

1. The differences between data and information are that data doesn't have much meaning behind it, no connection to anything, whereas information has meaning and context behind it
2. Metadata is data that describes data; it gives meaning to data, such as units of measurement, labels, and the time period the data represents.
3. A DBMS is a database management system that provides tools to create, manage, and manipulate databases. Some of its advantages are: Enhanced security, manages access and permissions to control who can view or modify data, and efficient data access, enabling quick and efficient retrieval of data.
4. Operational databases and Analytical databases. An operational database is focused on day-to-day tasks, optimised for speed and efficiency, and constantly being updated. An example of an operational database is withdrawing cash; the system updates the account balance in real-time and processes the transaction. An analytical database is focused on data analysis and business intelligence, optimised for complex queries and reporting. An example of an analytical database is a retail data warehouse, which stores data from multiple stores over several years, and can then be analyzed for more effective marketing campaigns.
5. NoSQL databases are most effective for non-structured and semi-structured data, such as JSON, images, and user-generated content, which is ideal for use cases requiring high scalability and high-speed performance.
6. SQLite does not require a server configuration. Its advantages are: simplified setup process, a small footprint, no need for separate server administration, portability, and a self-contained database file.
7. ACID properties are essential for ensuring reliable database transactions and maintaining data integrity. These properties work together to guarantee that even in the event of errors or crashes, your data remains consistent and trustworthy.