**what is SQL ?**

SQL stands for structured query language

SQL is a language

SQl is a case insensitive language

Ex: INSERT , insert , Insert

SQL is used to create database | table structured

SQL is used to create database | table | delete | update information’s in database.

SQL types of command ?

1. DDL
2. DML
3. DQL
4. TCL
5. DDL : stands for data definition language

Ex: create | alter | rename | truncate | drop |change.

1. DML : stands for data manipulation language

Ex: insert | update | delete

1. DQL: stands for data query language

Ex: select

1. TCL: stands for transactional control language

Ex: commit | rollback

**DDL : a) create a database**

**Syntax :** create database databasename;

Ex: create database flipkart;

<http://localhost/phpmyadmin/>

create database flipkart\_db;

**b) create a table**

**Syntax :**

Create table tablename

(

Id int(default size) auto\_increment primary key,

Name varchar(255),

Email varchar(255),

Password varchar(255),

gender varchar(255),

hobby varchar(255),

mobile bigint,

message text

);

Ex: create TABLE users

(

userid int AUTO\_INCREMENT PRIMARY key,

name varchar(255),

password varchar(255),

firstname varchar(255),

lastname varchar(255),

gender varchar(255),

hobby varchar(255),

mobile bigint,

address text

);

create TABLE category

(

category\_id int AUTO\_INCREMENT PRIMARY key,

name varchar(255),

added\_date varchar(255)

);

create TABLE subcategory

(

subcategory\_id int AUTO\_INCREMENT PRIMARY key,

subcategoryname varchar(255),

added\_date varchar(255)

);

create TABLE products

(

product\_id int AUTO\_INCREMENT PRIMARY key,

category varchar(255),

subcategory varchar(255),

pname varchar(255),

pimage varchar(255),

price float,

qty int,

descriptions text

);

Alter : alter is used to add | modify | change column name is tables .

Ex: alter table products CHANGE descriptions product\_decriptions text;

Ex: alter table products add added\_date varchar(255);

Ex: alter table products add offer\_price float after price;

Change :

alter table products CHANGE descriptions product\_decriptions text;

Rename : rename is used to rename the table name

rename table category to flip\_category;

rename table products to flip\_products;

**truncate** : truncate is used to remove or empty all tables data after truncate we never rollback data

truncate table tablename;

ex: truncate table flip\_category;

**drop :** drop is used to drop database and table structure and data both after drop we can not rollback data

**drop a database**

drop database databasename ;

ex: drop database flipkart\_db;

**drop a table**

drop table tablename;

ex: drop table flip\_category;

drop table flip\_products;

<http://localhost/phpmyadmin/>

create database flipkart\_db;

**DML :** dml stands for data manipulation language

Query : a) insert

b) delete

c) update

how to insert data :

1. Insert :

Ex: insert into flip\_category (name,added\_date) values ('mobile','09/01/2023');

Or insert multiple data

insert into flip\_category (name,added\_date) values ('electronics','09/01/2023'),('furnitures','09/01/2023'),('kitchen ware','09/01/2023');

or another way to insert query without taking columns

insert into flip\_category values ('null','kids items','09/01/2023'),('null','Mens items','09/01/2023'),('null','womens items','09/01/2023');

1. Delete : delete is used to delete all tables data | or particular data | or alternate data

1. Delete from flip\_category; deleted all data from tables
2. Delete from flip\_category where category\_id=1;
3. Delete from flip\_category where name=’mobile’;
4. Delete from flip\_category where name in ('mens items','electronics','kitchen ware');
5. Delete from flip\_category where category\_id BETWEEN 1 and 100;
6. Update :

Update tablename set columnname=’value’ where id=’id’;

update flip\_category set name='electronics',added\_date='07/01/2023' where category\_id=3;

