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Research paper

Supposed techniques to overcome institute corruption that result from bad use of database management system

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Abstract

The nations of the world today are measured by their scientific potentials in the extent to which they use the modern technologies and possibilities in the information and communication sector to constantly progress, that reflected as electronic government, communication networks, computer control, etc.
As these possibilities and advantages, it is difficult to say that there is negative on Data base management system present or future because of the urgent need in the present day. The most important difficulties in this area may be the problem of misuse of these techniques. This research raises one of these problems, which are part of the misuse, lead in turn to administrative corruption is difficult to control and research sets the mechanism for the design of database programs that can reduce the bad use of it as one of the most important pillars of e-government. This mechanism makes the monitoring system able to identify and retrieve data that has been illegally manipulated for certain purposes and benefits or through the misuse of inaccurate work in order to integrate the digital system that was originally designed for human service.

Keywords: *Corruption; DBMS; Detection Software Application; And Prevention.*

1. Introduction

Increasingly, real need appears to replace manual data management systems with digital systems. The digital systems have advantages in various aspects of speed, accuracy of delivery, ease of storage and transport. As data increases, the need for digital systems increased, especially in human resources management systems, which have become a problem of administrative work in an era characterized by speed in all areas.
We have often heard about e-government and the use of computers in the departments and institutions as well as accounting programs or human resources management and the services provided by these services to its users of speed, accuracy and efficiency and save time and money and transparency as well as protection of data from damage and forgery, but when advocating the use of digital systems in general, are disadvantages of such systems exist, and what are these negatives and what are the reasons, if any, and the methods of treatment.

2. Research methodology

2.1. The main problem

Due to the widespread use of digital systems instead of manual systems and the possibility of updating the data in these systems without leaving any trace of the change of the
original data, so problems will generated. These problem as there is not controlling to the changes carried out by the employee responsible for updating the data, as well as the absence of deterrent laws in this area to reduce fraud that may happen in this case.

2.2. The importance of research

The importance of this research is becoming more and more because of the administration now and in the near future dependable on digital systems, especially after the revolution of information technology in the world. The entry of Iraq in this area has become necessary and mandatory, because of these systems has many benefits and great advantages, therefore, they required to take the required actions to defeat corruption in this field.

2.3. Research objectives

1) The definition of research into specific affairs is:
2) Presentation of the features of the use of digital systems in management in general.
3) Show weaknesses in these systems.
4) Develop a mechanism to control and restore modified data to prevent illegal manipulation of such data.

2.4. Research tools

The tools used to complete the research are books, scientific articles, and notes in addition to the Internet, with the C # programming language and the Oracle database management engine using SQL.

3. Databases and their management systems

3.1. Database

It is a set of logical data elements that are associated with each other in a mathematical relationship, and the database consists of one or more tables. The table consists of one or more records, and the record consists of one or more fields. An example of a particular employee's record consists of several fields such as employee number, employee name, employee grade, date of appointment, salary, department, and other employee data stored in the computer in an organized manner (http://faculty.mu. edu.sa/)[1].
It is not possible to deal directly with the databases stored in the computer, but through the programs and applications are database management programs and custom systems are designed to manage the databases according to the customer's demand for these systems, for example, the human resource management system in an organization may differ from another institution in aspects But the result is that the data is placed into a store inside the computer, which is the hard storage part, as in most hard disks.

3.2. Database management system DBMS

It is a general software system for dealing with databases. It is basically an electronic reservation system that stores information and allows users to add, change, retrieve and update that information when needed [2-11].The purpose of a database management system (DBMS) is to focus on how the data is organized. This means that the main goal of the database designer is to design a system capable of saving, adding, modifying, restoring, and deleting data.
There are three levels to deal with data as the following [2]:
Level 1: The level closest to the user, the external level represented by the DBMS.
Level 2: the level of dealing with databases implementation of applications and programming language commands for dealing with databases.
Level 3: An internal level that focuses on how data is stored in the storage disks These three levels of database building make it possible to separate databases and their management so that the user can change the programs without changing the databases as shown below in figure 1.

