INSTRUCTIONS

Create a database **using SQL Developer** represents tables of courses, tutors, students, and their points and marks. One person can take up to 10 courses. All courses have week homework, quizzes, and final exams and should be finished before their deadline. From received points, the final mark will be evaluated. The later a client sends the homework, the less points he can obtain. With all finished on time homework parts, a student can omit the final exam with the good final mark. Draw an ER diagram and UML schema of this database. Write SQL code creating tables and insert some data into them (look at the exemplary university project).

If you have a smart idea, you can add, remove, transform, or change some tables (both entities and relationships).

MASSIVE OPEN ONLINE COURSE

HOW IS THE PROJECT DONE

The mains tables in this project are the **tutors**, **courses**, **students**, **homework**, **quizzes** and **final_exams** tables. To link **courses** and **students** tables, I created another table named **students_courses**. I used the same process to link **homework**, **quizzes** and **final_exams** table to the **students** table. So, I created **students_homework**, **students_quizzes** and **students_final_exams**.

Table content

The **tutors** table contains:

|PK: id_ *integer*
|name *varchar*(40)
|surname *varchar*(40)
|address *varchar*(40)

The **courses** table contains:

|PK: id_ *integer*
|title *varchar*(40)
|FK: tutors_id *integer*

The **students** table contains:

|PK: id_ *integer*
|name *varchar*(40)
|surname *varchar*(40)
|address *varchar*(40)

The **homework** table contains:

|PK: id_ *integer*
|title *varchar*(40)
|coefficient *float*
|publish_date *date*
|deadline *date*
|FK: courses_id *integer*

The **quizzes** table contains:

|PK: id_ *integer*
|title *varchar*(40)
|coefficient *float*
|publish_date *date*
|deadline *date*
|FK: courses_id *integer*

The **final_exams** table contains:

|PK: id_ *integer*
|title *varchar*(40)
|coefficient *float*
|publish_date *date*
|deadline *date*
|FK: courses_id *integer*

The **students_courses** table contains:

|FK: courses_id *integer*
|FK: students_id *integer*

The **students_homework** table contains:

|mark *float*
|drop_date *date*
|FK: homework_id *integer*
|FK: students_id *integer*

The **students_quizzes** table contains:

|mark *float*
|drop_date *date*
|FK: quizzes_id *integer*
|FK: students_id *integer*

The **students_final_exams** table contains:

|mark *float*
|drop_date *date*
|FK: final_exams_id *integer*
|FK: students_id *integer*

Index

I created four indexes. The first one is made to make sure that students do not have the same data twice in **students_course** which means that a student cannot applied twice for the same course. The three other indexes are related to **students_homework**, **students_quizzes** and **students_final_exams**. With theses indexes students cannot have more than one answer per test.

Trigger

I created four triggers. The first one is made to make sure that a student cannot register for more that ten classes. The three other one, are made to set the mark to zero if the test is drop to late.

