AUTOMOBILE INVENTORY AND SELECTION SYSTEM

A GRADUATE PROJECT REPORT

TEXAS A & M UNIVERSITY - CORPUS CHRISTI

BY

SALEH BAJUNAID

DECEMBER 11 1997

GRADUATE COMMITTEE

Dr. David Leasure
CHAIRMAN

Dr. Roy S. Ellzey
MEMBER

Dr. Mario Guimaraes
MEMBER
TABLE OF CONTENTS

Abstract 2

Background & Rationale 3

Narrative 4

Environment 7

Procedure 8

System Overview 9

Conclusion 19

Appendix A  DataBase E-R Diagram & Table Properties
Appendix B  DataBase Forms View
Appendix C  Report Samples
Appendix D  Tables and Table Properties
Appendix E  Structured Chart Notation and Coding
ABSTRACT

The purpose of this report is to describe the implementation of an automated automobile inventory and selection system to manage auto sales for South Texas Auto Trade. The system is based on a relational database and supports on-line updating. The system provides information about auto sales, customer profiles, customer orders and auto inventory. The system also provides necessary information that can be used by the sales person in negotiating a sale.
BACKGROUND AND RATIONALE

The South Texas Auto Trade is a used-automobile dealership that started business in 1991. The company sells a variety of vehicles (primarily passenger cars). Sales are done on cash or a cash basis or financed. Trade-ins are accepted. Types of trade-ins include: cars, boats, or motorcycles. South Texas Auto Trade imports and transports vehicles with other dealerships and buys and sells vehicles at car auctions. The profit margin from used-car sales is small, so rapid turnover is important.

Mohammed Faraji is the sole owner of South Texas Auto Trade, he manages both the operational and tactical level of the business. Mr. Faraji plans to expand his business operations by providing good marketing services to his customers by either selling or procuring cars for them. He believes that having information about customers, keeping track of sales, and maintaining accurate inventory will help him in making better decisions and future plans. I have known Mr. Faraji for three years and he asked me if I could develop a computer system that would handle his business operations in sales and inventory. I welcomed the idea to work on a project that is a feasible application to business management and marketing objectives.

South Texas Auto Trade does not currently use any computing services in its business. (All the work is done manually in filing and obtaining information on customers and vehicle inventory.) In reviewing the operations used in the sales and inventory areas currently, I determined that a database oriented information system would provide the necessary and timely information needed to improve the company's marketing and customer service. A system has been constructed that gives direct access to information required on customers, vehicle orders, vehicles sold and vehicle inventory. This project has helped me to understand the business design in a real-life application.
NARRATIVE

This computer-based information system has been designed to provide benefits to South Texas Auto Trade by improving revenues and for lowering costs. Usually, improvement is considered to be increased revenues or decreased costs, but this is not always the case. Keeping revenues from decreasing or keeping costs from increasing may very well be the benefit provided by a computer-based information system. The overall design is composed of an on-line database. The purpose of the database is to store information about certain type of objects related to selling and buying cars. The objects or entities possess certain properties which are called attributes; these attributes include information needed in a database and are used to uniquely identify individual objects. The association between entities form a relationship that structures a database management system which can do the job of manipulating databases for use. The following objects and their attributes form a database model for South Texas Auto Trade. The purpose of each object will be explained and its attributes will be defined.

1. CUSTOMER INFORMATION
2. SALES
3. CUSTOMER PAYMENTS
4. PAYMENTS HISTORY
5. CUSTOMER ORDERS
6. PURCHASED CAR
7. AUTO INVENTORY
8. REPORTS

CUSTOMER INFORMATION: This category includes information about a customer willing to buy a car. The information is used to confirm or reject the sale of a car on credit. There are two query functions for information retrieval for this category: 1.) to create a list of customers, and 2.) to identify a potential customer. A custom form is designed to update customer data with control command buttons that have different functions.

SALES: Selecting this option causes another form to appear consisting of attributes related to the following type of sales:

1. CASH SALES
2. CREDIT SALES
Both type of sales are represented in a single form with a combo box field defining the credit and cash sales. The user is given an option to select the type of sales.

**CASH SALES** and **CREDIT SALES** consists of all essential information about the buyer, information related to the car, and cash transactions other than the base sale price of the car such as trade-in and fees related to the car purchase. Credit Sale terms and net amounts of payments also include any additional fees. The user can input the invoice number or the customer name to retrieve detailed information on each sale. The user can add the required information on a new sale.

**CUSTOMER PAYMENTS** and **PAYMENTS HISTORY**: The payment table includes fields that store each payment paid on cars purchased by credit and all payments by credit customers. The fields are shown by default on the Payment History datasheet form. The Payment History form is a read-only form; users can only view payments in the form.

**CUSTOMER ORDER**: This table contains information about the customers order and preference. The order form is used for data entry. The user can access the customer order form through the Customer Information form by clicking on a command button in order to process the option about a certain order. This is done when a customer requires a certain type of car not available at the dealership.

**PURCHASED CAR**: In this table, the user is able to view and enter the cars that were bought for the dealership. The user is also able to view the name of vendors where the cars were bought, and the price of each car. This table works with the sales table to create an income report for car sales.

**AUTO INVENTORY**: In this category a user is able to view, input, and update the inventory table, and print the inventory report. The user can also display
information for a certain inventory.

**SYSTEM MANAGEMENT:** This category maintains a help menu with the procedures and description of tables for the whole system. It also includes a utility function.

**REPORTS:** There are three types of reports: Detailed Reports, Historical Reports and Summary Reports. These reports reflect the sales of cars by quarterly Sales, yearly sales Of cars, cars sold by category, yearly income on car sales showing loss or profit on selling a car, purchased car report and an inventory report. It can also print customers’ labels.
ENVIRONMENT

This is a relational database system that is operated on an IBM compatible computer with a Pentium 75Mhz processor. The relational database software used to implement this information system is Microsoft Access 7.0 for Windows 95. The selection of this database management program was chosen based on the power and ease of use and its close integration with Microsoft products such as Microsoft Excel and Microsoft Word. It has an advanced database engine and rich support for queries.
PROCEDURE

The following steps were performed to complete this project:

1. Developed an understanding of the overall strategy of the firm and the current problem.

2. Reviewed the business objectives, tactics to support the objectives and current procedures used.

3. Interviewed the user to determine user needs.

4. Studied the cost and benefits for automation.

5. Researched DBMS software packages and hardware to be used.

6. Suggested a design utilizing a relational database system to meet the needs of the end-user.

Once the system is completed the following steps will be taken:

1. Install the system and provide the user with training.

2. Use the system with live data.

3. Examine the system objectives.

The following pages provide functional descriptions of all systems management modules.
The system structure chart above represents the options of the system's main menu. Each option of the main menu represents a different function on the system's menu.

The main menu is used to provide the first level of user interface and can call eight other modules. The menu driven system indicates the actions the user can take, when the user makes an appropriate selection from the options on the menu. The user indicates his or her choice of by entering the number associated with the option or highlighting the selection and then pressing the return key or the mouse button. From the main menu the user can select one of