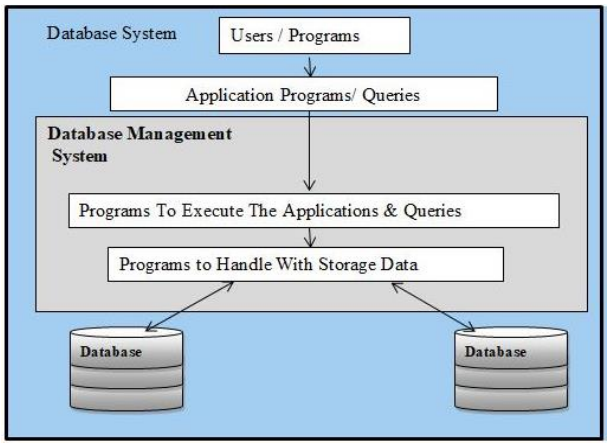


Fig. 1: Levels to Deal with Data.

4. Objectives of electronic management

There are many objectives of electronic management to achieve them, including [3], including:

1) Integrate and unify the organization as a coherent system through information technology.
2) Develop management processes and enhance their effectiveness in serving institutional objectives.
3) Provide effective and supportive decision-making mechanisms.
4) Ensuring the flow of information with accuracy, adequacy, timeliness and continuous readiness.
5) Reduce operating costs and continuously improve productivity.
6) Creating the environment and the appropriate organizational climate for comprehensive and continuous management research and development.

In addition, there are many most important issues as the [3- 4]:

1) Manage files instead of saving them.
2) Review the contents instead of reading.
3) Email instead of outgoing and incoming.
4) Executive procedures instead of minutes of meetings.
5) Achievements rather than follow-up.
6) Discover problems instead of continuing.
7) Successful processing of meetings.

mentions a number of electronic management objectives including [5]:

1) Upgrading performance.
2) Reducing administrative procedures. With the availability of information in digital form, paperwork is reduced, and data is manually mobilized.
3) Optimal use of human energies.
4) To increase the accuracy of data, trust in the validity of reused data exchanged will be high and there will be no concern about the inaccuracy of information or errors resulting from manual input.

In addition to the above, it can be said that the application of electronic management techniques achieve many goals, the most important of which are: the use of modern digital technologies and electronic networks, and thus lead to the development of administrative work, raising the efficiency and productivity of managers and employees of institutions, and providing services in minimum time and with the least effort possible. Therefore, the Technology of Information and communication has become the cornerstone of the modern society economy - the knowledge economy [6].

5. Information security

Information security can be defined as a science that works to protect threaten information from threats by providing tools and means to protect information from internal or external risks and to establish the necessary standards and procedures to prevent the access of information to unauthorized persons through communications, and to ensure the authenticity and validity of these contacts [7].
For the purpose of regulating the access of individuals to information follows several methods, most common as the following: [8].

- Password: is the common way to give access to information, which is a word defined by the user only and does not allow the user to access the protected information without giving the required password. This method is easy, as each user has a single password. This way needs to password protection from theft or disclosure to others, as well as word selection is difficult to predict.
- Access Card: In cases where the password is not sufficient, special cards can be used to access and access the information. To prevent theft, these cards are usually used with a short password, as is the case with ATMs in banks.
- Bio-information: When a person needs better verification, some systems use biological information on the user to allow him access to information such as fingerprint, eye or face image, or perhaps the user's DNA fingerprint. Yahiya believes that the latter are better in providing protection, but they are more expensive, so you should think about the extent of protection required for the information and the choice of protection that is compatible in terms of effort and cost.

6. Administrative corruption

To define what administrative corruption means and how to achieve corruption with a data management system know corrup-

tion: (Corruption is a language against reform and is said to spoil the thing which is abused in its use and vice versa) [9-10].
Transparency International has defined corruption as "any act involving the abuse of public office to achieve a special self-interest for itself or for its group"[11-12].
The spoiler does not mean the thief or the infiltrator of the system, but the spoiler of the employee has a certain position and powers used in the corruption and in the case of a digital management system, the authorized person (an employee has the authority to enter the system and deal with data) is the person who may be corrupt within the powers granted to him.

7. Mechanism of avoiding administrative corruption the problem solution

7.1. Prevention is better than cure

Perhaps the best way to fight corruption is to prevent corruption. In the case of digital administrative systems, it is the task of the system designer to design the system in such a way that the authorized employee is unable to adjust without the knowledge of his or her supervisors.

