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## Experiment No. 2

**Aim:-** **Aim:-** To study SQL and understand basis of MYSQL.

## Software used: MySQL

## Theory:-

SQL (Structured Query Language) is a standardized programming language used for managing relational databases and performing various operations on the data in them. Initially created in the 1970s, SQL is regularly used by database administrators, as well as by developers writing data integration scripts and data analysts looking to set up and run analytical queries.The uses of SQL include modifying database table and index structures; adding, updating and deleting rows of data; and retrieving subsets of information from within a database for transaction processing and analytic applications. Queries and other SQL operations take the form of commands written as statements commonly used SQL statements include select, add, insert, update, delete, create, alter and truncate.

### Basic Terminologies
These are some basic terminologies of database management system
- **Data**

Data and information are created as synonymous terms. Data is the representation of the information actually stored on the disk storage in the computer. Information is the meaning of data understandable to user. e.g. "1008" is a data (numeric data) while "account no" is the information.

- **Database**

The collection of the related data about a particular enterprise is referred to as a "database". An enterprise can be a self-contained, commercial, scientific, educational, technical or other organization. e.g. student database, bank account, items in the stores, etc.
- **Database System**

Database system is basically just a computerized record keeping system, which allow the user to access the information from the database.

- **Database Management System**

DBMS is a software system which organizes , maintains and manages the database to provide an environment i.e. convenient and efficient to use for users.

E.g. Oracle, Sybase,etc.

- **What is SQL?**

Structured Query Language or SQL is a standard computer language for accessing and manipulating database systems. SQL comprises one of the fundamental building blocks of modern database architecture. SQL defines methods using which user can create and manipulate databases on all major platforms. SQL is a set based declarative programming language and not an imperative programming language like C or BASIC.

- **Components of SQL**

SQL consists of three components:

1. Data Definition Language (DDL)
2. Data Manipulation Language (DML)
3. Data Control Language (DCL)

**The Data Definition Language (DDL):**
This component of the SQL language is used to create and modify tables and other objects in the database. For tables there are three main commands:

CREATE TABLE tablename to create a table in the database
DROP TABLE tablename to remove a table from the database
ALTER TABLE tablename to add or remove columns from a table in the database

**The Data Manipulation Language (DML):**
This component of the SQL language is used to manipulate data within a table. There are four main commands:

SELECT to select rows of data from a table
INSERT to insert rows of data into a table
UPDATE to change rows of data in a table
DELETE to remove rows of data from a table

**The Data Control Language (DCL):**
This component of the SQL language is used to create privileges to allow users access to, and manipulation of, the database. There are two main commands:
GRANT to grant a privilege to a user
REVOKE to revoke (remove) a privilege from a user

- **What 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 set permissions on tables, procedures, and views.

- **What is MYSQL?**

MySQL, the most popular Open Source SQL database management system, is developed, distributed, and supported by Oracle Corporation



**Conclusion: We have successfully studied how to install and operate MYSQL and also understood the the basics of MYSQL.**