Algorithms Review for Job Interview

deepwaterooo

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13.1	worked on 10 problems, $139/173$:				
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1	1/17/2015,	Saturday
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14.2 Other things

3

3

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39	12/26/2014, Friday
40	12/29/2014, Monday
1	1/30/2015, Friday
	• Reverse Nodes in k-Group recursion bug !~ ~ ~ ~
	• 1:30-7:30am; started to do labor work recently, had been sitting in chairs for weeks about one month without moving, got physically tired recently, have good rest & get schedule back.
2	1/29/2015, Thursday
	• $6:00-8:00$ am; $12:00-1:40$ fall asleep; work in food court $2:00-9:30$, 0.5 hr dinner;
	• Scheduled appointment with lawyer to be $2/5/2014$ 2:00pm;
	• Next court day will be $2/13/2015$, Friday 9:00am;
	• finish leetcode java code review as soon as possible;
	• Try to work on web scheduling system as soon as possible;
	• need to work hard on algorithms and projects…
	$ \bullet \ \text{start to work on java thread a little bit, terminal is ok, Emacs unreasonably throws java.lang.} IllegalThreadState and I don't understand why emacs behaves Difficulty yet \cdots $
	• work tomorrow day time, but will work on algorithms in the evening.
3	1/28/2015, Wednesday
	• decode ways java version, bug
	\bullet 4:30~09:45, have no reason won't be headache today, but to get my schedule back, worth a headache
	- accompany the landlord for cleaning the house for half an hour $2:30$ - $3:00$
	• too tired to continue work on it. have rest earlier…
4	1/27/2015, Tuesday
	• decode ways java version, bug ···
	• ~7:00-13:30,

12

12

13

15

35 12/22/2014, Monday

36 12/23/2014, Tuesday

 $37\ 12/24/2014$, Wednesday

38 12/25/2014, Thursday

- Unique path, bug

1/26/2015, Monday

- 8:00-12:00, know I have too much copy-paste labor work to do today, so less rest doesn't matter when don't need a mind…
 - have rest after dinner, evening depends, either:
 - Summarize dp, greedy and Backtracking first;
- Or try to finish the question contents copy-paste for today then, 175 questions;
- call food court tomorrow, check first day of work...nothing wrong with promoting oneself....

6 1/25/2015, Sunday

- worked on 3 problems, 175/175: finally Java once $\sim !!$
- · connect next Right • Wildcard Matching
- regular expression matching

6.2Other things

• $(4:30\sim5:00) \sim 12:30$, much better than yesterday~

- think about what I should do next
- Schedule appointment with layer
- Try to summarize LeetCode questions, want to make a book of my own, just like the one I made for ctci...

• Target: make a book of LeetCode just like them made it, which is pretty good~

1/24/2015, Saturday

- worked on 1 problems, 174/175: 3 left
- Sudoku Solver

7.2Other things

- regular expression matching
- Wildcard Matching
- connect next Right
- $(4:30\sim5:00)\sim2:30$, woke up from 10:00 to 2:00 from time to time,
- http://bbs.tianya.cn/post-culture-849459-117.shtml#ty_vip_look[V%E5%93%A5%E6%8E%B0%E8%B0%88
- 5:00-7:30 read 85-117; 117/166, want to finish this, a way to think... • go grocery buy food, have dinner, then conitnue the several questions
- fall asleep after dinner after couple of page reading, 22:00 0:15, no wonder felt so XXXX during the afternoon, but don't understand why so tired recently...

