Car Showroom System

Graduation Project Submitted to the Department of Computer Science/ College of Science for Women/ Babylon University as Part of Obtaining a Bachelor's Degree in Computer Science

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بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

ٱقْرَأْ بِٱسْمِ رَبِّكَ ٱلَّذِى خَلَقَ ۝ خَلَقَ ٱلْإِنسَٰنَ مِنْ عَلَقٍ ۝ ٱقْرَأْ وَرَبُّكَ ٱلْأَكْرَمُ ۝ ٱلَّذِى عَلَّمَ بِٱلْقَلَمِ ۝ عَلَّمَ ٱلْإِنسَٰنَ مَا لَمْ يَعْلَمْ ۝ كَلَّا إِنَّ ٱلْإِنسَٰنَ لَيَطْغَىٰ ۝ أَن رَّءَاهُ ٱسْتَغْنَىٰ ۝ إِنَّ إِلَىٰ رَبِّكَ ٱلرُّجْعَىٰ ۝

صَدَقَ اللهُ الْعَلِيُّ الْعَظِيمُ

Dedication

I thank God Almighty first and foremost for the great grace that He has bestowed upon me, then I thank those who favored them. My beloved parents do not cease to me for all their efforts from the moment of my birth to these blessed moments. For everyone who advised me, guided me, contributed, or directed me with me in preparing this research and connecting me to the required references and sources at any of the stages it went through, and I especially thank the distinguished professor: "Hadeel Qasem Gheni", for helping me Supporting me and guiding me with advice, education, correction, and all that he did with me. I am also pleased to thank the esteemed college administration: "University of Babylon/College of Science for Women/Department of Computer Science

Chapter One

General Introduction

Introduction to Databases

Databases and database technology have a major impact on the growing use of computers. It is fair to say that databases play a critical role in almost all areas where computers are used, including business, electronic commerce, engineering, medicine, genetics, law, education, and library science.

A database is a collection of related data. By data, we mean known facts that can be recorded and that have implicit meaning. For example, consider the names, telephone numbers, and addresses of the people you know.

A database has the following implicit properties:

• It represents some aspect of the real world, sometimes called the mini world or the universe of discourse (UoD). Changes to the mini world are reflected in the database.

• It is a logically coherent collection of data, to which some meaning can be attached.

• It is designed, built, and populated with data for a specific purpose. It has an intended group of users and some preconceived applications in which these users are interested.

To summarize: a database has some source (i.e., the mini world) from which data are derived, some degree of interaction with events in the represented mini world, and an audience that is interested in using it.

Size/Complexity: A database can be of any size and complexity. For example, the list of names and addresses referred to earlier may consist of only a few hundred records, each with a simple structure. An example of a large commercial database is Amazon.com. It contains data for over 20 million books, CDs, videos, DVDs, games, electronics, apparel, and other items.

Computerized vs. manual: A database may be generated and maintained manually or it may be computerized. For example, a simple database like a telephone directory may be created and maintained manually. The huge and complex database may be created and maintained either by a group of application programs written specifically for that task or by a database management system.

Database Management System

A database management system (DBMS) is a collection of programs enabling users to create and maintain a database. More specifically, the DBMS is a general-purpose software system that facilitates the processes of defining, constructing, manipulating, and sharing databases among various users and applications.

• Defining a database involves specifying the data types, structures, and constraints of the data to be stored in the database. The database definition or descriptive information is stored by the DBMS in the form of a database catalog or dictionary; it is called meta-data.

• Constructing the database is the process of storing the data on some storage medium that is controlled by the DBMS.

• Manipulating a database includes functions such as querying the database to retrieve specific data, updating the database to reflect changes in the mini world, and generating reports from the data.

• Sharing a database allows multiple users and programs to access the database simultaneously.

Other important functions provided by the DBMS include protecting the database and maintaining it over a long period of time. Protection includes system protection against hardware or software malfunction (or crashes) and security protection against unauthorized or malicious access.

A typical large database may have a life cycle of many years, so the DBMS must be able to maintain the database system by allowing the system to evolve as requirements change over time. A database together with the DBMS software is referred to as a database system.

