UNDERSTANDING THE VALUE OF DATA AS CORPORATE ASSET USING MICROSOFT ACCESS

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ABSTRACT

Nowadays, many organizations rely on data for making effective decision. Data may be the most difficult corporate resource to manage as there is a resource of tremendous volume pieces of data. Conventional file system will increase the possibility of data inconsistency and this requires more space for storing the huge volume of data. The purpose of this research is to transform a hard copy form data into a systematic database by using Microsoft Access. In this research, the first phase is we identify the user requirement in the hard copy form. Secondly, we do analysis of information needs based on the form and then design a new form which is much easier to understand. The final phase is implementation of Database Management System (DBMS) by using Microsoft Access to transform the form into a systematic database. The data of the hard copy form then transformed into database and stored in computer instead of using filing system.

Keywords: Data, Corporate asset, Database Management System, Conventional file system

INTRODUCTION

Data is/are facts about something that interests us (Gillenson, 2012). Data may be the most difficult corporate resource to manage. Nowadays, the amount of data is growing all the time at an astonishing rate and it contributes to big data issues that traditional data-processing applications are inadequate for manipulating the huge volume pieces of data.

The current practice is using traditional file system to store data in paper files, within folders and filing cabinets. However, this system will cause the difficulty of finding the files and loss of files. Users have to find the files based on the folders structures that have been created and files name given to the files. This system does not allow needed data to be retrieved in convenient and efficient manner. Therefore, DBMS is needed for user to manipulate the large quantities of data.

This study is carried out to create a database for storing and retrieving data of STML academic staff attended to seminar. The purpose of this study is to convert a hard copy form into e-form, then using MS Access to design and develop a DBMS. These two objectives make the data become much easier for user to manage.

LITERATURE REVIEW

Dewald (2014) defined data is an important direction strategic which provides information to firms and assisting in running business. Nowadays, Malaysian government and many business organizations emphasis on data management for enhance data security and minimize the risk of data loss. Data are important to government organizations as well as business organizations; nobody can edit or change it without authority. A well data management is important to avoid this issue from occurring.

Data as Corporate Resource
Today, when talking of corporate assets, data must be included in the list of corporate assets, not only the capital, human, equipment, and material but also corporation's data. Data is known as the most important corporate resource because it describes all of the others (Gillenson, 2012). Data provides real information for organizations to analyze and then make decision effectively. From government agencies to STML UUM, data is an important asset, they deal with data every day so that a well data management is very important for them to manage data because data as corporate resources. And this is one of the reasons why government implements e-government and launched UTC to connect each government agencies together to share data.

Electronic Government (e-Government)
There are many government agencies in Malaysia. Government need to connect each of the government agencies using online but not the conventional system because keeping track of data using manual file system is difficult and yet time-consuming (Coronel & Morris, 2015). Government agencies share their data through online and then this data are accessible for other government departments. Without the well-managed data, the operations of government agencies including the electronic service will be affected since the data is scattered or inaccurate. Hartini (2013) stated government can change the system of public sector services that are considered as traditional to modern, and from manual system to an electronic system through e-government. At the same time, these measures are considered to reduce the digital gap to move towards the world without borders.

Urban Transformation Centre (UTC)
UTC is a public multi-services centre that located at some state capitals and urban areas. It comprises ten clusters of government services, which are common governmental services, health services, security services, education, training and employment services, financial services, business and entrepreneurial development services, utility services, youth development services, welfare and community development services, and non-governmental organization (NGO) services. All the data of the citizens in Malaysia are stored in government database and it is accessible for the government agencies through online, UTC enable the public to make various transactions with government departments and the private sector without the need to go to any government building and the other at one time. Government consists of all the data of citizens, thus the security of data is very important to avoid any one that are not authorized to access and edit or delete the data. As volume and value of data grows, an up-to-date data protection becomes increasingly important.

