



CSE 373

Data Structures and Algorithms



Technical Interviews

Finding Opportunities

- ▶ Submitting resumes via company website (hit or miss)
- ▶ Search
 - ▶ Indeed: <http://www.indeed.com>
 - ▶ Dice: <http://www.dice.com>
 - ▶ Craigslist: <http://seattle.craigslist.org>
- ▶ References (best option if possible)
- ▶ Find Research At UW:
 - ▶ <http://www.washington.edu/research/urp/students/find/atuw.html>

Resumes

- ▶ Recruiters spend 15-20 seconds per resume
 - ▶ Don't be too wordy
 - ▶ Limit it to one (1) page
 - ▶ Use bullet points
 - ▶ Be specific
 - ▶ Bold important information (company names, schools)

The Process

- ▶ Submit resume (via website, career fair, reference)
 - ▶ “Homework” (not all companies)
 - ▶ Time limit: 1 hour to a few days
 - ▶ Phone interview
 - ▶ 1 or 2 phone screens (45 minutes to an hour each)
 - ▶ Face-to-face interview
 - ▶ Generally sign NDA (non-disclosure agreement) first
 - ▶ Internship: 1.5 hours
 - ▶ Full-time: 4 – 6 hours
 - ▶ Decision
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- ▶ Length of time in between steps usually about 1 week (can be shorter or longer)

Preparing for the Interview

- ▶ Read books/websites on relevant topics (e.g., interviewing, data structures, algorithms)
- ▶ Search for programming interview questions
- ▶ Talk to people who are going/went through the same process
- ▶ Be prepared to answer soft questions
 - ▶ Why are you leaving your current job?
 - ▶ Describe a hard problem/bug/co-worker and how you solved it
 - ▶ Describe an accomplishment that you are proud of

Technical Interview Questions

- ▶ Can be ambiguous
 - ▶ Ask clarifying questions
 - ▶ Check if your assumptions are ok
- ▶ Think out loud
 - ▶ They want to see how you think
- ▶ Get a working solution first and then refine it
 - ▶ If at a loss, go through major data structures (map, priority queue, set, etc...) and see if anything fits
- ▶ Know the runtime of each solution

Sample Interview Question

- ▶ Given an array of integers, list all duplicate numbers.
- ▶ Clarifying questions
 - ▶ Can you destroy the contents of the array?
 - ▶ Are the integers bounded?
 - ▶ How big is the array? Can it fit in memory?
 - ▶ Do the duplicates have to be in any order?

Sample Interview Question

- ▶ Given two strings, check if they are anagrams or not, e.g. “twelve plus one” and “eleven plus two”
- ▶ Reverse a singly-linked list
- ▶ Check if a binary tree is balanced (sound familiar?)

Sample Interview Question

- ▶ Given a source word, target word and an English dictionary, transform the source word to target by changing/adding/removing 1 character at a time, while all intermediate words being valid English words. Return the transformation chain which has the smallest number of intermediate words.

Sample Interview Question

- ▶ Given an array of integers find the kth element in the sorted order (not the kth distinct element). So, if the array is [3, 1, 2, 1, 4] and k is 3 then the result is 2, because it's the 3rd element in sorted order (but the 3rd distinct element is 3).

Reference to Some Questions

- ▶ <http://www.ardendertat.com/2012/01/09/programming-interview-questions/>