Upgrading the Computerized System for Teacher/Student Database in Department of Electronic Engineering

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Abstract

This work aims to illustrate how the computerized system is useful in economic and educational fields and it can be mainly applied in the educational field practically and effectively. Nowadays, in the economic field, for example super markets, new items are recorded by using the computerized system. Online shopping is also popular and the process of recording items, sealing, cashing are done with the aimed of computerized system. And also in the educational field, teachers, subjects and students profiles can be stored in the computer by the head of the departments and also student daily attendance can be recorded. At the end of the month, students' monthly roll call percentage can be calculated. So, upgrading the computerized system for teacher/student database is developed in this work. Based on the monthly percentage, the overall percentage can be calculated for each student. Overall and monthly roll call percentage can be stored exactly. Attendance can be checked and profiles would be displayed by the computerized system. The monthly roll call percentage can be printed out as a report form. Recorded data can also be updated by the authorized person in a short time and easily. The benefit of using upgrade computerized system is saving time to make calculation and reducing careless manual mistakes. For programming language, C# language is applied for this proposed system. To store data, database file is already built. The results of Graphical User Interface (GUI) would be satisfied by the performance and reliability of this system. This system can be used in any types of computers without opening the source code because the proposed system is created as application software.

Keywords: Computerized System, Database, Attendance Evaluation, GUI, Application Software.

1 Introduction

Nowadays computerized system is very useful in economic and electronic fields and it can be applied practically and effectively. In order to build a computerized system, programming language, database file and a connection language to join database file and coding are essential choice of the system. There are many programming languages such as C, C++, Java, C# and so on. Each language has its own properties and methods. For this system, the C# programming language is applied, it can make calculation and displaying data, and Microsoft Office Access 2003 is used as a database file (data container) for storing data. It can store data as user desire but it is not possible to make calculation [1-6].

Therefore, Microsoft. JET. OLEDB.4.0 is necessary as a connection tool between programming language and database. It can query the required data as user desire. This system is only a window

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form so that it can be improved as a web base application. To develop the system, Active Sever Page (ASP), popular language should be used. The main reason for choosing C# as a programming language is that ASP can be written by C# easily and for a database, Microsoft Office Access 2003, SQL (Structure Query Language), Excel or Oracle can be used as user required. A system can be created as a user demand but it is very important to choose language for program to be compatible with any type of electronic devices. To be a smoothly program is very important for user. C# programming language is suddenly popular together with Java programming tool. C# is the product of Microsoft Company. Visual studio can be run every language that every products of Microsoft. C# is an objected oriented programming language (OOP) and then it can also be said that component oriented programming language. So everything must be defined inside a class. OOP is a non-procedural language and has the feature of inheritance, and polymorphism. It can be used in Graphical User Interface (GUI), communication and multimedia. C# compile straight from source code to executable code, with no object file. Although C# classes are similar to Java classes, there are some important differences relating to constants, base classes, constructor and static constructor.

Figure 1: Program and DBMS Sever Connection

A database system is not essential more than a computerized record keeping system. The database itself can be regarded as a kind of electronic filing cabinet, that is, as a repository for a collection of computerized data file-adding new (empty) file to the database, inserting row data into the existing files, updating data into the existing file and removing existing files(empty or otherwise) permanently from the data.

In most of the government schools, associated data and student attendance are recorded on the paper. Roll call percentage is also calculated by manually. Not only time consumption is very large but also it can have careless mistakes for recording and calculating. To avoid this problem, computerized system is first introduced. By applying this system, associated profiles, daily attendance and overall percentage can be recorded correctly and effectively. For the above reasons, upgrading the computerized system for teachers and students database is proposed for my work. This system explores approaches to implementing a temporal DBMS as a stratum on top of an existing non-temporal DBMS, rendering implementation more feasible by reusing much of the functionality of the underlying conventional DBMS [6-12].

The goal of this work is to apply the computerized system in the educational filed. In this work, there are two main sections: profile and roll call. In profile section, it is collected at the start of the academic year and displayed it as needed. In the roll call section, roll call attendance is recorded day by day for each subjects and it is calculated at the end of the month automatically. This roll call percentage (monthly and overall) can be displayed at any time, base on the roll call percentage, to sit for examination chance is determined, and can print out it as a report form.

2 Activex Data Objects (ADO)

ADO is a Microsoft's object-oriented interface to databases and other similar sources of data. ADO is intended to replace the Data Access Object (DAO) and Remote Data Object (RDO). ADO can independently-create objects that command and recordset can be created without connection. ADO used connection objects to represent an individual connection to data source. A connection can be an actual network connection to database server or a connection to a local database file such as those used by Microsoft Access.

The ADO library is a small, lightweight library that contains core objects and offers the basics for making connections, issuing commands, and retrieving recordsets, and it also enables recordset navigation. It can be used to perform basic maintenance tasks, such as modifying, adding, and deleting records.

OLE DB providers help make ADO powerful. They offer a new way to access remote data that embraces and extends ODBC, and they provide access to both relational databases and untraditional data sources with a consistent ADO interface. Access 2000 ships with a variety of OLE DB providers, including ones for Jet, SQL Server, Oracle and general ODBC data sources.

A. Exploring ADO

ActiveX Data Objects (ADO) is another API for developing applications that can access OLE DB data providers. ADO is supported in several different programming languages, including Visual Basic, Visual C++, VB Script, Visual J#, and in Active Server Pages. While using the OLE DB directly provides a very low-level approach to accessing OLE DB providers, ADO provides a higher-level, easier-to understand mechanism. ADO is specifically designed for client/server application development, and because ADO can be used from the VBScript, it is also well-suited for server-side Web/database integration.

B. ADO Objects

ADO interface is based on a collection of objects. ADO objects are not as dependent on the object hierarchy. ADO is comprised of the following objects: , Connection, Error, Field, Parameter and Recordset.

All of the ADO objects except for the Error and Field objects can be created independently. In most cases, it can be simply created and used only the objects it is needed to work with the following object classes make up the bulk of the ADO interface:

C. Using ODBC and OLE DB

The Open Database Connectivity (ODBC) interface is an industry standard and a component of Microsoft Windows Open Services Architecture (WOSA). The ODBC interface enables application to access data from a variety of database management system (DBMSs). The ODBC interface permits maximum interoperability - an application can access data in diverse DBMSs through a single interface. Furthermore, that application is

independent of any DBMS from which it accesses data. Users of the application can add software components called drivers, which create an interface between an application and a specific DBMS.

Table 1: Names and Description of ADO Classes

Class	Description
Connection	Used to represent a connection to a data source, as well as to handle some commands and transactions.
Command	Used to work with commands sent to the data source.7
Recordset	Used to work with a tabular set of data, including fetching and modifying data.
Field	Used to represent information about a column in a recordset, including the values for the column, as well as information.
Parameter	Used to pass data to and from commands that are sent to the data source.
Error	Used to retrieve more specific information about errors that may occur

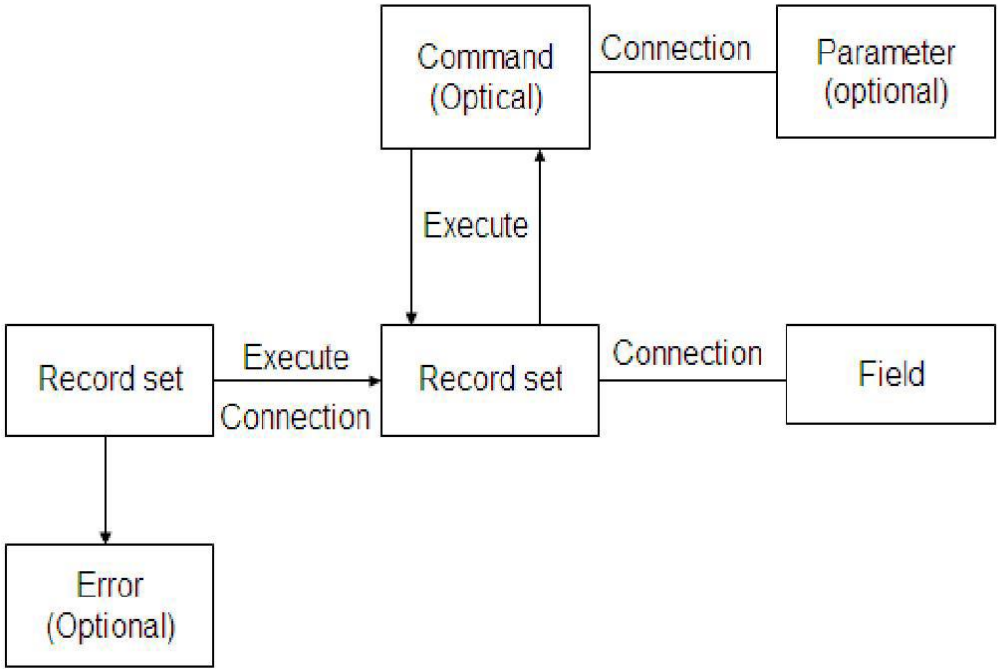

Figure 2: ADO Object Hierarchy

While the primary focus of ODBC is to provide a consistent interface to database data sources. OLE DB is designed with an even broader goal in mind: to provide a methodology to access data regardless of the data source. OLE DB becomes the data access bridge for

documents, e-mail systems, file systems, spreadsheets, Component Object Model (COM) components, and other database sources that utilize ODBC drivers.

3 System Design

In the proposed upgrade computerized system, there are three main sections. They are listed as followed: Data collection section, Data saving section and Data displaying section. Login section is a gate of the system and it can also be said that it is security of the system. This is the limitation of user number because this system can be applied after enter the user name, password and login password.

