Databases

CAL 3 2019-20

This CAL3 continues the work of CAL2 modifying, if necessary, the relational model of your database.

The report (a pdf file) will include the following sections:

1. **Normalization of every table in the database.** You will need to define functional dependencies to obtain 3NF or BCNF in every table. You do not need to redo the relational model in Pgmodeller.
2. **Creation of all the triggers required for the correct operation of the database.** You have to add screenshots to show the correct operation of every trigger.
3. **Creation of users and roles.** You have to create at least 4 roles:
    a. Administrator: is able to execute every operation on the database. There is no restriction for this role.
    b. Manager: is able to insert, update, delete and consult every table of the database.
    c. Cashier: is able to insert, update, delete and consult information related to tickets and products (purchased and returned).
    d. HHRR_Manager: is able to insert, update, delete and consult information related to the employees.

    At least one user will be associated to each role. You have to include screenshots of the creation of roles and users and the assignation of privileges. You will need to check if the users have permission to operate as it is expected (explain and add screenshots of your tests).
4. **Connection to the database from a Java program.** The Java program will include a simple graphical user interface (GUI) to execute the queries of the second assignment. You have to upload the Netbeans project together with the report. Users will be able to indicate their role and password in the main window of the GUI.

Note that you may have to modify your 2nd assignment if not every query was done successfully. If that is the case, include your new relational model describing changes and improvements.