https://candor.co/interviews/hudson-river-trading

LC Medium and Hard, lots of sorting, bitwise manipulation, string manipulation, DFS/BFS (should choose DFS if it is a complete search, since DFS requires less memory, and have to search all the way through anyway)

- Questions about Processes and Threads, followed by a data structure and algorithm question.

- OS related question: process vs thread, virtual memory - Algorithm question

What is the minimum number of comparisons needed to find the second-largest element in a list.

Four coding questions in 1.5 hours. 1 easy, three medium. Was very hard, and open noted, encouraged using online resources. Did not enjoy the experience, but got two questions finished

**Interview Questions**

* To extract information from a csv file, but in a weirdly specific way that requires "illegal" research unless ur a god at coding

Questions on leetcode: remove comments, number of atoms (but without the parenthesis case, which makes it so much easier).

Phone interview:

computer organization

Coding different scenarios and games.

Quant Trading/Developer:

####### THINK OUTSIDE OF THE BOX, LIKE ON THE GOLDMAN HACKERRANK YOU DID, IF CANT FIGURE OUT THE MATH WAY TO DO IT, CAN QUICKLY WRITE CODE TO SOLVE THE PROBLEM

Sum of all 2 digit numbers without 7 and 8 will be in range of different ranges in the options

35 mins 7 math/stats questions. 5 mins for each

Got two questions. The first one is about tossing dice 100 times and a coin 400 times. Ask what is the prob. of X > Y, where X and Y are the sums. The second one is the expectation of the number of people you have to see before you see someone who is taller than yourself.

C++ Developer-specific question:

Programming question in C++ based around stacks

Write a Python class that implements an O(1) map across all operations, specifically item deletion and random key selection.

One string, one array, one oop, one graph

Full stack

You get 3 hours to do create a carousel in react, write a python generator, and solve a sql question which needs a join and group by.

Maxheap and dp questions which required small optimization.

Round 1) - Given a string containing only the characters 'A' 'B' 'C' 'D', return the string when all adjacent "AB" / "BA" and "CD" / "DC" pairs have been removed. - Given a graph (represented as an array) where nodes have value either 'A' or 'B', find the longest path where no two adjacent nodes have the same value. Round 2) - Physical memory vs virtual memory. You have 4GB physical, but you allocate an 8Gb buffer. Is this possible? If so, how? How is the memory actually read as we traverse the memory? - Thread vs process, what's the difference? Talk about some common threading models. -What are some methods of inter-process communication. Between threads. Between processes. - Explain how a named pipe works (FIFO). - What does the inline keyword do in C++? What are the pros and cons? - How do virtual functions work in C++? Explain how vtable lookup works. - Map (ordered map is with a binary search tree I think (try to figure out the exact tree, AVL?) vs unordered\_map in C++, how is each one implemented under the hood. What data structure is used.

Two questions, 140 minutes:

First question: given a string with only A, B, C or D, remove adjacent A and Bs and remove adjacent C and Ds so 'ABACD' becomes 'ACD' becomes 'A'.

Second question: longest path in alternating tree. You are given a tree with only 'a' or 'b' as values. Find the longest alternating path inside the tree. The hard part is that the path might connect two sub-paths through a common parent, or it might not go through the root.

Solve with dynamic programming (DFS/BFS and adj list, + memoization and cache results to store values, bottom-up, store the longest up to that point as .val in each node)