CSE 373  
Data Structures and Algorithms  
Technical Interviews
Finding Opportunities

- Submitting resumes via company website (hit or miss)

- Search
  - Indeed: [http://www.indeed.com](http://www.indeed.com)
  - Dice: [http://www.dice.com](http://www.dice.com)
  - Craigslist: [http://seattle.craigslist.org](http://seattle.craigslist.org)

- References (best option if possible)

- Find Research At UW:
  - [http://www.washington.edu/research/urp/students/find/atuw.html](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

- 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