SOFTWARE APPLICATION FOR DATABASE MANAGEMENT IN A TRANSPORT COMPANY

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Abstract: *The program was designed with the idea to cover the needs of a company, to reduce the workload in terms of managing documents. In the transport field working with large amounts of data that require processing in order to obtain the necessary reports to the appropriate entire operating system for this application.*

1. INTRODUCTION

The system is molded to the need not to lose important information from the shipments and contains buttons explicit in relation to work [4]. Due to continuously updated information through databases, annual monthly reports may have a broader picture of the activities. Employees are given the option to work organized and structured through a database containing information necessary for proper work methods [3]. As a result, we can emphasize good organization and a minimum of operation. The main aspect of the solution for managing transport truck is treating each division as a profit center and transport orders to vehicles and drivers.

I used data processing algorithms taking account of local rules of order and operation of the companies concerned, in this way obtaining improved information and generating reports easy to interpret. This software is performed using basic knowledge of databases enabling access to persons not specialized in the field.

Being an application that adapts to user's needs and solving their application consists of 4 modules:

1. Administrator
2. Accounting Department
3. Commercial Department
4. Personal

Administrator

The administrator is the most important level of this application.

Login password is unique and is the only user of this level. He will have a main page where all events close will appear: cargo, transport, following routes and amounts to be collected. He has access to legislation, so will be able to keep a real-time and avoid possible fines. Also will be able to hold own database view statistics for all accounts. The administrator is the key to the whole system of the company. He works closely with the Commercial Department and will receive a monthly report from all departments. The administrator has all the necessary information about the entire company, customers and employee.

Accounting department

This department represents an intermediate level, but always branch that will oversee everything related to the economic side. In this part will find the salary scale for employees, expenses incurred during the month resect current year / previous (fuel payment, vignettes, ITP, oil change and so on). Transport records will be closely supervised by the department; they are always aware laden goods from the warehouse and takings.

However, overall activity of this department will be outlined by statistics which will be analyzed yearly increases or decreases the financial part.

Commercial Department

Another important aspect is the commercial side. With the support of previous branches, this department will constantly consider an analysis of the whole activity: the ratio of transactions, deposits with merchandise suppliers sourcing and quality control services deployment.

Personal

This part of the app provides transparency regarding staff salaries, having their own timekeeping system that is realized during the month.

An advantage of the company's drivers is that they have access to the most important pieces of legislation to avoid customs irregularities and customs access is more easily achieved. Also, in case of defense problems throughout their transport are given the opportunity to add a "journal" of travel.

It is worth mentioning that each branch has a login name (for example Administrator with User-Admin) and password authentication. The main objective is achieving an application easy to use which is a method to manage the database of the entire company under a well-defined structure.

So we can say that the main motivation in making the application is given by the desire to moderate the commotion caused by the quantity of the documents required level's operation. Employees are given the option to work organized and structured through a database containing information necessary for a proper work methods and as a result, as previously mentioned can emphasize good organization and a minimum workload.

Through computer systems, many activities take that people can be alleviated and even improved. So, with this in mind and taking into account the individual's need for organization and structure was chosen the theme.

The idea of operating within a transport company was random; the application is required to be used in several areas. Among the top issues is the legislative studied because in a first transport companies fear is related to fines or customs controls. The study was begun seeking information about laws, the organization hierarchy in particular firm and was made a detailed documentation on active transport companies.

Under the legislation, we remember that fines are classified according to the following criteria:

* Very serious punished with a fine of 14,000 lei to 18,000 lei;

* Serious punished with a fine of 8,000 lei to 12,000 lei;

* Minor sanctioned with a fine of 3,000 lei to 6,000 lei.

2. APPLICATION DESIGN AND IMPLEMENTATION

Software engineering has emerged as a discipline that provides the framework for building software. Engineering programs considered as an object program and aims to define complex techniques of "manufacturing" justified by theory or practice. This discipline aims to combine art rigor of programming with engineering sciences in order to deliver programs in a timely and economic manner. Is the discipline that deals with all aspects of software production from initial specification to maintenance of its having been provided to the customer for use.