The Research Structure

The first chapter dealt with a general introduction to databases, while the second chapter dealt with an introduction to the database and the types and benefits of databases. The third chapter deals with the practical side and presents the system tables as well as the system interfaces and their work. . The fourth chapter deals with conclusions and the future works.

Chapter Two

Database Concept

Introduction

Databases are one of the most important reasons for the development and progress of information systems. It receives the world's data in databases, and the databases feed other systems and reports for different purposes. The different programs that feed the databases and the different goals of their existence necessitate that they take many forms and models.

Everything comes together without hard-to-reach organization, and databases are no exception. So I found methodologies for organizing and arranging databases to facilitate and speed up searches and access to stored data.

Types of Database
1-Manual Database

Those scattered data on the shelves and papers that fill libraries and stores represent manual databases. Because of this scattering, important and logical classifications came to classify the data according to their relationship to each other or according to their mathematical or logical structure. Based on what I mentioned to you, the files stored on the shelves, electronically scheduled sales invoices, and addresses of people in a document file are examples of manual data.

2-Relational Database

This type of database is one of the most used types by humans in order to coordinate information, as it relies on linking tables and information in an easier way in order to quickly access the required information. It is one of the methods that the human mind frequently uses in attempts to remember old events. A simple relationship may make you remember big events.
This type of information database has good features, such as data being entered only once, so there is no need for repetition. Small tables can also be easily created and modified. Small, clear, well-defined relationships are easier to modify, and tables can be added to the database at any time.

3-Non-Relational Database

In this system, a large table is created that contains all the data. As if all your information is on a single piece of paper. The strangeness of this method is well known to you, and you may have imagined several disadvantages to it. In this type of database, data is repeated frequently. If you enter a product 10 times, the

supplier's phone number, for example, will be written 10 times as well!! It is not hidden from you that when amending, the number will be amended as well 10 times as well!!

4-Hierarchy Database

This rule is based on the principle of hierarchy at work. As it creates a sequence from the origin, or the root, as this system begins to branch out in the form of sections, and the principle of its work is based on accessing the data in a sequential and branched way, and it is either from the bottom up or from the top down.

5-Network Database

This type of database appeared at a time when hierarchical databases were popular. The hierarchical form depends on the fact that the father is single and has several children, but it was found that some data are associated in a way that several children have several fathers, and vice versa. Maybe it doesn't make sense to have multiple parents in reality, but in databases, it happens.

The fourth and fifth types are restricted to large needs because they usually require large memories. But despite this, it has many advantages, as it is more efficient than relational databases, and deals with a very large amount of information, in addition to saving based on the method of organizing files followed by large areas of media for storing data Storage Database.

Databases Benefits

One of the benefits of databases is the easy and facilitation of searching and saving a lot of data and information, but there is a certain defect in it, and no calculator user can deal with it in terms of its design. As for using it as a ready-made program, any computer user can deal with it. The benefits of databases can be summarized as follows:

1. Reduce the amount of time you spend managing the data.
2. It gives you the opportunity to analyses the data in different ways.
3. Promote a systemic approach to data management.
4. Transferring hidden or lost information to valuable information and a powerful resource.
5. Improving the quality and coordination of information.
6. Easy access to data with low cost.

Chapter Three

Practical Side

Introduction

This chapter illustrates the practical side which is explained using some figures and steps.

Building the Tables

The management system that was built involved managing the buying and selling of cars in a showroom. Two tables were built to store the information, one for buying cars while the second for selling. The two tables contain all the information about sellers and buyers.

Sellers Table

The table of sellers includes complete personal information about them. The information includes:

- Buyer Name
- Sex
- Birthday
- Phone Number
- Address
- Vendor Name
- Date of Sale
- Type of Car
- Brand
- Model
- Car Color
- Vin No.
- Plate No.
- Gear Type

Buyers Table

The table of buyers shows their full personal information of them. It includes the same information for sellers.

Car Showroom System

The Car Showroom System is built using Visual Studio language, which includes the project's interface.