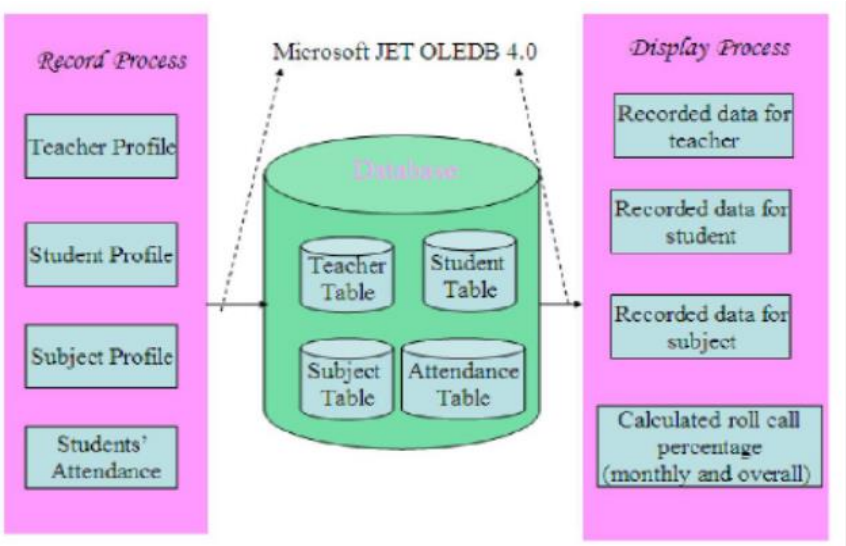

Figure 3: Overall Block Diagram of the System

A. Flowchart of the System

The system can be seen clearly by showing the flow chart of each program. The flow chart of the user login form and change password form are illustrated as follow. If user inputs the user name or password or confirm password wrongly more than three times, the login program will exit from the system.

The flow charts of recording the profile, updating the profile, deleting the profile, displaying the profile, recording daily attendance, displaying of roll call percentage and printing of the monthly roll call percentage for report are illustrated as followed. Fig. 5 illustrates the flow chart for the multi choice program of the system. In the system, there are six main sections, profile recording, profile deleting, profile updating, profile searching, roll call recording and table cleaning. Each function will be done depends on the user choice. This is only a describing of which function can be done. The associated implementation of each function will be done when it is selected. System flow can be seen clearly by showing the flow chart.

B. Profile Recording

Flow chart of Fig.6 illustrate for the profiles recording. There are three profiles: teacher, student and subject. So which profile will be recorded must be selected by the user. After choosing the profile to record, associated data is needed to fill to record in a database table.

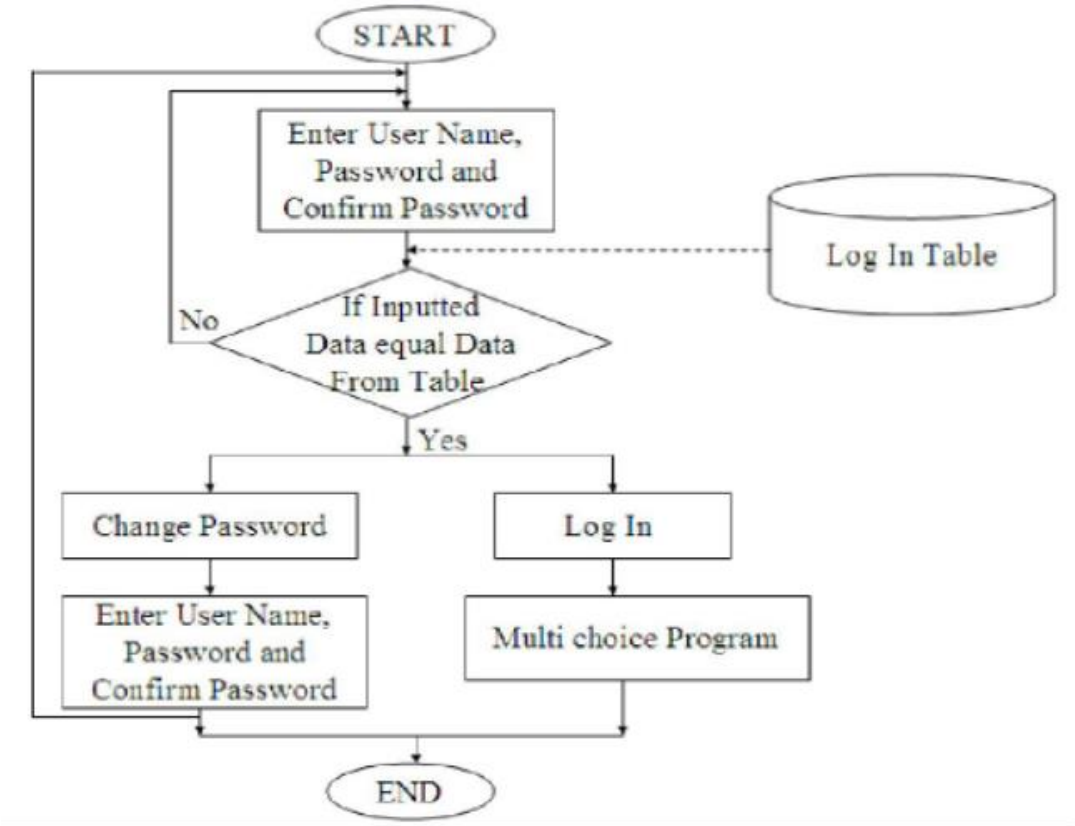

Figure 4: User Login Form of the System

The connection statements for inserting data are

```
public String connection= "provider= Microsoft. JET.OLEDB. 4.0; Data
Source=D:\\Student.mdb";
OleDbConnection connect=new OleDbConnection(connection);
connect.Open( );
String command="INSERT INTO Teacher Profile VALUES ("ME-EcE-10", "Ma
Ma", "Phone No",……..)";
OleDbCommand command=new OleDbCommand();
command.Connection=connect;
command.Command Type= Command Type.Text;
command.Execute Non Query ();
connect.Close( );
```

C. Profile Search

For a user, it is needed to review the profiles recorded from the previous. The searching step of the program is described by using the flow chart of Fig.7. Firstly, user needs to choice the profile that the user wants to search. And then, data needed to search from the selected profile is inputted by the user. The next step is to compare the inputted data and data from the table. If they are the same, the searched data will be displayed. If not, it will message to the user that the input data is not included in the table and then it will go to the input data stage.

