



EPL342 –Databases

Lab 4

Project Phase 1

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<http://www.cs.ucy.ac.cy/courses/EPL342>



SuperAppDB Project

Project Goals

- Design and implement the SuperAppDB database
- Implement a GUI to administer the database and post queries

Project Phases

- Phase A: Database Design (25%)
- Phase B: Database Implementation (75%)



SuperAppDB

- The system manages the sales SuperAppDB a global supermarket chain of general trade. Objectives of the system are:
 - the storage/data management of supermarket sales to various customers
 - sales analysis for extracting useful statistics which will be used by the managers of supermarket.



SuperAppDB Data

- **Client:** ID, Name, Surname, Nationality (Country), Date. Birth, Sex, Age, Total purchases, etc.
- **Supplier:** ID, Name, etc.
- **Store:** Store name, address, Director, Number of employees, etc.
- **Employee:** Id, Name, Surname, Nationality (Country), Date. Birth, Sex, Age, Date of hire, Date of dismissal, etc.
- **Products:** Product Name, Category, Barcode Code, Brand, Country of origin, Size (used for sales volume), Category, Supplier, Secondary codes, etc.
- **Product categories:** Name, Supercategory that the category belongs to (if any), etc.
- **Promotional products:** Is any combination of products under an offer (e.g., ketchup + Mayo on bid price).
- **Client Invoice:** Customer invoices store information for the sales of products to customers. Each invoice is made on a date and time to a customer (if he is registered in the system) and contains at least one product. Finally, each invoice calculates the total amount of all products.
- **Supplier Invoice:** Supplier invoices store information for the sales of products from suppliers to the supermarket stores



SuperAppDB Reports

- Report with products with whose name resembles the name given by user
- Report with the invoices of a given month sorted by the total amount in descending order
- Report with the k-biggest consumers (in sales amount) for a particular time period
- Report with products by supplier brand sorted by the sales volume (volume = quantity x size) for a particular time period (from-until)
- Report with brands that have no sale for a particular time period (from-until)
- Report of products participating in all sales of a particular time period of time (from-until)
- List of store sales (in money) per year for all years. Note, if a shop does not make sales at some time, then it should appear with the value 0
- List of stores that have sales (in money) above the average sales amount for a specific time period
- List of clients that have the same name with employees
- List with the 10 suppliers that have the largest sales volume and the 5 with the smallest sales volume. Note: you will need to produce **ONE** result with both (**ONE** list).



SuperAppDB Specialized Reports

- Most important stores (http://en.wikipedia.org/wiki/Pareto_principle)
 - For a specific time period (year, month), produce a list with the stores that contributed the 80% of the total sales (in money) in that period
 - The rest of the stores should be aggregated and be displayed as “Others”
- Most important brands: Similar with the previous one but for brands instead of stores

Περίοδος: Μάιος/2013 - Σεπτ./2013		
Κατάστημα	Πωλήσεις	Συνεισφορά
Κατ-Α	30,000.00 €	30%
Κατ-Β	25,000.00 €	55%
Κατ-Γ	20,000.00 €	75%
Κατ-Δ	10,000.00 €	85%
Άλλα (Σύνολο)	15,000.00 €	15%



SuperAppDB Specialized Reports

- Store Progress Report:
Starting from the second month that a store has sales, calculate the sales volume difference (in percentage %) from the previous month
- Brand Progress Report:
Similar to the previous one
- List with the sales of every category
 - If a category contains subcategories, then the subcategory sales are included in the category sales
 - ***Recursive Query!!!***
- User operations Report: list of data entries and updates that a given user made in system grouped per table
 - Sorted by imports/updates (IE. first show data entries and then updates) and then by time

Περίοδος	Πωλήσεις	Διαφορά (%)
Φεβ'13	1,000.00 ltr	--
Μαρ'13	1,500.00 ltr	50%
Απρ'13	1,200.00 ltr	-20%
...



System Overview

