

Reflection on Data-driven Information Systems around you

1) A database management system or database management system can be understood as software with the ability to store and retrieve user data. This allows the application to request data and provide specific data. There are also specific security measures that help users retrieve and store data from various software. It was created to support the data types supported by the computer's language and to create a neat and clean database. It can store six data types, the first scalar data type storing scalar values such as numbers and decimals. Then use the composite data type to store the first combination of data types. Then there is a reference data type that stores another type of data. These are called pointers in C. The LOB data type is also used to store classes such as large objects, videos, and images. However, the unknown column type is the data type used when searching for unknown objects. Finally, the user can define the data type, the user can define a new data type, and can be thought of as a composite data type.

2) The DBMS manages the data. The database engine allows you to access, lock, and modify your data. The database schema defines the logical structure of the database. These three basic elements help provide concurrency, security, data integrity, and an integrated data management process. Database management systems help users share data quickly, efficiently, and securely across the organization. By providing a rapid solution for database queries, data management systems provide faster access to more accurate data. What if the DBMS data is not available? DBMSs play an important role in both the creation and management of data. Without a DBMS, it is impossible to run and manage data effectively. As an intermediary between the user and the database, the DBMS provides the user with access to the files stored in the database.

3) DBMS, the physical storage of data. This makes the data physically persistent and allows you to get information quickly. With a simple DBMS on your computer, your data is stored on your hard drive. In an enterprise solution, the DBMS is started on a dedicated server computer and the data is stored on the computer's hard drive. Compare this to Excel, which is largely limited by your computer's RAM. This can cause large amounts of data to freeze quickly. A DBMS eliminates this problem by using advanced data persistence techniques and structures. The technologies that stand out are fast data sharing, better security, and better productivity.

4) For DBMS, data breaches lead to data privacy and security issues, which are not usually the result of malicious attacks. It can be caused by loss or mishandling of valuable data, by accident or by the user's lack of understanding of security and privacy policies. Another common form is fraud. A phishing link sent by an attacker is published disguised as information from a trusted source. When a user clicks on it, an attacker can compromise their device or gain access to the local network. Finally, the emergence of ransomware is a major new threat to personal and organizational data. Ransomware infiltrates your device and encrypts data, ransomware requires a ransom to return the key, otherwise the data becomes unusable. Unfortunately, even paying the ransom is ineffective and data is lost.

1) File system, file system is a technology for placing files on storage media such as hard drives, USB sticks, and DVDs. You can organize your data and search for files by grouping different files into directories. Its main purpose is to manage user data, and some file systems accept data for storage as a stream of bytes that are collected and stored in a media-efficient manner.

2) File system whenever. Lavarian (2022) you open a file on your computer or smart device, the operating system uses that file system to load the file internally from your storage device, alternatively, if you copy, edit, or delete a file, the file system processes the file in the background, the file system is involved whenever you download a file or access a website over the Internet. For example, when you visit Deakin's page, the browser sends an HTTP request to Deakin's server to retrieve the page. If the requested resource

is a file, it will be retrieved from the file system. Two things can happen if the data is not available. First, the data does not appear on the website because you cannot access the data on the website. Second, you cannot access the data in your computer's file system. That is, the file cannot be used. If you created a c # file, but the data associated with the c # file is not available on the file system, then the entire file is incomplete and available

3) File system. A file system stores and organizes data, indexing all data in its storage devices. These devices include flash memory, hard drives, and other storage devices. Sullivan (2018) File systems specify file naming conventions, the number of characters in the name, the characters that can be used, and the length of the file name suffix in the system, where the file name is case-insensitive. In addition to the file itself, the file system contains information such as the file size, its attributes, location, and the hierarchy in the metadata directory. The metadata also determines the available memory blocks and available disk space on the drive. The technical advantages are good compactness, less space required for storage in comparison, and faster data retrieval, saving data in any file format

4)file system: If a strong firewall is not built, due to virus entry or corrupted files in the computer or sudden system crash, resulting in unsafe files, data loss or file corruption. Secret love. It is the process of writing a binary data set into memory. 3. Corrupt system files. File system moves and rearrangements can happen because someone modifies the computer system. File system data is unusable, and unlike data from a DBMS that can be recovered, data loss means that the data cannot be restored from the computer system or the backup in progress. Once data is lost, users are in a predicament: confidential information, technical documents, financial accounts, etc., transactions and production data can all be damaged beyond recognition. Okay

1)NoSQL systems (full name "SQL and above") are non-tabular databases that store data differently than relational tables. There are different types of NoSQL databases, depending on the data model. The main types are documents, key values, wide columns, and charts. NoSQL databases are modelled as relational tables used in relational databases, and unlike SQL built outside the database, they store data in documents rather than relational tables.

2)For NoSQL, use data such as user session data. Chat data, messages, log data. Internet of Things time series data or device data. Large objects such as videos and photos. If these usages are not available, chat logs will be lost and user data will not be accessible. For example, if you log in to Facebook and your messages and user data are lost, your account will not be available. Needless to say, large objects such as video and image data in the device data are not available, which can lead to missing or non-functional device data

3) Divided into different collections in NoSQL by user-supplied data types (e.g., document-only databases, key-value stores, wide column databases, chart databases, etc.). There are multiple storage options that can be easily run with local or server storage. Distributed NoSQL databases automatically replicate data across multiple servers, data centers, or cloud resources to minimize data management latency and ensure a consistent application experience for users everywhere. Its prominent technologies are flexible data model with high performance operation..

4)NoSQL does not allow users to admin or authenticate by default, and it has a very weak password store. The client communicates with the server in plain text (MongoDB), which cannot use external encryption tools like LDAP, Kerberos, etc. and does not support data file encryption. Weak authentication between client and server. Sicari S et al. (2022) By detecting trusted devices, the use of distributed storage makes the end device more vulnerable to remote or physical attacks due to the distance from the central system, while

the contact is made through an unreliable network thus resulting in.

Lavarian R (11 January 2022) 'What Is a File System? Types of Computer File Systems and How they Work – Explained with Examples', *freeCodeCamp*, accessed 18 July 2022.

<https://www.freecodecamp.org/news/file-systems-architecture-explained//>

Sicari S., Rizzardi A. and Coen-Porisini A (2022) 'Security&privacy issues and challenges in NoSQL databases', *Computer Networks*, 206. doi: [10.1016/j.comnet.2022.108828](https://doi.org/10.1016/j.comnet.2022.108828).

Sullivan E (15 August 2018) 'file system', *TechTarget*, accessed 18 July 2022.

<https://www.techtarget.com/searchstorage/definition/file-system>