

# Algorithms Review for Job Interview

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<b>1</b>	<b>1/4/2015, Sunday</b>	
1.1	worked on problems, /173:	
	•	
	•	
<b>2</b>	<b>1/3/2015, Saturday</b>	
2.1	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

## 2.2 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.

## 3 1/2/2015, Friday

### 3.1 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 comfortable 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

### 3.2 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 tedious things;
- The haircort 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 semester;
- 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.

## 4 1/1/2015, Thursday

### 4.1 worked on 8 problems, 28/173:

- intersection of two 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

## 5 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

## 6 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

## 7 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,

## 8 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;

## 9 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

## 10 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

## 11 12/24/2014, Wednesday

- 2:00(3:00am?)-11:00am, expect 2:00-9:00am schedule tonight;
- Don't know why old account 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	Accepted
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%
Binary Search	13	94	Binary Tree Inorder Traversal	35.7%
		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%

## 12 12/25/2014, Thursday

- List a detailed plan of working on the algorithms; **Question Tags** according to the Website:
- Sent about 10 applications/interns;

## 13 12/26/2014, Friday

- two sum III

## 14 12/29/2014, Monday

- read N characters given read4