

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic look.

Introduction to databases MYSQL, POSTGRESQL AND SQL SERVER

DEFINITION OF DATABASE

- ▶ A database is a set of data stored in a computer. This data is usually structured in a way that makes the data easily accessible.
- ▶ A relational database is a type of database. It uses a structure that allows us to identify and access data in relation to another piece of data in the database. Often, data in a relational database is organized into tables.
- ▶ A relational database management system (RDBMS) is a program that allows you to create, update, and administer a relational database. Most relational database management systems use the SQL language to access the database.

DEFINITION OF SQL

- ▶ SQL (Structured Query Language) is a programming language used to communicate with data stored in a relational database management system. SQL syntax is similar to the English language, which makes it relatively easy to write, read, and interpret.
- ▶ • Many RDBMSs use SQL (and variations of SQL) to access the data in tables. For example, SQLite is a relational database management system. SQLite contains a minimal set of SQL commands (which are the same across all RDBMSs). Other RDBMSs may use other variants.
- ▶ (SQL is often pronounced in one of two ways. You can pronounce it by speaking each letter individually like “S-Q-L”, or pronounce it using the word “sequel”.)

RDBMS : MySQL

- ▶ MySQL is the most popular open source SQL database. It is typically used for web application development, and often accessed using PHP.
- ▶ The main advantages of MySQL are that it is easy to use, inexpensive, reliable (has been around since 1995), and has a large community of developers who can help answer questions.
- ▶ Some of the disadvantages are that it has been known to suffer from poor performance when scaling, open source development has lagged since Oracle has taken control of MySQL, and it does not include some advanced features that developers may be used to.

RDBMS : PostgreSQL

- ▶ PostgreSQL is an open source SQL database that is not controlled by any corporation. It is typically used for web application development.
- ▶ PostgreSQL shares many of the same advantages of MySQL. It is easy to use, inexpensive, reliable and has a large community of developers. It also provides some additional features such as foreign key support without requiring complex configuration.
- ▶ The main disadvantage of PostgreSQL is that it can be slower in performance than other databases such as MySQL. It is also slightly less popular than MySQL.

RDBMS : SQL Server

- ▶ Microsoft owns SQL Server. The code is close sourced.
- ▶ Large enterprise applications mostly use SQL Server.
- ▶ Microsoft offers a free entry-level version called Express but can
- ▶ become very expensive as you scale your application.

Difference between the three RDBMS

- ▶ **MySQL** is owned by Oracle. It supports programming languages like C++, Java and has running support for Perl, TCL and Haskell.
- ▶ It needs less amount of operational storage space. MySQL does not support midway query execution cancellation. It blocks the database while taking the backup.
- ▶ MySQL is free to use and Data file can be manipulated while running.
- ▶ **POSTGRES** Provides support to different functions of SQL and Views can be updated but not automatically .It Doesn't provide computed columns.
- ▶ Replication is in form of reports and is supposed to be least polished of the bunch
- ▶ **SQL Server** is developed by Microsoft. It supports programming languages like C++, Java, Ruby, Visual Basic, Delphi, R. SQL Server needs large amount of operational storage space. SQL Server allows canceling query execution midways. It does not block the database during backup process.
- ▶ SQL Server is costly.