

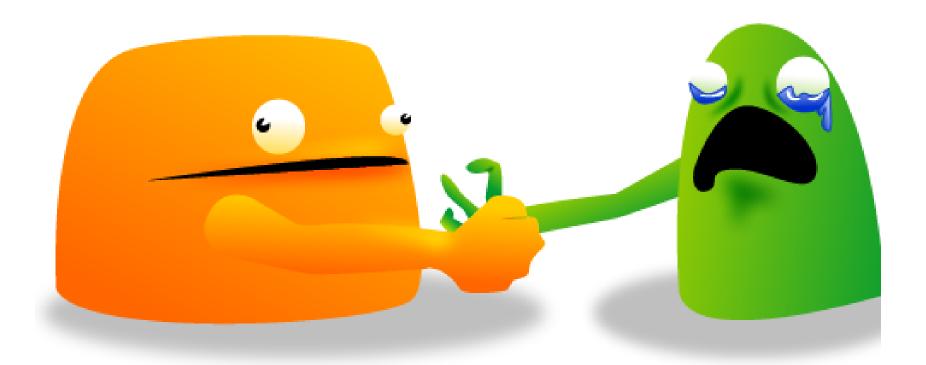
# Interview Questions Coding Interview

## But First!



https://theoatmeal.com/comics/handshakes

# The Bone Crusher



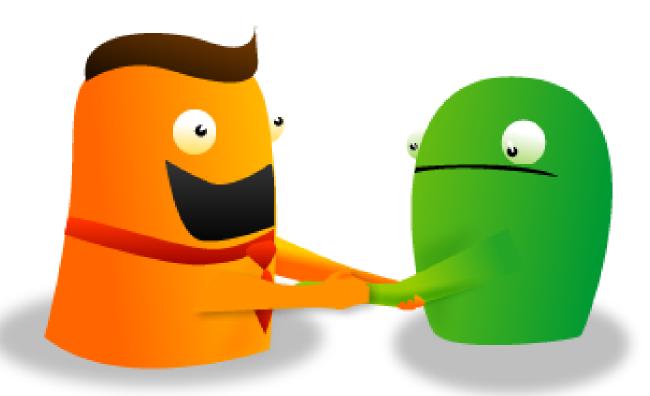
## The Misfire

Your fingers don't quite come together like they should, but you stick it out anyway to avoid looking awkward.



# The Politician

Those who shake with both hands are trying to sell you something.

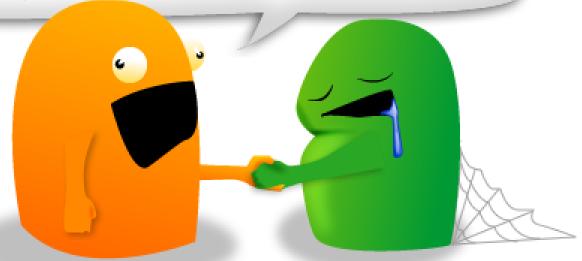


# The Limp, Dead Fish



## The Never-Let-Go

"so then I said "get your baby off my lawn or I'll hit him with the pressure hose again!" So what does she do? She calls the cops! The nerve of some people. Hey, do you like raisins? I think raisins are really neat! Better than grapes, grapes are for chumps. One time I stuck a bunch of raisins in my underpants - it was so weird! LOL ... you don't talk much, do you?



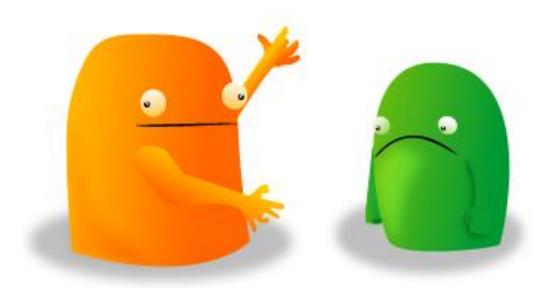
## The Close Shaker

Really what they want is a hug.



# The Hipster

Their confusing handshake makes you feel out of touch.



# The Airball









# What's an R package or Python library you use frequently and why?

- The interviewer shouldn't be looking for a specific answer here. Rather, they're looking to see if you
  - a) program enough in either language to have a frequently used package and
  - b) can explain how and why you use that package.
- A good answer also gives them a sense of what kind of work you do day-to-day.
- Don't forget to explain what the package does, especially if it's a niche package.
- If there's another package that's more widely used for the task, you may want to explain your reasoning of why you choose this package, as that shows your broader awareness of what alternatives are out there.
- Finally, don't worry about picking the most "advanced" library (like a deep learning library) to impress the interviewer. This should hopefully be one of the easiest and potentially fun questions to answer, so don't overthink it.