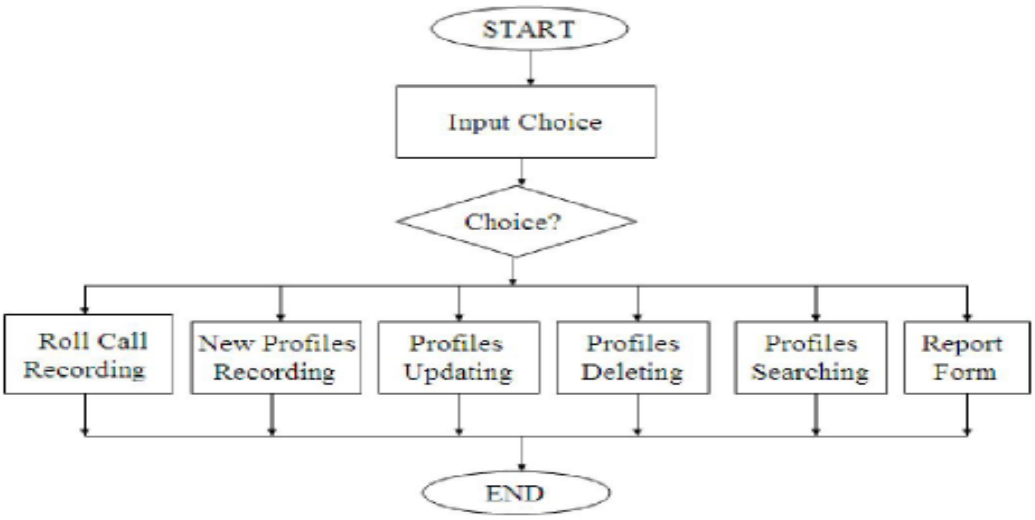

Figure 5: Flowchart of the Multi Choice Program

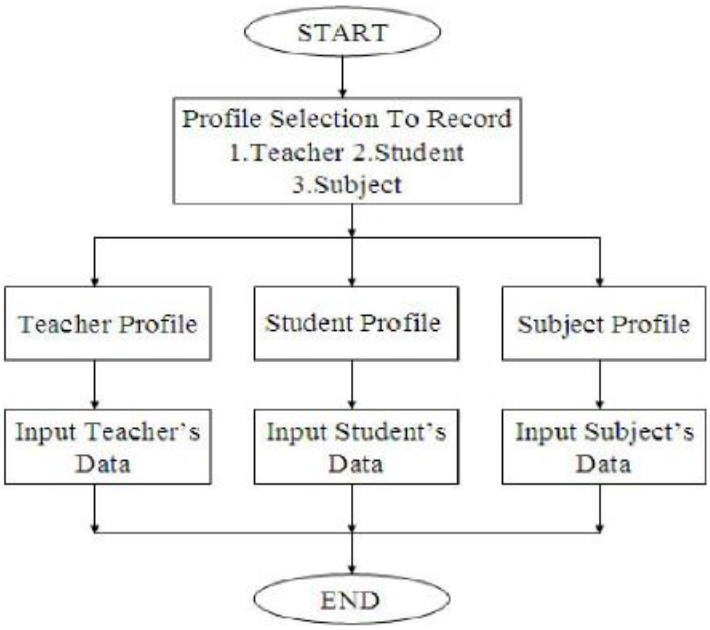

Figure 6: Flowchart of the Profile Recording

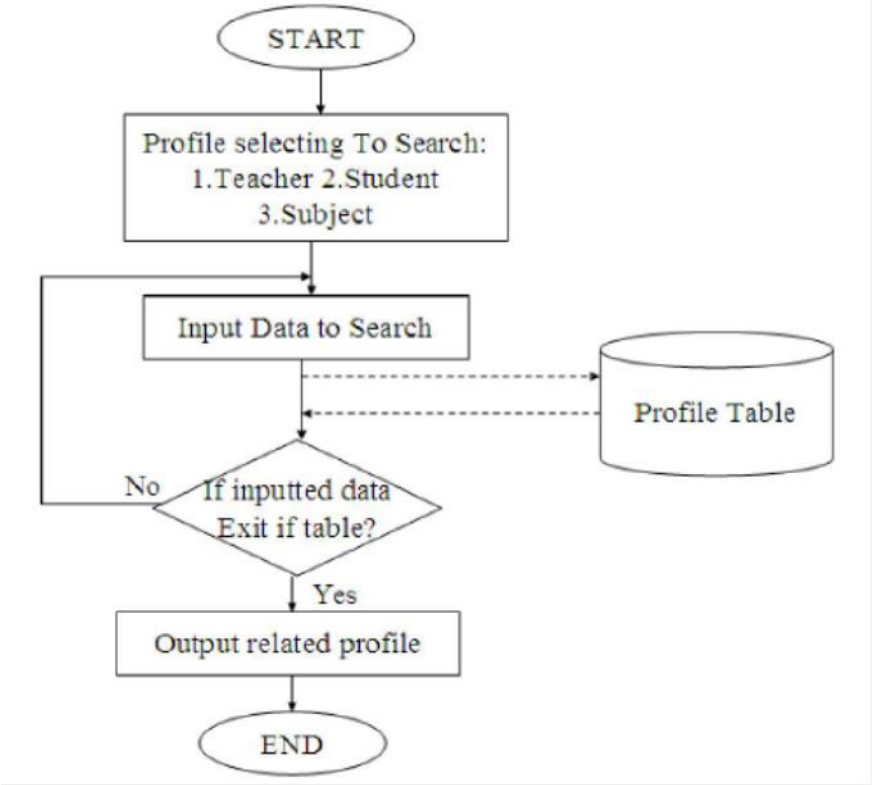

Figure 7: Flowchart of the Profile Searching

Finally, program will be ended. This process is a retrieving data from the table but this is only the displaying of user desire data. For each looping method is applied to print out the retrieved data. The source codes of the searched profile are as follow.

```
Public String connection="provider=Microsoft.JET.OLEDB.4.0;
DataSource=D:\\Student.mdb";
OleDbConnection connect=new OleDbConnection(connection);
connect.Open();
String command="SELECT * FROM TeacherProfile";
OleDbDataAdapter adap=newOleDbDataAdapter(command,connection);
DataSet ds=new DataSet();
Adpt.Fill(ds,"TeacherProfile");
DataTable dt=new DataTable();
dt=ds.Table[0];
Foreach(DataRow r in dt.Rows){
      Console. Write Line (r[0]+r[1]+……);
}
```

D. Profile Update

Profile updating is needed to prepare the existing wrong data. It is very important that which profile, columns and row will be updated. If the teacher profile is choose, updating can only be done in this profile.

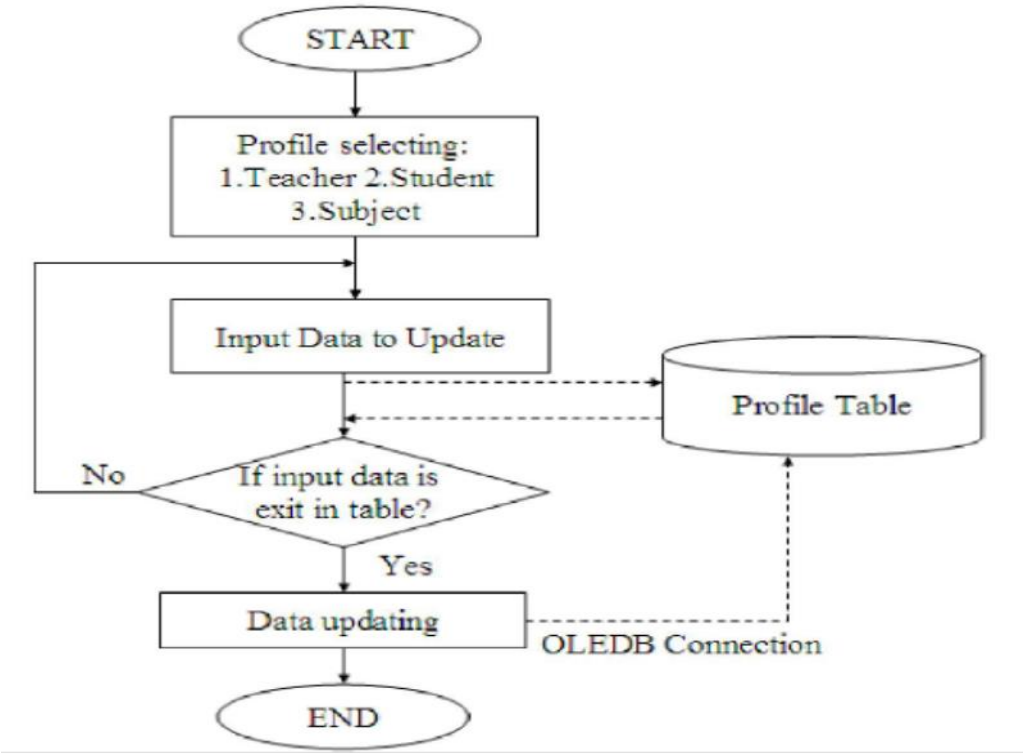

Figure 8: Flowchart of the Profile Update

This step is limitation of the profile to update. After selecting the profile, input the data to update. The row and column to update must be confirmed in the source code. The command statements of updating process are listed as follow:

```
Public String connection="provider=Microsoft.JET.OLEDB.4.0; DataSource=
D:\\ Student mdb";
OleDbConnection connect=new OleDbConnection(connection)
connect.Open();
String command = "UPDATE TeacherProile SET Name='Ma Ma' WHERE
ID='Tec002'";
OleDbCommand command=new OleDbCommand();
command.Connection=connect;
command.CommandType=CommandType.Text;
command.ExecuteNonQuery();
connect.Close();
```

E. Profile Delete

For the teacher, it is needed to delete when the teacher is transferred or out from the school. Student profile is also required to delete when the student is out. And then, for a subject, it will be needed to delete when the course is changed. For the above reason, deleting process must be included in this system. Firstly, profile must be choice and then input data to delete. If the inputted data is already exit in the table, it will delete easily. If the data is not contained in the table, it will go to the inputting stage. Fig.9. illustrate the deleting step of the system. The connection statements of the delete process are as follow.

```
Public String connection="provider=Microsoft.JET.OLEDB.4.0;
DataSource=D:\\Student.mdb";
OleDbConnection connect=new OleDbConnection(connection);
connect.Open();
String command="DELETE FROM TeacherProfile where ID='Tec01';
OleDbCommand command=new OleDbCommand();
command.Connection=connect;
command.CommandType=CommandType.Text;
command.ExecuteNonQuery()
connect.Close();
```

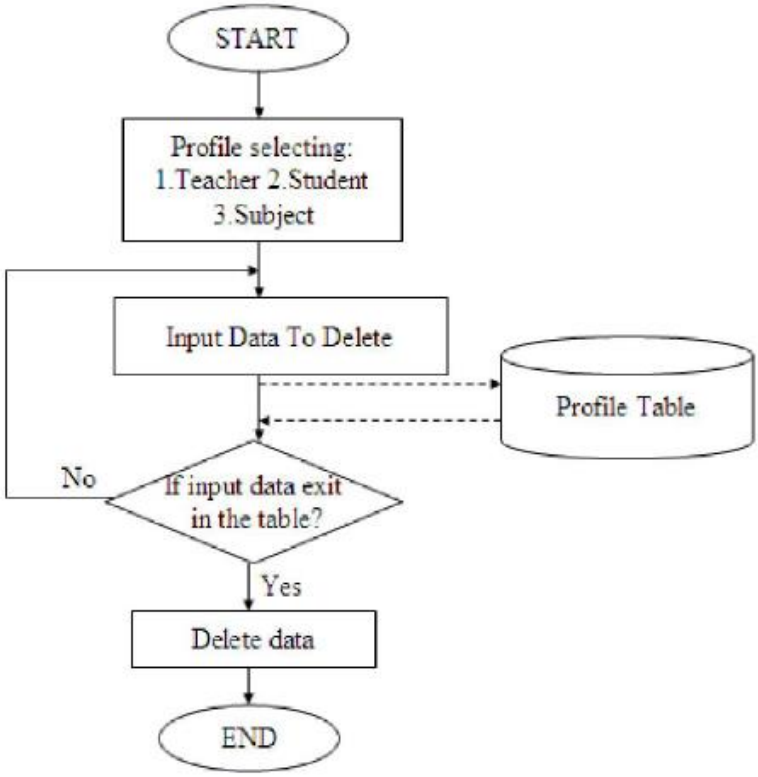

Figure 9: Flowchart of the Profile Delete

F. Roll Call Attendance

For the daily roll call recording, it is needed to take attendance of each student in a class and it is usually taken at the start or at the end of the class for each subject. Student name, roll_no, subject name, period and date are recorded into the student roll call database table for a period, one table for one subject. If there is error in roll call recording, the monthly and overall roll call percentage will be changed because the calculated percentages are based on the roll call attendance. Attendance must be recorded carefully because roll call percentage is concerned with sitting for the exam for each student. Students' daily attendance for one subject can be seen clearly by showing the flowchart of Fig.10.

