SQL

Presentation by – Chinal Suthar

Introduction to SQL :

- **DBMS -**

Database is collection of data in a format that can be easily accessed. A software application used to manage our DB is called DBMS (Database Management System).

- **SQL -**

Structured Query Language is a programming language used to interact with relational databases.

- **CRUD -**

SQL is used to perform Create ,Read ,Update and Delete operations.

Types of Database :-

- **Relational Database –** In this data is stored in tables.
- **Non-Relational Database –** In this data is not stored in tables.

Types of SQL Commands:-

- **DDL(Data Defination Language) –**create ,alter , truncate , rename and drop.
- **DQL (Data Query Language) -** select.
- **DML (Data Manipulation Language)** : select, insert, update & delete.
- **DCL (Data Control Language)** - grant & revoke permission to users.
- **TCL (Transaction Control Language)** - start transaction, commit, rollback etc.

DATATYPES – Text, varchar,int,float,decimal,date,time,timestamp,bigint.

KEYS :-

- **Primary Key** - It is a column in a table that uniquely identifies each row. (a unique id) There is only 1 PK & it should be NOT null.
- **Foreign Key** - A foreign key is a column in a table that refers to the primary key in another table. There can be multiple Key. Foreign key can have duplicate & null values.

CONSTRAINTS :-

- NOT NULL - columns cannot have a null value.
- UNIQUE – All values in column are different.
- PRIMARY KEY - makes a column unique & not null but used only for one.

- DEFAULT - sets the default value of a column.
- FOREIGN KEY - prevent actions that would destroy links between tables.
- CHECK - it can limit the values allowed in a column.

How to create database in SQL Query :-

- CREATE DATABASE DB_NAME;
- USE DATABASE_NAME; (TO USE THE DATABASE CREATED)
- DROP DATABASE DB_NAME;

TABLE RELATED QUERIES :-

- CREATE TABLE TABLE_NAME; (used to create table)
- SELECT * FROM TABLE_NAME; (used to see table)
- INSERT INTO TABLE_NAME(COLNAME1,COLNAME2)VALUES(COL1_V1,COL2_V2);

- **WHERE CLAUSE :-** It can be used with arithmetic, logical , comparision and bitwise operators. Eg :- select id from student where age > 20;
- **LIMIT CLAUSE:-** Sets an upper limit on number of rows to be returned. Eg:- select * from student limit 3;
- **ORDER BY CLAUSE:-**To sort in ascending (ASC) or descending order (DESC).EG:- SELECT * FROM STUDENT ORDER BY CITY ASC;

- **Aggregate Functions:-** It perform a calculation on a set of values. Like COUNT(),MAX(),MIN(),SUM(),AVG(). Eg:-select avg(marks) from student;
- **Group By Clause:-** Groups rows that have the same values. We use group by with aggregate functions. Eg: select city count(name) from student group by city;
- **HAVING CLAUSE:-** It is similar to Where. It is used with condition on rows. Used when we want to apply any condition after grouping. Eg: select city count(name) from student group by city having max(marks)>90;
- **GENERAL ORDER:-** SELECT column FROM tablename WHERE condition GROUP BY column HAVING condition ORDER BY column ASC;
- **LIKE CLAUSE:-** It is used like 'A%'-first charachter should be a then any character.
- There are some other table related query like UPDATE, DELETE ,TRUNCATE ,ALTER includes(rename, add, change, modify, drop).

THANK YOU