8	1/23/2015, Friday
8.1	worked on 6 problems, $173/175$: 4 left
•	find substring idxes
•	sort Colors
•	distinct Sequence
•	Interleaving Sequence
•	Scramble String
•	Candy
8.2	Other things
•	Sudoku Solver
•	regular expression matching
•	Wildcard Matching
•	connect next Right
•	$(4:00\sim4:30)\sim11:30$
•	I think I got sick today, fever, 3-3:30 & 6:30-7:30 rest almost fall as leep
9	1/22/2015, Thursday
9.1	worked on 6 problems, $167/175$:
•	50, 69, 4,, 119, 65, 174
•	$\operatorname{sqrt}(\operatorname{x})$
•	pow(x)
•	Median of Two Sorted Arrays
•	Pascal's Triangle II
•	valid number, god…
•	Dungeon Game
9.2	Other things
•	$(5:30\sim6:00)\sim12:00$, headache!!!
•	have rest after dinner, do as much as I can for today~!!
10	1/21/2015, Wednesday
10.1	1 worked on 8 problems, $161/175$:
•	114, 31, 41, 32, 9, 7, 26, 80
•	Flatten binary tree to Preorder all Right nodes
•	Next Permutation

• First Missing Positive

• Longest Valid Parentheses

• Remove Duplicates from Sorted Array • Remove Duplicates from Sorted Array II 10.2Other things • 8:00 - 2:38pm C-cC-vC-c C-cC-vC-r C-xC-c terminate without prompt, but still seeking a way to kill subprocesses without kill emacs; It maybe Difficult, but so far tolerate it, only one tree/list problem left anyway~ • 10 hard ones left untouched ~!! 1/20/2015, Tuesday 1111.1worked on 6 problems, 153/173: • 28, 140,, 126, 132, 5, 105, 106 • strStr word break II word ladder II • Palindrom Partitioning II

• (2:30~2:45) ~ 11:55 • still, somebody else's mind in my body today, so not me~

• Preorder Inorder build tree • Inorder Postorder build tree

Other things

• longest Palindrom

11.2

Palindrome Number

• Reverse Integer

• 3:00-5:00, go campus, try to meet advisor, stubbern evening... will work coming week when docs processed ready, so try finish this round as soon as possible

1/19/2015, Monday 12

- worked on 8 problems, 147/173:
- 84, 42, 85, 11, 131, 179, 127, 28
- Largest Rectangle in Histogram
- Trapping Rain Water
- Maximal Rectangle
- Container With Most Water • Palindrome Partitioning
- Largest Number

Word Ladder

• (3:30~4:00) ~ 11:05 1/18/2015, Sunday 13 worked on 10 problems, 139/173: 13.1• 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 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; 1/17/2015, Saturday 14worked 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

12.2

Other things

Combination Sum II

- 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…
- 1/16/2015, Friday 15

worked on 9 problems, 117/173:

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

Other things

14.2

- Anagrams
- search in rotated sorted array with dup II: wrote mid = end 1 in the morning ~;
- N-Queens
- 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)/(double) == (double)(int/int)???

15.2Other things • Wanted to swipe bottom up from 17?, but apparantly I am **NOT proficient enough** to solve the Difficult

Simplify Path

N-Queens II

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 ∼!
- 1/15/2015, Thursday 16

- 16.1worked on 10 problems, 108/173:
 - 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.

18.1 worked on 4 problems, $90/173$:	
• 98, 99, 100, 101	
• Validate binary search tree	
• Recover binary search tree	
• same tree	
• Symmetric tree	
18.2 Other things	
\bullet got very headache and 3:30-6:00pm food court training	
19 1/12/2015, Monday	
19.1 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	
19.2 Other things	
• wrote quite a few nippets for java-mode, works quite great~!	

1/14/2015, Wednesday

binary tree Level order Traversal
binary tree Level order Traversal II

Maximum Depth of binary treeMinimum Depth of binary tree

• Balanced binary tree

Other things

path sumpath sum II

17.2

18

• binary tree Level Zigzag order Traversal

• a matter get it done as soon as possible, 7-12,

1/13/2015, Tuesday

• didn't do anything in the evening, better not behave this way any more~!