The flowchart of Fig.11 explains how the overall and monthly roll call percentage will be displayed. The roll call percentage can be displayed in two styles. Firstly, select the roll_no of a student to show the overall roll call percentage for each subject. Secondly, the monthly roll call percentage of all students for one subject can be displayed for each month. This system also included the printing process. So that monthly roll call percentage can also be print out as a report form.

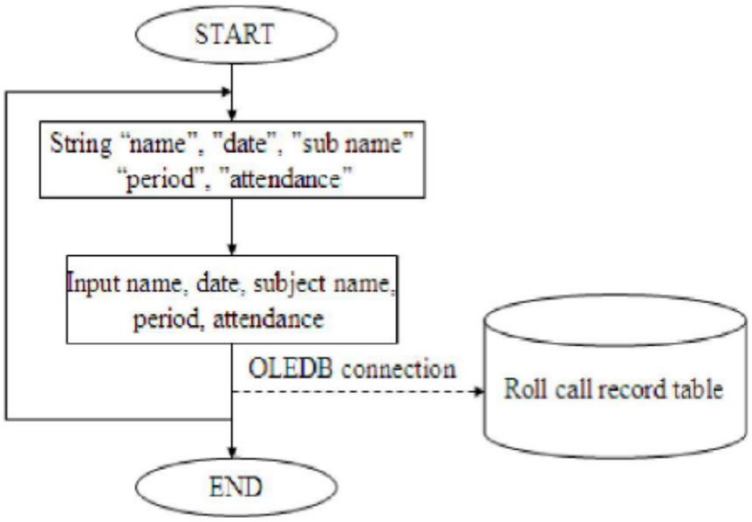

Figure 10: Flowchart of the Roll Call Recording

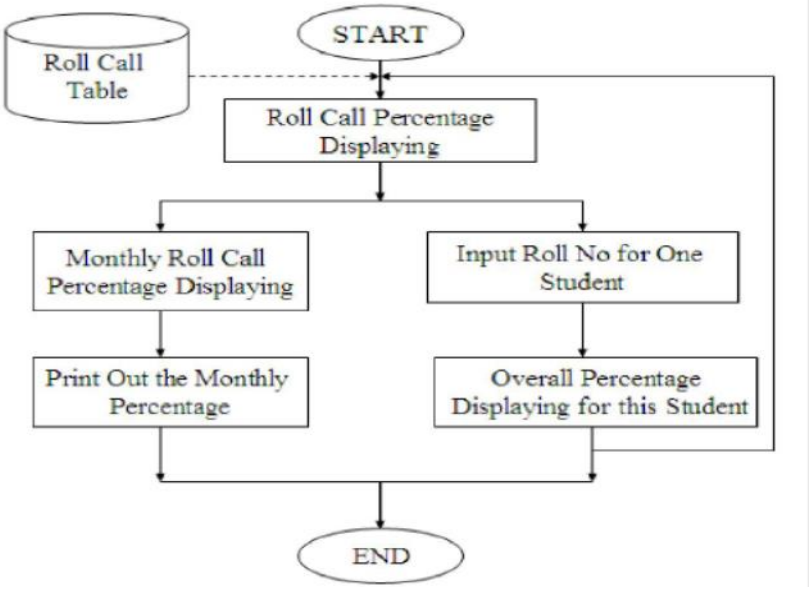

Figure 11: Flowchart of the Roll Call Percentage Displaying

G. Data Cancel Form the Table

Tables are needed to clear at the start of the academic year because the profile and roll call are recorded in the last year. The data can be cleared one by one but it will take too long. In the table clearing process, there are two choices: profile and roll call. In profile section, there are three types: teacher, student and subject. If there are many errors in recording process, table clearing is more suitable than updating the error data. In the following flow chart, there are two user choices. Based on the selection, tables will be deleted.

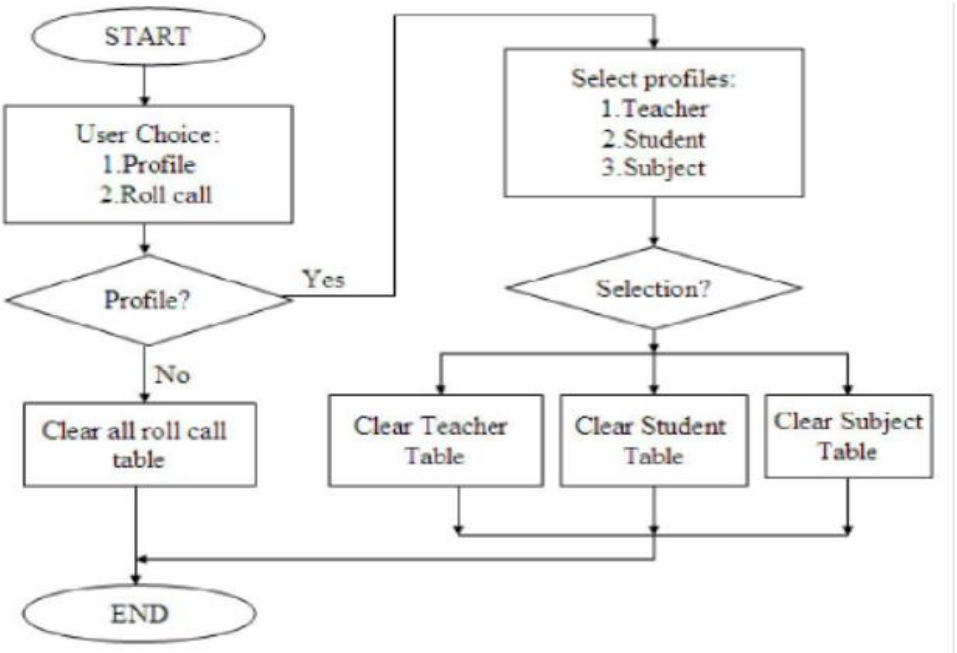

Figure 12: Flowchart of the Clearing Table

4 Results and Discussions

A. Login Form of the System

Login form is the main entry of the system. To use this system, user has to fill the user name, password and confirm correctly. Changing password can also be done. The function of the login button is to compare the inputted username, password and confirm password with is username, password and confirm password existing in the database table. If the compare data are matched, the home page of the system will be displayed. If inputted data is error, the message box will be displayed. The system will exit if the user inputs the wrong user name or password or confirm password. Fig.13 illustrates the login form of the system.

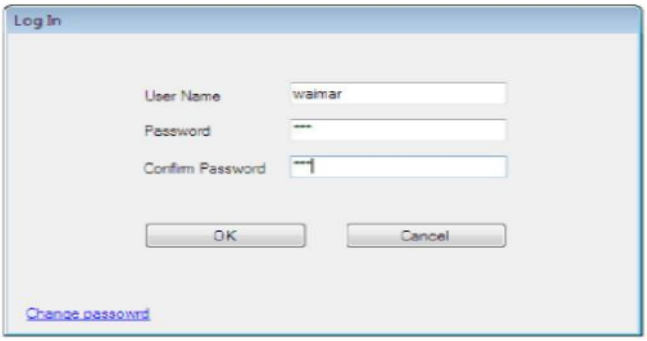

Figure 13: Login Form of the System

If the user wants to change the password and confirm password, click the change password button. The following figure will be displayed.

It first requests the old user name, old password and old confirm password. And then, user needs to fill the new user name, password and confirm password. The new data will be replaced in the old data of the password table.

After changing the username, password and confirm password, it will go to the login form of the system. The user needs to fill the new username, new password and new confirm password. If the inputted data are matched with the data in the password table, home page of the system will be displayed automatically.

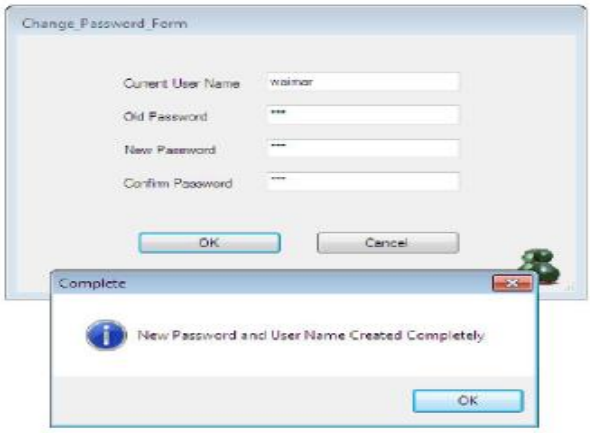

Figure 14: Username and Password Changing Form

B. Home Page of the System

This is upgrading the computerized system and the user can use the Goto button to display the creation part of the system. Fig.15 is only the display of university name and figure of the university. It describes the entering of the second home page of the system.

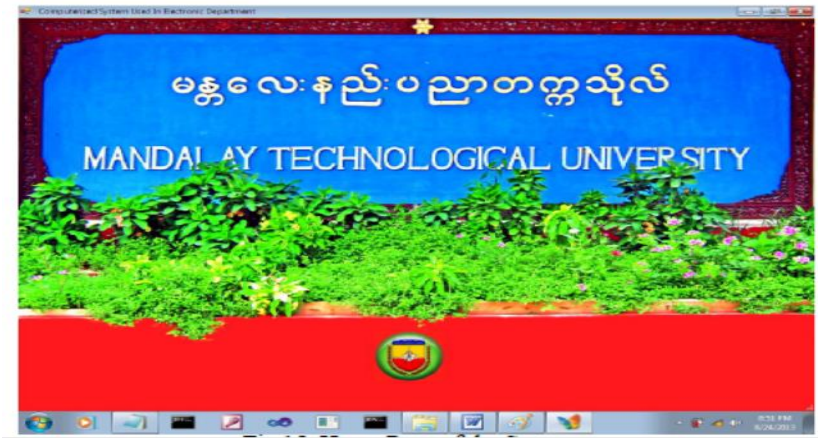

Figure 15: Home Page of the System

C. Multiple Choice of the System

At the start of the system, the multiple choice form shown in Fig.16 will be displayed. There are seven main parts: new profile, search profile, deletes profile, update profile and record roll call, monthly report and roll call percentage.

