SQL

1. Continuing from the last exercise, analogous to the table `pdb` also load the tables `pdb_pfamA_reg` and `pfamA` into your database (ignore all warnings).
   - List all PDB IDs and chain identifiers which are part of the pfam family 'G-alpha'. First, identify the relevant column in pfamA, then get the information about the pdb_ids and chains. Don't use a cross-product but explicitly write the JOIN the statement. Which types of JOINs can you use here?
   - Extend your query to also include the resolution for these entries.
   - Think about which parts of the statement is computationally cheap to execute and which aren’t.

2. Also execute the above commands from python3, for example by using `PyMySQL`.

3. Implement (i.e. write the respective SQL statements) the following entity-relationship diagram in SQL. There is more than one way to solve this. We are aware that this has not been covered yet: If you know how to do this or want to learn yourself you can work on it, otherwise we will discuss the solution in detail in the exercise session.
No-SQL

Name and explain in one sentence three different NoSQL data storage approaches.

Good luck,
L. Richter