**RDBMS:**

A relational database management system (RDBMS) is a program used to create, update, and manage relational databases. Some of the most well-known RDBMSs include MySQL, Microsoft SQL Server and Oracle Database. In a RDBMS, information is stored in tables. Tables contain rows and columns. Rows are individual records, and columns are the different details about each record. Each column has a specific type of information. These tables can be connected through shared details and this connection is known as a relationship.

**Data Warehouse:**

A Data Warehouse is like a special database used for looking at and understanding data. The information in the warehouse comes from everyday operations, like marketing or sales systems. It's like gathering all the important details in one place to perform various operations.

**Data Warehousing:**

Data warehousing is like gathering, storing, and managing lots of information from different places to help businesses make better decisions. It's like having a central storage space where all the data from different parts of a company is put together in an organized way. This organized data is then used for things like reports, analysis, and helping the business make smarter choices.

The features of data warehousing are:

**Subject-oriented**: Data is organized by topics instead of specific applications. The main focus is on creating models and analyzing data to help decision-makers, rather than dealing with everyday tasks or transactions.

**Integrated**: Put together by bringing in different types of data sources like databases, flat files, and online records. It makes sure that names, structures, and other details of the data are consistent across all these different sources.

**Time-variant**: The data warehouse looks at a much broader time frame compared to operational systems, offering information from a historical viewpoint, such as the past 5-10 years.

**Non-volatile**: No changes are permitted; once data is added to the data warehouse, it remains permanently. The warehouse contains the company's historical data, and operational data representing recent history is consistently added to it.

**OLTP:**

OLTP (Online Transaction Processing), is a way to help users access the data easily. It works quickly and in a straightforward manner to help with deductions based on investigation. OLTP is a type of system that supports applications focused on transactions, like entering and retrieving data.

**OLAP:**

OLAP (Online Analytical Processing), is like a computer tool that helps people quickly find important information in a huge amount of data. It's great for doing advanced analyses, letting users explore data from different angles. Key OLAP features are:

**Multidimensional Data Structure**: OLAP organizes data into a cube-like shape with different sides. Each side represents a different part of the data, so users can look at it in different ways.

**User Interaction**: OLAP lets users interact a lot. They can zoom in on details, zoom out to see summaries, and move around the data easily.

**Complex Calculations**: OLAP can do complicated math and combine data in smart ways, making it fast to work with lots of information. This is helpful for making advanced decisions.

**Fast Queries**: OLAP is built to quickly get the answers you need. Even when there's a ton of data, it can find and show information fast.

**Slicing and Dicing**: OLAP allows users to "slice and dice" the data cube. This means they can focus on specific parts of the data they're interested in. This flexibility is important for exploring data in different ways.

**SQL & its features:**

SQL is a standard language for storing, manipulating and retrieving data in databases. The features of SQL are:

**Flexibility and Scalability**: SQL offers users flexibility and scalability in managing relational database systems. It simplifies the process of creating new tables and removing or deleting tables that are no longer needed.

**Comprehensive Application Development Tool**: SQL serves as a comprehensive and efficient tool for application development. Programmers use SQL to program applications that need to access databases, making it suitable for organizations of all sizes.

**Rich Transactional Support**: SQL excels in handling large records and managing multiple transactions simultaneously, providing robust support for transactional operations.

**High Performance**: SQL provides high-performance programming capabilities, making it suitable for demanding database systems with heavy workloads and high usage. It offers various ways to describe data more analytically.

**High Availability**: SQL is compatible with various databases, including Microsoft SQL Server, Oracle Database, MS Access, MySQL, SAP Adaptive Server, and more. This compatibility allows for easy creation of application extensions and additional features, making SQL a powerful tool.

**High Security**: SQL is known for its high-security features. It allows for easy permission management on views, procedures, and tables, ensuring optimal security for data.