For this application was used Microsoft Visual Studio. Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop software for Microsoft Windows and web sites, web applications and web services. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, and Windows Presentation Foundation. Visual Studio supports different programming languages, code editor and debugger allows for almost any programming language. Programming languages Visual Studio included as standard are: C, C ++, Visual Basic, C #. [1] C # is an object-oriented programming language developed by Microsoft in the late 90s and was designed as a competitor to Java. At least is a derivative of the C # programming language C ++. [2]
Having this programming presentation the next steps are to exemplify the implementation.

According to the specifications, this application is designed on four modules:
- administrator module;

- accounting module;
- sales department module;
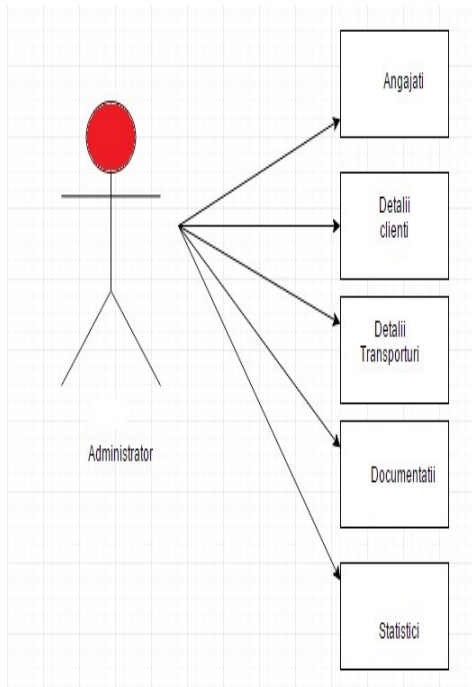- personnel module.

Fig. 1 Diagram of the Administrator user cases

The administrator is the one who can see through their entire database activity within the company. Such as, it is always informed of what is happening, what are the results expeditions and can get an idea of annual statistics database is connected with the other users. It has password for all users and can check in any time current situation (Fig. 1)
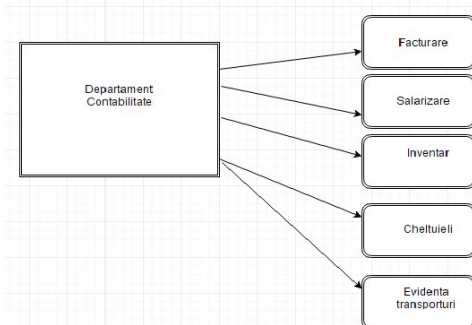

Fig. 2 Diagram Use of Accounting Department user cases

Accounting department is the most key of financial activities of the company. Any input and output are all centralized through a database with records of all receipts and expenses

incurred. This department oversees any economic activity and record all shipments made (Figure 2).
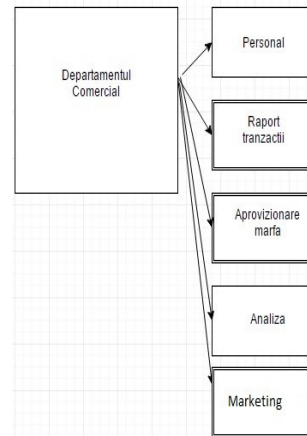

Fig. 3 Diagram Use of Commercial Department user cases

The commercial department has to connect the plant to the material and sales (presented in Fig. 3).
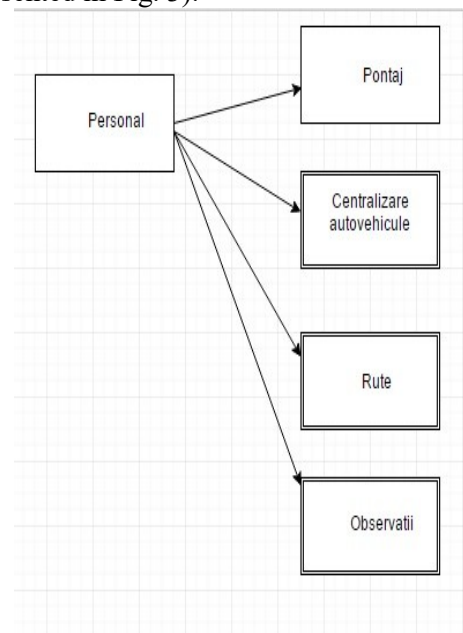

