Hair Salon Coding Challenge - Candidate Version

Candidate Instructions

This interview consists of two stages. For the first 20-30 minutes you will read the problem and think about how to solve it. This is a great time for you to ask questions, sketch out some ideas, talk about tradeoffs, and consider changing requirements. For the remaining time, you will actually implement a solution. During both parts of this problem, please express your thought process verbally with the interviewer. Feel free to ask the interviewer any clarifying questions at any point. Please share your screen if you are doing anything digitally, such as coding, taking notes, or looking something up. While coding, please use the language and IDE with which you are most comfortable. We want to see you at your best! Also, you are free to utilize Google, StackOverflow, language and package documentation or other resources online as long as you aren't looking for solutions to the problem.

Here are some details about how you will be evaluated during this interview:

- How you will be evaluated:
    - Highest priority: Your approach to the problem. Is the solution and code easy to modify or adjust to changing requirements? How do you consider tradeoffs and make design choices? Do you test your code with a reliable feedback loop? Etc.
    - Medium priority: Structure and clarity of the coded solution. Are data structures, data flow, and logic control flow clear?
    - Low priority: Correctness of the coded solution. Did you meet all of the problem specifications?
- How you will NOT be evaluated
    - This is NOT intended to be an algorithms question.
    - You do NOT need to finish the problem to get a good score.

Problem

Specification

Goal

Your task is to simulate a hair salon.

Rules

The hair salon is open for 8 hours, from 9am to 5pm. You don't want your program to take that long to run, so you'll need to somehow simulate real time.

When the salon opens, there are 4 hair stylists who start their shift:

Anne, *Ben*, *Carol*, and *Derek*.

On average, a new customer enters once every ten minutes. Their arrivals are random. Customers are named successively starting at Customer-1.

When a customer enters, if a stylist is available, they immediately start cutting the customer's hair. Otherwise, the client waits for a stylist. A stylist can only cut one person's hair at a time, and takes 30 minutes to do so. After a stylist is done with a customer, the customer leaves satisfied.

Stylists can go home after 5pm. They end their shift as soon as they can, unless they are busy with a client. In that case, they wait until they finish with that client, and then end their shift.

When all the stylists and customers have gone home, the salon closes. If there are any customers left waiting for a stylist, they are kicked out, and leave furious.

Input/Output

Your program should print the below events in chronological order. [Time] is salon-time in the format HH:MM, not real time.

```
[Time] Hair salon [opened/closed]
[Time] [Customer] entered
[Time] [Customer] left [satisfied/furious]
```

```
[Time] [Stylist] [started/ended] cutting [Customer]'s hair
```

Example:

```
09:00 Hair salon opened
09:02 Customer-1 entered
09:02 Anne started cutting Customer-1's hair
09:11 Customer-2 entered
...
09:32 Anne ended cutting Customer-1's hair
09:32 Customer-1 left satisfied
...
```