# PRACTICAL : 1

Introduction to SQL.

- SQL stands for Structured Query Language. It is used for storing and managing data in relational database management system (RDMS).
- SQL became a standard of the American National Standards Institute (ANSI) in 1986, and of the International Organization for Standardization (ISO) in 1987
- It is a standard language for Relational Database System. It enables a user to create, read, update and delete relational databases and tables.
- All the RDBMS like MySQL, Informix, Oracle, MS Access and SQL Server use SQL as their standard database language.

What Can SQL do?

- SQL can execute queries against a database
- SQL can retrieve data from a database
- SQL can insert records in a database
- SQL can update records in a database
- SQL can delete records from a database
- SQL can create new databases
- SQL can create new tables in a database
- SQL can create stored procedures in a database
- SQL can create views in a database
- SQL can set permissions on tables, procedures, and views

SQL Process

- When an SQL command is executing for any RDBMS, then the system figure out the best way to carry out the request and the SQL engine determines that how to interpret the task.
- In the process, various components are included. These components can be optimization Engine, Query engine, Query dispatcher, classic, etc.
- All the non-SQL queries are handled by the classic query engine, but SQL query engine won't handle logical files.
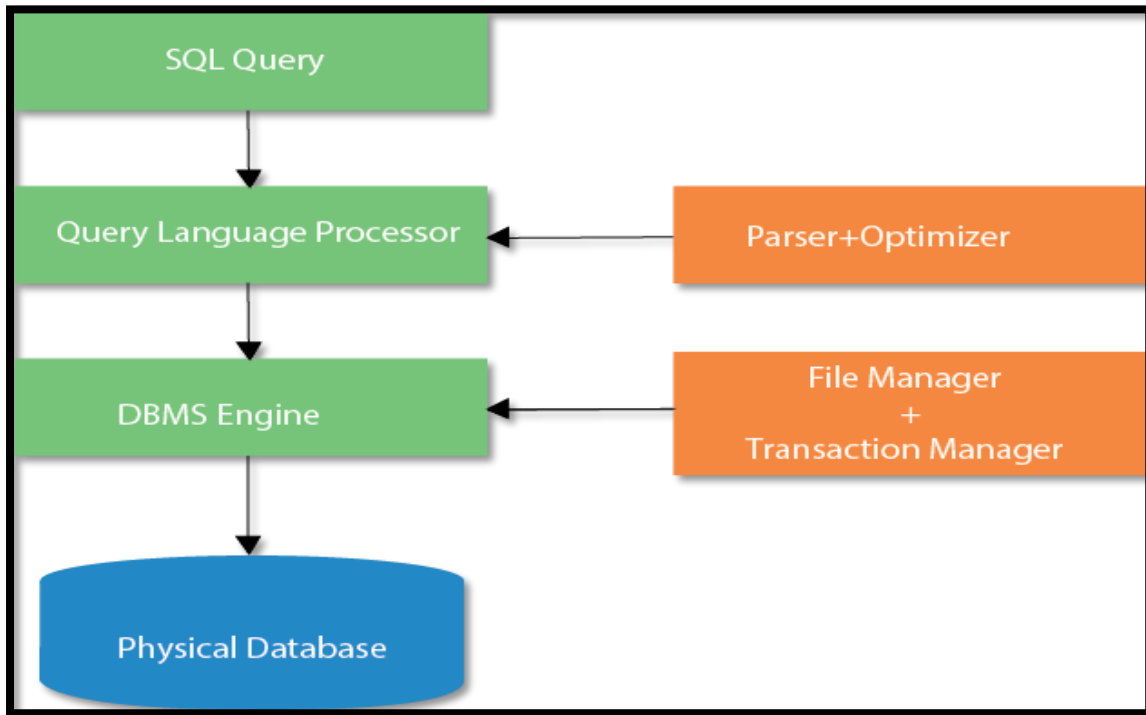
Features of SQl

- Security and authentication:
- Client server execution and remote database access:
- High Performance
- High Availability
- Scalability and Flexibility
- Robust Transactional Support
- High Security
- Comprehensive Application Development
- Management Ease
- Open Source
- Can contain SQL Procedural Language statements and features which support the implementation of control-flow logic around traditional static and dynamic SQL statements.
- Are easy to implement, because they use a simple high-level, strongly typed language.

- SQL functions are more reliable than equivalent external functions.
- Support input parameters.
- SQL scalar functions return a scalar value.
- SQL table functions return a table result set.
- Support a simple, but powerful condition and error-handling model.
- Reside in the database and are automatically backed up and restored as part of backup and restore operations.
- Can be invoked wherever expressions in an SQL statement are supported.
- Support nested functions calls to other SQL functions or functions implemented in other languages.
- Support recursion
- Can be invoked from triggers.
- Many SQL statements can be included within SQL functions

Rules of SQL

- SQL follows the following rules:
- Structure query language is not case sensitive. Generally, keywords of SQL are written in uppercase.
- Statements of SQL are dependent on text lines. We can use a single SQL statement on one or multiple text line.
- Using the SQL statements, you can perform most of the actions in a database.
- SQL depends on tuple relational calculus and relational algebra.
- SQL commands can be written on multiple line.
- Clauses are generally used to separate lines to build accuracy through it is not necessary.
- Tabulation (Index) can be used.
- Command words cannot divide over the lines.
- Execution takes place when the statement is specified by a semi-colon(;).
- Only one statement can be present at any time within the buffer and it can be run in multiple ways.