



International Journal of Multidisciplinary Research and Growth Evaluation



International Journal of Multidisciplinary Research and Growth Evaluation

ISSN: 2582-7138

Received: 25-05-2021; Accepted: 15-06-2021

www.allmultidisciplinaryjournal.com

Volume 2; Issue 4; July-August 2021; Page No. 280-283

The role of database systems on sustainability education

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Abstract

Data management which includes student data storage and student age reporting is still done simply where the data is only stored in an excel data. It looks less effective and efficient in today's technological developments. Therefore, now the implementation of Management Information System (DBMS) in student data management has begun to be applied by schools. Database-based applications are one solution that aims to overcome the problem of managing student data in schools. The research method used is literature study and

interviews with schools that have implemented the management information system (DBMS). Applications are developed in schools in general with the PHP and MYSQL programming languages and several tools including notepad++, dreamweaver, php my admin, xampp and mozilla firefox. From the results of research and observations it is evident that the application runs according to the available features.

Keywords: Database Systems, Sustainability Education, Technology

1. Introduction

Database is a field of Information Technology that studies electronic-based data processing, from creation, editing, grouping, to how to perform structured data management in order to achieve the desired results. Database contains a collection of files that have a relationship between one another to form an information called Data. The database is a system that manages the database called the Database Management System (DBMS), which allows multiple users to access and manipulate these files.

The role of the database, among others, is in terms of speed and convenience. This means that the design of the database aims to speed up the information processing process. Because of the concept of primary key, indexing, searching, sorting, and much more. In addition, a good database requires its use to be easy to use. Because the database is stored on a dedicated PC, this will certainly save space where the data storage process is not carried out on all client PCs but is stored on a single specified PC. All transactions in and out of records in the database must go through this Dedicated-PC Server.

All sources of information and processed data are stored in the same database, so the level of accuracy is guaranteed. All information and data processing results are stored in the same place. Facilitate the management of a data. Big data is one of the most in-demand niches in enterprise software development and complement today. The popularity of big data is a socio-technological phenomenon fueled by the rapid and constant growth of the volume of information.

The development of the education sector and facilities of course also undergoes adjustments with the existence of database management system technology. This may be used and useful in terms of the function of supervision, implementation and evaluation in the implementation of continuing education or sustainability education. Continuing education is held to continue and expand basic education and prepare students to become members of the community who have the ability to have reciprocal relationships with the social, cultural and natural environment, and can develop further abilities in the world of work or higher education.

2. Literature Review

(Jogiyanto). According to Jogiyanto, the notion of a database is a collection of information and data that are interconnected with each other, where the data is stored in storage outside the computer and certain software is needed to manipulate it.

(Abdul Kadir). database or database is an organization of a set of data that are interconnected so as to facilitate activities to obtain information.

(Gordon C. Everest). A database is a collection of data that is mechanical, shared, formally defined, and controlled. The control is concentrated in an organization.

Types of database software include:

1. Microsoft Access

One of these database software is the most frequently used. Microsoft Access is perfect for most relational computers. In addition, if you are doing business on a home scale, you can choose this database system because it is very easy to use and the data format is very common, making it easier to read.

2. Oracle

One of these database software is very capable of storing data with a maximum size of up to tera bytes. Oracle is most widely used in companies, especially those that are developing because it is available for free to access.

Continuing education or can be called sustainability education is defined by the accrediting commission of the continuing education. As follows: Continuing education as the further development of human abilities after entrance into employment or voluntary activities. It includes in-service, upgrading, and updating education. It may be occupational education or training which furthers career or personal development. Continuing education includes that study made necessary by advances in knowledge. (Apss, 1979: 68-69). Based on the above definition, it can be stated that continuing education is a learning opportunity for adults to improve their abilities after they carry out an activity or volunteer work in the community. Article 12 of the RI Law of 2003 states that:

1. Secondary education is a continuation of basic education
2. Secondary education consists of general secondary education and vocational secondary education
3. Secondary education is in the form of Senior High School (SMA), Madrasah Aliyah (MA), Middle School Vocational (SMK) and Vocational Madrasah Aliyah (MAK), or other equivalent forms.
4. Education equivalent to SMA or MA is a program such as Package C in the non-formal education pathway.

Database systems and DBMS have a very close relationship. It is said that a database system is a system consisting of a database and a DBMS. Date, in addition to defining the Data, also provides a statement about the definition of the DBMS. According to Date, DBMS is a software or computer software that is intended to handle all access to the database (database) and then serve the needs of users who will access the database.

the database. So, it can be concluded that a database system is a system that performs the management process on the database or database using DBMS software. A database and DBMS will not be called a database system, if the database and DBMS do not interact and are not interconnected with each other.

It must be admitted that the quality of the data and information used in educational planning is still inadequate, limited, slow and even still an estimate whose validity cannot be accounted for. These problems may be caused by:

1. There is no special system that focuses on the development and management of IS, which always validates data and information about academics.
2. Unstable network problems that result in frequent internet disturbances.
3. Lack of human resources who have sufficient ability and interest in the field of data and information management, at each management level

3. Methods

In the research of this scientific paper, the research approach that we use is a qualitative approach so that statistical analysis is not used. And the method we use is descriptive method, a method to provide a description of a phenomenon from certain circumstances in the form of social, economic conditions.

