# Yenlo Recruitment Assessment

## Requirements

Build an API for a stock management system for a company that has both a webshop and a physical store. With the following requirements:

- The current stock levels need to be stored in a persistent data store.
- Stock can be either in storage or in the store.
- Operations that change anything in the system need to be secured and only available to store managers.
- (ADVANCED) Because the cash register in the physical store is not connected to the system the API needs to be able to process the (large) file exported from the cash register with stock changes. We do want to be sure that once the file is uploaded it is successfully processed.

What we are looking for is an API that can handle the following interactions, per interaction a basic message format will be specified on the next page.

- Update specific products stock for sales or when receiving stock (secure)
- Set specific stock level of (new or existing) product, for example after a stock check (secure)
- Get stock level (all or specific items)
- (ADVANCED) Take in a file with a large amount of stock changes

Optional:

- Create a (simple) UI which shows the stock levels of products and allows to update the stock level of a product.

## Solution

Create a solution for the above use case as you see fit. Expect around 8-10 hours of work, our focus will be less on how much was done and more on how it was done, specifically the following points:

- Your approach and problem-solving ability.
- Programming skills.

Possible tools to solve this problem:

- Any persistent data store
- WSO2 middleware (Enterprise Integrator, API Manager, etc.)
- Other middleware
- JMS implementation
- Develop your own WebService/API
- A combination of the above

Keep in mind you do not have to use everything, only what you need for your solution.
WSO2 products can be downloaded from https://wso2.com/platform

You will need to demo this either locally on your laptop, or you can use a cloud solution.

## Hints and tips:
- The latest WSO2 products can be downloaded from the WSO2 website.
- Two WSO2 products can run on the same system configuration, by changing an offset from 0 to 1 in one of the products configuration file.
- The management console can be accessed via https://localhost:9443 (possibly + offset) if one of the products is started.
- Installation of the WSO2 products is easy; Download, extract, possibly adjust offset, start, and you can log into the management console with "admin" / "admin" as the username / password.
- You can test Web services with the Try-it service from the ESB management console. However, it works easier / better to test a Web service invocation with SoapUI.

## Message formats API (basic).

Following is a description messages on the API need to adhere to. Anything that is not defined here you are free to fill in yourself.

You can opt to use either XML or JSON, the file for the file upload will be a CSV file

**Update stock level**

Request:

*Mutations*

 *Mutation (1 or more)*

  *ProductID*

  *StockChange*

   *Change (integer)*

   *Location (Store/Storage)*

Response:

A simple confirmation or error.

**Set stock level**

Request:

*Products*

 *Product (1 or more)*

  *ProductID*

  *Name (optional, required for new product)*

  *Stock*

   *Amount (positive integer, absolute)*

   *Location (Store/Storage)*

Response:

 A simple confirmation or error

**Get stock level**

Request:

 A simple request, with an optional list of ProductID's

Response:

*Products*

 *Product (1 or more)*

  *ProductID*

  *Name*

  *Stock*

   *Amount (positive integer, absolute)*

   *Location (Store/Storage)*

**File upload**

Request:

Message with file containing mutations in the following format

*ProductID, Change (integer), Location*

Response:

Confirmation or Error for the complete file