

# Introduction

You have been given the task to continue the implementation of an inventory management project that has been abandoned by its developer. The solution is incomplete and has much room for improvement, but management believes in the idea. Your job is to finish implementing what has been abandoned, but also to develop some new additional functionality to showcase how it can be extended.

## Tasklist

1. Provide a **data structure** for products
2. Implement all methods where **NotImplementedException** is currently thrown
3. Add a **CachedInventoryService**
4. Add **unit testing** where appropriate

### Products

The provided **Product** is incomplete and exists merely as a placeholder. Refactor it how you like, but **InventoryService** needs to return a data structure with all information regarding a product.

### Cached inventory service

Add a **CachedInventoryService** and implement **InventoryService**. This service should only request data on cache misses or if the requested product has expired in the cache. Cache timeout is 5 minutes.

### Disk inventory source

Finish the implementation of **DiskInventorySource**. The implementation should write and read to and from the JSON file provided without storing any data in memory between invocations.

### Unit testing

You are also expected to write unit tests if and where you find them applicable. There is a .csproj in the same solution that should be used to create unit tests. You are not constrained to NUnit or NSubstitute, use whatever testing framework you like.

## Project structure

This project has no entry point and no executable, and you're not expected to work on the program flow. Focus on finishing up the abandoned work and completing the tasks instead of over-engineering it.

## General

- There is no “correct” solution, write your code as you see fit
- Focus on writing a solution that works, instead of one that is over-engineered
- Only NuGets allowed are for unit testing frameworks
- Use .NET 6 (Visual Studio 2022)
- Deliver your solution in a compressed folder (e-mail works fine)