Prescription Routing - Phone Screen - v4

Prompt

After a patient requests a new prescription, and our medical team has written a new prescription, our system must automatically determine the cheapest way to fill a given order. This routing is subject to the following set of constraints:

- We want to minimize the total cost of fulfilling an order, which is determined by the `inventory.cost x orderItem.quantity`
- A single Order can be fulfilled by multiple pharmacies, but a single OrderItem cannot be split across more than one pharmacy
- Assignments should contain OrderItems, not Orders, to allow an individual order to be fulfilled with a single shipment by a single pharmacy or multiple shipments by multiple pharmacies

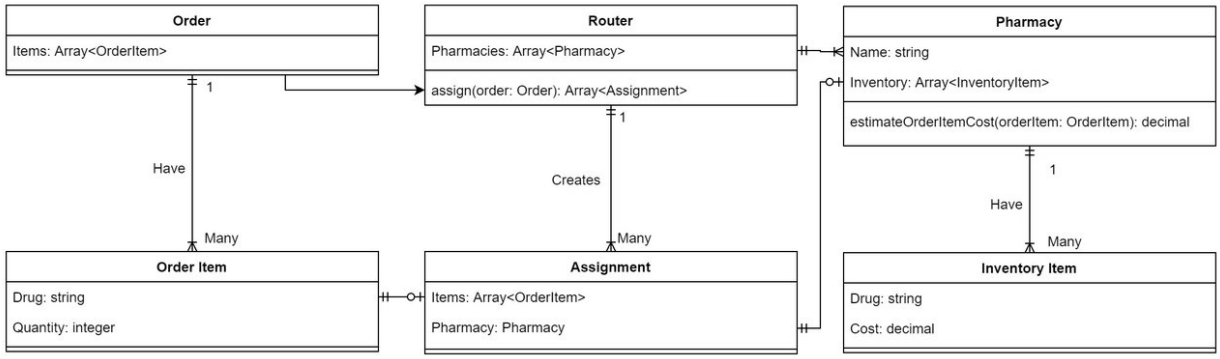
A simplified object model in UML is provided below that shows the relationships and types of your function. In a language of your choosing, implement the `assign(Order)` function.

COMMENTARY

Please comment your implementation and make note of assumptions, trade-offs, and limitations in the architecture, as well as any exceptions that the fulfillment assignment algorithm must consider.

If you have any questions, please do not hesitate to ask. Feel free to extend the model as needed, but take care not to modify the specified requirements.

Object Model (Updated Nov 2020)



FAQ

Q: Are there tests available?
A: We are not evaluating your performance on a test suite. While we do ask that your code can be executed, and highly recommend you test it in advance, we won't run a suite against it to measure performance or results.

Q: What tools can I use?
A: You can use any language of your choice, as well as anything available in standard and liberally licensed open source libraries (e.g. MIT, Apache, etc.) Use of proprietary or paid services, including SaaS APIs, is not permitted.

Q: How do I submit?

A: When you are finished, create an archive of your solution and Email your recruiting contact. We'll ensure your next interviewer has a copy of your solution before our meeting.