Algorithms Review for Job Interview

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January 15, 2015

Contents

1 1/15/2015, Thursday

1.1 worked on 10 problems, 108/173:

- Simplify Path

- Search in Rotated Sorted Array

- Restore IP Addresses

- Populating Next Right Pointers in Each Node

- **Populating Next Right Pointers in Each Node II**: You may only use constant extra space

- Minimum Window Substring, repeats,

- Sum Root to Leaf Numbers

- Binary Tree Inorder Traversal

- Binary Tree Preorder Traversal

- Binary Tree Postorder Traversal

- Merge K sorted List

2 1/14/2015, Wednesday

2.1 worked on 8 problems, 98/173:

- tree series: 102, 103, 104, 107, 110, 111, 112, 113

- binary tree Level order Traversal

- binary tree Level order Traversal II

- binary tree Level Zigzag order Traversal

- Maximum Depth of binary tree

- Minimum Depth of binary tree

- Balanced binary tree

- path sum
- path sum II

2.2 Other things

- a matter get it done as soon as possible, 7-12,
- didn't do anything in the evening, better not behave this way any more~!

3 1/13/2015, Tuesday

3.1 worked on 4 problems, 90/173:

- 98, 99, 100, 101
- Validate binary search tree
- Recover binary search tree
- same tree
- Symmetric tree

3.2 Other things

- got very headache and 3:30-6:00pm food court training

4 1/12/2015, Monday

4.1 worked on 6 problems, 86/173:

- 73, 74, 79, 83, 86, 92
- Set Matrix Zeroes
- Search a 2D matrix
- Word Search
- Remove Duplicates from Sorted Lists
- Partition list
- Reverse Linked List II

4.2 Other things

- wrote quite a few nippets for java-mode, works quite great~!

5 1/11/2015, Sunday

5.1 worked on 7 problems, 80/173:

- Spiral matrix II
- rotate list
- Unique paths
- Unique paths II
- Minimum path sum
- add binary
- Text Justification

6 1/10/2015, Saturday

6.1 worked on 3 problems, 73/173:

- Spiral matrix

- merge Interval

- insert Interval

- udgrade jdk from 1.6 to be 1.8, Emacs 1.6 to be 1.8 as well, don't have wired errors like Arrays.asList(), Collections.sort() any more, nice!

7 1/9/2015, Friday

7.1 worked on 2 problems, 70/173:

- Permutation: Arrays.asList() not working in 1.6, spent hours here, figured it should be the openjde-1 too outdated for being openjde-1.6

- retate Image

8 1/8/2015, Thursday

8.1 worked on 9 problems, 68/173:

- remove element

- search for a range

- search insert position

- valid sudoku

- count and say

- Multiply string

- Length of last word

- Pascal's Triangle

- merge sorted array

9 1/7/2015, Wednesday

9.1 worked on 12 problems, 59/173:

- Integer to roman

- roman to Integer

- Longest Common Prefix

- 3Sum

- 3Sum closest

- letter Combination of a phone number

- 4Sum

- remove nth node from end of list

- Valid Parentheses

- merge two sorted list

- swap nodes in pairs

- reverse nodes in k-Group

10   1/6/2015, Tuesday

10.1   worked on 5 problems, 47/173:

- sorrounded region

- two sum

- add two numbers

- longest substring without Repeating characters

- ZigZag conversion string

11   1/5/2015, Monday

- worked on 0 succeed problems

11.1   Other things

- Go to a on 1/14/2015, Wednesday

12   1/4/2015, Sunday

12.1   worked on 2 problems, 42/173:

- binary tree Maximum path sum

- Valid Palindrom

12.2   Other things

- want to look into them and got JUnit framework for leetcode ready

- http://www.vogella.com/tutorials/JUnit/article.html

- http://junit.org/

13   1/3/2015, Saturday

13.1   worked on 5 problems, 40/173:

- copy list with random pointer, failed on tmp to move to next yesterday;

- word break; **word break II** TLE DP not thinking

- best time to buy and sell stock

- best time to buy and sell stock II

- best time to buy and sell stock III

13.2 Other things

- finally got the package working now with the help from online;

- These two days, especially bad sleep. 7(8)~12:30pm last night, feeling can fall asleep now at 1:00am, hope tomorrow will be another day.

- only 5 today, Left all those slightly challenged ones for tomorrow.

