02.16.21

Ro Engineering Fellowship Take-Home Exercise

Hello! We're excited that you're interested in coming to work with us. Below you'll find an exercise that will help us get acquainted with your skills and strengths. We expect this to take between two to three hours to complete (if you find you're spending more time on it, send us a note). Please return your response to us within a week of receiving it.

If you're unavailable to start the exercise once received, kindly let us know a more convenient date for you, and we're happy to coordinate. The engineering team will review the completed assignments during February, and team interviews will begin in March. Five fellows will be selected by April for a **Summer 2021** start date. We will confirm receipt of your exercise once received with an ETA of when to expect feedback on the next steps. Thank you for taking the time to participate in this process for an Engineering Fellowship at Ro!

Technical Overview

Feel free to use any major programming language you'd like (Javascript, Go, PHP, Ruby, Python, Java, Scala, Kotlin are all great choices), as well as any libraries that you'd like. We only ask that you submit code that you would be comfortable shipping to production. And of course, only submit your own original work.

When you're done, please create a README describing how we can run your code, and email your recruiter a zip file containing your solution.

One thing to note is that there is an error in the JSON file and that "contraindication" should be replaced with "major". Please submit your completed challenge by **Wed, Feb 24th** at 9 am ET. Kindly let us know if you need additional time based on these requirements.

If you have questions, please feel free to contact your recruiter. We're more than happy to help clarify or address any concerns you may have!

The code challenge is intentionally open-ended to help us gauge how you approach problem-solving. If you successfully pass the code challenge, a future step in the interview process will discuss your particular approach to the problem with an engineer. During this discussion, be sure to share the thoughts and questions you raised about the prompt and how they informed your technical implementation.

Context

Ro's platform enables physicians to diagnose patients and prescribe medications for many common conditions. When prescribing medications, our physicians are constantly looking for a risk known as a drug interaction, which occurs when a patient's response to a drug is affected by factors such as food, supplements, environmental factors, other drugs or disease.

At Ro, we dedicate ourselves to ensuring the safety of our patients. Before prescribing any medication, we ask patients to tell us any other drugs they're currently taking, which allows our physicians to find any potential risks the patient may face by introducing a new medication.

Problem

Given a file containing a list of drug-drug interactions, write a **command line application** that accepts a space-separated drugs per line and determines if there is a risk of interaction between any drugs in the list. All interactions listed in the `interactions.json` file attached are between two drugs. For the purposes of this problem, you can assume that will always be the case.

If there are multiple interactions detected for a single line of input, you should return the most severe interaction. The order of severities is `major`, `moderate`, and `minor`

Constraints

- Number of medications per line between 1 and 20
- Number of lines per execution between 1 and 10,000

Examples

> Note: all examples are based on the interactions.json file included with this description.

Input (each line represents one line of input)

1. sildenafil tamsulosin
2. sildenafil ibuprofen
3. sildenafil nitroglycerin

Output (order should match the input above)

1. moderate: Sildenafil may potentiate the hypotensive effect of alpha blockers, resulting in symptomatic hypotension in some patients.
2. No Interaction

3. major: Phosphodiesterase-5 (PDE5) inhibitors may potentiate the hypotensive effect of organic nitrates.