INTRODUCTION TO MySQL

SQL stands for Structured Query Language

SQL is a standard language for accessing and manipulating databases.

SQL can 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

MySQL Database:

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. MySQL is developed, marketed, and supported by MySQL AB, which is a Swedish company. MySQL is becoming so popular because of many good reasons:

- MySQL is released under an open-source license.

- MySQL is a very powerful program in its own right. It handles a large subset of the functionality of the most expensive and powerful database packages.

- MySQL uses a standard form of the well-known SQL data language.

- MySQL works on many operating systems and with many languages including PHP, PERL, C, C++, JAVA, etc.

- MySQL works very quickly and works well even with large data sets.

- MySQL is very friendly to PHP, the most appreciated language for web development.

- MySQL supports large databases, up to 50 million rows or more in a table. The default file size limit for a table is 4GB, but you can increase this (if your operating system can handle it) to a theoretical limit of 8 million terabytes (TB).

- MySQL is customizable. The open-source GPL license allows programmers to modify the MySQL software to fit their own specific environments.

SQL GENERAL DATA TYPES

Each column in a database table is required to have a name and a data type.

The following table lists the general data types in SQL:

Data type	Description
CHARACTER(n)	Character string. Fixed-length n
VARCHAR(n) or CHARACTER VARYING(n)	Character string. Variable length. Maximum length n
BINARY(n)	Binary string. Fixed-length n
BOOLEAN	Stores TRUE or FALSE values
SMALLINT	Integer numerical (no decimal). Precision 5
INTEGER	Integer numerical (no decimal). Precision 10
BIGINT	Integer numerical (no decimal). Precision 19
DECIMAL(p,s)	Exact numerical, precision p, scale s. Example: decimal(5,2) is a number that has 3 digits before the decimal and 2 digits after the decimal
FLOAT(p)	Approximate numerical, mantissa precision p. A floating number in base 10 exponential notation. The size argument for this type consists of a single number specifying the minimum precision
DOUBLE PRECISION	Approximate numerical, mantissa precision 16
DATE	Stores year, month, and day values
TIME	Stores hour, minute, and second values
TIMESTAMP	Stores year, month, day, hour, minute, and second values

INTRODUCTION TO DDL AND DML COMMANDS IN MYSQL

DDL- Data Definition Language (DDL) statements are used to define the database structure in MYSQL.

DDL includes commands such as CREATE, ALTER and DROP statements.DDL is used to CREATE, ALTER OR DROP the database objects (Table, Views, Users).

 Data Definition Language (DDL) are used for different statements:

- CREATE - to create objects in the database
- ALTER - alters the structure of the database
- DROP - delete objects from the database

CREATE TABLE

Syntax: Create table <table name>(fieldname1 datatype(),fieldname2 datatype()...);

Example: create table studenttb(grno integer(5),class varchar(3),section varchar(1));

ALTER TABLE

1. ADD

2.MODIFY

ADD

Syntax: alter table <tablename> ADD (fieldname datatype ()...);

Example: alter table studenttb add (schoolname varchar(10));

modify

syntax: Alter table <table name> modify (fieldname datatype()...);

Example: alter table studenttb modify (schoolname varchar(10));

DESCRIBE TABLE

Syntax: DESC <TABLE NAME>;

Example: desc studenttb;

DROP TABLE

Syntax: DROP Table name;

Example: drop studenttb;

DML- Data Manipulation Language (DML) statements are used for managing data.DML deals with data manipulation, and therefore includes most common SQL statements such SELECT, INSERT, etc. DML allows to add / modify / delete data itself. DML is used to manipulate with the existing data in the database objects (insert, select, update, delete).

DML Commands:
1.INSERT
2.SELECT
3.UPDATE
4.DELETE

INSERT:
Syntax: INSERT INTO Table name values();
Example: Insert into student values (21687,' Pranav',8,'A');

SELECT:
To select all columns in a table:
Syntax: Select*from <table name>
Example: select * from studenttb;

To select specific columns in a table:
Syntax: Select <column name> from <table name>
Example: select sname from studenttb;

Eliminating redundant data(with keyword DISTINCT): The DISTINCT keyword eliminates duplicate rows from the results of a SELECT statement.
Syntax: select distinct <column name> from <table name>
Example: select distinct city from suppliers;

Condition based on pattern matches:

UPDATE:
Syntax: Update<table name> set to(calculation);
Example: update studenttb set grade='A' where grade='C';
DELETE:
Syntax: Delete from<table name>;
Example: delete from employee where salary<10000;