.1 worked on 8 problems, 98/173:
tree series: 102, 103, 104, 107, 110, 111, 112, 113

• rotate list • Unique paths • Unique paths II • Minimum path sum add binary • Text Justification 211/10/2015, Saturday 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! 1/9/2015, Friday 22worked on 2 problems, 70/173:

• Permutation: Arrays.asList() not working in 1.6, spent hours here, figured it should be the openide-1 too

1/11/2015, Sunday

outdated for being openide-1.6

1/8/2015, Thursday

worked on 9 problems, 68/173:

retate Image

· remove element

· valid sudoku

count and say

Multiply string

Length of last word

• Pascal's Triangle

merge sorted array

search for a range

search insert position

Spiral matrix II

worked on 7 problems, 80/173:

20

- 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 1/6/2015, Tuesday 25worked on 5 problems, 47/173: • sorrounded region two sum • add two numbers longest substring without Repeating characters ZigZag conversion string 1/5/2015, Monday 26• worked on 0 succeed problems Other things • Go to a on 1/14/2015, Wednesday 1/4/2015, Sunday worked on 2 problems, 42/173:
- 27.2 Other thingswant to look into them and got JUnit framework for leetcode ready

• binary tree Maximum path sum

Valid Palindrom

1/7/2015, Wednesday

worked on 12 problems, 59/173:

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

1/3/2015, Saturday 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
- 28.2Other 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.
- 1/2/2015, Friday 29
- 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 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

so limited. I need change my schedule and use time more efficiently.

• single number

- 29.2Other 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;
- 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

need to work on the appointment with professor web scheduling projects, because it is important, and sure

30 1/1/2015, Thursday

0.1 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

31 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

32 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

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,
- intersection of two linked list,

compare version number, and

3412/21/2014, Sunday • Only three got done today: 152/169

- maximum gap
 - fraction to recurring decimal

more problems, and slightly complicated ones;

- majority element • Don't feel my mind is clear today at all, will look into job searing instead, hopefully tomorrow I can solve

33

12/22/2014, Monday 35

• 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

- 12/23/2014, Tuesday 36
 - 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

37

12/24/2014, Wednesday

- \bullet 2:00(3:00am?)-11:00am, expect 2:00-9:00am schedule to night;
- 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%
D: :1 1 0		169	Majority Element	31.6%
Divide and Conquer	4	23	Merge k Sorted Lists	21.0%
		$\frac{4}{53}$	Median of Two Sorted Arrays Maximum Subarray	$17.6\% \ 34.2\%$
		$\frac{55}{169}$	Majority Element	34.2% $31.7%$
Greedy	6	44	Wildcard Matching	14.6%
Greedy	U	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 Pinary Tree Zigger Level Order Treversel	23.3%
		103 102	Binary Tree Zigzag Level Order Traversal	$26.5\% \ 29.9\%$
		$\frac{102}{107}$	Binary Tree Level Order Traversal Binary Tree Level Order Traversal II	30.4%
Stack	11	20	Valid Parentheses	27.9%
DUACK	11	$\frac{20}{42}$	Trapping Rain Water	$\frac{27.9\%}{29.4\%}$
		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	$\operatorname{Sqrt}(x)$	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 74	Search a 2D Matrix	27.6%
		74 50	Search a 2D Matrix	$31.2\% \ 26.2\%$
		$\frac{50}{4}$	Pow(x, n) Median of Two Sorted Arrays	26.2% 17.6%
		$\frac{4}{162}$	Find Peak Element	$\frac{17.6\%}{31.7\%}$
		$152 \\ 153$	Find Peak Element Find Minimum in Rotated Sorted Array	31.7% $32.2%$
		153 154	Find Minimum in Rotated Sorted Array II	29.9%
		29	Divide Two Integers	16.5%
Hash Table	16	36	Valid Sudoku	27.3%
	10	1	Two Sum	18.3%
				10.0/0

$38 ext{ } 12/25/2014, ext{Thursday}$

- \bullet List a detailed plan of working on the algorithms; $\mathbf{Question}$ \mathbf{Tags} according to the Website:

$39 \quad 12/26/2014, Friday$

• two sum III

$40 \quad 12/29/2014, Monday$

 $\bullet\,$ read N characters given read 4