DIAGRAM

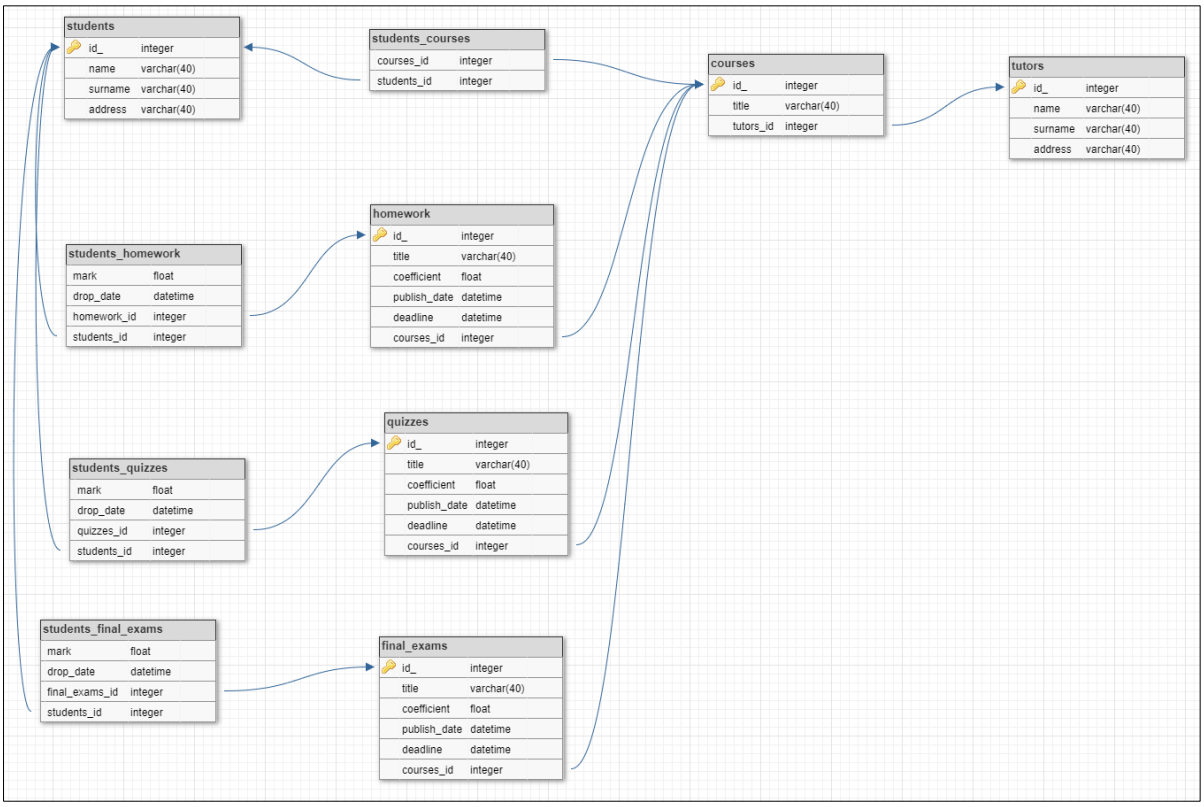

Figure 1: RD DIAGRAM

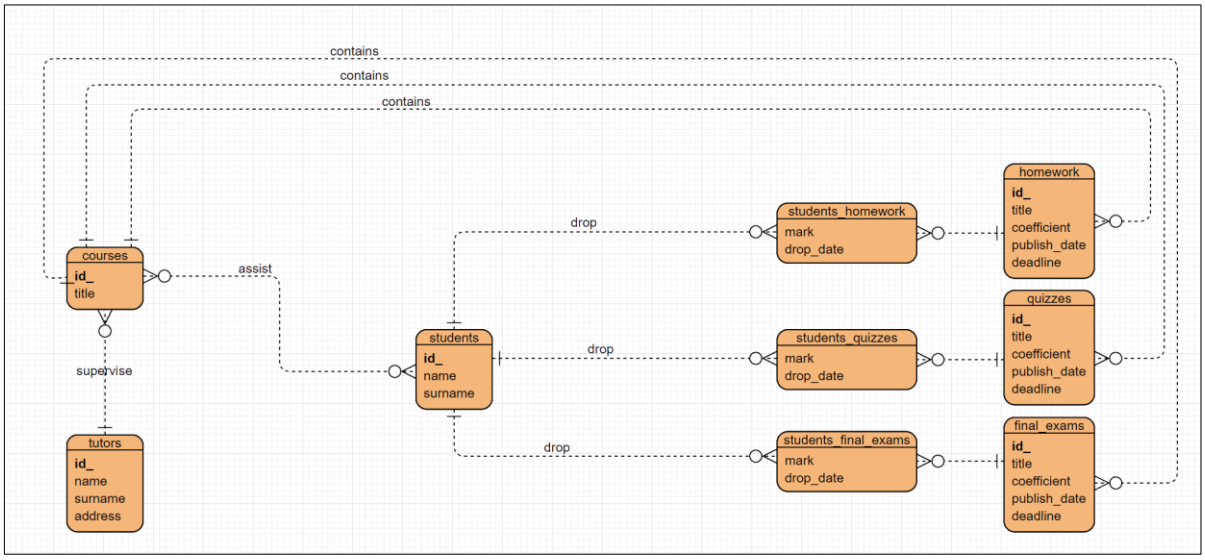

Figure 2:ERD DIAGRAM

Useful features

To change format when you are looking to the table: **Tools/Preferences/Database/NLS/Date_format: DD/MM/YYYY HH24:MI:SS**
Active output with (**DBMS_OUTPUT.PUT_LINE(' message ');**): **SET SERVEROUTPUT ON;**
Random data generator: https://www.mockaroo.com/
Remove duplicate lines: https://www.jerome-pasquelin.fr/tools/dedoublonner.php