Lecture 39: Interview Practice Time

CS 62
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Round 1

1. Given a list of numbers, find three of them such that two sum to the third (if they exist).
2. Print all pairs of anagrams in a given array of strings.
   • Example of anagrams: cinema – iceman
3. Remove duplicates in an ArrayList.
   • (1,1,1,2,2,3,3,3,1,2,2,2,2) -> (1,2,3)
4. (Hard) Find the diameter of a binary tree. The diameter is the length of the longest path (not guaranteed to include the root).
1. Given a sorted ArrayList with unique integers, write an algorithm that creates a BST with *minimal* height.

2. Design an algorithm to find the smallest $k$ numbers in an array.

3. Given a 2D array of 1s and 0s, count the number of "islands of 1s" (i.e. groups of connecting 1s).

4. (Hard) Given a dependency graph for java files, decide if it is possible to compile the code.
   - Input:
     - List of files [a,b,c,d,e,f]
     - Dependencies (a,b), (c,d), (a,e), (f,a), (d,b), (f,c)
   - Output:
     - f,a,c,d,b,e