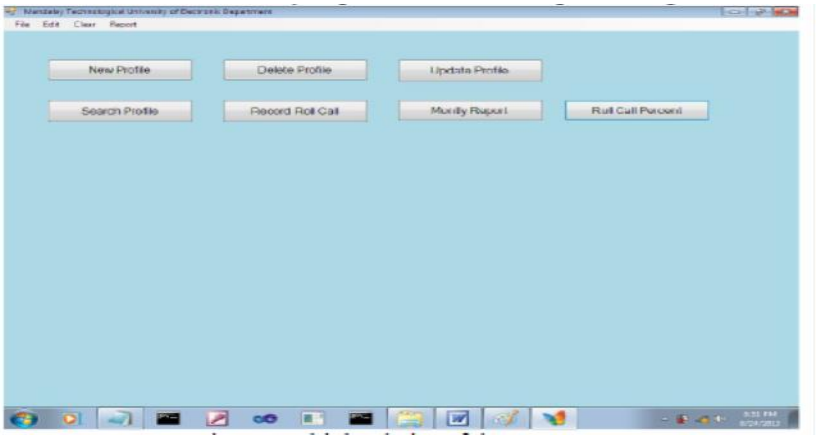

Figure 16: Multiple Choice of the Program

D. New Profiles Recording

Three profiles are included in this system. They are teacher profile, student profile and subject profile. At the start of the academic year, authorized person of the department have to record the profiles after collecting associated data. Profile recording is very important for the universities or other schools because profiles must be used from the start of the year to the end.

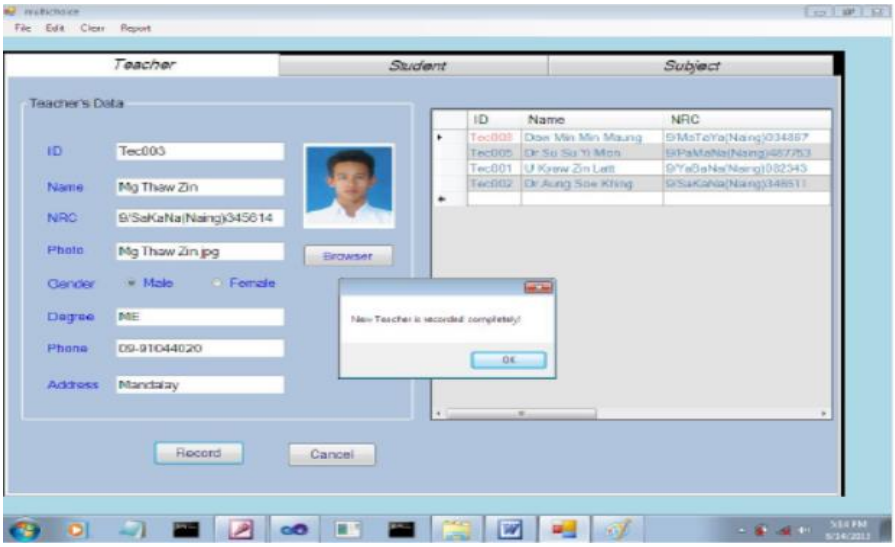

Figure 17: Teacher Profile Recording Process

Fig.17 will display the graphical user interface of teacher profile recording process. In this page, the recorded teacher profiles will be displayed by using data grid view or table. “Brower” button is used for photo choosing. The function of this button is to go to the photos existing directory (D:\\PhotoSever\\.....) without user effort. After filling the required data such as ID, name, NRC, degree, address, phone number and gender, click the “Record” button. If some data are missed to fill, a message box will be displayed for the error. If all data are completed to fill, record the teacher’s associated profile into the database file and then already recording message box will be displayed. The program will go to the multiple choice page if the user clicked the cancel button.

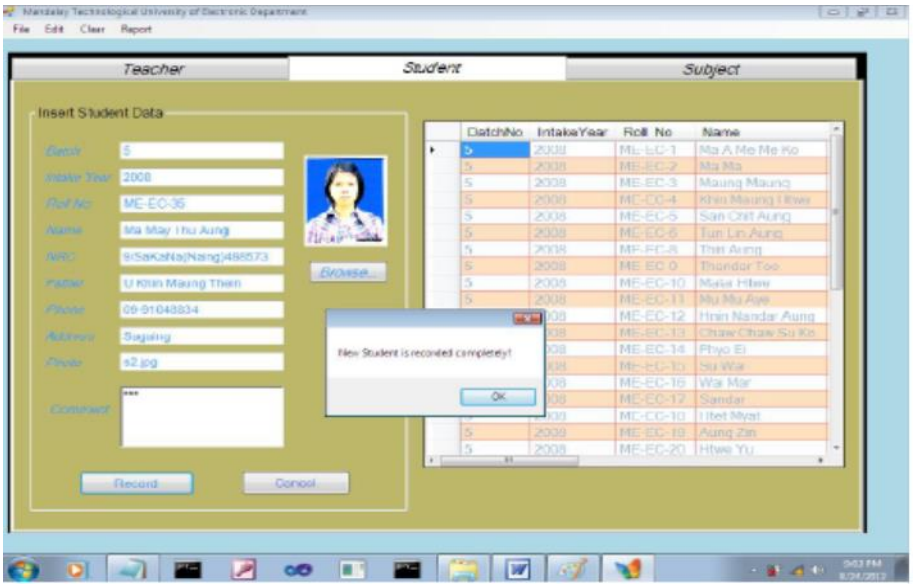

Figure 18: Student Profile Recording Process

Student profile recording is an essential part of the system. This profile must be used in the whole academic year such as in taking the student attendance, for paying the school fees, to out the exam result, to declare the over all roll call percentage and so on. Firstly the user has to fill the associated student profile such batch, intake year, name, roll_no, NRC, father name, phone number, address, photo and commands. The photo can be get by clicking the Browser button because it will show where the photo exit. After filling the required data, click the "Record" button to save the data into the student profile table existing in the database file. When the student recording part is finished, click the "Cancel" button to go back to the multi choice page. The detail of student profile recording process is described in Fig.18.

This is last section of the recording process. The different between subject recording part and other two parts is that Fig.19 does not contain the Browser button and no need to collect images.

The function of "Record" button is to save the filled data into the database file. To complete the recording process, required data must be filled. There are six data about the subject. They are number, code number, subject name, subject short name, number of chapters and teacher name who teaches this subject. The function of "Cancel" button is the same with the above two recording processes (teachers and students).

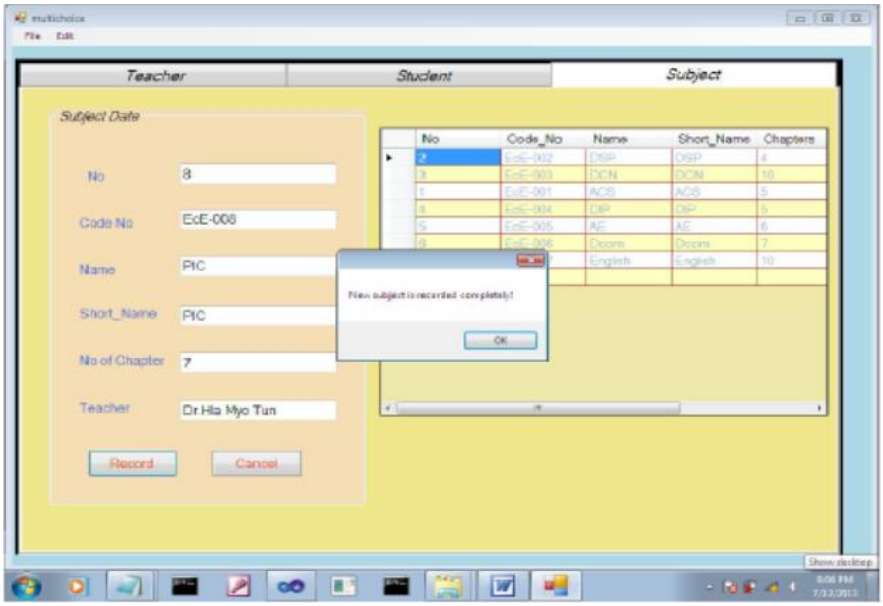

Figure 19: Subject Profile Recording Process

The conclusion of the recording process is saving data to the associated database file. Profile saving is the first step of the process because user can retrieve profiles when the data is already saved in the table. Search profile, delete profile and update profile processes could be done after recording process.

E. Searching Process of Recorded Profile

When the user wants to know about the teacher in the department, the student list in each class and the subjects for an academic year, it is needed to search the profiles. The programmer has to decide how to search the profiles. What is the best way? The searching profile method can be different such as teacher profile is searched by ID, student profile can be searched by roll_no and then subject profile can be search by code number. Fig.20 shows the teacher profile searching process of the system.

