

Attached are two files called DAY1.txt and DAY2.txt. Both files are delimited by a “|” or the pipe character.

The structure of the files is similar and contains the following information:

- ETF-ID, constituent ID, weight

The first column identifies the ETF

The second column identifies each constituent of the ETF

The third column identifies the weight of the constituent within the ETF

The weights should add up to 1.0 (or 100%) or very close thereof.

Write a program to provide the following pieces of information from the two files:

- For each DAY (DAY1 and DAY2), indicate how many distinct ETFs are present
- For each DAY, for each ETF provide a breakdown of how many constituents are present in each ETF
- Compare DAY1 to DAY2. For a given ETF, indicate which constituent has dropped from DAY1 to DAY2, and which constituent has been added from DAY1 to DAY2
- For each ETF, indicate which constituent's weight has changed the MOST from DAY1 to DAY2

You can use any programming language (Python preferred, Java or C#) you'd like to solve this. Please provide instructions how to run it so that we can try to replicate this on our servers (we usually will run this on either a windows machine or a Ubuntu 20 Linux server). If you don't have access to either of these two that's OK; just provide some instructions as a short README indicating how to run the program.