

Design and Implementation System for Distribute a new admission students Into A College Has Several Departments

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Abstract — The proposed system trying to automate the Distribution process of new admission students In the science college departments , so it translate the traditional manual system into computer-based system. This computerized application is automate the operation of entered students information and then perform its major operation of distribution the students into the college departments. This system allow to students to enter their information details as well as try some exams ,more ever ,this system make the distribution process more efficient and flexible. The distributed process provides three choices(type of distribution) for an administrator of the system, (The mark average degree and the student interest distribution type, The mark average degree and the student interest and the mark of the basic subject into four class distribution type, and the mark average degree and the student interest and the mark of the basic subject into four class and the mark of the competition exam distribution type). The proposed system also provide a competition exam for each new student to identity their skills and interest trend.

Index Terms — Database, DBMS, Distribution Process, Computer-Based Application, Online Exam, .

1 INTRODUCTION

Database systems are an essential component of life in modern society , most of us encounter several activities every day that involve some interaction with a database. For instance, if we go to the bank to deposit or withdraw some money, or if we reserve a hotel or book airline ticket, or even we purchase something online—such as a book, toy, or computer—all our activities may involve someone or some computer program accessing a database. Even purchasing items at a supermarket often automatically updates the database that holds the inventory of grocery items[4].

Database management has developed from a specialized computer application to a central component of a modern computing environment, and, as a result, knowledge about database systems has become an essential part of an education in computer science. [5].

2 DATABASE SYSTEM

There is a fundamental concept behind all databases: There are things in a business environment, about which we need to store data, and those things are related to one another in a variety of ways. In fact, to be considered a database, the place where data are stored must contain not only the data but also information about the relationships between those data[2]. We may, for instance, need to relate our customers to the orders they place with us and our inventory items to orders for those items. The idea behind a database is that the user—either a person working interactively or an application program—has no need to worry about how data are physically stored on disk. The user phrases data manipulation requests in terms of data relationships [6][1].

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. You may have recorded this data in an indexed address book or you may have stored it on a hard drive, using a personal computer and software such as Microsoft Access or Excel. This collection of related data with an implicit meaning is a database. A database has the following implicit properties[4]:

- 1- A database represents some aspect of the real world, sometimes called the miniworld or the universe of discourse. Changes to the miniworld are reflected in the database.
- 2- A database is a logically coherent collection of data with some inherent meaning. A random assortment of data cannot correctly be referred to as a database.
- 3- A database 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.

2.1 Database Management System

A DBMS is a complex set of software programs that controls the organization, storage, management, and retrieval of data in a database. DBMS are categorized according to their data structures or types, sometime DBMS is also known as Data base Manager. It is a set of prewritten programs that are used to store, update and retrieve a Database. DBMS Benefits [7] :

- Improved strategic use of corporate data
- Reduced complexity of the organization's information systems environment

- Reduced data redundancy and inconsistency
- Enhanced data integrity
- Application-data independence
- Improved security
- Reduced application development and maintenance costs
- Improved flexibility of information systems
- Increased access and availability of data and information

2.2 Database Models

A database model is a type of data model that determines the logical structure of a database and fundamentally determines in which manner data can be stored, organized, and manipulated. The most popular example of a database model is the relational model (or the SQL approximation of relational), which uses a table-based format[8]. Common logical data models for databases include:

- Hierarchical database model
- Network model
- Relational model
- Entity-relationship model
- Object model
- Entity-attribute-value model

2.2.1 Relational Model

A The relational model for database management is a database model based on first-order predicate logic, first formulated and proposed in 1969 by Edgar F. Codd. In the relational model of a database, all data is represented in terms of tuples, grouped into relations. A database organized in terms of the relational model is a relational database. The purpose of the relational model is to provide a declarative method for specifying data and queries: users directly state what information the database contains and what information they want from it, and let the database management system software take care of describing data structures for storing the data and retrieval procedures for answering queries[3].

3 PROBLIMS IN CURRENT SYSTEM

The existing system is not flexible as the college uses the traditional manual method to distribute the new admissions students into the college departments. In this traditional way the college needs many faculties to do this process, where a lot of time and effort is required.

- Not flexible.
- Time consuming process.
- Involves large amount of work.

- Slow Updating and Retrieval of Information.
- Cost huge and unpredictable.
- Huge staff is required.
- The manual system gives us very less security for saving data.
- Some data may be lost due to mismanagement.
- Searching of particular information is very critical it takes lot of time.

4. AIMS AND OBJECTIVES OF THE SYSTEM

The proposed system distribute the students into college department by take the advantage of using the database , so it is aims to :

- The system makes the overall project management much easier and flexible.
- Authentication is provided for this application only registered Users can access.
- The speed and accuracy of this system will improve more and more.
- Involves less paperwork.
- Faster information retrieval and updating.
- Easy Availability of Data.
- Report Generation.
- Reduces Complexity.
- Reduces Cost Effectively

5 PROPOSED SYSTEM

Distribution of new admission students into college the students is like all application program that go through three level during its implementation are (input into stage, processing stage, output stage) [8] figure (1).

This system which build by using VB as it have all properties that connect with DB and GUI which can be easily used by any user can we the windows operating system.

At the first stage the students enter them information details such as name, average, marks, desire about departments and then go through some exams to check their knowledge. After entering the information of all students the second stage will starts, in which a program administrator which is collage authorized person is responsible for this stage, where his role is only choice one of three distribution type available in the program, the third stage is five tables, each table represent department and its contents are names and average of students belong to this department.