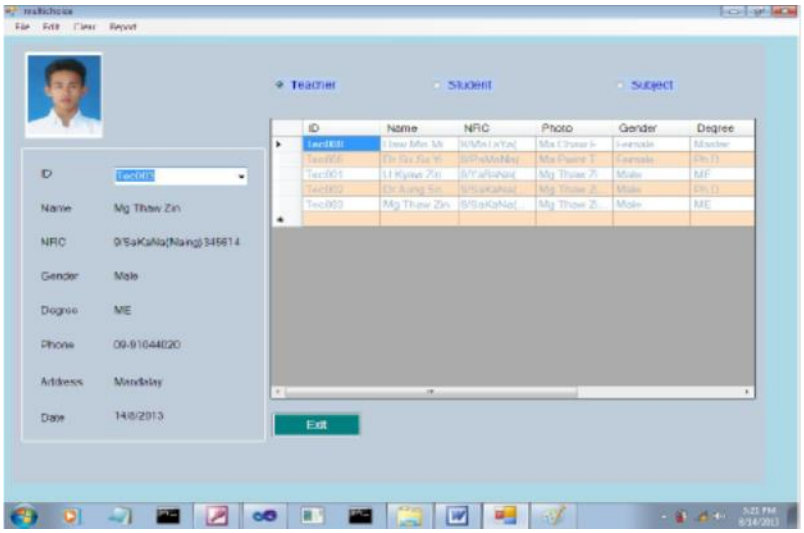

Figure 20: Teacher Profile Searching Process

There are three option buttons: “Teacher”, “Student” and “Subject”. If the user clicks the “Teacher” option button, Fig.20 will be displayed. Teacher profile can be searched by the ID. All the recorded teachers will be shown in the table and its ID will be listed in the combo box. The user has to select one ID that wanted to know. Its associated data will be displayed separately. The displaying data can be changed when the user change the selected ID. The function of the exit button is to go to the multi choice of the system. This is the less use part of the system.

Fig.21 illustrates the student profile searching process. In this part the user searches the profile by using roll_no of each student. All of the students will be displayed in the (data grid view) table. As a result students in the class can be viewed by the user. If the user wants to know one by one, select the roll_no from the combo box existing in this GUI. The data corresponds to the selected roll_no will be displayed clearly. The user can go back to the multi choice of the system by click the Exit button.

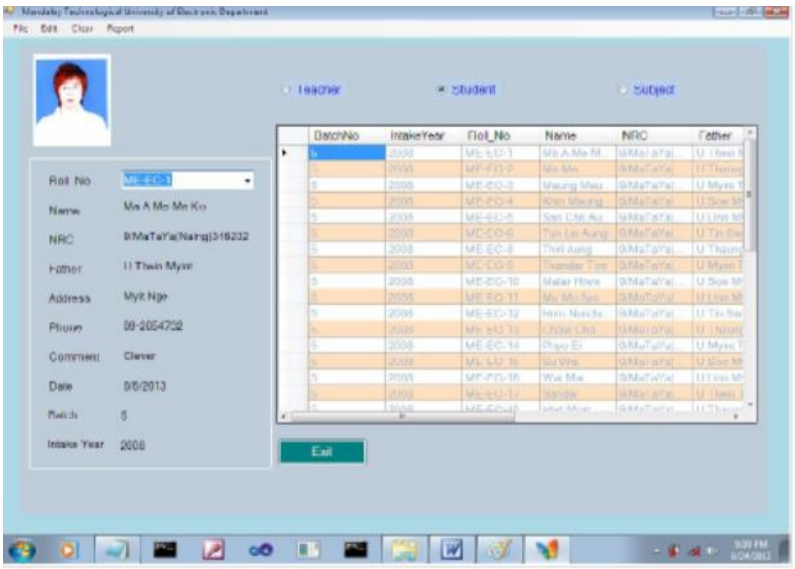

Figure 21: Subject Profile Searching Process

The last searching process of the system is subject profile. This is the less use of the searching part because it does not look like human profile. Student profile is the most used process of the system in taking roll call, displaying roll call result and so on. Fig.22 displays the searching process of subject profile.

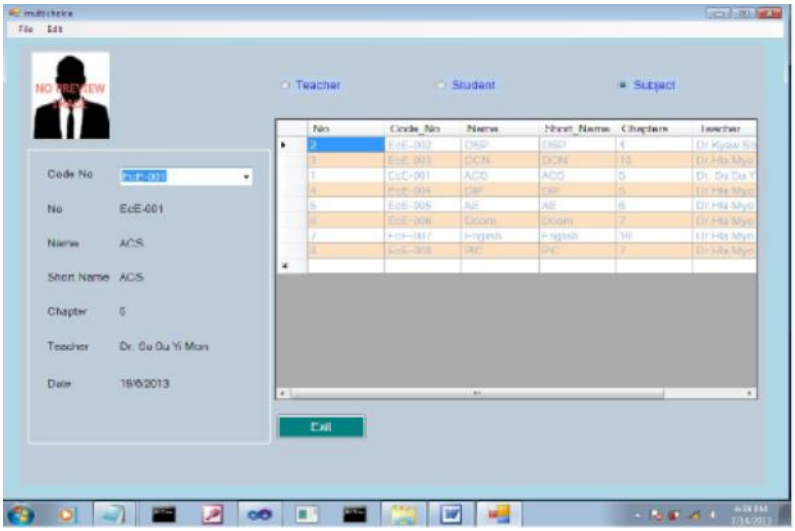

Figure 22: Searching Process of the Subject Profile

All subjects already stored in the database file will be shown by clicking the student option button and then all subjects' code number will also be in the combo box simultaneously. Only one subject can be search by choosing one code number that user want to know. As a result, data corresponds to the selected code number will be displayed. The user can use the "Exit" button to go back to the start of the program. The function of this button is the same with the above two searching process (teachers and students).

The result is shown in Fig.22. Searching process is showing of all data from each profile and selecting of each data from the profile form the database table with the aim of GUI. This process is used to view something about profiles as user likes.

F. Update Process of the System

In profile recording, user can record some error data into the database file carelessly. It is necessary to use the this process to update (to change) data from the table of associated database file (teacher table, student table and subject table) and it is depend on the user desire. The user has to decide which profile user want to update. All processes will be done separately. Each updating process will be displayed with the respective graphical user interface as shown in Fig.23.

Figure 23: Initial Update Process of the System

In this page there are three option types, teacher, student and subject, to change or to update. There is also an "Exit" button to back to the multi choice of the system. This button can be used for all three types. If the user clicks the teacher profile button, its associated database table will be connected and all ID will be added to the combo box. After choosing one ID from this box, it associated data will be displayed clearly.

For example, user needs to update (change) the phone number. This initial number is 09-91044020. The user wants to change it to 09-91040220. After preparing 09-91044020 to 09-91040220, click the "Update" button.

When "Student" option button is selected, students' roll_no will be added into the combo box. Select the one roll_no from this box and as a result, its associated data will be displayed as shown in Fig.26. After preparing the new data to update, click the "Update" button to complete the update section. In Fig.26, the user changes father name.

The new data will be replaced to it initial state in the update process. Only one roll can be update at a time but two or more data can be updated at the same time.

Figure 24: Displaying Profile before Update

Figure 25: Displaying Profile after Update

After replacing the updated data, the new recorded data in the table will be displayed and after that the message box will be showed. The function of "Cancel" button is to clear the displaying data in each text box. To update next student, select one roll_no from the combo box. If the user clicks the "Exit" button, it will go to the multi choice page of the system. Fig.27 displays the update process of student data.

When the user selects "Subject" radio button, code_no of each subject will also be added to the combo box. Based on the selected data from the combo box, its associated data is displayed in each textfield. This is a retrieving of data from the database table.

Updating is inserting of renew data into the database table. Fig.29 is displaying of finished update condition with a message box.

G. Delete Process of the System

This process is deleting of data from the database table. In this process one or more profiles can be deleted but not at the same time. All profiles for each part (teacher, student and subject) can be deleted at the same time. In this process, the profile from the database table will be deleted one by one because the profile to be deleted is choice by the user from the `combo box. The present data in the box can be select one data at a time. Which profiles will be deleted? It is depends on the user. There are three choice profiles: teacher profile, student profile and subject profile. The initial state is choosing profile to delete. The choosing state is shown in Fig.30.

If teacher profile is selected to delete, its ID will be added to the combo box by using the add method. After selecting one ID from this box, its associated name and degree will be displayed as shown in Fig.31. By clicking the “Delete” button, the selected ID and its data will be clear from the database table. Initial state will be displayed if the user clicks the “Cancel” button.

Its ID will also be cleared from the combo box because data adding to this box is refreshed after clicking the Delete button. The graphical interface of teacher profile is shown in Fig.32.

Student profile delete step will be the same with the above process. When the user chooses the student option button, all the students’ roll_no will be added to the combo box. As soon as the user selected one roll_no from this box, its associated name will be displayed in the textfiled as show Fig.33. The function of "Delete" button is to cancel one row that the user selected to delete.

There are four steps of deleting process. Firstly the user selected roll_no is assigned to a string variable. The second step of this process is to read roll_no from the database of student table and add to the array list.

Comparing the user selected roll_no and number from the array list is the third step of the process. The final step is to delete the same roll_no from the database table. Only the final result can be seen by using the graphical user interface. The conditions before deleting and during deleting are illustrated as followed.

