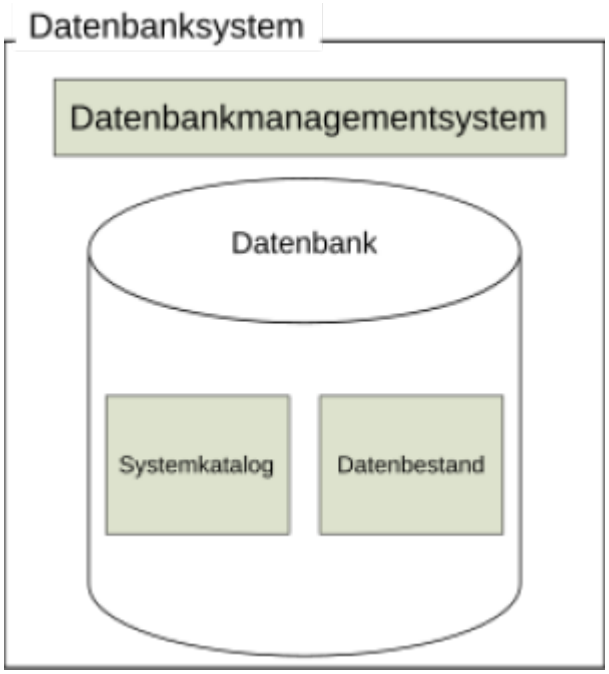
LU03a - DBS, DBMS, DB

Introduction

Databases are fundamental to modern information systems, such as Webshops or Banking Applications. This document provides a concise overview of three key terms:

1. **DBS**: Database System
2. **DBMS**: Database Management System
3. **DB**: Database

The following diagram illustrates the interaction of these three terms:



Database System (DBS)

A Database System (DBS) encompasses the database, the DBMS, and associated hardware and software components. It represents the complete environment for managing data.

Components of a DBS

- Database (DB): The stored data itself.
- Database Management System (DBMS): The software for managing the DB.

Database (DB)

A database (DB) is a structured collection of data organized for efficient retrieval and management. It stores information in a systematic way, allowing users to access, modify, and analyze data as needed. Basically, it is several Excel spreadsheets that are linked together.

**Characteristics of a DB **

- Organized: Data is arranged in a logical manner (tables, records, fields).
- Integrated: Data is related and consistent across the database.
- Shared: Multiple users can access and update data simultaneously.
- Controlled: Access to data is managed through security measures.

Database Management System (DBMS)

A Database Management System (DBMS) is software that interacts with users and applications to create, store, modify, and retrieve data from a database. It acts as an intermediary between the user and the database.

Functions of a DBMS

- Data Definition: Creates and modifies the database structure.
- Data Manipulation: Allows users to insert, update, delete, and retrieve data.
- Data Query: Enables users to search and retrieve specific data.
- Data Integrity: Ensures data accuracy and consistency.
- Data Security: Protects data from unauthorized access.
- ...

Additional Material

- Aufbau von Datenbanken

Vocabulary

English	German
to provide	bereitstellen
retrieve	abrufen
concise	knapp und präzise
to interact	zusammenwirken
to modify	verändern
intermediary	VermittlerIn

References

Definition DBS: https://de.wikipedia.org/wiki/Datenbank

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