Computer Basics: Database

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Database Basics

What is a database?

- A database is an organized collection of data, or information, that is stored electronically on a computer system.
- Databases are used to store a wide variety of data, such as customer information, product information, financial data, and scientific data.

Why use a database?

- Databases offer a number of advantages over traditional methods of data storage, such as paper files and spreadsheets.
- Databases are `more efficient` to store and manage large amounts of data.
- Databases allow for `easy searching and retrieval of data`.
- Databases can be used to `share data` with other users.

Types of databases:

- There are many different types of databases, but the most common are `relational databases` and `non-relational databases`.
  - **Relational databases** store data in tables, where each table is made up of rows and columns.
  - **Non-relational databases** store data in a variety of formats, such as XML or JSON.

Database Design

- Database design is the process of creating a database that is efficient and meets the needs of the users.
- There are a number of steps involved in database design, such as:
  - Identifying the data that needs to be stored
  - Determining the relationships between the data
  - Normalizing the data
  - Creating a database schema

Database Management Systems (DBMS)

- A database management system (DBMS) is a software program that is used to `create`, `manage`, and `access databases`.
- Some popular DBMSs include `Oracle`, `MySQL`, and `Microsoft SQL Server`.

SQL

- SQL is a structured query language that is used to `communicate with databases`.
- SQL can be used to create, read, update, and delete data in a database.

See Also:

- Khan Academy Database Course: https://www.khanacademy.org/computing/computer-programming/sql
- W3Schools SQL Tutorial: https://www.w3schools.com/sql/

Microsoft Access

Microsoft Access is a database management system (DBMS) from Microsoft that combines the relational Access Database Engine (ACE) with a graphical user interface and software-development tools.

See also:

- Access video training
- What is Microsoft Access? - Database.Guide

True/False (Mark T for True and F for False)

Multiple Choice (Select the best answer)

Exercises

Review Questions

References and Bibliography

- Access video training
- What is Microsoft Access? - Database.Guide