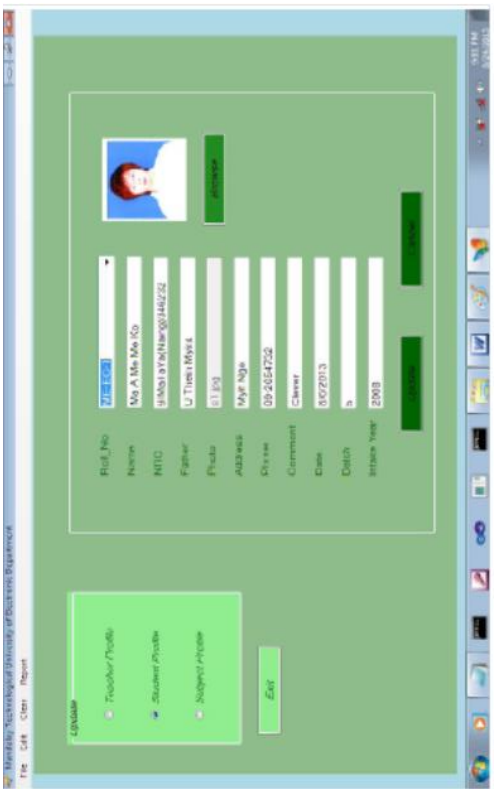

Figure 26: Student Data Displaying before Update

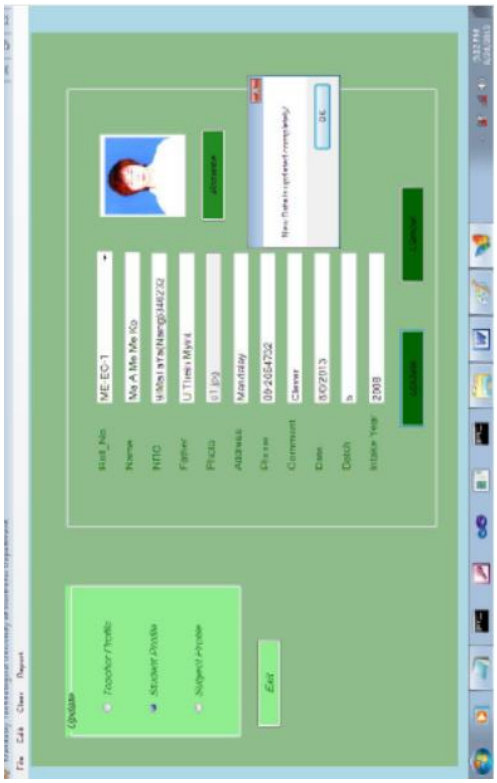

Figure 27: Student Data Displaying after New Data Update

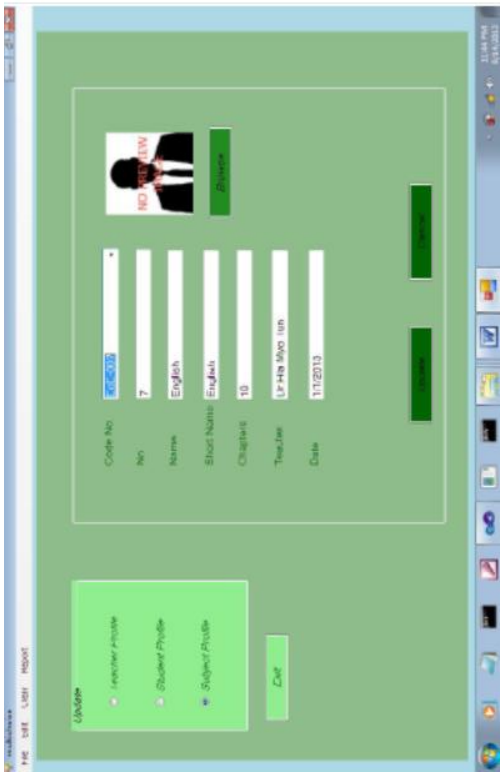

Figure 28: Subject Data before Updating

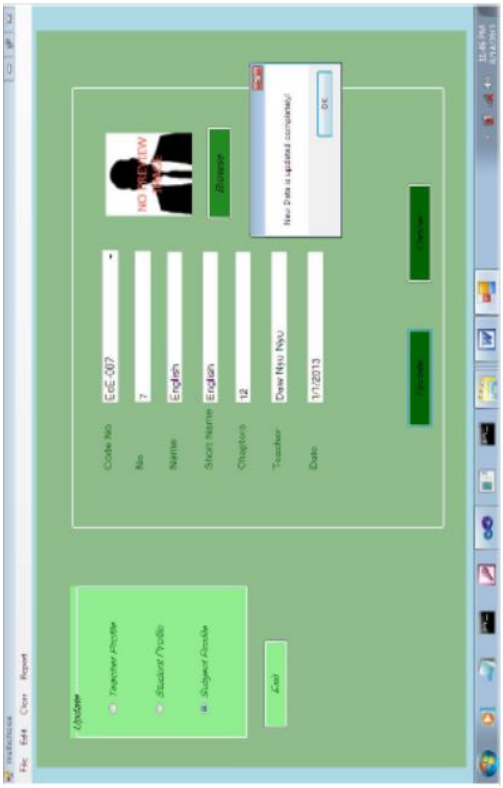

Figure 29: Subject Data after Update

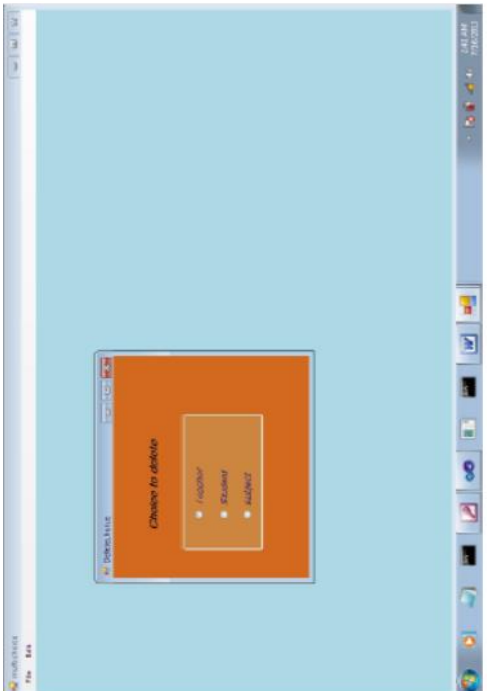

Figure 30: Initial Step of Delete Process

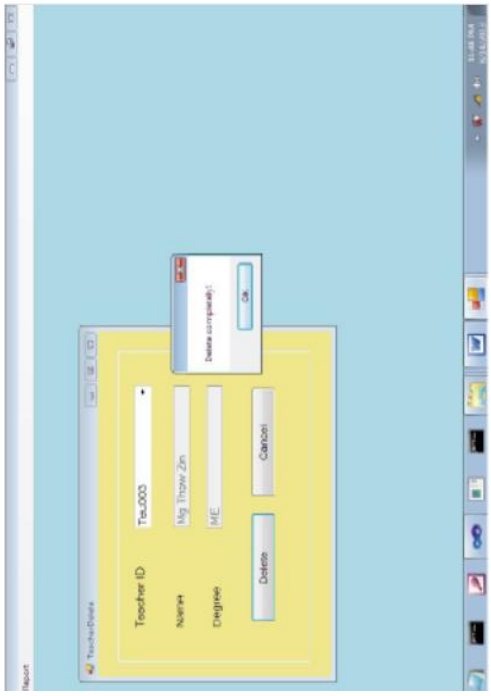

Figure 31: Teacher Profile Delete

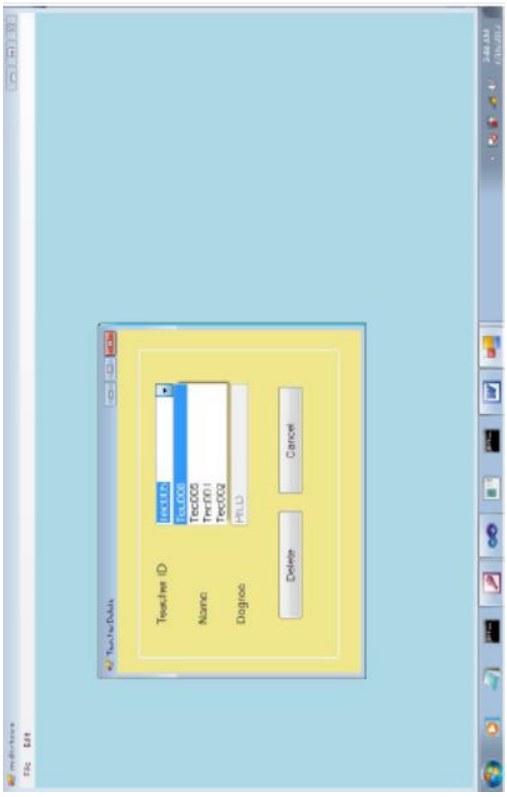

Figure 32: Teacher Profile after Delete

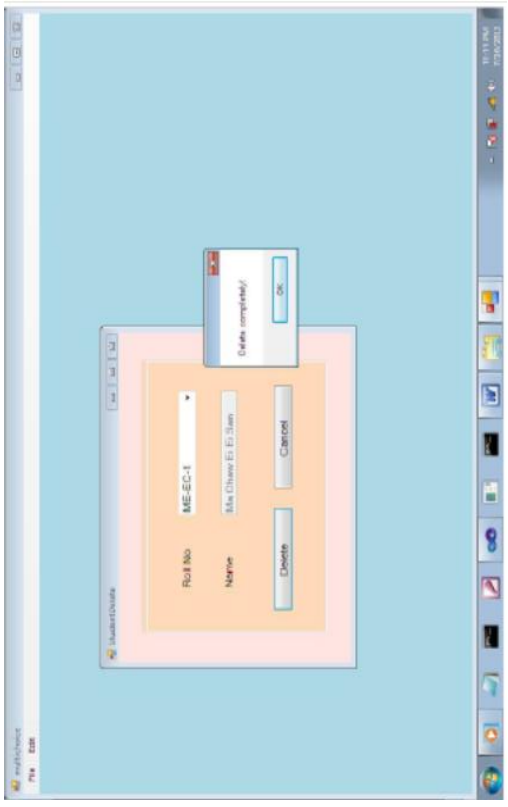

Figure 33: Student Profile During Delete

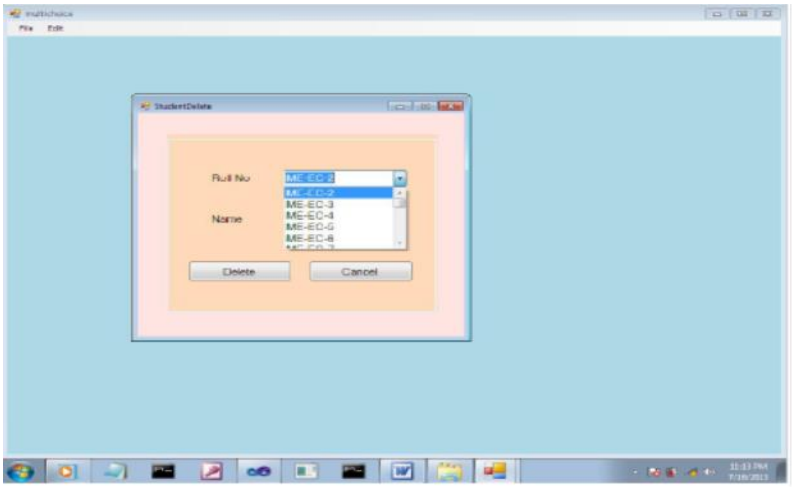

Figure 34: Student Profile after Delete

H. Roll Call Program of the System

Roll call is main part of the system. The above programs are no need to use daily. Profile recording will be applied at the start of the academic year and sometime during the year. Other processes such ad delete, search and update process are also apply less.