7.2. Design of digital data management system

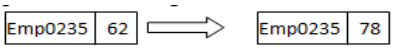
To design the digital administrative system that is controlled in the data modification part, three scenarios must be considered within the design:
First: Automatically report the amendment before or after modification: This is the first task to be developed within the system design and comes with pre-edit and pre-edit data preservation through the Data Modification Reporting algorithm (assuming that the constraint represents the employee number and the test score for the purpose of competition).

Employee number	score
Emp0235	62

1) Start.
2) Enter your username and password.
3) Open the data adjustment interface.
4) Determine the record to be amended.
5) The database management software (DBMS) retrieves the required record.
6) Display the data specified in the adjustment interface.

Emp0235	62

1) The authorized user replaces the existing data with a new one.



2) Show message Yes / No to confirm the replacement process.
3) If no answer go back to step 6.
4) If yes, the data is replaced in the database.
5) Send a message to the manager indicating the update in the entry with the username.
6) Create a new entry in the Updates table that contains the data before and after the update.

5	Before	After	User name
Emp0235	62	78	salaam

7) End.

Second: Monitoring the data modification, A task that must be accomplished by the designer for the purpose of controlling the illegal modification of the data through which it is possible to refer later to know the modified data and by the authorized personnel and identify the employee responsible for the amendment with the possibility of knowing the data before and after the amendment.
Third: Restoration, A possibility provided by the designer to enable system personnel to restore previously modified data in certain cases and with special authorization for restoration. The designed procedure for this task are:

1) Start.
2) Enter the user name (controller) and password.
3) Open the control and restore interface.
4) Display the record to be monitored or restore the previous data in case it is previously modified.
5) The database management system (DBMS) retrieves the record from the stored database.
6) Display the record in the control interface.

Employee number	Before	After	User name
Emp0235	62	78	salaam

1) Press the Retrieval button to return data before updating in the original table.
2) Show message Yes / No to confirm the loopback.
3) If no, answer go to step 6.
4) If yes, replace the new data with the original (original) in the original table.

1) Add a new entry in the updates table that contains the update in step 10 with the name of the controller (restoreor).

Employee number	Before	After	User name
Emp0235	78	62	Ali

2) End.

8. Conclusions

1) Database management systems (DBMS) are the most important bases of e-government in any country.
2) Database management systems (DBMS) have a set of advantages that make them a cornerstone of administrative work.
3) In terms of information security, DBMS provides high security by preventing access to the system without authorization and specific authorities.
4) There is a weak point in the misuse of DBMS and not in the systems themselves, but those who work on the systems, that is, the employee authorized authority is not honest or inaccurate work and this problem posed by the research and gave a mechanism to overcome them.
5) Administrative corruption, It is difficult to predict the existence of a spoiler before the act, but mechanisms can be put in place to prevent corruption before it occurs.
6) The solution to the problem lies with the system designer who is responsible for designing the system and overcoming potential weaknesses.
7) Application of the search mechanism to control the modification of unauthorized data prevent corruption or neglect may not be controlled without it.
8) The validity of modifying the data for the average user in the proposed system is different from the validity of the user who controls or retrieves the data, giving the system the power to prevent tampering and debugging.
9) The possibility of retrieving data in the search mechanism after modification and this is not found in traditional systems.
10) It is possible to know the name of the user who modified the data and the retrieved user name of the data even after a

long period of time, making the control at any time possible and not restricted by a specific time.

9. Recommendations

1) Attention to developing the capabilities of software designers in general and database management systems in particular in order to build professional computer programs that avoid expected problems and not problems that are required to solve them.
2) When designing any computer program that takes into consideration the misuse of this program by users.
3) Putting deterrent laws against those who infringe electronic systems.
4) To develop the capabilities of employees who use the computer and their supervisors and supervisors to prevent negligence or misuse of the employee to computer through officials and control points.
5) If any person enters the system by illegal means such as hacking or access to the passwords of the system by one way or another, the proposed system reveals the manipulation of data.
6) A statement that the development of programs in the research helps the user in avoiding unintended errors by placing more than one control points to follow up and check the work easily and not harmful to the operation and speed of completion.

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