14 1/2/2015, Friday

14.1 worked on 7 problems, 35/173:

- LRU Cache, need to rework on it sometime, doubly-linked list to maintain frequency not proficient;

- Insertion sort list, straight forward

- sort list, merge sort, when break it down into pieces, it's not that hard;

- evaluate reverse polish notation

- gas station

- single number

- single number II, half done, most basic, but needs the perfect method, **tomorrow**

- **Now:** I am not afraid of lists, or even trees, but still don't feel confortable with DP yet. Need some quality time on couple of questions of that type. For Graphics as well. I will not touch them when I am headache, but will work on them when I have a mind.

- **undone:** binary tree Preorder Traversal - iterative method still thinking

14.2 Other things

- When thought about sth, cannot fall asleep, fall asleep at 8:00am, and waked up at 12:00, so today would be filled with tidious things;

- The haircurt store was closed during Christmas (I went to the store most probably on 12/26 on the afternoon after I met the two who were leaving for CA on 24th, but I don't really remember. The door was closed and the note on door said they would open today), and I called today and they did, so I spent $7+$1 tip and half an hour in store got my hair cut, but still spent 1 hours at home to redo it to thin the hair layers; Cut hair has nothing to do with love life, but rather that I don't want to waste time on the hair at this semster;

- try to organize previous courses contents, get the projects done better, and upload into github, and so far keep them secret until the time I need them in case in war;

- need to work on the appointment with professor web scheduling projects, because it is important, and sure will be beaten if I fail in case in war;

- target for fall asleep at 4:00am, but target for 8-10 easier algorithms problems be done before sleep; Time is so limited, I need change my schedule and use time more efficiently.

15 1/1/2015, Thursday

15.1 worked on 8 problems, 28/173:

- intersection of wto linked list

- reverse words in string

- find Minimum in rotated sorted array

- find Minimum in rotated sorted array with Duplicates

- min stack

- linked list cycle

- linked list cycle II find start

- Reorder list

- binary tree Preorder Traversal - iterative method still thinking

16   12/31/2014, Wednesday

- java-mode autofill functions and yasnippets snippets, while keeping tab-indent block are all working now, like the emacs environment;

- worked on **9?10** problems, **19/173**:

    - Longest substring with at most 2 distinct characters, took my effort to rewrite it, sth can be done;
    - binary search tree iterator, understand theory, feels like just got Java environment ready;
    - excel sheet column number
    - factorial training zeroes
    - find peak element
    - maximum gap **dont like**
    - fraction to recurring decimal
    - excel sheet column title
    - majority element

17   12/30/2014, Tuesday

- get Emacs JDEE environment ready, can compile and run inside emacs now, convenient than using terminal jc j;

- worked on **5** problems, **9/173**:

    - binary tree upside down
    - missing ranges
    - two sum II
    - one edit distance
    - **DONT LIKE:** read n characters given read4 II

18   12/20/2014, Saturday

- Website (github), program highlight, and chinese input environment all good now;

- Will configure Linux Mint Java environment later, prefer emacs;

- 145/168 done before new season review, begin to work on these questions from today.

- Just got 4 easiest done: **149/168**

    - min stack,
    - excel sheet column title,
    - compare version number, and
    - intersection of two linked list,

19 12/21/2014, Sunday

- Only three got done today: **152/169**

    – maximum gap
    – fraction to recurring decimal
    – majority element

- Don't feel my mind is clear today at all, will look into job searing instead, hopefully tomorrow I can solve more problems, and slightly complicated ones;

20 12/22/2014, Monday

- So far got four done: **156/169**

    – sort list
    – merge k sorted list
    – trapping rain water
    – recovery binary search tree

- am going to work on the rest 6 tonight, so that hopefully tomorrow I would be able to work on the new 10 questions;

    – **word ladder II**: spent hours on this one, but got really sick with it! I should have solved my problems gradually, like solve the clone graph to understand graph first before touch this one, but I will get this one done later when I have clear mind.
    – regular expression matching
    – divide two integers
    – clone graph
    – find peak element

21 12/23/2014, Tuesday

- Meet IPO staff this morning got coming semester plans clear at 8:30am in the morning;

- Will most probably meet some friend and have dinner together; changed to be **tomorrow noon**

- Hopefully by this morning's dirruption meeting staff, I could change back my regular schedule instead of 5am-13:30 day time sleeping, target for tonight fall asleep before 12:00am; fall asleep from 10:00-15:30, seems I will change my schedule back as expected tonight~!