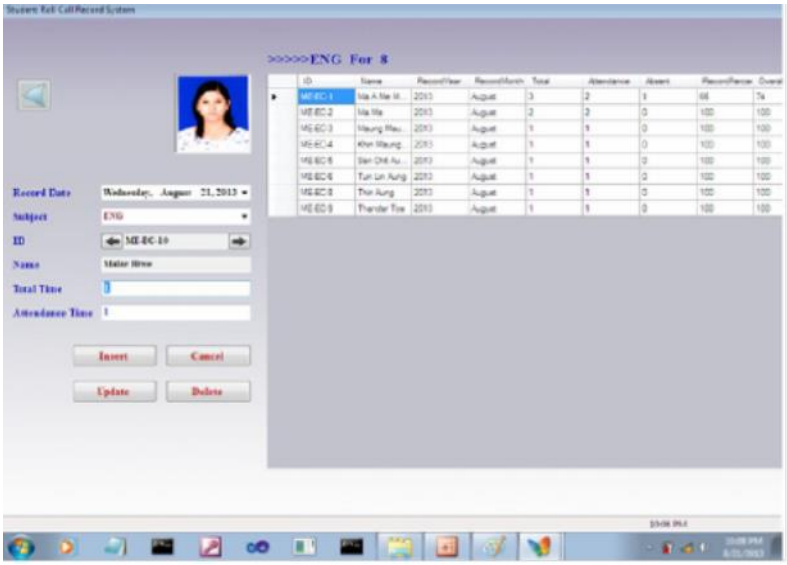

Figure 35: Daily Roll Call Recording Form

Student attendance is taking everyday expect weekends. Roll call recording process is used four or five times in a day, it is depends on the time table of the class. Teachers teach in this class have to use this program because they have to record attendance when the teacher teaches in this class. At the end of the month, roll call attendance of each subject has to be calculated for each student and also overall roll call percentage. Roll call calculating is also included in this system. It will be calculated at the end of the month automatically and monthly roll call percentage and overall percentage are saved in the database file. The user

can display the result for each month. The roll call recording form will be explained with the aim of graphical user interface (GUI).

After selecting the roll_no of a student, its name and photo is displayed as shown in Fig.35. The teacher has to select the subject name from the combo box. This step is very important because it is created one table for one subject. If the teacher selects the subject name with error, the student attendance will be saved to the database file as the user selected subject table. The teacher also need to fill the number of total periods such as 2 or 3 or 4, it is depends on the time table and also fill the attendance periods. If the teacher clicks the "Insert" button, student attendance (present or absent), subject name, period and date are saved to the associated database table. Attendance saving table will be changed corresponds to the subject name. If the teacher clicks the "Cancel" button this page will be hide and multi choice of the system will be displayed.

From the following GUI, select the intake year, batch_no, month and subject name and then click the "Search" button to show the monthly percentage of all students. Roll call result displaying will be explained. If the user clicks the "print" icon, the monthly roll call percentage will be printed out.

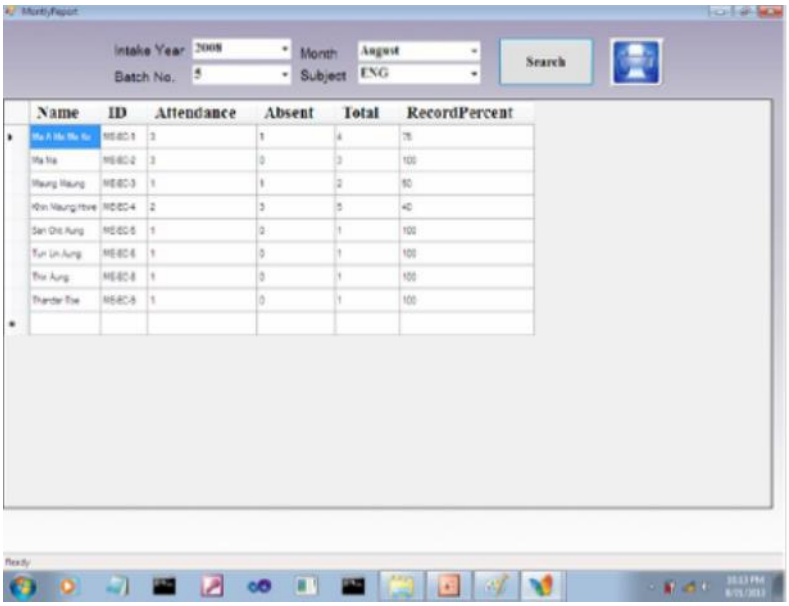

Figure 36: Overall Roll Call Percentage Displaying

I. Printing Section

The monthly roll call percentages for all students are needed to print as a report form, one report form for one subject. In this report form, student name, roll_no, attendance, absent, total period and roll call percentage are described. The preview report form of the system is shown in Fig.37.

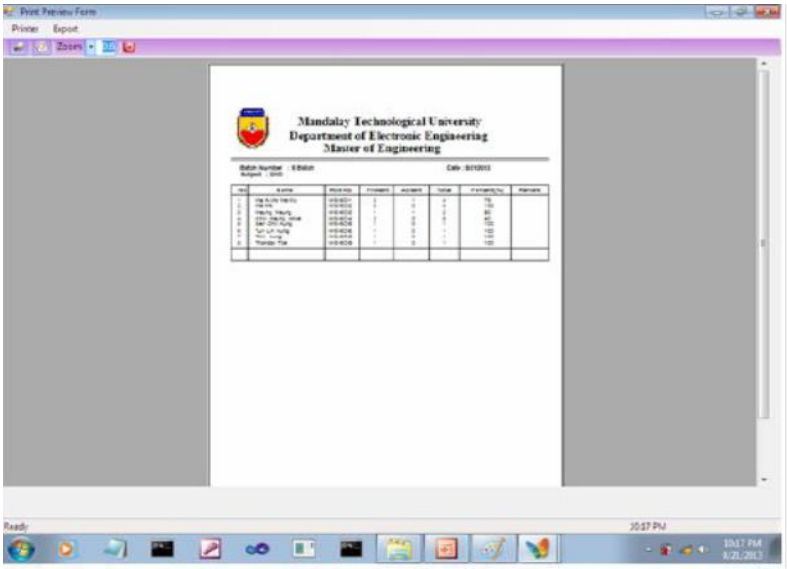

Figure 37: Print Preview Form of the System

In Fig.37, the user needs to choose the subject and month and then click the show result button to get the required report form. In one page, only 46 students can be included and if number of students is greater than 46, new page will be created automatically.

J. Clear Data from Table

At the beginning of an academic year, user has to record the new data, teacher profile, student profile, subject profile and roll call attendance. So that it is needed to clear the data that was recorded in the last academic year. If the user record profiles with many errors, profile table deleting is more suitable than updating the error one by one. This system supports the table clearing process with two sections: profile and roll call. In profile section, user needs to select the profile table because each table are stand independently. For the roll call section, it will delete all tables about the roll call. The main reason is that they have relationship with table, for example, monthly percentage table is based on the daily attendance table.

5 Conclusion

Microsoft Office Access 2003 is applied to create the database file to store the required data for the system. The connection tool to connect both the source code and database file is Microsoft.JET.OLEDB.4.0. There are many connection tools such as SQL (Structure Query Language), ODBC (Open Database Connectivity), Microsoft.JET.OLEDB.4.0 and so on. The command statements of SQL are more powerful than other two connection languages (ODBC and OLEDB) so that it is very useful in online systems and hyper markets. The power of connection for both ODBC and OLEDB are similar but there are some different in connection to the database file. These two connection tools are applied in applications software that are not connected to the online severs. Database Management System (DBMS) are responsible for the storage and processing of huge amount of information. The data stored by the database system refers to

information valid at present time. Nowadays computerized system has been popularize and developed in every electronic area. In the system, the profiles (teacher, student and subject) can be not only stored in a database file exactly and clearly but also reviewed the recorded profiles as required. In addition, updated and deleted processes can also be performed easily in a short time. For roll call section, the daily roll call attendance of each student can be stored. And then, the monthly and overall percentage will automatically be calculated based on the everyday attendance. The calculated roll calls percentage for monthly and overall can be displayed. And then, the monthly roll call percentage can be printed out as a report .form. By applying the computerized system in roll call calculation, careless mistake by manual can be avoided. This system is created as an application form (exe file) so that this system can be used on any type of computers neglecting the Dot Net Frame Word supported by the computer. The Graphical User Interface (GUI) results will be satisfied that the system is effective.

Acknowledgement

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