Wrocław, 07.01.2022

Structured and Object Oriented programming
Laboratory: Sorting, Collections
Assignment 12, the last one

The file ecdc_covid19_cases.csv contains data about the Covid19 pandemic.

The data is in the following format:
dateRep,year_week,cases_weekly,deaths_weekly,countriesAndTerritories,geoId,countryterritoryCode,popData2019,continentExp,notification_rate_per_100000_population_14-days

Example:
25/01/2021,2021-03,1763,27,Algeria,DZ,DZA,43053054,Africa,8.02
18/01/2021,2021-02,1689,29,Algeria,DZ,DZA,43053054,Africa,7.96
11/01/2021,2021-01,1736,35,Algeria,DZ,DZA,43053054,Africa,8.16

Task 1

Implement the class: WeeklyDataProper that extends the class WeeklyData.
Requirements:

- The default (natural) sorting order is: Country and then Week
- The class could be properly used in a HashSet collection. Two objects are considered equal if they have the same Country and Week attributes.

Task 2

Implement the class TreeData that has 2 integer attributes:

- deaths, and cases

and one String attribute:

- continent.

Task 3

Implement the class CovidDataStore. It stores data in the types of objects:

- ArrayList of WeeklyDataProper objects
- HashSet of WeeklyDataProper objects
- TreeMap that maps key (country, week) to a TreeData object.

The methods:

- readFromFile should populate all 3 collections with proper data from a file in the file ecdc_covid19_cases.csv format.
- int getCasesAL(String country, week) // use ArrayList object
- int getCasesHS(String country, week) // use HashSet object
- int getCasesTM(String country, week) // use TreeMap
- int getCasesAL(String country) // use ArrayList object, total of all weeks
- int getCasesHS(String country) // use HashSet object, total of all weeks
- int getCasesTM(String country) // use TreeMap, total of all weeks

Task 4

Implement a program that uses the CovidDataStore class in an interactive mode.
It should accept commands:

Read filename // read data from the specified file

Show country week // display the data from each collection in separate lines in the format:
Number of cases [execution time] (collection type)
To measure the execution time use the method:
    System.currentTimeMillis()

Show country // format as above, data for all weeks for the specified country

Show week // format as above, data for all countries for the specified week

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