Technical Interviews

What is a Technical Interview?

Overview

A technical interview consists of a series of questions to test a candidate's quantitative knowledge in their field such as programming, algorithms, data structures, circuits, operating systems, etc., and their ability to solve problems. Students in engineering, computer science, IT and other technical fields, applying for technical positions, should expect to have technical interviews. Technical interview questions are most common in the second interview and on-site interviews; however, students should be prepared for them to occur at any time.

Types

There are two main types of technical interviews:

- The first type of technical interview is to determine how well a candidate knows advanced technology, software, special algorithms, programming languages, etc., and accesses a candidate's broad set of technical skills as they relate to the needs of the company / position.
- The second type of interview addresses a candidate's problem solving skills. The interviewer is looking at the candidate's approach to the problem and how they think through a problem to find a solution (the focus may even be more on the actual process than the outcome itself).

Included in technical interviews are design challenges, whiteboard challenges, take-home challenges, coding and remote coding challenges, and behavioral technical questions.

Format / Structure

Candidates may experience a technical interview or screen via phone, video, on-site during the final interview round, or as a take-home/ online assignment prior to beginning the interview process.

Goals of the Technical Interview

- To assess a candidate's technical skill set, theory, and knowledge and/or their ability to think critically, solve problems, and/or design.
- To assess a candidate's response to questions related to potential or hypothetical situations that they may not have experienced before, and that are specific to the position.
- For a candidate to demonstrate to the recruiter that they have the skills required to do the job through challenges and assignments, similar to an exam. ("Show, Don't Tell")

How to Prepare

- Review the job posting and align studying and preparation according to the skills and qualifications needed.
- Review notes from relevant classes, labs, projects, and textbooks.
- Practice providing detailed technical responses for all related skills or experiences related to those listed in the job description as well as what is listed on the resume submitted for the position,
- Talk with classmates and/or alumni about their technical interview preparation and experiences. Remember that interviews can be quite different, even with the same company!

What You Should Expect

- Technical interviews and questions are unique to each company, interviewer, and position.
- A technical interview for a similar position at two different companies can be very different.
- Questions may be weighted: more points may be given for questions most aligned with the key requirements of the position. Carefully review the job description to determine the most important skills needed.
- Trick questions are common! Sometimes questions are intentionally too hard. Technical interviewers want to access how you think and see if you will/can express your opinion, point-of-view, and/or knowledge. They may want to see how far you can get in a problem and if you will ask questions if needed.

What Employers Expect

You should have the ability to…

- Think critically, problem-solve, and develop new ideas in a structured and systematic way.
- Talk and work through the process, so employers can learn about the way you think.
- Understand the big picture; how systems interact and the consequences of infrastructure decisions.
- Ask for help and clarity when necessary.
- Respond positively to constructive feedback.
- Clearly communicate with people from diverse backgrounds.
- Communicate technical knowledge into context and practical application.
- Work and communicate effectively with other members of a diverse project team (be able to communicate technically and non-technically or in an approachable way for those with a different technical or a non-technical background).
- Be confident, yet humble.
- Show enthusiasm and interest in the type of work, position, and company.

Strategies for Success (Do's)

- Before getting started, restate the question to clarify what has been asked. Make sure you understand the question.
- Verify the system, coding language, tool, application, etc. prior to beginning.
- Remain focused and respond to the question / challenge that has been presented.
- Everything you know and figure out is to your benefit – keep talking through the problem, verbalize everything, and write down what you know.
- Demonstrate your thought process so the interviewer will understand that you're doing your best to find a solution. Ask for help when needed.
- If you're stuck, stay calm, think out loud, and try another approach.
- Give answers that best represent the skills and experience needed for that specific position.
- Know your audience and be humble. Be respectful of the interviewer's experience and knowledge while trying to convince them that you are knowledgeable as well.
- Show your willingness and enthusiasm to learn.

Common Mistakes (Don'ts)

Avoid…

- Giving up – ask questions, work through what you do know, write down ideas, and strive for partial credit.
- Giving "yes" or "no" answers – even if it's a close-ended questions, always back up your answer with additional information, explanations, or examples when possible.
- Using the "we statement" to answer questions – employers want to know what YOU did and what skills YOU have. Use the "I statement."
- Stopping at what the interviewer has asked – go beyond, and introduce related items to show the depth and breadth of your knowledge as it relates to the topic asked. (Be sure to stay on topic only)
- Pretending that you know something when you really don't – they are the experts and will know you don't know what you are talking about. Be honest and share what you do know.
- Acting as though you know more than the interviewer – be humble and open to learning.
- Relying only on technical questions posted on the Internet to prepare – do your homework and use the job description as your study guide.
- Getting stuck in the details – focus on the big picture.

Resources

Google Technical Development Guide – Visit this resource library that includes problems and projects, former Google interview questions, online courses, education sites, videos, and more.

HackerRank – Join over 7 million developers, practice coding skills, and prepare for interviews.

LeetCode – Practice interviewing with over 1400 technical questions offered.