- Will not work on Algorithms for today, but work on it hard tomorrow. I have my confidence that I can figure them out, and do great job summarize the questions during my Java round, no worries!

- so far Got 2 done: **158/169**

    – find peak element
    – maximal rectangle

22 12/24/2014, Wednesday

- 2:00(3:00am?)-11:00am, expect 2:00-9:00am schedule tonight;

- Don't know why old accound doesn't work any more, use new account; from **158/169** to **0/169** using **Java**

- Worked on the following questions: **1/169**

    – divide two integers, just got the Java environment ready
    – regular expression matching: **working on it!**, require understanding and summarizing

Tags	Counts	
Heap	1	Merge k Sorted Lists
Graph	1	Clone Graph
Data Structure	3	
Bit Manipulation	4	
Divide and Conquer	4	
Greedy	6	
Sort	6	
Breadth-first Search	7 (32)	
Stack	11	
Binary Search	13	
Hash Table	16	
Math	17	
Linked List	19	
Depth-first Search	19	
Backtracking	21	
Two Pointers	22	
Dynamic Programming	23	
Tree	26	
String	38	
Array	56	

- Detailed Questions:

Tags	Counts	#	Title	Accepta
Heap	1	23	Merge k Sorted Lists	21.0%
Graph	1	133	Clone Graph	23.3%
Data Structure	3	170	Two Sum III - Data structure design	19.2%
		155	Min Stack	14.6%
		146	LRU Cache	14.3%
Bit Manipulation	4	78	Subsets	27.9%
		136	Single Number	46.0%
		137	Single Number II	34.0%
		169	Majority Element	31.6%
Divide and Conquer	4	23	Merge k Sorted Lists	21.0%
		4	Median of Two Sorted Arrays	17.6%
		53	Maximum Subarray	34.2%
		169	Majority Element	31.7%
Greedy	6	44	Wildcard Matching	14.6%
		55	Jump Game	27.2%
		45	Jump Game II	24.6%
		134	Gas Station	26.0%
		135	Candy	19.5%
		122	Best Time to Buy and Sell Stock II	37.0%
Sort	6	148	Sort List	20.9%
		75	Sort Colors	32.3%
		56	Merge Intervals	21.2%
		164	Maximum Gap	23.1%
		147	Insertion Sort List	25.5%
		57	Insert Interval	20.7%
Breadth-first Search	7 (32)	127	Word Ladder	18.4%
		126	Word Ladder II	11.8%
		130	Surrounded Regions	14.3%
		133	Clone Graph	23.3%
		103	Binary Tree Zigzag Level Order Traversal	26.5%
		102	Binary Tree Level Order Traversal	29.9%
		107	Binary Tree Level Order Traversal II	30.4%
Stack	11	20	Valid Parentheses	27.9%
		42	Trapping Rain Water	29.4%
		71	Simplify Path	19.8%
		155	Min Stack	14.6%
		85	Maximal Rectangle	21.4%
		84	Largest Rectangle in Histogram	21.8%
		150	Evaluate Reverse Polish Notation	20.1%
		103	Binary Tree Zigzag Level Order Traversal	26.5%
		144	Binary Tree Preorder Traversal	35.8%
		145	Binary Tree Postorder Traversal	31.3%
		94	Binary Tree Inorder Traversal	35.7%
Binary Search	13	167	Two Sum II - Input array is sorted	45.1%
		69	Sqrt(x)	22.5%
		35	Search Insert Position	35.0%
		33	Search in Rotated Sorted Array	28.7%
		81	Search in Rotated Sorted Array II	31.2%
		34	Search for a Range	27.6%
		74	Search a 2D Matrix	31.2%
		50	Pow(x, n)	26.2%
		4	Median of Two Sorted Arrays	17.6%
		162	Find Peak Element	31.7%
		153	Find Minimum in Rotated Sorted Array	32.2%
		154	Find Minimum in Rotated Sorted Array II	29.9%
		29	Divide Two Integers	16.5%
Hash Table	16	36	Valid Sudoku	27.3%
		1	Two Sum	18.3%

23   12/25/2014, Thursday

- List a detailed plan of working on the algorithms; **Question Tags** according to the Website:

- Sent about 10 applications/interns;

24   12/26/2014, Friday

- two sum III

25   12/29/2014, Monday

- read N characters given read4