The first interface contains the entry to the as shown below:
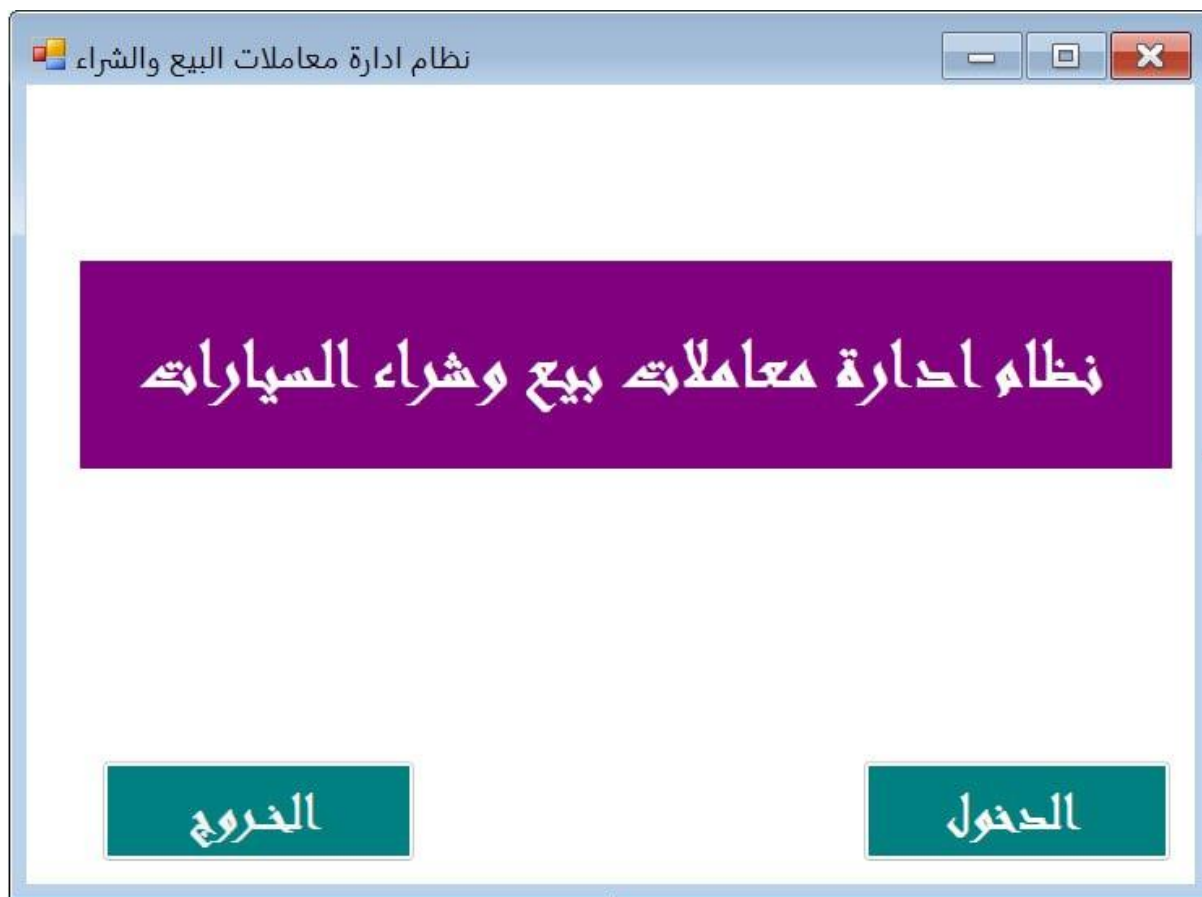
Fig. 1: Car Showroom Management System Interface

