

SESSIONS 1

Introduction to Databases

Data Science Program

Outline

- What is databases?
- Why we need databases?



What is Databases?

Database Definition

- A **database** is an organized collection of data, generally stored and accessed electronically from a computer system.
- **Database**, also called electronic database, any collection of data, or information, that is specially organized for rapid search and retrieval by a computer.
- Where databases are more complex they are often developed using formal design and modeling techniques.



Database Terminology

- Formally, a "database" refers to a set of related data and the way it is organized.
- Access to this data is usually provided by a "database management system" (DBMS) consisting of an integrated set of computer software that allows users to interact with one or more databases and provides access to all of the data contained in the database (although restrictions may exist that limit access to particular data).



Why we need database?

Database Functionality

1. Database Management System (DBMS) help to correlate, query, and report to the collected information.
2. DBMS can quickly answer lots of questions.
3. DBMS help to understand complicated data.
4. DBMS can improve our work and reducing excessive work hours in pursuit of particular objectives.



Using Databases to Improve Business Performance and Decision-Making

Businesses use their databases to:

1. Keep track of basic transaction
2. Provide information that will help the company run the business more efficiently
3. Help managers and employees make better decisions



Reference

- Wikipedia, “Database”, <https://en.wikipedia.org/wiki/Database>
- Britannica, “Database”, <https://www.britannica.com/technology/database>
- David Scott Brown, “7 Reasons Why You Need a Database Management System”, <https://www.techopedia.com/2/31970/it-business/7-reasons-why-you-need-a-database-management-system>
- Using Databases to Improve Business Performance and Decision-Making, <https://paginas.fe.up.pt/~als/mis10e/ch6/chpt6-3bullettext.htm>