Fig. 4 Diagram Use of Human Resources Department user cases

This department has an operational role and there is the part that is in charge with dealing expeditions. They subsequently obliged to record observations during routes made so both

administrator and commercial department can have a record of problems encountered (Fig. 4). Below we'll present a system block diagram (Fig. 5).
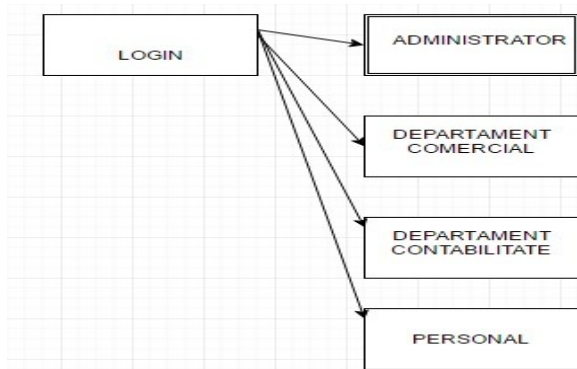

Fig. 5 Block diagram of the system

It will be created a software application using C # programming language and database management system MySQL for the activities of a transport company.

Logging is performed for each module, each with a different interface.So,administrator's login user name is "Administrator" and password is unique, being the only one who has. Login password is "admin". Same logging process for all modules.

```
if (textBox1.Text == "administrator" &&
textBox2.Text == "admin")
        {
            this.Hide();
            Pagina_Principala administrator
= new Pagina_Principala();
            administrator.Show();
        }
```


Fig. 6 Login Application

The connection between SQL and C # interface was performed using the library "using System.Data.SqlClient".

In order to connect the C # database from SQL Server was used Class SQL Connection, class of which has been instantiated object and that object is assigned to a string which is called string connection and must contain information about database's name, data security and database server name.

To open a connection to the database using SQL Connection Open method. Inside this method will call SQL functions (queries) to manage the database. Close function is used in SQL Connection to be closed database.

```
namespace Carmen
{
    public partial class Login : Form
    {
        public Login()
        {
            InitializeComponent();
        }
        private void button1_Click(object sender,
EventArgs e)
        {
            if (textBox1.Text == "" && textBox2.Text
== "")
            MessageBox.Show("Please check your
username and password");
            else {
            SqlConnection con = new
SqlConnection("Data Source=DESKTOP-
ABSAQMS\\SQLEXPRESS;Initial
Catalog=gestiunefirma;Integrated
Security=True");
            SqlDataAdapter da = new
SqlDataAdapter("Select Count(*) From
logintable where username= '" + textBox1.Text
+ "' and password= '" + textBox2.Text + "'",
con);
            DataTable dt = new DataTable();
            da.Fill(dt);
            if (dt.Rows[0][0].ToString() == "1")
```

Instructions for updating the databases used are:

• INSERT that adds new lines into a table.
• DELETE that remove lines from a table.

• UPDATE which amends the existing data in the database.
• SELECT statement that selects information from the main table desired.

As previously noted logging methods are similar but different interface for each user. The following figures will be illustrated each user interfaces.

In the Fig. 7, 8, 9 and 10 are shown the managing interfaces Administrator, Accounting and Human Resources Department Interfaces.
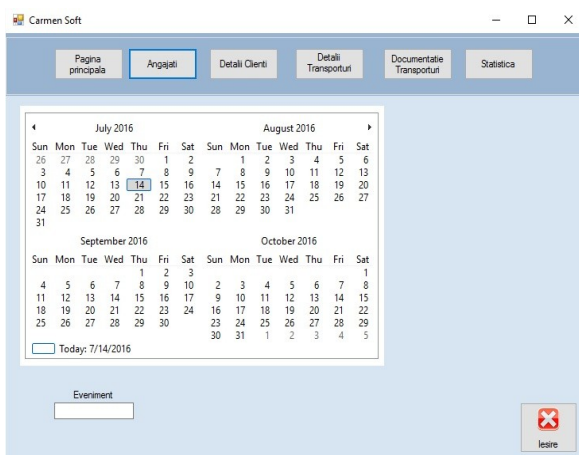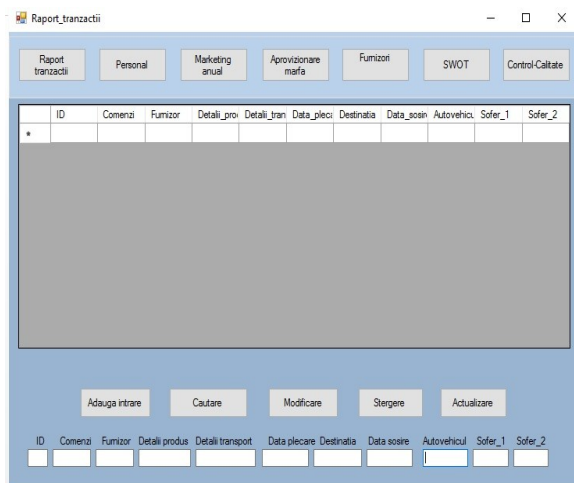