Big Data Issues
Nowadays, organizations are creating more and more data. The amount of data has increased and become big data. Big data can be defined as the large amount of data just beyond capability of technology to collect, store, manage and process efficiently (Manyika, et al., 2011). Conventional file system is inadequate to process large and complex data. DBMS has the ability to store and manage large quantities data efficiently. The issues of big data are growing every day since there are so much data are being created, gathered, collected and processed. Data security and privacy are the most common issues related to big data. For example, hacker access to the company data which are not accessible for others and attempts to make change to the data without authority. Thus, that is why data needs to be managed correctly to prevent data from stealing by others.

Advantages of Database Management System (DBMS)
Kamisli (2004) defined DBMS is computer software that is designed to create, store, access, secure, backup and manipulate a database. DBMS offers many advantages to organizations. DBMS makes possible for users to develop a well-defined, distributed or centralized database (Bijoy, Atul, & Sumit, 1994). Multiple users can access to the same data concurrently in DBMS. Figure 1 shows the functions of DBMS.
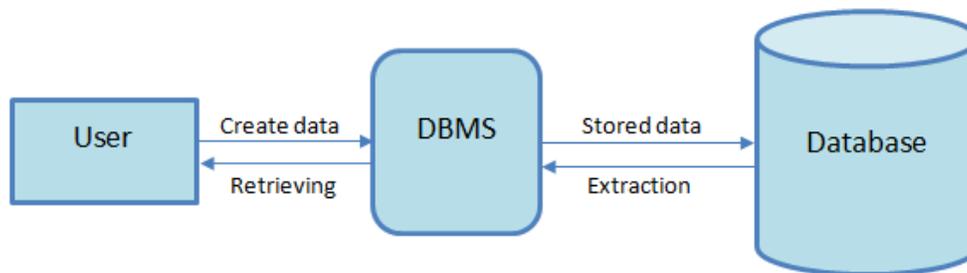

Figure 1: Function of DBMS

A huge amount of data can be stored in one location and the data are assessable for different departments within a company. The data can be accessed by many different systems (Ronald, 1994). With DBMS, data redundancy problem in conventional systems can be controlled as there is no duplicated data in the database. Besides that, DBMS also provides data integrity because data records are just need to be updated once.

DBMS contains a query language that makes the users possible to retrieve data quickly. Users can setup a query in the system and then they can get the needed data from the database. Moreover, Gillenson (2012) stated DBMS enables users to retrieve, insert, update, and delete data through Data Manipulation Language (DML) which helps users to save time to retrieve the data in efficient manner.

Unauthorized access is restricted to the database. Authentication is needed to validate identity of the users before they access to the database. Only authorized users can access to the database and view the record to protect data from unauthorized use and update. For instance, not all of the company's data are accessible for employees. They are authorized only to access to the specific data which they need in their work (Gillenson, 2012). In conventional file system, there is no restriction for employees to access to the data that they should not such as sensitive data.

Software Used as DBMS
DBMS is a platform and good data management system which are effective and efficient to control the limitations of conventional file system and maximize the value of data (Maritz, 2003). There are huge choices of DBMS providers in the market that can be used to manage data. Each has its own strengths and differs on price, performance, and ease of use. Organizations should know which DBMS can provides functions that are suitable for their specific needs and best for them before choosing a DBMS to use. The examples of software that can be used as DBMS are Microsoft Access, Oracle Database, DB2, and MySQL.

Microsoft Access is compatible with SQL queries which allow users to create queries to retrieve data. It enables users to enter data easier and less error-prone with recommendations made in the beginning of data entry. Furthermore, lookups function in Access also allow for drawing relationships between records in different tables (Bassil, 2012). Oracle Database provides the highest level of consulting expertise for IT infrastructure. This software supports for operating systems like Windows, Mac OS X, Linux, and UNIX.

