

Introduction to databases

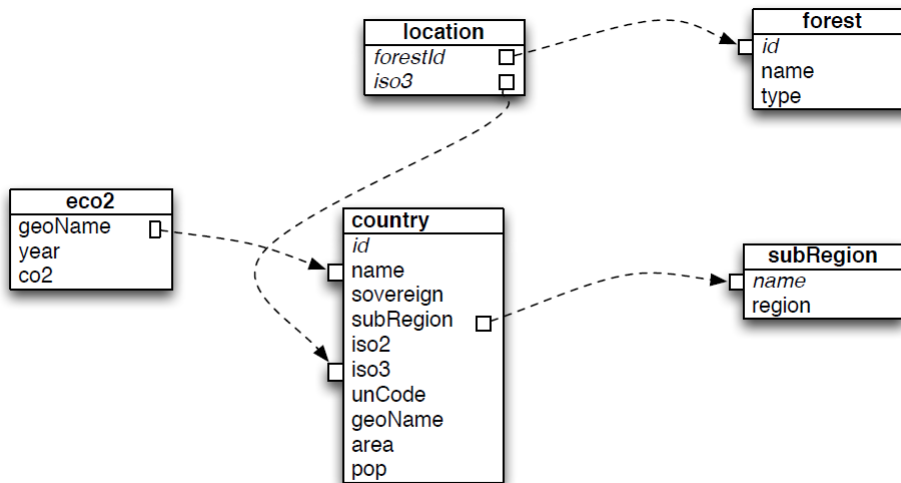
G.Falquet & S.Aljalbout

Connection to the database through the phpMyAdmin web interface :

- From a browser open the URI `http://kr.unige.ch/phpmyadmin` or `http://129.194.69.202/phpmyadmin/`
- Username : etu
- Password : x
- Once connected, select the Enviro database from the list on the left.
- Click the SQL tab to enter a SQL query or open a query window by clicking the "Query window" icon (in the middle above the list of bases).
- To execute the request click (GO) / (Execute).
- You can modify a query already executed by clicking [Edit] below right of the query

Questions

Write the SQL queries needed to complete the tasks below. The schema of the database is the following :



Selection operations

1. List information for countries with IDs less than 100

2. List countries that are not sovereign, i.e. those whose geographical name (geoName) is different from that of their sovereign.
3. List the CO₂ emission values of countries for the year 1990.
4. List information corresponding to 'Mangroves' type forests.
5. List countries whose geoName contains the word Republic.

Projection operations (and calculation)

1. List all regions.
2. What are the iso3 codes of countries with forests?
3. Display country names and population density.

Selection + projection operations

1. Which subregions make up the 'Asia + Pacific' region?
2. In which region does the 'Arctic' subregion belong?

Join operations

1. What are the names (name) and geoName of countries in the West Asia region?
2. Find Country Names that own Mangroves Forests.
3. Find all forest types of the country whose geoName is Australia.
4. Display for each country the number of tonnes of CO₂ emitted per capita for the year 2007.

Self joins

1. For each country calculate the difference between CO₂ emissions in 1989 and 2007.
2. Same question but we want the results in ascending order of difference.

Aggregation operations

1. Calculate the number of subregions in the 'Asia + Pacific' region.
2. Calculate the average value of CO₂ emissions in Brazil for the years listed in the database.
3. Find the average, minimum and maximum CO₂ emissions per capita in 2007.

Queries with grouping

1. List each year the cumulative CO₂ emission values of all countries.
2. List cumulative CO₂ emission values by country for the years 2000 to 2007.

Nested queries

1. List the countries (with year and CO₂ emission value) exceeding the average CO₂ emission value.
2. List the countries (with year and CO₂ emission value / inhabitant) exceeding the average CO₂ emission per capita.