Inventory Management - Task Work

> .NET Software Engineering

Welcome to your task work,

The goal of this exercise is for you to demonstrate your abilities to write a self-contained piece of software to demonstrate both your design and coding skills. This is a real-life exercise and a simplified version of something we created ourselves.

If you have any questions during the task work, feel free to ask us at hr@felfel.ch.

Most importantly: have fun with this little exercise!

Your friendly engineers @FELFEL: Behrooz, Bert, Bruno, Janos, Lee, Lennart, Matias, Stefan, Stephen & Susanne

What you need to know: Context

In our warehouse, we need to track incoming and outgoing products in order to keep our inventory up-to-date.

The typical flow of goods is as follows:

1. FELFEL places an order with a supplier (e.g. for 1000 portions of pasta on Monday, and another 500 on Tuesday)
2. Suppliers deliver those orders, which we then check into our warehouse as a batch. A batch is a very important unit for us, since all the units of a batch have the same expiration date (we need to make sure not to deliver expired food!)
3. At any point in time, we need to know how many units of each batch we have on stock, or how many units have already been taken from a given batch respectively
    - Typically, the inventory changes if we deliver the products to our end customers. For example, if we sent 10 units from the first batch to our customer COMPANY X, the stock count of that batch would be reduced to 990.

- There might be other reasons for inventory corrections. For example if we drop some items by accident, or simply need to correct the inventory after a recount (stuff gets lost in a warehouse all the time).

> Our Satay Chicken is one of the most sold items in the FELFEL fridge (but not directly relevant for the task ;)).

Your Task & Deliverables

Task

Build a self-contained inventory management system, accessible through a set of well-defined RESTful endpoints. It should fulfill the following functional requirements:

- Register new product batches for the warehouse
- Update or modify stock of any batch
- **Retrieve the current inventory per product**
  - for **each batch** individually
  - or for the **whole warehouse**, broken down by batches
- Retrieve an **overview of the freshness of food** we have in the warehouse (3 states: fresh, expiring today, expired)
- Retrieve the **history of a given batch** (we should be able to trace what came in, what went out)

Deliverables

- A microservice built on top of .NET
- A list of **next steps, improvement areas & ideas** where you would like to take your product

Feel free to either create a regular data layer or just a dummy. In any case, keep your design clean and refactoring-friendly!

Don’t worry about authentication etc. - focus on the core domain (inventory management).

This is your time to shine and show off what you can do. Your production-grade solution should speak for itself :)

WE LOOK FORWARD TO HEARING FROM YOU SOON!