DATABASES I / DATABASES

(2021-2022)

PROJECT: DONATEXL

SPECIFICATIONS AND GUIDELINES

PART II

Description

In this phase of the final project, the groups should promote the evolution of the database that results from the first phase of the project, implementing a set of rules that make sense in the DonateXL data model. For the starting point of the groups to be equivalent, a version of a possible representation of the data model is provided – conceptual and physical data models and the SQL script to generate the database.

Part I specification and guidelines, namely parts of the text that described rules that weren't implemented in the first phase of the project, should be considered as contextual information for Part II of the project.

The implementation of the integrity and business rules must be made using triggers complemented by other database objects (e.g., stored procedures, functions, integrity constraints) if necessary. The main objective is to produce a database enriched with a set of rules implemented to enforce integrity and business rules.

Rules[1]

1. It is not possible to have more than one (1) promotion for the same store with time overlap. (INSERT/UPDATE)
2. Whenever an article is sold (date of sale changes from null to a specific value) calculate the PriceOfSale – check if there is one countdown promotion active; If that's the case, calculate the price accordingly; If not, check if there is an ad-hoc/seasonal promotion active and, if it exists, affect the price according to the percentage. (UPDATE)
3. Premium stores can only have premium items. Regular stores can only have regular items. This means that whenever a new row is inserted (INSERT) in the ITEMS table, if it references a STORE, it must be a viable store (i.e., if the ITEM is PREMIUM the STORE must also be PREMIUM; if the ITEM is not PREMIUM the STORE must be REGULAR). This must also be implemented when the store referenced by an ITEM is changed (UPDATE).
4. In items, if Use is equal to "Resell" then Destination Store, Price, Premium, Subcategory and Category cannot be NULL. If Use is equal to "Reuse" then Social Project cannot be NULL. (INSERT/UPDATE)
5. It will be necessary to develop a rule such that the store where the item is placed to sell (Destination Store) must belong to the same NDC of the container (or store) where it was deposited. (INSERT/UPDATE)

[1] The operations to be supported and subject of testing are presented between brackets in the end of the rule text.

Deliverables

1. Script with SQL code to implement business/integrity rules (e.g., triggers, functions, stored procedures, integrity restrictions) – **one (1) single text file** with ".sql" extension.
2. A database backup including all the objects developed for this phase of the project (e.g., triggers, stored procedures, functions, integrity constraints)
3. A text file with the identification (name and number) of all the group elements.

Guidelines

- For the evaluation of the 2nd delivery, the code created to implement the integrity/business rules will be analyzed and their execution tested through examples created by the professor. If the triggers created by the groups prevent the test samples from functioning normally, the work will be penalized. The test results will have a significant weight in the final evaluation.
- The tests mentioned above will consider both individual record and **batch operations** in the database. By batch operations is meant operations (insert/update/delete) that include several rows in the same statement.
- The deliverables described above must be sent by email to jnneves@novaims.unl.pt, plapa@novaims.unl.pt, and imargarido@novaims.unl.pt in a single zipped file (.zip) following the template "DB_2022_2023_Delivery_2_AAAANNN" – AAAANNN is the student number of the group's delegate.
- Part II deadline is **December 18, 2022**. **Files delivered after the deadline will not be accepted.**