

What is SQL?

SQL is Structured Query Language, which is a computer language for storing, manipulating and retrieving data stored in relational database.

SQL is the standard language for Relation Database System. All relational database management systems like MySQL, MS Access, Oracle, Sybase, Informix and SQL Server use SQL as standard database language.

SQL (Structured Query Language) is a language used to access data from the database. The SQL is used for doing various database operations like creating database objects, manipulating data in the database and controlling access to the data.

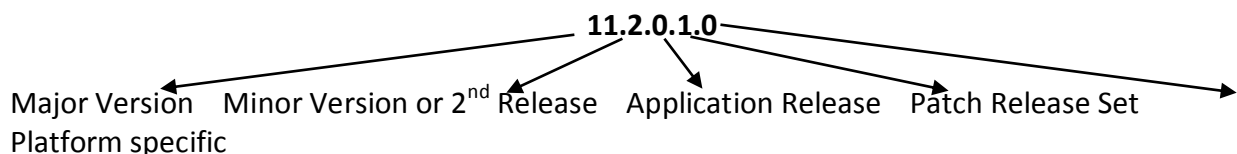
Why SQL?

- Allows users to access data in relational database management systems.
- Allows users to define the data in database and manipulate that data.
- Allows users to create and drop databases and tables.
- Allows users to create view, stored procedure, functions in a database.
- Allows users to set permissions on tables, procedures, and views.

Note: CEO of Oracle Corporation is “**Larry Ellison**”

History of Oracle: (Different versions of Oracle)

- In 1977, SEL (Software Development Laboratory) ... V1
- In 1979, RSI (Relational S/W Incorporation) V2
- In 1983, Oracle Corporation → Oracle 3 [Developed Using ‘C’, which supports simple queries but does not support transactions]
- In 1984, Oracle 4 → Supports Transactions [Commit/Rollback]
- In 1985, Oracle 5 → Client-Server Architecture [Only install DB in Server, so that ‘N’ no of Clients can connect is known as Client-Server Architecture].
- In 1989, Oracle 6 → PL/SQL
- In 1992, Oracle 7 → Supports DWH [OLAP-Online Analytical Processing]
- In 1997, Oracle 8 → ORDMBS
- In 1999, Oracle 8i → ‘i’ means Internet & it has inbuilt JVM (JAVA Virtual Machine)
- In 2001, Oracle 9i → with 400 New features, e.g. XML (Xtended Markup Language), RAC (Real Application Clusters) etc which provided high availability & performance.
- In 2003, Oracle 10g → ‘g’ means grid (group of DB Servers)
- In 2006, Oracle 11g → we can add columns with values etc.



Some of the Most Important SQL Commands:

- **SELECT** - Extracts data from a database
- **UPDATE** - Updates data in a database
- **DELETE** - Deletes data from a database
- **INSERT INTO** - Inserts new data into a database
- **CREATE TABLE** - Creates a new table
- **ALTER TABLE** - Modifies a table
- **DROP TABLE** - Deletes a table
- **CREATE INDEX** - Creates an index (search key)
- **DROP INDEX** - Deletes an index

SQL Commands:

The standard SQL commands to interact with relational databases are CREATE, SELECT, INSERT, UPDATE, DELETE and DROP. These commands can be classified into groups based on their nature:

DDL - Data Definition Language:

Command	Description
CREATE	Creates a new table, a view of a table, or other object in database
ALTER	Modifies an existing database object, such as a table.
DROP	Deletes an entire table, a view of a table or other object in the database.

DML - Data Manipulation Language:

Command	Description
INSERT	Creates a record
UPDATE	Modifies records
DELETE	Deletes records

DCL - Data Control Language:

Command	Description
GRANT	Gives a privilege to user
REVOKE	Takes back privileges granted from user

DQL - Data Query Language:

Command	Description
SELECT	Retrieves certain records from one or more tables

What is Database?

- 1) It is a collection of Inter-Related data. Records the data in HDD (Permanent Memory).
- 2) Inter-Related data means relation among data values
- 3) Objective of DB is to record data & save it for future use.

What is RDBMS?

RDBMS stands for **R**elational **D**ata**B**ase **M**anagement **S**ystem. RDBMS is the basis for SQL, and for all modern database systems like MS SQL Server, IBM DB2, Oracle, MySQL, and Microsoft Access.

A Relational database management system (RDBMS) is a database management system (DBMS) that is based on the relational model as introduced by E. F. Codd.

ODBC: (Open DB Connectivity)

- 1) It is open to all S/W & standardized by ANSI (American National Standard Institute).
- 2) It acts as an Interface between two different S/W.
- 3) Main job of ODBC drivers is Data Transformation & Data Transportation.

Data Transformation: It converts one S/W Data Types into another S/W corresponding Data Types.

Data Transportation: It carries instructions from front end (S/W application) & transfers to back end (DB) and vice-versa.

Note: Database is a Client-Server Architecture.

