https://make-school-courses.github.io/SPD-1.4-Engineering-Careers-Communication-And-Interviewing/#/Lessons/02-Interviewing-Communication-Lab

Interviewing Communication Lab

Slides https://docs.google.com/presentation/d/1LkIajE8xTbP8BUkm_hKuvgILUutacoL5ne_kcuJ2sVk/edit#slide=id.p

Learning Outcomes

Warm-Up (3 minutes)

Sequence the communication steps of technical interviewing below, then compare with 1-2 partners.

a. Brainstorm solutions
b. Think out loud
c. Suggest improvements
d. Explain your rationale
e. State your assumptions
f. Discuss tradeoffs
g. Restate the problem
h. Ask clarifying questions

G --> H --> E --> B --> A --> D --> F --> C

Worksheet (20 minutes) //12m

Complete **this worksheet** https://docs.google.com/document/d/16NFUlOR9v-

j23Z6IM80z8Ev5iogDCWf7OgfIkmP09NU/edit# on your own, then review your responses in a small group.

Alternative Interview Question: Given an array of all duplicates except 1 unique value, find the unique value.

Communication Steps	**Your Response**
1: Restate the Problem *This helps ensure:* *You heard and interpreted the interviewer's words correctly and didn't miss anything* *You're able to articulate the problem in a way that makes sense to you*	
2: Ask Clarifying Questions *This is important because:* *Technical interview problems are very often intentionally underspecified. You are expected to ask the interviewer about several missing details.* *A subtle detail in the inputs or outputs can significantly affect what techniques you can use to solve the task.*	
3: State Assumptions *Benefits: Demonstrates good judgement for designing new components* *Simplifies problem to produce a solution for common case* *Risks: Get stuck trying to solve the hardest version of problem and not finish*	

4: Think Out Loud **4a: Brainstorm Solutions** Walk through the problem by hand, using an example input or a data structure diagram Create a list of solution ideas with keywords to remind you Name a few data structures and see if you could apply any of them to the problem **4b: Explain Your Rationale** *Effective rationalization:* *Explain why you chose to use an operation or data structure* *Connect to design constraints in the problem or assumptions* *Mention performance considerations (i.e., time and/or space complexity)* **4c: Discuss Tradeoffs** *Explain the tradeoffs (i.e., pros and cons) to your solution, as well as how it compares to other solution ideas you generated in the brainstorming phase.* **4d: Suggest Improvements** *Analyze the weaknesses (e.g., limitations or performance bottlenecks) in your solution and generate new ideas to discuss how you could improve upon it.*	

Break (10 minutes)
Rapid-fire Breakouts (40 minutes) //50m

Instructions:

1. Find a partner to do mock interviews with. One will play interviewer, one interviewee.
2. Work through the problem as if you're in an actual interview. Your interviewer will have a checklist to make sure you follow the best-practice communication steps.
3. Give feedback on what they did/didn't do.
4. Swap roles and work through problem 2.
5. Find a different partner and repeat the above steps (2-4) for problems 3 and 4.

Practice Problems:

1. Given two arrays, determine if both arrays contain exactly the same elements, regardless of their order.
2. Given a string containing a long text, find the most commonly occurring word in the text as well as its count.
3. Given a sorted array, find the index of the first and last occurrence of a given element. If the given element is not found in the array, report that. //1h21m
4. Given an array a of numbers and a target value t, find two numbers that sum to `t` (that is, `a[i] + a[j] = t`).

- Zain, u didn't clarify what your inputs and outputs //1h40
- Didn't account for multiple possible answers
- if you need index and value, automatically think if enumerate()

Homework

1. **Find 2 new problems on LeetCode** and follow the communication steps covered in last class to guide your thinking and problem solving.
2. **Write down and commit** your **communication steps** (in code comments) and **solution code** to a GitHub repository.
3. **Submit** your GitHub repository to Gradescope.

Wrap-Up

Fill out the **Vibe Check Form** with any thoughts & feelings from class today that you'd like your instructors to know.