As for the data collection technique we used the literature study method. This literature or literature study method is carried out to obtain data from written information originating from secondary sources in the form of books, journals and articles on the internet that support this research. Content analysis will be used as a research methodology to collect possible data to answer research questions. Content analysis will involve a number of steps, which include formulating research questions to be answered, selecting text, defining applicable categories, highlighting the coding process and executing the coding process, determining reliability, and checking the results of the coding process. The contents of the selected articles will be analyzed to bring out the main points related to the research topic. The articles that will be used for content analysis will be sourced from international databases.

4.1 Result

Massive data processing and utilization or commonly known as big data technology has become an important factor underlying this breakthrough. Now data is no longer a complementary factor, but has become the main weapon to win the competition in various fields.

Indonesia is one of the largest countries in the world, so it has huge potential as a producer and user of data. It is not difficult to find evidence of massive use of technology and data, because we can find it easily in everyday life.

In the context of sustainability education itself, the database system has contributed a lot in supporting and participating in carrying out various educational functions. This will be further discussed in the discussion section.

4.2 Discussion

The database system is a representation of the ease and accuracy in implementing sustainability education. The database system has many roles and benefits, both in general and in particular.

The general benefits of the database system itself include:

1. Speed and Ease (Speed)

The first benefit of databases is in terms of speed and convenience. This means that the design of the database aims to speed up the information processing process. Because of the concept of primary key, indexing, searching, sorting, and much more. In addition, a good database requires its use to be easy to use.

2. Centralized Data Control

Centralization of data control means that data maintenance can be carried out by a user who is appointed as the person in charge of database management in a system, and in this case the user in question is called a database administrator. The database administrator is responsible for creating, editing, deleting, managing users, and maintaining various databases.

Thus, the benefit of centralized data control is that incoming data through various inputs can be processed via a dedicated PC Server database, without reducing or colliding with existing network performance.

3. Togetherness of Use (Sharability)

A good database is required to be used together (shared-database). An example is the MySQL database, which provides database access at the same time. Management of industrial data is facilitated by the presence of a shared database, because web-based Enterprise applications can be accessed by all interested staff, which requires database access at the same time. For this reason, shared-database systems usually provide User and Access Privilege features that determine and regulate data limits and what data features can be accessed by certain users.

4. Efficiency of Storage Space (Space)

Because the database is stored on a dedicated PC, this will certainly save space where the data storage process is not carried out on all client PCs but is stored on a single specified PC. All transactions in and out of records in the database must go through this Dedicated-PC Server.

5. Accuracy

Because all sources of information and processed data are stored in the same database, the level of accuracy is guaranteed. All information and data processing results are stored in the same place. Facilitate the management of a data.

6. Availability

Availability means that processed data or information is available whenever needed. This makes the database a ready-to-use information which ensures that the information can be accessed at any time without significant delay.

7. Completeness

Database is the completeness of information stored and processed, because various data attributes such as primary key, index, relationship, foreign key, also become properties that accompany the database. So with these properties, the database not only contains rows of records that produce information, but also information related to data structures, data types, relationships between tables, data properties, and much more.

8. Security (Security)

The database guarantees that the stored information is ensured to be safe, either by using password methods, encryption, or access restrictions (data access restrictions). Mdb database types like which is owned by Microsoft Access (.mdb) has included a database file protection feature with a password. Meanwhile, the MySQL database accompanies the user privilege feature which regulates the management of user accounts and limits on data access and what operations can be performed on the data on the server. Likewise with another method, namely encryption through third-party encryption tools.

The benefits specifically to the context of sustainability education in a nutshell are:

1. In the Library Aspect

In managing the library it is necessary to have a database system, in order to make it easier to find a document, book, reference and so on, so by searching by name of the

researcher, for example a book by Tatang Sutarman, we will automatically find the location of the book we are looking for.

2. In the aspect of administration

In administrative management, there is a need for a database system to make it easier to enter data. For example, in payment spp. The database is one of the important components in the information system, because it is the basis for providing information for users. The database consists of data that will be used or intended for many users, from each user will use the data according to their duties and functions.

3. In the learning aspect

Database is a learning tool to improve students' abilities. For example, the computer is a common database media. Computers are one of the fields of study in the ability that must be possessed by every student. With the provision of computer science since school, children can compete later when entering the world of work. Another benefit of computers is that they open horizons. Lots of access to knowledge using computers. Can open students' horizons about this world and everything in it.

5. Conclusion

Information technology in general and database systems in particular are indispensable in life in this era, including in the context of implementing sustainability education today. Information technology has been successful in representing various kinds of facilities in supporting the implementation of sustainability education. This can be seen in almost all aspects of life, where database system information technology can help in achieving effectiveness, efficiency, accuracy, and ease

In summary, the role of the database system in sustainability education includes:

1. Assist all parts that play a role in the world of education by providing comprehensive information about education from elementary school to high school or equivalent.
2. Providing facilities so that all parts that play a role in the world of education in the province / district city so that they can play an active role in efforts to advance the education business.
3. Public accountability, namely by providing transparent information about policies and the use of resources allocated for education.

The education sector in Indonesia must also be prepared to face a moment that is closely related to the digital era. One key thing that every industry must always improve is the ability to manage data that is safe and appropriate, according to applicable regulations.

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