Algorithms Review for Job Interview

deepwaterooo

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Contents

1 1/19/2015, Monday

1.1 worked on 7 problems, 146/173:

- 84, 42, 85, 11, 131, 179, 127

- Largest Rectangle in Histogram

- Trapping Rain Water

- Maximal Rectangle

- Container With Most Water

- Palindrome Partitioning

- Largest Number

- Word Ladder

1.2 Other things

- (3:30~4:00) ~ 11:05

2 1/18/2015, Sunday

2.1 worked on 10 problems, 139/173:

- 78, 90, 77, 46, 47,, 133, 152, 89, 72, 55, 45

- Subsets

- Subsets II

- Combinations

- Permutations

- Permutations II

- Clone Graph

- Maximum Product Subarray

- Gray Code

- Edit Distance

- Jump Game

- Jump Game II

2.2 Other things

- 5:00 - 10:44, mind is NOT in the brain today, do only easy ones, no touching greedy nor array⋯

- eat earlier, eat more to make it easier to fall asleep after dinner, evening depends⋯

- should be able to fall asleep before 5am tonight then;

3 1/17/2015, Saturday

3.1 worked on 12 problems, 129/173:

- 120, 128, 96, 95, 70, 53, 91,, 66, 8, 60, 39, 40

- Triangle

- Longest Consecutive Sequence

- Unique Binary Search Trees

- Unique Binary Search Trees II

- Climbing Stairs

- Maximum Subarray

- Decode Ways

- Plus One

- String to Integer (atoi)

- Permutation Sequence

- Combination Sum

- Combination Sum II

3.2 Other things

- 4:00 - 8:58, woke up for 2 min, fall back asleep in 2 mins after surfing internet for 2 mins;

- wake up 11:48, better mind today, tried couple of dp, but how could I efficiently fall asleep before 4 tonight? 1 cup coffee at ard 4pm alrdy after 20 mins nap

- Need try greedy method some other time when mind is clear, all painful & bad memories about TLE⋯

- Can't believe I am so sleepy, headache around eleven⋯ try fall asleep around two⋯ long way to go⋯

4 1/16/2015, Friday

4.1 worked on 9 problems, 117/173:

- 49, 81, 51, 52, 22, (39), 82, 108, 109, 149

- Anagrams

- search in rotated sorted array with dup II: wrote mid = end - 1 in the morning ~;

- N-Queens

- N-Queens II

- Generate Parentheses

- **Combination Sum**: don't know how to make it run faster

- Remove Duplicates from Sorted List II

- Convert Sorted Array to Binary Search Tree

- Convert Sorted List to Binary Search Tree

- Max Points on a Line, **Double** map key, (double)/(doule) == (double)(int/int) ???

4.2 Other things

- Wanted to **swipe** bottom up from 17?, but apparantly I am **NOT proficient enough** to solve the Difficult ones yet, so take my time to solve them gradually~

- do NOT work in it any more tonight,

- got especially headache this week, go grocery to get my water, have rest earlier & expecting tomorrow to work in DP ~!

5 1/15/2015, Thursday

5.1 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

6 1/14/2015, Wednesday

6.1 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

6.2 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~!

7 1/13/2015, Tuesday

7.1 worked on 4 problems, 90/173:

- 98, 99, 100, 101

- Validate binary search tree

- Recover binary search tree

- same tree

- Symmetric tree

7.2 Other things

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

8 1/12/2015, Monday

8.1 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

8.2 Other things

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

9 1/11/2015, Sunday

9.1 worked on 7 problems, 80/173:

- Spiral matrix II

- rotate list

- Unique paths

- Unique paths II

- Minimum path sum

- add binary

- Text Justification

10 1/10/2015, Saturday

10.1 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!

11 1/9/2015, Friday

11.1 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

12 1/8/2015, Thursday

12.1 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

13 1/7/2015, Wednesday

13.1 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

14 1/6/2015, Tuesday

14.1 worked on 5 problems, 47/173:

- sorrounded region
- two sum
- add two numbers
- longest substring without Repeating characters
- ZigZag conversion string

15 1/5/2015, Monday

- worked on 0 succeed problems

15.1 Other things

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

16 1/4/2015, Sunday

16.1 worked on 2 problems, 42/173:

- binary tree Maximum path sum
- Valid Palindrom

16.2 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/

17 1/3/2015, Saturday

17.1 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

17.2 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.

18 1/2/2015, Friday

18.1 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

18.2 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.

19 1/1/2015, Thursday

19.1 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

20 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

21 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

22 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,

23 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;

24 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

25 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

26   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%

27 12/25/2014, Thursday

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

- Sent about 10 applications/interns;

28 12/26/2014, Friday

- two sum III

29 12/29/2014, Monday

- read N characters given read4