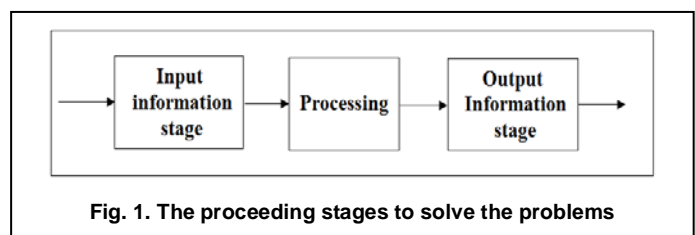


Fig. 1. The proceeding stages to solve the problems

5.1 FIRST STAGE (INPUT INFORMATION STAGE) :

This system need two type of input and output to work, this inputs are:

1. Question about the department knowledge area and its answers.
2. Students information.

5.1.1 Questions And Its Answers

Distributing of new admission students Into the science college departments system have huge DB which consist of many tables, some of this tables are used to save question that is prepared ea exams for students while entering them information details, so this system have five tables each table used to save question for one departments (Biology, Physics, Chemistry, Mathematics and Computer Applications, Environment) . This question are prepared by experts (teachers) of that department. Those experts put about more than one hounded questions and its answers. This questions are randomly viewed to studying during the exam. The system administer is responsible to entering this type of information.

5.1.2 Students information

Distributing In this stage our system deals with the first type of users (students), since the students enter his own information details to the program interfaces which is:

Students name and average, in this interface the student enter his name as (first name middle name last name) and his average that he got in the higher secondary school (bachelors). The subject marks which the student have got in the subject similar to the departments available in the collage, this system provide interface that accept this type of data, we think this information is very important to distribute as we see that this mark reflect the students strong of his knowledge in one subject among the others. Now the student enter his desire of department wish to join which must be sorted according to his desire, for instance he choice the mathematic department of first then biology as second an so on... .After entering the previous information the student have to go through some exams, where is each exams there is number of question which belong to subject of one department, for example one exam about biology department and another for chemistry department and so on ...

5.2 Second Stage(Processing)

In this stage is the main stage in this system which depend on the first stage (Input information stage) such as (student name, average, marks, desire and the mark got from exam). The responsible of this stage is the system administer who is the collage authorized person which will choose one of three type of distribution available in the system .

5.2.1 First Distributing Type

Distributing of student according to their average and desire, in this way the students will be distributed according to the average mark which they got from the higher secondary school and there shorted desire of department they wish to join. This way is the traditional which is used right now in the collage but it is mainly applied.

5.2.2 Second Distributing Type

Distributing of student according to their average, desire and the mark they got in the subjects similar to the department. This type and the next (third distributing type) is represent the important main idea for the system which does not decide only at the student average and desire but it try to find the suitable department for the students when it deals with the marks in the subject similar to the department, where we think that anyone like some subject, he will be excellent in it, and if he perfect that subject definitely will get good marks, so the system take their marks as it the index to their strongest in one area and according to this index the system will distribute the students into the departments.

5.2.3 Third Distributing Type

In this type of distributing the system take into account the students average, desire the marks in subject and the marks they will get after the trying some exams while entering their information. This type of distribution is have the same idea of the second distribution type, the only deferens is in this type we have put one more index with is the students result mark which they got after trying the exams, where we think this mark can also reflect the students strongest in some special knowledge area(department).

5.3 Third Stage (Output Information Stage)

Because The output of the proposed system will be tables contain the students names , where each table belong to department which it is ready to be printed.

6 CONCLUSION

The proposed project is automate the process of "Distribution of New Admission Student Into College's Department s", where it provide three different ways of distributions ,one of them is currently used in the college with manual manner while the remaining two ways is suggested in this project.

By comparing the results of each type of distributions ,we think that the new two ways that suggested by this project is better of find the suitable department to each student .

This computer-based application decrease the time and effort needed to do the process of distribution as well as the staff that responsible of doing this process.

7 RESULT AND DISCUSSIONS

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This project interduces two new ways in additional to the traditional way to distribute the new admission student, As a study carried out for a number of students (300 students) about the way they prefer to be applied in the future we find the following result see fig 2 below.

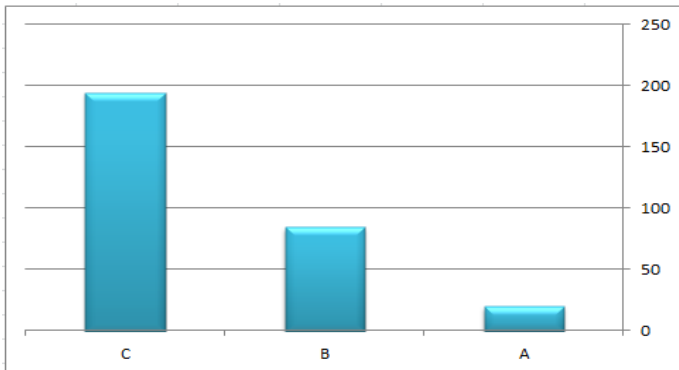


Fig. 2. Study about the three suggested ways of distributions

We find that only 6.67 % (5 student) prefer the traditional way of distributing which depend on the mark average degree and the student interest distribution type, While about 28.33 % (85 student) prefer the way that depend on the mark average degree and the student interest and the mark of the basic subject into four class distribution type, but we find that most of student 65 % (195 student) like the third way which depend on the mark average degree and the student interest and the mark of the basic subject into four class and the mark of the competition exam distribution type. This study reflects the urgent need for this proposed systems to distribute the new admission student, where it will be guaranteed that each student will get the suitable department.

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