Solving Coding Challenges – a Framework

Solving coding problems is a part of the software engineer job interview process. Essentially, writing code is problem-solving. The good news is that any coding problem can easily be solved by following some predefined steps that allow engineers to approach that problem effectively.

Proficiency in software development is often associated with the ability to write complex code in a short span of time. However, in practice, tackling coding challenges quickly and efficiently is more of an art and comes with practice.

At its core, software programming teaches you to think analytically and determine the best possible solution to a problem — something that is a trait among all successful software developers.

Here is a 4-step framework that you can use to solve coding challenges during interviews, and even at work

1. **Understand and appreciate the problem statement.**

- Did you fully understand the problem?
- Do you know what inputs are required?
- Do you know what the desirable output is?
- Does it give you enough information?

2. **Break down the problem into functions.**

- Define the problem statement into various functions or modules.
- Does each module solve a specific subset of the problem?
- Can the functions/modules be reused?

3. **Apply common patterns or language constructs that you already know for the problem.**

- Do you see a common pattern that you can use?
- Do you see a loop to use or a language function that might make things easy?
- Pseudocode your proposed solution.

4. **Start coding.**

- This is the best place to start really coding.
- Ignore difficult parts for now – begin by solving a simpler sub-part.
- Run the code as you work and let errors show you where you can correct the code.
- Start with input gathering, then processing logic, and then output.
- Compare your solution for its accuracy and completeness relative to the problem statement.
- If time permits, optimize the solution by looking at various alternatives to shorten the code or increase its efficiency.

Coding Challenge Practice 1: Simple Problem

For the easy problem below, you can choose between JavaScript or Python language to code. You can use any IDE of your choice on your local machine. Use the 4-step framework to assess and code the problem.

Task

Write a function that takes two integers namely hours & minutes, converts them to seconds, and adds them together to display the total seconds.

You will get a chance to compare your code with a proposed solution in the following lab.

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