# Given a totally blank slate, how do you pick your tech stack?

- When interviewing candidates at T-Mobile, Heather Nolis usually has a person pick a project and describe the decisions they made, the decisions other people made, and how they would do it differently knowing what they know now. Your interviewer may not ask you those things directly, but they are all worth including anyway.
- Whatever answer you give you'll want to include plenty of references to decisions you have had to make in work you've done before (which can include side projects or course work).
- The point of this question is to see how much thought you have put into choosing the right technology for the right project.
- Having chosen technological stacks that ended up being problematic is fine as long as you've learned from it. In fact, having learned from things is even better than getting everything right the first time because it shows you can change.

### Beer Advocate

- 1.5 M rows of individual reviews
- Columns:
  - brewery\_id
  - brewery\_name
  - review\_time
  - review\_overall
  - review\_aroma
  - review\_appearance
  - review profilename
  - beer style
  - review palate
  - review taste
  - beer name
  - beer\_abv
  - beer\_beerid

### How would you answer:

- Which brewery produces the strongest beers by ABV%?
- If you had to pick 3 beers to recommend using only this data, which would you pick?
- Which of the factors (aroma, taste, appearance, palette) are most important in determining the overall quality of a beer?
- Lastly, if I typically enjoy a beer due to its aroma and appearance, which beer style should I try?



LeetCode

Given a string containing digits from 2-9 inclusive, return all possible letter combinations that the number could represent.

A mapping of digit to letters (just like on the telephone buttons) is given below. Note that 1 does not map to any letters.



### Example:

```
Input: "23"
Output: ["ad", "ae", "af", "bd", "be", "bf", "cd", "ce", "cf"].
```

### Note:

Although the above answer is in lexicographical order, your answer could be in any order you want.

The string "PAYPALISHIRING" is written in a zigzag pattern on a given number of rows like this: (you may want to display this pattern in a fixed font for better legibility)

```
P A H N
A P L S I I G
Y I R
```

And then read line by line: "PAHNAPLSIIGYIR"

Write the code that will take a string and make this conversion given a number of rows:

```
string convert(string s, int numRows);
```

### Example 1:

```
Input: s = "PAYPALISHIRING", numRows = 3
Output: "PAHNAPLSIIGYIR"
```

### Example 2:

Roman numerals are represented by seven different symbols: I, V, X, L, C, D and M.

Symbol	Value
I	1
V	5
Х	10
L	50
С	100
D	500
M	1000

For example, two is written as II in Roman numeral, just two one's added together. Twelve is written as, XII, which is simply X + II. The number twenty seven is written as XXVII, which is XX + V + II.

Roman numerals are usually written largest to smallest from left to right. However, the numeral for four is not IIII. Instead, the number four is written as IV. Because the one is before the five we subtract it making four. The same principle applies to the number nine, which is written as IX. There are six instances where subtraction is used:

- I can be placed before V (5) and X (10) to make 4 and 9.
- X can be placed before L (50) and C (100) to make 40 and 90.
- C can be placed before D (500) and M (1000) to make 400 and 900.

Given an integer, convert it to a roman numeral. Input is guaranteed to be within the range from 1 to 3999.

### Example 1:

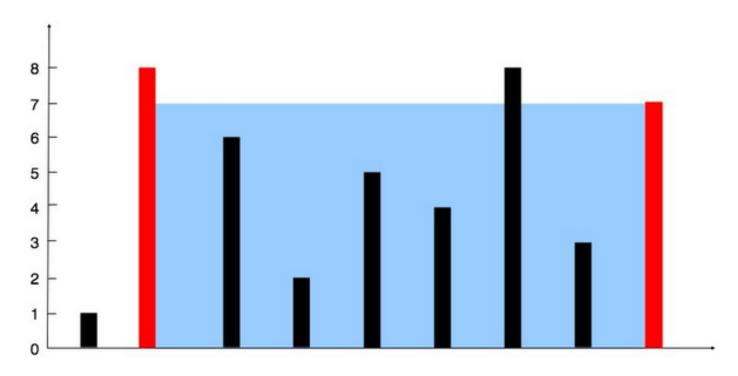
```
Input: 3
Output: "III"
```

#### Example 2:

```
Input: 4
Output: "IV"
```

Given n non-negative integers  $a_1$ ,  $a_2$ , ...,  $a_n$ , where each represents a point at coordinate  $(i, a_i)$ . n vertical lines are drawn such that the two endpoints of line i is at  $(i, a_i)$  and (i, 0). Find two lines, which together with x-axis forms a container, such that the container contains the most water.

**Note:** You may not slant the container and *n* is at least 2.



The above vertical lines are represented by array [1,8,6,2,5,4,8,3,7]. In this case, the max area of water (blue section) the container can contain is 49.

### Example:

Input: [1,8,6,2,5,4,8,3,7]

Output: 49