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Interviewing at Google? Here's 6 Things You Absolutely Need To Do

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Having interviewed, coached, and sat on hiring committees with many candidates during my three year tenure at Google, I've learned a lot about what works and what *doesn't*. I conquered the interview process after failing once before and, even then, I thought it could've gone either way. With tons of stuff to study, it's hard to figure out how to prepare. Even really smart people can fail if they don't have a good plan for what to do when they get into the room with an actual software engineer and a whiteboard.

So, I'm going to share six tips I believe you absolutely need to nail your interview. After you check these out, watch this sample interview video conducted by Google engineers.

1. Repeat the question in your own words

As soon as you hear it, repeat it out loud. Do this preferably in your own words to demonstrate your comprehension. Remember, your interviewer is there to assist you, so repeating the question aloud will only serve to make their job (and yours) easier.

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through it more clearly.

2. Check assumptions

Many candidates start writing code almost immediately after hearing the questio
big mistake. Most coding questions have some level of ambiguity built in. Have
or three questions ready so that you can confirm you have all the necessary detai
the problem. You can also write out confirmed assumptions on the whiteboard (
print to save space). Questions like "does input fit in memory?" or "can I assume
always valid?" are good candidates if you can't think of any at first.

3. Use real examples

You've got a whiteboard—use it! Draw out an example array, a binary tree, a lin
Give it real data and write out the expected output of a working solution. You sh
practice coming up with good examples as part of your study regime (you do ha
right?). Using a visual example also gives you opportunity to think up more que
your interviewer a chance to correct your assumptions. Don't forget to keep thin
loud as you work through it.

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is also how interviewers will point you towards problems with your design or implementation.

4. Brainstorm solutions and their time/space complexity

Stop and think about various approaches. If you've put in time studying algorithms and data structures, this is where it really starts to pay off (Cracking the Coding Interview, anyone?). Think about trade offs using Big-O analysis and *think out loud*. Don't stop with the first solution that comes to mind. Always ask yourself what's the best you can do. Trust me, we *always* will!

Tips: Don't forget the space–time tradeoff principle. Wanna go fast? Use more space. Also, hash tables people! And learn how to think graphs—including trees. If all else fails, recursion, backtracking, and memoization are useful tools on particularly difficult problems.

5. Write working code (no pseudo-code please!)

You might normally use pseudo-code to design your code, but you don't have time for that in a 45-minute interview. Choose your strongest language and turn your thoughts into working code as quickly as possible. This should be the easiest part of the interview assuming you've put time into practicing without an IDE (seriously, don't use an IDE to practice for the

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using a whiteboard or just use pen and paper.

6. Test your code, always

Now turn your brain into a compiler and execute each line of code to ensure you
any logical bugs. Use the whiteboard to keep track of variable state as you iterat
the example(s) you created earlier and confirm that you get the expected output.
crucial in software engineering, so never make the grave mistake of leaving this

Practice makes perfect

It took nearly an hour and a half to finish a coding question when I first started u
six steps. After a month and a half of daily practice, I could solve most question
half an hour. *Nothing* takes the place of putting in the time to prepare for the int
you've developed the muscle memory to execute these six steps perfectly. Is it w
say so.

Anthony D. Mays is a Software Engineer at Google and a former foster youth from Compton. Read more about his story and career tips at anthonydmays.com.

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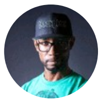

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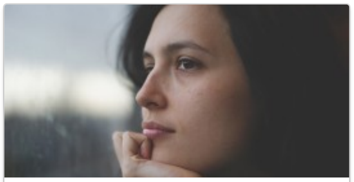

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