

Proyecto Final BAses de Datos

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1 Objective

The student will analyze a series of requirements and propose a solution that meets them, applying the concepts seen in the course.

2 Problem Description

2.1 Part 1

It consists in the design of a database. A stationery chain is looking to innovate the way it stores their information, and hires them to develop computer systems to meet the following requirements:

You want to have stored data such as the company name, address, name and telephone numbers of the suppliers, company name, name, address and at least one email of the customers. It is necessary to have an inventory of the products that are being sold, in which the barcode, price at which the product was purchased, date of purchase and number of copies in the warehouse (stock) must be kept. You want to save the brand, description and price of gifts, stationery, prints and refills, as long as you have the corresponding record in the inventory. The sale number, date of sale and the total amount to be paid for the sale must also be saved, as well as the quantity of each item and the total price to be paid per item. In addition, it is required that:

- Upon receiving the barcode of a product, return the utility.
- Each time an item is sold, the stock must be increased by the quantity sold of that item. If the value reaches zero, abort the transaction. If there are less than 3, issue a message.
- Given a date, or a start date and an end date, return the total amount that was sold on that date / period.
- Allow to obtain the name of those products of which there are less than 3 in stock.

- A view is automatically generated that contains the information necessary to resemble a purchase invoice.
- Create at least one index, of the type that is preferred and where it is preferred. Justify the reason for the choice in both aspects.
- Take into consideration the following considerations:
 - There may be different solutions to the problem.
 - The requirements listed above must be carried out through PostgreSQL , with the elements considered adequate to solve them.
 - The sales number must have a format similar to "VENT -001", prefix VENT, followed by a dash and a sequential number.
 - Where the address attribute is present, it is composed of state, zip code, neighborhood, street and number.
 - The design must satisfy all the design principles, the above requirements, and good information management.

2.2 Part 2

Once the database is designed and ready, a graphical interface must be created via a mobile or web app, which allows:

1. Add a customer's information
2. Enter A sale, of up to 3 items, which can be selected from a list of options, allow to enter the quantity, calculate the total cost of each item and the total cost of the entire sale. Enter the information in the database, respecting all integrity restrictions.

3 Deliverables

It is necessary to deliver what is requested below:

3.1 Document

- A FORMAL document made in Latex must be delivered, containing the following sections: Introduction: Brief description of the analysis of the problem, its objectives (s), its solution proposal (s).
- Work plan: The degree of detail that this section will give is at the discretion of each team, but at a minimum it must contain a general description of the activities to be carried out and their corresponding activity plan, as well as a brief detail of what each member of the team did. team.
- Design: Description of what has been done in the corresponding design phases of the databases, adding the results of each one of them.

- Implementation: Description of operation and code only of stored procedures, triggers, functions, etc. Employees to meet the requirements of the problem.
- Presentation: Description of what the selected mode does as a way of connecting to the database.
- Conclusions: Personal, detailing the difficulties, challenges, successes, etc. that were featured in the project.

3.2 Code

Through github, a folder per team should be created where the following is appended, assigning SUITABLE names for each document / file:

- The document of the previous point
- MER, MR source codes
- Database and table creation script
- Script for adding information
- Script of all programming at DB level
- Codes of what is implemented as part of the presentation stage The presentation to be used when presenting

3.3 Exposition

As part of the course evaluation, a presentation of the project should be given. The idea is to simulate the presentation of a software solution to a potential customer, which implies a description of the software, samples of functionality, solution of doubts, etc. Each team is free to decide how to make their presentation, the only detail is that it must be TOTALLY formal.

4 Take into consideration

The following will be taken into account, based on the grade percentage stipulated at the beginning of the semester:

- Teams that have copied somewhere in the project, their course grade will be NP.
- Team (s) that fail the project or the part of the presentation, must present a final exam regardless of what they obtained in the other areas of the course.

- The seriousness, formality, presentation and quality of the project, although they will not have a specific numerical value , may play for or against the qualification of the corresponding items.
- Any point not contemplated in this document will be determined by the teacher.

5 recommendations

It is not mandatory, but the following points are suggested :

Correctly delegate responsibilities

Use of collaborative tools

Use of client-server architectures or cloud services 4