PRACTICAL NO-1

AIM: Introduction to SQL. Features of SQL. Rules for SQL.

A) SQL is a language to operate databases; it includes database creation, deletion, fetching rows, modifying rows, etc. SQL is Structured Query Language, which is a computer language for storing, manipulating and retrieving data stored in a relational database.

SQL is the standard language for Relational Database System. All the Relational Database Management Systems (RDMS) like MySQL, MS Access, Oracle, Sybase, Informix, Postgres and SQL Server use SQL as their standard database language.

- SQL is easy to learn.
- SQL is used to access data from relational database management systems.
- SQL can execute queries against the database.
- SQL is used to describe the data.
- SQL is used to define the data in the database and manipulate it when needed.
- SQL is used to create and drop the database and table.
- SQL is used to create a view, stored procedure, function in a database.
- SQL allows users to set permissions on tables, procedures, and views.

There are the following advantages of SQL:

- High speed
  Using the SQL queries, the user can quickly and efficiently retrieve a large amount of records from a database.
- No coding needed
  In the standard SQL, it is very easy to manage the database system. It doesn't require a substantial amount of code to manage the database system.
- Well defined standards
  Long established are used by the SQL databases that are being used by ISO and ANSI.
- Portability
  SQL can be used in laptop, PCs, server and even some mobile phones.
- Interactive language
  SQL is a domain language used to communicate with the database. It is also used to receive answers to the complex questions in seconds.
- Multiple data view
  Using the SQL language, the users can make different views of the database structure.

  Rules of SQL:

  1. Only Use Lowercase Letters, Numbers, and Underscores
  2. Use Simple, Descriptive Column Names
  3. Use Simple, Descriptive Table Names
  4. Have an Integer Primary Key

5. Be Consistent with Foreign Keys
6. Store Datetimes as Datetimes
7. UTC, Always UTC
8. Have One Source of Truth
9. Prefer Tall Tables without JSON Columns
10. Don’t Over-Normalize