Automate tasks in DB2 such as memory allocation, storage management, health monitoring and business policy maintenance are used to enhance IT productivity. Besides that, DB2 also provide predictive and pattern analysis without moving the users' data into proprietary data mining platforms. DB2 ensures industry-leading performance across multiple workloads that provide storage and reduce administration. MySQL is developed by Oracle Corporation. It runs on Windows, Mac OS, Linux, UNIX, and BSD. There are two editions of MySQL which are the open source MySQL Community Server and the proprietary Enterprise Server.

In this study, Microsoft Access has been chosen. It is the most widely used desktop DBMS and available with the Microsoft Office Professional as purchased computers already installed with Microsoft Access. It is DBMS that is easy to use and it allows for rapid development. Besides that, it has established with reputable support structures.

METHODOLOGY

In this study, qualitative approach (interview) was used to collect and analyze data. Bryman (2007) defined qualitative approach is a research method that focuses on inductive approach to explain a theory well as the research philosophy of interpretivism. An interview with an admin in STML who is also a user of database management system was conducted. The respondent handles STML academic staff who applied to attend to a conference. The interview has taken one hour of duration to complete. During the interview session, eight questions had been asked to the respondent about the current system in STML. This interview allow researcher to understand the current database management system used in STML. Interview method allows more detailed and follow-up questions to be asked and respondents' own words are recorded. Complex and in-depth data that is not as easily obtained through questionnaires can be gathered through interview.

FINDINGS AND DATA ANALYSIS

Figure 2 shows the transformation of hard copy form to DBMS. Firstly, identify the user requirement in the hard copy form. Secondly, analyzing information needs based on the form and then designs a new form which is much easier to understand, where the hard copy forms were converted into an electronic form using Microsoft Word. The attributes in the hard copy forms were rearranged according to their entity. Developing and implementing DBMS using Microsoft Access based on the created e-form. There are eight entities, which are academic staff, conference, external financial support, internal financial support, presentation, recognition, head of unit, and center of responsibility. So, there are eight tables in the system. All the entity tables had been created in the system. Then, attributes and data were inserted into the entity tables. For example, staff ID, name, contact number, conference title, date, venue, and so on. Next, form and report of each entity had been created in the system to display the data in different formats. After that, a "Menu" and "Report" page were also created to display multiple records. "Menu" page displays data in form format that can make it easier to insert data across multiple tables; "Report" page can display a summary of data in report format. Data can be read by just clicking into the button that added into the page, and then the appropriate data will be appearing in the page. For example, when user click into "Academic Staff" button, the data of this entity will be displayed in the page such as the staff name, staff ID, phone number, and so on. Besides that, select query was developed in the system that enables user to retrieve data in a convenient manner. For example, type the staff ID 2785 in the query column, the data of this person will then be displayed in the page, like her personal detail, and the conference that she had participated. The hard copy forms were successfully transformed into DBMS as shown in Figure 3.
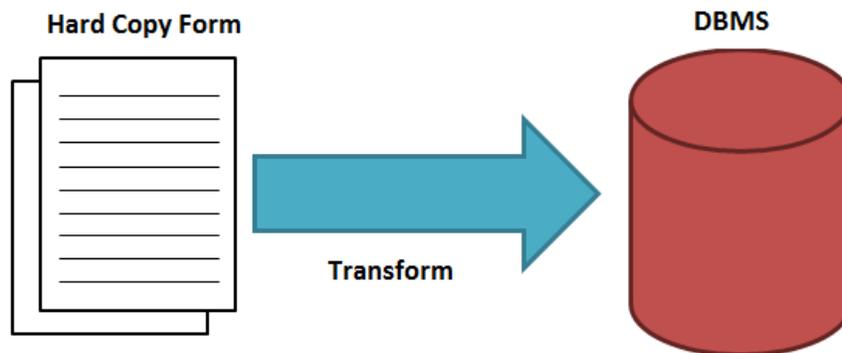

