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TRAINING IN CREATING A DATABASE FOR STORING AND MANAGING SCHOOL DATA

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Abstract

In the current digital era, managing school data efficiently and effectively is crucial to supporting the learning and administration process. The background to this initiative is rooted in the need to store, access and manage school data in a more structured and systematic way. Problems often faced include limitations in storage capacity, difficulties in accessing data quickly, and challenges in ensuring data security. To overcome this, the proposed method is database creation training which is designed to provide an in-depth understanding of basic database principles, effective database design, as well as data management and security techniques. The aim of this training is to equip school staff and administrators with technical skills in building and managing school databases, so as to increase operational efficiency and ensure the integrity and security of educational data. This will enable schools to utilize information technology to better manage information resources, support strategic decisions, and improve the quality of education.

Keywords: Digital era, school data management, data storage and access, data security, database creation training.

INTRODUCTION

Introduction to Databases with the aim of developing the use of Information Technology [1]. In the increasingly developing digital era, the use of information technology has become an integral part of various sectors, including education.

Today's technological developments require students to be proficient in using technology [2]. Information technology is a science that studies the use of technology as a medium in managing information [3]. Technological developments in this day and age require students to be proficient in using technology, especially for MTS Asyafi'iyah 04 in the field of computers who are expected to be able to work immediately after finishing school [4].

Schools are currently facing demands to manage information more effectively and efficiently. Therefore, the existence of a good database system is crucial in supporting optimal school data management.

Database management information system training for storing and managing school data is to increase the efficiency and effectiveness of school data management.

By using databases, schools can store data better, more easily accessed, and easier to analyze [5][6]. This can help schools to make better decisions about school management, such as in terms of planning, budgeting and evaluation.

In this context, the research entitled Database Creation Training for Storing and Managing School Data has a strong background. Some basic reasons why this research is relevant and important are as follows:

1. Complexity of School Data: Modern schools collect and manage various types of data, such as student data, teaching staff data, lesson schedules, test results, attendance, and other administrative information. This data can be very complex and diverse, requiring structured and organized solutions. A computerized data processing system cannot be separated from the important role of the database in it. The database is a container that holds data as above so that it can be called at any time by users of the data.
2. The Need for Efficiency: Managing data manually or with inappropriate tools can take up valuable time and resources. With the right database system in place, administrative work can be automated, allowing school staff to focus on more important tasks.
3. Data-Based Decision Making: Schools that rely on data-based decision making have a competitive advantage. By storing data in a structured manner, schools can analyze trends, understand student performance, identify areas of improvement, and make more informed decisions.
4. Data Precision and Accuracy: Errors in managing school data can have a major impact on academic and administrative processes. A good database system can help maintain data accuracy and reduce the risk of human error.
5. Improved Services: With the right database system, schools can provide better services to students, parents, and staff. Information that is easily accessible and up to date can improve communication and interaction between various parties.
6. Workforce Education: Training in database creation and management is an investment in workforce education. Teachers and school staff who are proficient in information technology will be able to manage the system better.

In the context of the background above, this research aims to develop training that focuses on creating and managing databases that suit school needs. This training will include an introduction to database concepts, data structure design, database implementation, data security, and how to manage information efficiently[7][8][9]. It is hoped that this research can provide practical guidance for schools to improve their data management and support better decision making in educational contexts.

Partner Problems

Lack of Awareness and Knowledge: Many school staff may not have sufficient understanding of basic database concepts, data structure design, and information management. This lack of knowledge can hinder technology adoption and efficiency in data management. Lack of Technology Skills: While some staff may have basic knowledge of technology, they may not have sufficient skills in designing and managing databases. This problem can result in errors in data structure design and information management. Lack of Infrastructure and Resources: Some schools may have limitations in terms of technological infrastructure and trained human resources. Without adequate equipment and skilled staff, this training may be difficult to implement successfully.

Benefits and Urgency (Priority) of Community Service

The benefits and urgency of Database Creation Training for Storing and Managing School Data lies in several important aspects in the context of education and school administration in the digital era, as follows:

1. Optimizing Administrative Processes: By building and managing an efficient school database, administrative processes become more organized. This enables the management of student, staff and school asset data in a more systematic way, reducing redundancy and speeding up the information retrieval process.
2. Improved Data Security: Data security is very important in avoiding loss, theft, or misuse of sensitive school information. This training offers methods to improve database security, ensuring that data is protected from external and internal threats.
3. Data-Driven Decision Support: An organized and well-managed database provides the basis for data analysis that can support strategic decision making. This allows schools to identify trends, allocate resources effectively, and improve educational outcomes.

Purpose of Community Service

This training aims to provide participants with understanding and skills related to creating, using and managing databases in an educational context. By participating in this training, participants are expected to achieve the following goals:

1. Understanding Database Concepts: Participants will understand the basics of database concepts, such as tables, relationships and keys. They will know how database structures can be used to store and link data efficiently.
2. Database Creation: Participants will learn how to design and create a database that suits school needs. They will understand how to plan table structures, attributes, and relationships to organize data.

3. Data Management: Participants will learn how to enter, change, and delete data in a database. They will be given an understanding of how to manage data to keep it accurate and orderly [10].
4. Use of Technology in Data Management: Participants will understand technology in inputting data and processing school data. By using technology, work can be completed quickly and saves processing time [11].
5. Administrative Efficiency: Participants will be able to reduce dependence on manual processes in data management. They will understand how databases can help increase efficiency in tasks such as student registration, recording grades, and others [12].