DQL : dql stands for data query language

Command : select

1. select \* from flip\_category
2. select \* from flip\_category where category\_id=3;
3. select \* from flip\_category where name=’mens items’;
4. select category\_id,name from flip\_category;
5. select \* from flip\_category order by name asc;
6. select \* from flip\_category order by name;
7. select \* from flip\_category order by name desc;

Like operartor : searching an name with keyword or alphabetic character

1. select \* from flip\_category where name like 'e%';
2. select \* from flip\_category where name like '%e%';
3. select \* from flip\_category where name like '%e';

**SQL function :**

**A function is a group of code or set of instructions i.e used to complte any task.**

**Or**

**A function is block of code or group of code i.e used to copleted any task .**

**Typs of SQL function :**

1. **aggrigate function**
2. **min()**
3. **max()**
4. **avg()**
5. **count()**
6. **Sum()**

**B) scalar function**

**a) first()**

**b) last ()**

**c) ucase()**

**d) lcase()**

1. Max () : find a max values

Ex: select max(salary) as max\_salary from flip\_employee;

1. min () : find a min values

Ex: select min(salary) as min\_salary from flip\_employee;

Find second highest salary

Find subquery in SQL : query within another query

select max(salary) from flip\_employee where salary < (SELECT max(salary) from flip\_employee);

1. select avg(salary) as AVG\_SALARY from flip\_employee;
2. select sum(salary) as SUM\_SALARY from flip\_employee;
3. select count(emplid) as Total\_number\_employee from flip\_employee;

b) scalar :

1. first : get first data from table

select first(empname) from flip\_employee;

1. last : get last data from table

select last(empname) from flip\_employee;

1. ucase() : get uppercase data from table

select ucase(empname) from flip\_employee;

1. lcase() : get lowercase data from table

select lcase(empname) from flip\_employee;

TCL : transaction control language

1. commit () :

commit () : commit is used to save any data after delete

START TRANSACTION;

delete from flip\_employee where emplid=1;

commit;

1. rollback() :

Note : mysql structured does not support

START TRANSACTION;

Select \* from flip\_employee where emplid=1;

rollback;

SQL constraints : sql constraints provides a limit on tables

Types of SQL constraints :

1. primary key
2. unique key
3. foreign key
4. compound key

primary key : A PK is used to assign only once time in a table

A PK never returns null value

A PK is always auto\_increments

Country

Country\_id(pk) country\_name

1 india

unique key : A UK is used to assign more than once time in a table

A UK at least once time return null value.

A UK never returns a dublicate values

users

user\_id(pk) name email(uk) phone

1 ABC [abc@gmail.com](mailto:abc@gmail.com) 9173357215

ALTER TABLE `users` ADD UNIQUE(`email`);

Foreign key : A FK is used to provide relationship between one table to another table

A FK provides relationship with its common field

A FK provides more than one times in a tables

Tbl\_country

country\_id (PK) countryname

1. india
2. usa
3. pakistan

Tbl\_state

state\_id (PK) statename country\_id (FK)

1. gujrat 1
2. california 2
3. karachi 3
4. uP 1
5. MP 1
6. Lahore 3

Tbl\_city

city\_id (PK) cityname country\_id (FK) state\_id(fk)

rajkot 1 1

1. navada 2 2
2. pkcity 3 3

create table tbl\_country

(

country\_id int PRIMARY key AUTO\_INCREMENT,

country\_name varchar(255)

)

Create a foreign key

create table tbl\_state

(

state\_id int PRIMARY key AUTO\_INCREMENT,

country\_id int REFERENCES tbl\_country(country\_id),

state\_name varchar(255)

)

create table tbl\_city

(

city\_id int PRIMARY key AUTO\_INCREMENT,

country\_id int REFERENCES tbl\_country(country\_id),

state\_id int REFERENCES tbl\_state(state\_id),

city\_name varchar(255)

)

**SQL joins : joins are used to join more than one tables if data matched one table with another tables.**

Types of join :

1. inner join
2. join
3. outer join
4. left join
5. right join
6. full join

d) cross join