Lab 2. SQL Queries

* assigned: week 3; due: week 6

On the relational structure created for the first lab, write SQL statements that:

* insert data – for at least 4 tables; at least one statement must violate referential integrity constraints;
* update data – for at least 3 tables;
* delete data – for at least 2 tables.

In the UPDATE / DELETE statements, use at least once: {AND, OR, NOT},  {<,<=,=,>,>=,<> }, IS [NOT] NULL, IN, BETWEEN, LIKE.

On the same database, write the following SQL queries:

a. 2 queries with the union operation; use UNION [ALL] and OR;

b. 2 queries with the intersection operation; use INTERSECT and IN;SQL E

c. 2 queries with the difference operation; use EXCEPT and NOT IN;

d. 4 queries with INNER JOIN, LEFT JOIN, RIGHT JOIN, and FULL JOIN (one query per operator); one query will join at least 3 tables, while another one will join at least two *many-to-many*relationships;

e. 2 queries with the IN operator and a subquery in the WHERE clause; in at least one case, the subquery must include a subquery in its own WHERE clause;

f. 2 queries with the EXISTS operator and a subquery in the WHERE clause;

g. 2 queries with a subquery in the FROM clause;

h. 4 queries with the GROUP BY clause, 3 of which also contain the HAVING clause; 2 of the latter will also have a subquery in the HAVING clause; use the aggregation operators: COUNT, SUM, AVG, MIN, MAX;

i. 4 queries using ANY and ALL to introduce a subquery in the WHERE clause (2 queries per operator); rewrite 2 of them with aggregation operators, and the other 2 with IN / [NOT] IN.

You must use:

* arithmetic expressions in the SELECT clause in at least 3 queries;
* conditions with AND, OR, NOT, and parentheses in the WHERE clause in at least 3 queries;
* DISTINCT in at least 3 queries, ORDER BY in at least 2 queries, and TOP in at least 2 queries.

**Obs.S**

You can use views in at most 3 queries.

You can change the relational structure created for the first lab.

**Your queries must be relevant to the problem domain.**