Energy Informatics

https://proglang.informatik.uni-freiburg.de/teaching/energy-informatics/2018ws/

Exercise Sheet 8 – SQL

2018-12-11

Using the *postgres* database, for each of the following exercises, write the appropriate SQL query. Make sure to deliver only the requested information!

Exercise 1 (Dealing with date)
Using the *extract* function you can extract specific fields from a date value. Refer to the Online Documentation to learn more details about this function and usage examples: https://www.postgresql.org/docs/current/functions-datetime.html#FUNCTIONS-DATETIME-EXTRACT
Use this function to show the average and the sum of power consumption of each fuel type for each month of the recorded period in reading table[1]. The results should appear in an ascending order of the average consumption.

Exercise 2 (Views)
Create a view that contains the following information:
For each building, year, month, and fuel type, give the sum of power consumption. Deliver the following information: buildingid, year, month, fuelid, consumption_sum.

Exercise 3 (With SQL you can also create and manipulate your data!)
Create your own version of the table PeriodBuilding (call it PeriodBuilding_yourname), it should contain the same attributes of the existing table PeriodBuilding. Give the SQL code for creating this table considering the following points:

- The table should contain an auto-increment primary key

- It has three foreign keys: one refers to BuildingId, one refers to FuelId and the last one refers to PeriodId

Define the correct referential actions on those keys to assure that:

- Deleting a row from one of the parent tables will lead to deleting the corresponding row from the child table

- Updates on the parent tables should be rejected if there is a related foreign key value in the child table.

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[1]Hint: your result will contain 12 rows for each fuel type.