When pressing the button "الدخول", we will transmit to the second window, which has two systems, one for the buying management system, and the other for the selling management system as shown in Figure 2, while when press on the button "الخروج", will exit from the whole system.
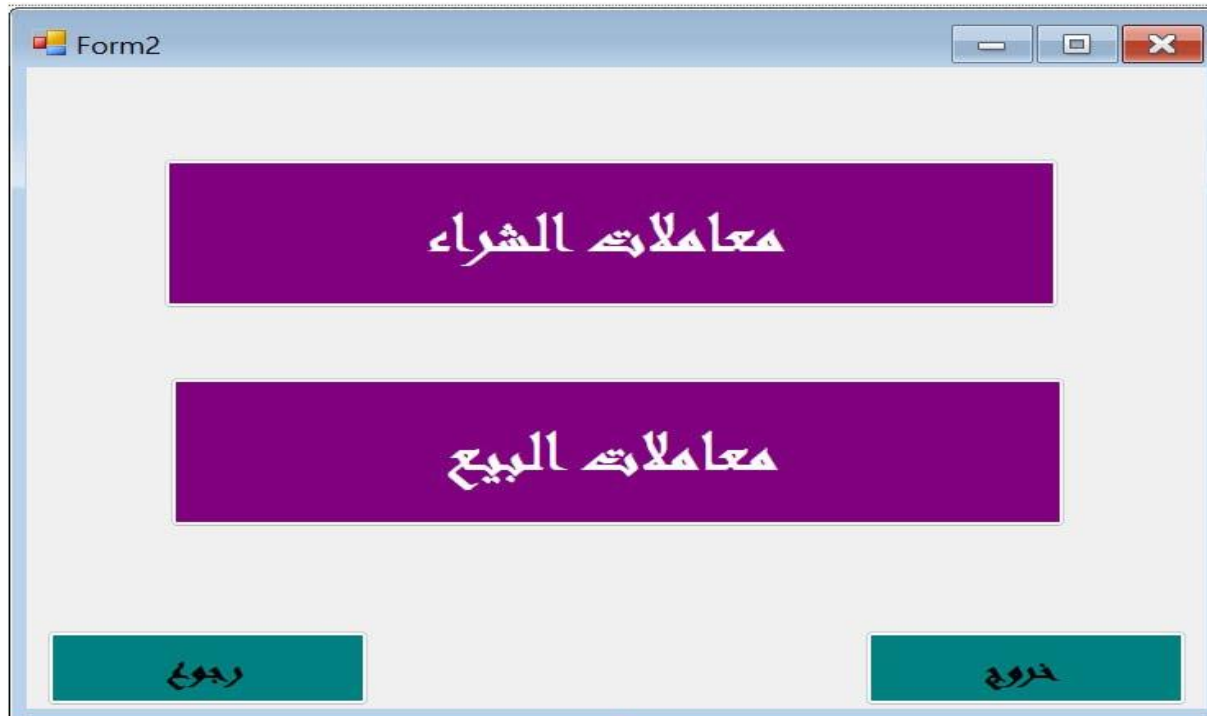
Fig. 2: Selling and Buying Management System Interface

When pressing the first button "معاملات الشراء", we will move to the next window containing the sales information of cars as is shown in Figure 3. While when pressing the second button "معاملات البيع", we will move to another window containing the buying information for cars as is shown in Figure 4.

Fig. 3: Sales Information Interface

This interface allows the admin to enter the selling information, and edit it using the buttons on the right-hand side.

When we have new selling information, we should fill in all the fields with the right information and click on "Add New", then the information will appear on the table on the lower side of the interface.

If we need to delete a specified field from the table, we should press the button "Delete", then the information of the specified field will disappear.

The "Save" button saves the information in two ways. The first is saving the information to an Excel sheet by opening a window of saving and you can determine the place of saving. The second is saving the information to an Access database, especially to the table of Selling.

The "Print" button will print the present information shown in the table.

The "Reset" button will reset the information in the fields.

The "Back" button will go back to the previous interface.

Finally, the "Exit" button will exit from the whole system.

Fig. 4: Buying Information Interface

The information in the window above is the same as the information in the sales information interface, but it saves the information in the buying table.