Fig.7 Administrator's Interface
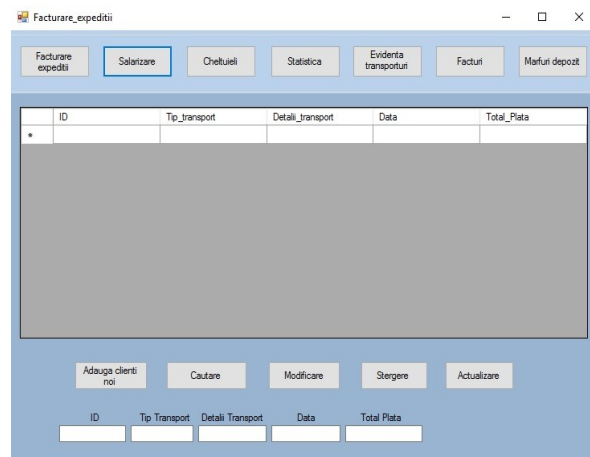

Fig.8 Commercial Department Interface

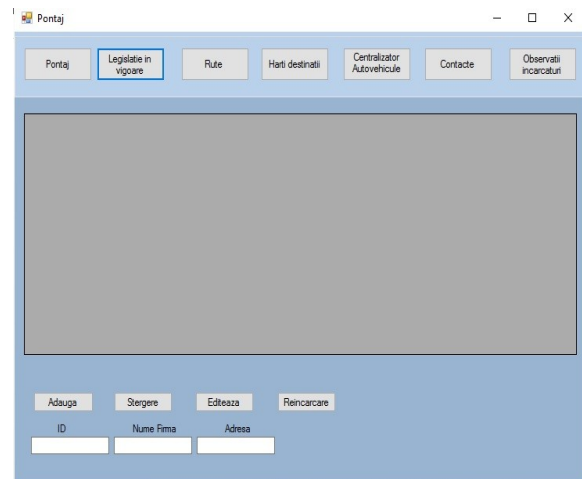*Fig.9 Accounting Department Interface*

Fig 10. Personal's Interface

3. CONCLUSIONS

Most of the companies today seek to find various offers shipping links, so all the specialized companies are trying to present the best offers and the most appropriate quality of service.

Therefore, in order to ensure the best possible quality, they need a fair and orderly management of all the information with which they work.

Currently on the market are such existing Software Applications for Transport Companies. Those applications require constant improvement and certain services are offered monthly fee.

The price varies depending on the package you want. For example, 24TRANSOFT studied

before to create this application for 19, 95 Euro / month promises unlimited access to all modules support online.

It has as purpose racing better monitored, documents clear and well organized, accurate and easy billing. As those mentioned above to view the interface by providing the information related to the company such as C.U, recording in the Trade Register and contact with all the information it sends a demonstration program.

In recent years the Romanian market is evolving in terms of both the companies and their customers. With the advent of numerous companies and offers to attract customers began developing this profile and transport and software in the field.

Applications provided by these companies increased comfort and steps by which a client can facilitate relations with suppliers and can maintain a stable and organized database. If was based on the principle of databases, over time developed software engineering ideas to improve and have added increasingly more functionality from applications.

Even if the applications are commercially with the same procedure, the difference desired is the friendly interface, that each department knows exact perimeter work and conduct, even for lay people in software engineering.

4. REFERENCES

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[4] Presented at Student Scientific Communications Session 14 May 2016, own source