

TECHNICAL INTERVIEWS

A technical interview consists of a series of questions designed to test your technical knowledge in your major such as programming, algorithms, data structures, circuits, operating systems, estimating, materials testing, etc. and your ability to solve problems. They can consist of coding challenges, word problems, peer discussions, puzzles, or brain teasers.

Types of Technical Interviews:

There are usually two types of technical interviews:

- The first type determines how well you know advanced technology, such as coding, software development, special algorithms, mapping, drawing in 2D vs. 3D, etc. and examines your broad set of technical skills.
- The second type uncovers your problem-solving skills. The interviewer is looking at your approach to a problem, how you think through the issues to find a solution (not necessarily the most optimal solution).

Goal of the Technical Interview:

Demonstrate to the interviewer your technical skills and abilities and how you solve real world problems in your field.

Should I Expect a Technical Interview and When?

- If you are earning or have earned a degree in engineering or technology, or applying for technical positions, expect to have technical interviews.
- A combination of behavioral and technical questions are more common during on-campus interviews while more technical interview questions are definitely part of later round or on-site interviews (because they are expensive).
- Some employers will give homework in the form of programming or logic problems to do before the interview. This eliminates candidates before the technical interview.

How to Prepare for a Technical Interview:

- **Review the job description** to highlight both the key technical responsibilities and requirements of the position (software, hardware, testing, operating systems, circuits, areas of engineering knowledge, such as FEA, CFD, surveying, estimating, etc.).
- **Refresh on Core Principles and Basics.** Review relevant class notes. If the position calls for PHP developer skills or AutoCAD, and you want to brush up on those skills, consider taking an online tutorial.
- **You may not have to be an expert in every technology listed** but know the basics since many questions will not be specific in domain knowledge but will look at general principles.
- **Familiarize yourself with formal technical jargon** and acronyms around the technology.
- **Study and practice answering** (out loud) standard interview questions and as many variations of them as possible.
- **Prepare to use a whiteboard.** Most programming is done on computer, but most technical interviews do not use a computer. Practicing white boarding (and/or drawing things out on paper) is a key way to prepare and can make a big difference, especially for those to whom this kind of interaction doesn't come naturally.
- **Be ready to discuss your projects**, prior technical experiences and coursework in detail. It is not enough to say that you have done the project, you have to be able to share the details of the project. If you have a portfolio (either in hard copy or online), show it to the interviewers.
- **Research the company** and imagine you are head of your own technical or engineering team. What technical questions would you ask a candidate for this role to gauge their level of understanding?
- If possible, **find out who you will be interviewing with**, their background, and position. Check their LinkedIn profile. It may give you an idea of what their perspective and/or focus might be.
- **Prepare questions to ask at the end of the interview.** For sample questions, see the *Interview Preparation Handout*.
- **Preparing in advance** will go a long way to increasing your confidence during the interview.

Do's:

- **Demonstrate the ability to think systematically** (step by step). First, find the easiest solution, then, gradually improve on your solution.
- **Ask for clarification** on a problem if you didn't understand something or if there is any ambiguity.
- **Let the interviewer know what you are thinking.**
- **Suggest multiple approaches** to the problem.
- **Bounce ideas off the interviewer**, such as design ideas, data structures or algorithms.
- **If you get stuck, don't be afraid to let them know** and politely ask for a hint.
- **Ensure you understood the question and then confirm.** "Did that answer your question? Is there any part on which you'd like more details?" Don't assume, because many times there can be a disconnect. Ask them to clarify on the front end, answer the question and then confirm it on the backend."
- **Be honest:**
 - **If you can't recall:** Apologize and say something like, "I just used that command last week, but if I was offered this opportunity, here is what I would do to find the answer." That way walk them through the problem and show them you're resourceful.
 - **If you're sure you don't know:** Draw a parallel or connection to something relevant that you've done. You can say something like, "Unfortunately, I haven't had the opportunity to work with C#; however, I have so much experience in VB.NET that I feel like I can transition easily."

Don'ts:

- **Don't be afraid to ask questions.** Make sure you understand the question before diving in and answering.
- **Never give up!** That determination is a large part of your ability to solve problems.^{[1][2]}
- **Don't sit in silence while thinking.** The interviewer has limited time to find out as much as possible about you. Help them understand how you think through a problem/ find a solution as an engineer or a technologist.
- **If you already know the answer, don't just blurt it out.** Maybe you have seen the question before but take the opportunity to think through how best to present the answer.

Remember:

- The first technical interview can be tough as you may not know what to expect and have not experienced anything like it before. Keep in mind each interview will increase your knowledge and confidence for future interviews.
- You may be asked to remember things from classes that you have taken a while ago.
- You may need to come up with solutions to problems on the spot. Keep in mind that some companies ask harder and harder questions until you cannot answer the question and then move on. Some of the questions are ones that the companies have not yet solved themselves.

What are some of the companies that have Technical Interviews?

Amazon	Bose	Dell	Hewlett-Packard	Microsoft	VMWare
AMD	Cisco	Expedia	IBM	Orbitz	Yahoo
Apple	Citadel	Harris	Lockheed Martin	Qualcomm	

Additional Resources:

- [How to Ace Your Technical Interview](#)
- [MIT Course Handouts: Hacking the Google Interview](#)
- Check for specific company technical interviews details using www.glassdoor.com or Google.

Some information adapted from Carnegie Mellon Career & Professional Development Center and MIT Course Handouts