RESEARCH METHOD

Research design

Training on creating a database to store and manage school data is designed to improve the ability of school staff to manage information efficiently using a database system. This training combines theory and practice, giving participants an in-depth understanding of basic database principles, design, implementation, and database maintenance. The following is the training implementation method:

1. Preparation

Before implementation, the training committee carried out a series of preparations, including:

- Material Preparation: Material is prepared based on school data management needs, including introduction to databases, SQL, database design, and use of database management software such as MySQL or PostgreSQL.
- Instructor Selection: Instructors who are experienced in the field of databases and school data management are selected to provide training materials.
- Facilities Preparation: Prepare a training room equipped with computers/laptops for each participant, projector, and internet connection.
- Participant Registration: Interested school staff are invited to register as training participants.

2. Implementation

Training is carried out through several sessions which include:

- Theory Session: Provides a conceptual understanding of databases, including data structures, normalization, relationships between tables, and database security principles.
- Practical Session: Participants are guided to create a database according to school needs. This session covers creating a database schema, data entry, basic queries to retrieve information, and data backup and recovery techniques.

- Discussion and Case Studies: Presents real case studies of data management in schools, discussions about problems that are often faced, and how to overcome them using databases.
- Evaluation and Feedback: At the end of the session, participants are expected to be able to demonstrate their ability to manage databases. Feedback is provided for further improvement and development of participants' abilities.

RESULT AND DISCUSSION

1. Training Results

The training "Creating a Database for Storing and Managing School Data" was successfully implemented with the active participation of school staff from various departments, including administration, finance and academics. Training participants are given a series of materials ranging from basic database concepts, data modeling, database implementation using leading database management software, to query techniques for data retrieval.

One of the significant results of this training is the creation of a database prototype for the purposes of storing and managing school data, which includes student data, teacher data, lesson schedules and academic track records. Trainees successfully demonstrated their ability to design effective database schemas, enter data into a database, and perform basic operations such as searching, updating, and deleting data.

2. Discussion

Implementation of this training opens up important insights regarding several aspects:

- Importance of Databases in School Data Management: Databases have proven to be a crucial tool in managing school data efficiently. With a database, schools can store data in a structured manner, making it easier to search for information, and minimizing the risk of data loss.
- School Staff Technical Skills: One of the challenges faced during training is the variation in participants' technical skill levels. This requires a flexible teaching approach and intensive question and answer sessions to ensure that all participants can follow the material well.
- Implementation and Continuous Development: Although this training succeeded in improving participants' abilities in creating and managing databases, the next challenge is the implementation and development of the database to meet the specific needs of the school. This requires ongoing commitment and effort from school staff to update and maintain the database.
- Collaboration between Departments: Effective management of school data requires close collaboration between departments. This training stimulated

discussion about how databases can be used to support collaboration between departments in managing school information.

The following is a table of evaluation results of participants' understanding in the training "Creating a Database for Storing and Managing School Data":

Table 1. Evaluation results of participant understanding

Aspek	Average Score Before Training	Average Score After Training
Introduction to Databases	55	80
Database Design	50	85
Use of SQL	45	80
Data Management	40	75
Security and Privacy	35	70

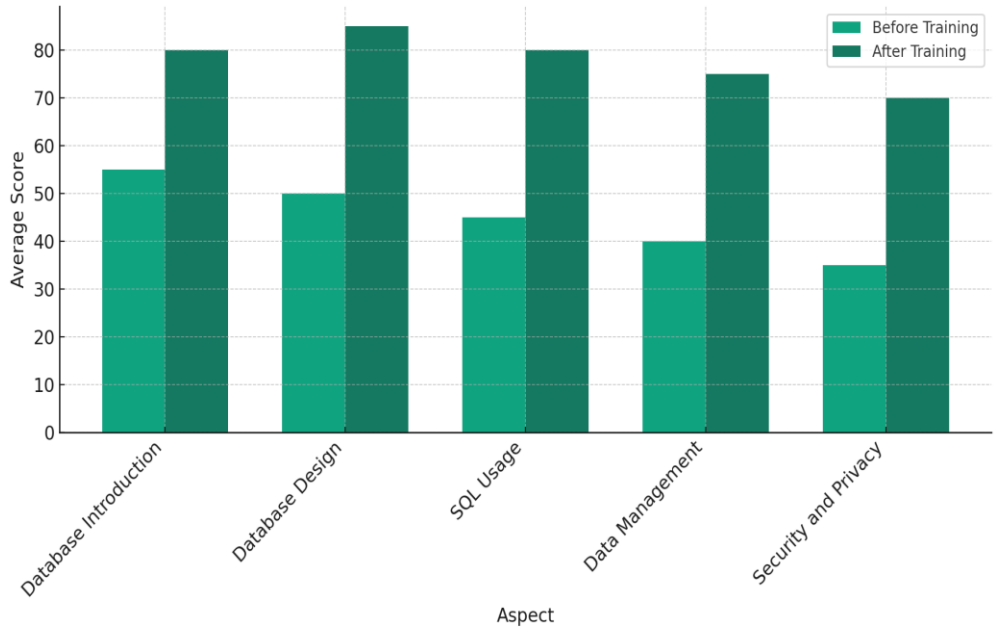

Figure 1. Improvement of Participants Understanding in School Database Training

The graph above shows the increase in understanding of the training participants in creating databases to store and manage school data. From the graph, we can see an increase in the average score from before to after training in each aspect evaluated, indicating the effectiveness of the training in increasing participants' understanding of creating and managing school databases.

Figure 2. Implementation of Database Creation Training for Storing and Managing School Data

CONCLUSION

Conclusion

Training on Creating a Database for Storing and Managing School Data has succeeded in achieving its main objective, namely increasing participants' understanding of key concepts in creating and managing databases and improving their practical skills. Assessment evaluations show significant improvements in participants' theoretical knowledge and practical skills, as well as active participation and effective application of knowledge in the final project.

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