return the level order traversal of its nodes’ values. (ie, from left to right, level by level).
* Given a set of candidate numbers (C) and a target number (T), find all unique combinations in C where the candidate numbers sums to T.
* alien dictionary

2016.2.16 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=171713&extra=page%3D1%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given a list of strings, find all pairs of strings that can be catenated to be palindrome.
* For example: bana nab

2016.3.10 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=177305&extra=page%3D1%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given an sorted array of doubles and a double target number，return closest number’s index.
* Given N\*N matrix, support 2 operations,
* update(x,y,v), update matrix[x][y] to be v
* query(x1,y1,x2,y2), return sum of matrix[x1…x2][y1…y2]
* *Follow up* if frequently calling query, design a more efficient data structure

link

* Given a collection of intervals, merge all overlapping intervals.
* Given a non-empty binary search tree and a target value, find the value in the BST that is closest to the target.

2016.1.20 [link](http://www.1point3acres.com/bbs/thread-166355-1-1.html)

* Given str1, str2, return the length of the shortest substring of str1 that str2 is a subsequence of that substring
* For example, str1 = “acbacbc” str2=”abc”, the shortest substring is “acbc” which has length of 4.

2016.3.3 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=175393&extra=page%3D2%26filter%3Dsortid%26sortid%3D311%26searchoption%255B3046%255D%255Bvalue%255D%3D1%26searchoption%255B3046%255D%255Btype%255D%3Dradio&page=1)

* Given a 2-dimension array of 1s and 0s, find the number of different island

2016.1.6 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=164790&extra=page%3D2%26filter%3Dsortid%26sortid%3D311%26searchoption%255B3046%255D%255Bvalue%255D%3D1%26searchoption%255B3046%255D%255Btype%255D%3Dradio&page=1)

* Given a list of tuples (in, out), ‘in’ represents the time a person enters a office and ‘out’ represents the time leaves the office, computes the longest busy time of this office.
* For example,
* A in:5 out:10
* C in:12 out: 15
* D in: 25 out:30
* B in:7 out:13
* return [5,15]

2016.2.2 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=168274&page=1#pid2289946)

* Implement a social network. Need to define a data structure and two APIs:
* friendsfriends()
* top\_friendsfriends()

2016.2.18 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=171889&extra=page%3D2%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given an array of integers, return the largest product of any two integers.
* *Follow up*
* Given a dictionary and a word, check no other words have the same abbreviation as the given word.
* An abbreviation of a word follows the form .

2016.2.21 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=172765&extra=page%3D2%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given a list of graph nodes, find top K connected component.

2016.2.6 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=169841&extra=page%3D2%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given several coins with values in a bag. How many different values of the sum of any number of coins?
* Check if all integers in the list can be grouped into 5 consecutive number. For example [1,2,2,3,3,4,4,5,5,6] should return True because it can be grouped into (1,2,3,4,5)(2,3,4,5,6) with no other elements left.
* A tortoise is at (0,0) of an x-y coordinator system. It can face to east/west/south/north.
* a) Write 2 functions for the tortoise to:
* i) turn right
* ii) move 1 step along the direction it’s facing
* b) Write a function that returns its position after a command such as FRRRFFFR (F for move forward, R for turn right)
* c) How about there are numbers in the command, such as F3R3F1R (short for FRRRFFFR)?
* d) How about there are parentheses in the command, such as F(3R5(FR)) (short for FRRRFRFRFRFRFR)?

2016.3.1 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=174713&extra=page%3D3%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* Given a list of strings which contains only lowercase alphabets, group all strings that belong to the same shifting sequence.
* For example, given: [“abc”, “bcd”, “acef”, “xyz”, “az”, “ba”, “a”, “z”],
* Return: [[“abc”,”bcd”,”xyz”], [“az”,”ba”], [“acef”], [“a”,”z”]]
* Given a string, find the length of the longest substring T that contains at most 2 distinct characters.
* For example, Given s = “eceba”, T=”ece”, return 3

2016.2.11 [link](http://www.1point3acres.com/bbs/forum.php?mod=viewthread&tid=170558&extra=page%3D3%26filter%3Dsortid%26sortid%3D311%26searchoption%5B3046%5D%5Bvalue%5D%3D1%26searchoption%5B3046%5D%5Btype%5D%3Dradio%26sortid%3D311)

* 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: “((()))”, “(()())”, “(())()”, “()(())”, “()()()”