Module#4 Accessible Learning

Name_____ Class number: _____
Section: _____ Schedule: _____ Date: _____

Lesson title: Basic of Computing Platform: <u>What is Database?</u>
Learning Targets:

1. What are the types of databases?.
2. What are the components of a database?.

A. Introduction

What is Database?

A database is a collection of data that has been organized to make it simple to manage and update. Data records or files containing information, including as sales transactions, customer information, financial data, and product information, are often aggregated and stored in computer databases.

Any type of data can be stored, maintained, and accessed using databases. They gather data on individuals, locations, or objects. It is gathered in one location so that it can be seen and examined. You might think of databases as a well-organized collection of data.

B. Main Lesson

1. What are the types of database?

   The varieties of databases are numerous. They can be divided into four categories based on the type of content: pictures, full text, numeric, and bibliographic. Databases are frequently categorized in computing according to the organizational strategy they employ.

   The following are a few of the major organizational databases:

- **Relational**
  - Data is defined using a tabular structure, allowing for flexible reorganization and access. Tables are the building blocks of relational databases. In those tables, data is organized into predetermined categories. Each table has rows with a specific data instance for each of the categories stated in the columns, as well as columns with at least one data category. A relational database's rows, columns, and tables are used to arrange data about a particular consumer. These have been indexed to facilitate searching with SQL or NoSQL queries.

- **Distributed**
  - This database keeps files or records in a number of real places. Additionally, data processing is replicated and dispersed among the network's many regions.

- **Cloud**
  - These databases were created for a virtualized environment in a public, private, or hybrid cloud. Users are charged according to the amount of bandwidth and storage they consume. They also benefit from high availability and demand-based scaling. These databases can be used with software as a service-deployed applications.

- **No SQL**
    - NoSQL databases are effective when handling huge distributed data collections. Compared to relational databases, they are better able to address big data performance challenges. Additionally, they excel at processing data from cloud virtual servers and huge unstructured data volumes. Non-relational databases are another name for these types of databases.

- **Object-Oriented**
    - Data produced by object-oriented programming languages is stored in these databases. Instead of emphasizing actions or reasoning, they concentrate on organizing objects and data. As opposed to an alphanumeric value, an image data record would be a data object.

- **Graph**
    - These databases fall within the NoSQL database category. They use graph theory ideas to store, map, and query relationships. Nodes and edges make up graph databases. Nodes are things that link the nodes together.

C. Conclusion:

Cybersecurity has provided a comprehensive understanding of this fundamental aspect of information management. We've explored the different types of databases, including relational, NoSQL, and columnar databases, each with its unique strengths and use cases. Additionally, we've examined the essential components of a database, which typically include tables, records, fields, and a database management system (DBMS). Understanding these components is crucial for effectively organizing and retrieving data in a structured manner. Databases are the backbone of modern information systems, and the knowledge gained in this lesson serves as a valuable foundation for anyone seeking to work with data, whether in business, technology, or various other fields.

Author:

TechTarget: https://www.techtarget.com/searchdatamanagement/definition/database