Introduction

In TSRD we source time series market data from various external providers. The quality of this data, however, is not always superb, so one of the main responsibilities of our application is to refine the data received before certain useful market risk characteristics can be derived from it. This refinement process, in a nutshell, is an application of a set of pre-defined heuristics to the data in order to get rid of errorneous data points.

Your task

In this excercise, we would like to emulate the scenario described above, by asking you to develop a simple library that is going to read time series data from the specified input files and then applying a simple algorithm to them.

The data is a series of data points composed of:

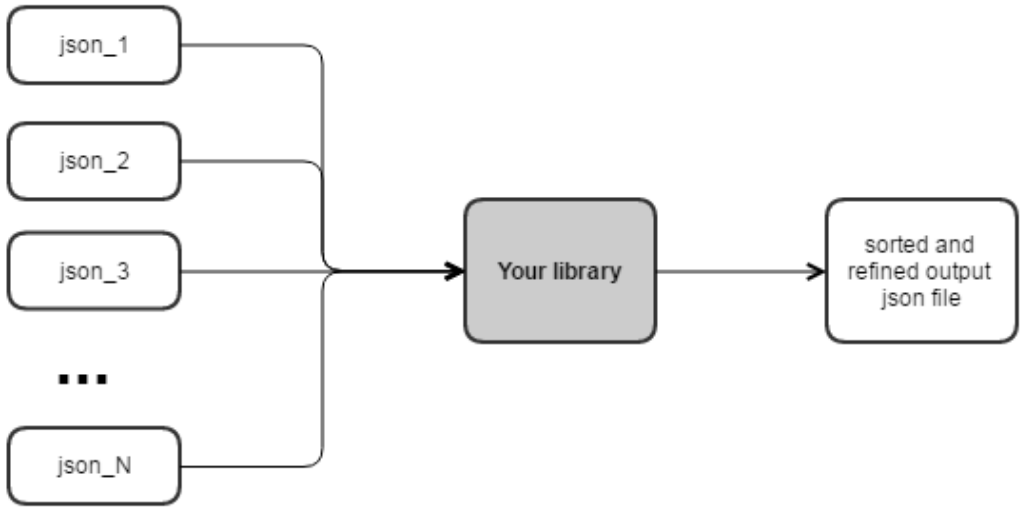
- *Instrument* (containing *InstrumentId* and *Name);*
- *DataPointId;*
- *DateTime;*
- *Value.*

and the algorithm to be applied ot the data sourced is the following:

- if a value is duplicated several times in a row in one week, set the value of its last occurrence to 0
- merge the data from all the input files and sort according to the *DateTime.*
- save the result as a JSON file.

Both input and output files should be formatted in JSON.

The below picture summarizes the idea:



Please bear in mind that:

- we will evaluate the design of your solution, in particular we will scrutinize how easy it is going to be to extend it to satisfy changing requirements; on the other hand - please avoid overengineering and don't try to show off by applying all the design patterns you've ever heard of; think what's reasonable and what's practical, elegant simplicity is what we value the most;
- We should be able to use your code as a library;
- We will test your solution with different sets of data, in particular some of the input files might be really huge, some other ones might not always contain only valid entries; please make sure to design your library to be robust enough to handle those kind of inputs too.

Technical requirements:

- You’re allowed to use Open Source libraries and frameworks of your choice, preferably these available on nuget.org, we must be able to build and run your program with simple nuget restore packages command.
- Use .NET 4.0 or newer.
- Use C# 5.0 or newer.
- We will be checking performance AND style, so don’t be afraid to use LINQ just because it’s „ a bit” slower, just watch out for complexity :)

ABOVE SPECIFICATION IS AND ALWAYS WILL BE USED FOR CANDIDATE SKILLS EVALUATION ONLY.