Car Dealership: Relational Database Solution

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CMIS 320

June 2nd, 2017

**Introduction**

Want to increase the efficiency and the organizational management of your car dealership businesses? Great! A Relational Database solution is just what’s needed to store all the company’s data, so that it can be easily accessed, deleted, and updated with ease. Imagine a centralized database where all the car dealerships employee records, inventory, sales figures, etc... will be stored in organized tables (relations) that are linked up together, and in a matter of a few simple steps someone can access or retrieve all this related information in one place. Thus, implementing a RDBMS is one of the most efficient ways for any type of company to grow, as it helps to make better business decisions by being able to efficiently evaluate all the company information and customer needs.

**Capturing Information**

Whether it be a small business or a large enterprise corporation, companies that use relational database systems do so to maintain their information storage. This alleviates the pain of companies having to use filing systems or manually store their data, as this can get very cumbersome and hard to maintain. In terms of this car dealership company, we will be able to capture our information in the form of employee records, vehicle inventory, and car sale record tables to more efficiently keep track of sales quotas and make changes to our vehicle inventory based on this information.

While databases store information in the backend, they incorporate a front-end user interface to allow the users to easily capture information and add and update it into the database. The user will be able to log into the company portal using a computer and input new employee and sales information, check inventory, and make any other necessary changes as needed.

Most companies who do not currently use a RDMS have difficulty in capturing information efficiently, because they run into issues of duplicate data being captured from different users, as there is no centralized system making sure this does not happen.

**Information Manipulation**

In a RDBMS, once the database is populated via an initial load of data, it utilizes a data manipulation language (DML) for retrieving and updating the data. One of the most commonly used language is Structured Query Language (SQL), where “SQL statements are used both for interactive queries for information from a relational database and for gathering data for reports” (What is relational database, n.d.). These data manipulation statements come in different formats depending on the type of language being used.

For example, if we were wanting to generate a report of the top sold vehicles and their colors across all the car dealerships, it could take a good amount of time to do this manually. It would take shifting through every single transaction from all the dealerships and figuring out what model and color the car was and keeping a running total. However, using a DML with the RDBMS, we can generate this information only with a SELECT statement of two tables, let’s say a sales table linked with an inventory table to return the list of vehicles.

This type of manipulation of data can be very useful for any type of business, as it can help to make crucial decisions such as how much inventory to keep on hand, what products to order the most of, and which ones to order less of, etc.…

**Information Management and Sharing**

The information in relational databases are stored in tables which are linked together based on their interaction relationships. Thus, your database will be customized to suit your unique company needs through the entities and attributes relevant to your company. In databases, the use of encapsulation, which “is a design issue that deals with how functionality is compartmentalized within a system, you can build anything anyway you want, and then you can later change the implementation and it will not affect other components within the system” (Ambler, n.d.).

By encapsulating access to a database, perhaps through something as simple as data access objects, we will be able to customize the accessibility of the company’s data and hide the sensitive details of our database schema from many of the employees and developers within the organization, while at the same time giving them access to the database for them to do their jobs.

Using a RDBMS also makes it possible to share same database resources and company information with multiple managers of the different car dealerships simultaneously. This is done by centralizing the relational database in one server and creating a connection to the various locations in need of the information. Once the database has been designed and the tables linked the information can be shared over the network.

**Value the database brings to the organization**

The presence of a good and effective RDBMS will surely help to enhance the operations and routine transactions for all the car dealership locations as no data will be inadvertently duplicated, thus preventing inaccurate and repetitive information from slowing down operations. All the data tables will be linked with one another and those that are related will share a connection using special keys.

For example, once a customer has purchased a car, there is no need to recapture their contact information, name, etc…again if they come in to purchase another car, since that information and customerID of the consumer will already have been created and a record stored in the system database.

Also, in case changes need to be made to an employee record, vehicle information, or other entities, it is only done once and all the related tables that are effected will simultaneously be updated as well. This increases efficiency and improves errors from occurring, as there won’t be a need to go through each individual table or rows and change the information.

Google Inc, one of the most successful companies on the planet uses relational databases to effectively manage and store their vast amount of data to run all their applications and services. Although they use many databases, the primary one they use is BigTable which was built in-house by them. It is a [compressed](https://en.wikipedia.org/wiki/Data_compression), high performance, and [proprietary](https://en.wikipedia.org/wiki/Proprietary_software) data storage system built on Google technologies, which is designed to scale to a very large size. Many projects at Google store their data in Bigtable, including web indexing, Google Earth, and Google Finance. These applications place very different demands on Bigtable, both in terms of data size (from URLs to web pages to satellite imagery) and latency requirements (from backend bulk processing to real-time data serving). Despite these varied demands, Bigtable has successfully provided a flexible, high-performance solution for all of these Google products.

Samsung Electronics, a South Korean based company is another successful company that has used relational database systems to increase their efficiency. Back in 2001, Samsung used a marketing and communications company to develop a customer relationship database to consolidate and analyze their customer records. They wanted the ability to analyze all aspects of the business at a glance, and identify its best customers and then build better relationships with them. These tasks were very difficult with their prior system of numerous, unconnected and incompatible databases (Clark, 2001). The new database they developed helped them to eliminate duplicate data, track sales, marketing and customer data, and create comprehensive reports based on user criteria. It also helped them consolidate all their customer information from call centers, product registration, customer service, sales leads and special promotions into a single information pool.

**Conclusion**

Overall, using a RDBMS is the best data management tool we can incorporate right now, as it will significantly improve the company’s ability to analyze and store company information. It will allow us the ability access interconnected and related company data and generate queries using this information to make better business decisions. For businesses that involve having to manage transactions daily, I believe it would be highly beneficially to implement a relational database system because of the reasons outlined above.

**References**

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