Laboratory Assignment #2

Super Store with Threads

You have developed the Super Store application in the previous laboratory assignment without using threads. Your task now is to write a Java application that will use the monthly sales data in the list of .csv files that are passed as parameters to the main method using one thread per file. The dataset is identical to the one we used previously, therefore you may download it through lab assignment #1.

You should follow these steps in your Java application: (1) For each file passed as a parameter, you will need a thread to parse the file and a data structure passed to the thread to save the results. (2) Each thread reads the file assigned to it, and uses the data structure to add or update the sales statistics. (3) Once all threads are complete, use data structures that are assigned to the threads to aggregate their results to another data structure, for yearly online & yearly in-store sales (TL). (4) Compare the results in this aggregated data structure to the results you have obtained from the Super Store application without the threads that you have implemented last week.

Consider the flow diagram given in Figure 1. Although the figure is for n number of files, assume that three files have been passed as arguments (n = 3). In the main method, four data structures are created: three of them for each of three files (indices 1 to 3), and one for aggregating the results (index 0). Data structures of indices 1 to 3 are passed as parameters to each thread along with the file names from the `args` parameter. Each thread works on the data structure and the file they are assigned to. Once they are all complete, the main method aggregates results to the remaining data structure with index 0.

Sample Run

```
C:\java ThreadedSuperStore 01-January.csv 02-February.csv 03-March.csv

Thread parsing 02-February.csv...
Thread parsing 03-March.csv...
Thread finished: 02-February.csv – In-store: ₺6570, Online: ₺15265
Thread parsing 01-January.csv...
Thread finished: 01-January.csv – In-store: ₺6805, Online: ₺13950
Thread finished: 03-March.csv – In-store: ₺7725, Online: ₺14725
Threads are complete. Aggregating results.

There are,
In-store: ₺21100
Online: ₺43940
Total: ₺65040 worth of sales for all products.
...
```

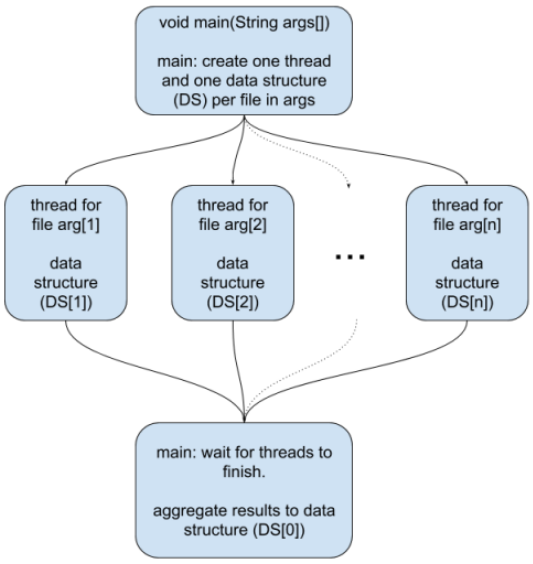

Figure 1: The flow diagram for both Super Store and Inverted Index.