The Programming Code of the Car Showroom System

Add New

DataGridView1.Rows.Add(TextBox1.Text, ComboBox1.Text, TextBox4.Text, TextBox3.Text, TextBox6.Text, TextBox5.Text, TextBox14.Text, TextBox8.Text, TextBox7.Text, TextBox10.Text, TextBox9.Text, TextBox12.Text, TextBox11.Text, TextBox13.Text)

Save Information

```
Private Sub btnSave_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnSave.Click

    SaveToExcel()

  End Sub

Private Sub SaveToExcel()

   Dim excel As Microsoft.Office.Interop.Excel._Application = New Microsoft.Office.Interop.Excel.Application()

   Dim workbook As Microsoft.Office.Interop.Excel._Workbook = excel.Workbooks.Add(Type.Missing)

   Dim worksheet As Microsoft.Office.Interop.Excel._Worksheet = Nothing

   Try

      worksheet = workbook.ActiveSheet

      worksheet.Name = "Exported From DataGrid"

      Dim cellRowIndex As Integer = 1

      Dim cellColumnIndex As Integer = 1

      For j As Integer = 0 To DataGridView1.Columns.Count - 1

         worksheet.Cells(cellRowIndex, cellColumnIndex) = DataGridView1.Columns(j).HeaderText

         cellColumnIndex += 1

      Next

      cellColumnIndex = 1

      cellRowIndex += 1

      For i As Integer = 0 To DataGridView1.Rows.Count - 2

         For j As Integer = 0 To DataGridView1.Columns.Count - 1
```

```vbnet
            worksheet.Cells(cellRowIndex, cellColumnIndex) = DataGridView1.Rows(i).Cells(j).Value.ToString()

            cellColumnIndex += 1

        Next

        cellColumnIndex = 1

        cellRowIndex += 1

    Next

    Dim saveDialog As New SaveFileDialog()

    saveDialog.Filter = "Excel files(*.xlsx)|*.xlsx|All files(*.*)|*.*"

    saveDialog.FilterIndex = 2

    If saveDialog.ShowDialog() = System.Windows.Forms.DialogResult.OK Then

        workbook.SaveAs(saveDialog.FileName)

        MessageBox.Show("Export Successful")

    End If

Catch ex As Exception

    MessageBox.Show(ex.Message)

Finally

    excel.Quit()

    workbook = Nothing

    excel = Nothing

End Try

End Sub
```

Delete Information

```vbnet
For Each row As DataGridViewRow In DataGridView1.SelectedRows
        DataGridView1.Rows.Remove(row)
    Next
```

Print

```vbnet
Private bitmap As Bitmap

  Private Sub iPrint()

    Dim hi As Integer = DataGridView1.Height
```

```vbnet
    DataGridView1.Height = DataGridView1.RowCount * DataGridView1.RowTemplate.Height

    bitmap = New Bitmap(Me.DataGridView1.Width, Me.DataGridView1.Height)

    DataGridView1.DrawToBitmap(bitmap, New Rectangle(0, 0, Me.DataGridView1.Width,
Me.DataGridView1.Height))

    PrintPreviewDialog1.Document = PrintDocument1

    PrintPreviewDialog1.PrintPreviewControl.Zoom = 1

    PrintPreviewDialog1.ShowDialog()

    DataGridView1.Height = hi

End Sub

Private Sub btnPrint_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnPrint.Click

    iPrint()

End Sub

Private Sub PrintDocument1_PrintPage(ByVal sender As System.Object, ByVal e As
System.Drawing.Printing.PrintPageEventArgs) Handles PrintDocument1.PrintPage

    e.Graphics.DrawImage(bitmap, 0, 0)

End Sub
```

Reset

```vbnet
    Dim txt

    For Each txt In Me.Controls

        If TypeOf txt Is TextBox Then

            txt.text = ""

        End If

    Next txt

    ComboBox1.Text = ""
```

Exit

```vbnet
Private Sub btnExit_Click(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles btnExit.Click

    MeExit()

End Sub
```

```vbnet
Private Sub MeExit()

    Dim iExit As DialogResult

    iExit = MessageBox.Show("Confirm if you want to exit", "Datagridview system", MessageBoxButtons.YesNo,
MessageBoxIcon.Information)

    If iExit = DialogResult.Yes Then

        Application.Exit()

    End If

End Sub
```

Chapter Four

Experimental Results

Experimental Result

- The proposed system (Car Showroom System) provides excellent reports on the system and flexibility in adding other reports if that system is requested.
- Flexibility of the proposed system and the ability to easily perform operations on the database.