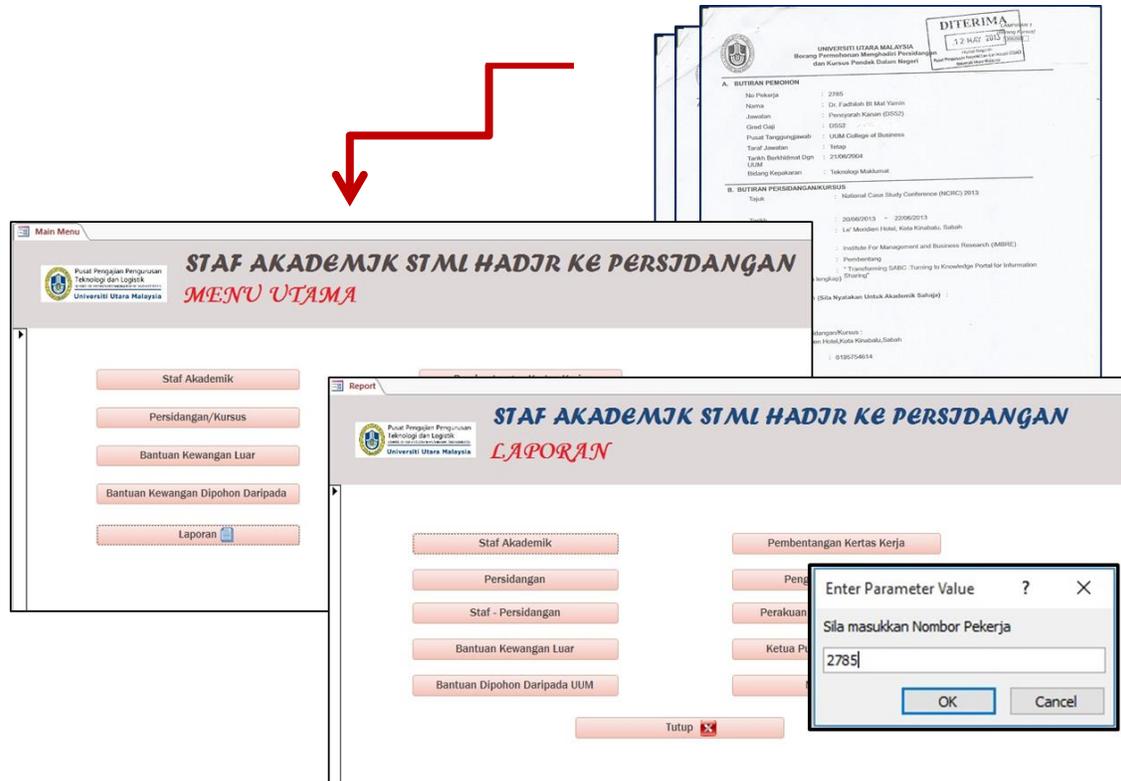Figure 2: Transformation from hard copy form to DBMS

Figure 3: Results of DBMS in MS Access

DISCUSSION AND CONCLUSION

The objectives of this study have been achieved with satisfactory results. The existing form was converted into an e-form, and then the e-form was transformed into a systematic DBMS. The DBMS was designed and developed using Microsoft Access. The data are now stored in the DBMS. A "Menu" and "Report" page were developed in the system to display multiple records in form and report format. The data can be retrieved from database in a convenient and efficient manner with the developed query in the system. The data of STML academic staff attended to seminar in hard copy forms had been successfully transformed into a systematic database management system using Microsoft Access.

The probability of data inconsistency is greatly reduced in DBMS and the DBMS makes it possible to produce quick answers to ad hoc queries. This can help users to save their time in retrieving needed data with the help of select query. Users do not need to find information in paper files that stored within folders and filing cabinets. The authorized users are now can access to the DBMS to read, insert, delete, and update the stored data at any time. Moreover, the DBMS provides a central store of data that can be accessed by multiple users in a controlled manner. The same data can be accessed manipulated by multiple users in parallel. Overall, DBMS has many advantages than manual file system. There are many organizations employing DBMS to control the limitations of conventional file system.

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