Assignment - Import & Export Data

# Requirements

Your task is to create an import/export functionality.

Create database with the following tables:

* Substances. With following columns:
  + Id as integer
  + SPElemFlow as string,
  + SPUnit as string,
  + SPMainCompartment as string,
  + FlowId as guid,
  + ConversionFactor as decimal
* InvalidData. With following columns:
  + Id as integer
  + ErrorType as integer
  + ErrorDescription as string
  + Data as string

1. Create a console application using c# and .Net 6, that does the following:

1. Import the data from the attached file “Substances.csv” and store it to the table “Substances”.
2. While importing, find the anomalies in the data and either:
   * correct them and store them in table “Substances”, or
   * report them in the table “InvalidData”.
3. Export the content of the tables Substances and InvalidData, and save the data as XML files on disk, named “Substances.xml” and “InvalidData.xml” accordingly.
4. Have tests which confirm that the validation of data works as expected.
5. Call stored procedure defined below.

2. Create stored procedures that do the following

1. Query the table Substances, and as result show the number of occurrences for every different “SPElemFlow” where the “SPMainCompartment” is “Waterborne emissions”
2. Query the table Substances, and as result show all the elements where “SPMainCompartemnt” is “Raw materials”, and Conversion factor is between 0.4 and 0.6, and “SPElementFlow” is not “Iron”.
3. Queries the table InvalidData, and as result show the number of occurrences of each ErrorType.
4. Extract the geographical region name from substances beginning with “Water, “. For example:
   1. the geography in `Water, lake, CA-YK` is `CA-YK`
   2. the region in `Water, lake, IAI Area, Russia & RER w/o EU27 & EFTA` is ` IAI Area, Russia & RER w/o EU27 & EFTA`

3. Write a simple TODO text file with steps for running the solution locally.

## Notes

If you find an edge case that is not completely defined, or something needs further explanation, please write it down as your assumption, describe it in the delivery of your solution, and proceed.

# Delivery

Please send the result of the assessment to email Despotovski@pre-sustainability.com not later than Sunday 26th 23:55h.

In the email include a .zip file with a backup of the database, and link to a publicly accessible git repository from where the source code of your solution and the TODO file can be downloaded.

Good Luck!