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**DATABASE MANAGEMENT SYSTEM (DBMS)**

DBMS manage the data in table form.

In DBMS sorting, manupulating and retriving data.

Data is a collection of information.

**Structured query language (sql)**

In sql there are five commands:

1. Data definition language (DDL)
2. Data manipulation language (DML)
3. Data query language (DQL)
4. Transaction control language (TCL)
5. Data control language (DCL)
6. Data definition language: it is used to define the database schema.
7. Create : create a new table.
8. Drop: delete complete database.
9. Alter : insert new column
10. Truncate : delete column and row.
11. Rename : rename the table.
12. Data manipulation language: it is used modify the table
13. Insert : it is used to insert data
14. Update : it is used to update data
15. Delete : it is used to remove row and column
16. Data query language: it is used to fetch the data from database.
17. Select : it is used to retrieve data from the database
18. Transaction control language
19. Commit: save permanently
20. Rollback: one step back
21. Savepoint: it is used to temporarly save transaction.
22. Data control language
23. Grant : giving access to user.
24. Revoke: giving back permission

**CREATE**

1:create table "tablename"

("column1" "data type",

"column2" "data type",

"columnN" "data type");

**INSERT**

INSERT INTO table\_name (column1, column2, column3....)

VALUES (value1, value2, value3.....);

**UPDATE**

UPDATE table\_name

SET column1 = value1, column2 = value2, WHERE condition;

**DELETE**

DELETE FROM table\_name WHERE condition;

**DROP**

DROP TABLE table\_name;

The SQL WHERE Clause:

SELECT column1, column2, ...

FROM table\_name

**MIN() and MAX() Functions:**

The MIN() function returns the smallest value of the selected column.

The MAX() function returns the largest value of the selected column.

SELECT MIN(column\_name) FROM table\_name

WHERE condition;

SELECT MAX(column\_name) FROM table\_name

WHERE condition;

**COUNT(), AVG() and SUM() Functions:**

COUNT() Syntax:

SELECT COUNT(column\_name) FROM table\_name

WHERE condition;

AVG() Syntax:

SELECT AVG(column\_name) FROM table\_name

WHERE condition;

SUM() Syntax:

SELECT SUM(column\_name) FROM table\_name

WHERE condition;

**JOINS**

Joins is used to combine records from two or more tables in database

In SQL there are four types of joining:

1. **Inner join:** return rows when there is a match in both table.

**Syntax:**

SELECT column\_name(r)

FROM table1

INNER JOIN table2

ON table1.column\_name = table2.column\_name;

1. **Left join**: return all records from the left table.

**Syntax:**

SELECT column\_name(r)

FROM table1

LEFT JOIN table2

ON table1.column\_name = table2.column\_name;

1. Right join: return all records from the right table.

Syntax:

SELECT column\_name(r)

FROM table1

RIGHT JOIN table2

ON table1.column\_name = table2.column\_name ;

1. Full join: return records when there is a match in one of the table.

Syntax:

SELECT column\_name(r)

FROM table1

FULL OUTER JOIN table2

ON table1.column\_name = table2.column\_name;

select\*from employee1;

+--------+----------+------------+----------+

| emp\_id | emp\_name | emp\_salary | emp\_city |

+--------+----------+------------+----------+

| 101 | sam | 20000| nashik|

| 102 | aditya | 30000 | pune |

| 103 | prathm | 40000 | bangluru |

+--------+----------+------------+----------+

3 rows in set (0.00 sec)

mysql> select sum(emp\_salary),emp\_city from employee group by emp\_city;

+-----------------+----------+

| sum(emp\_salary) | emp\_city |

+-----------------+----------+

| 20000 | nashik |

| 30000 | pune |

| 40000 | bangluru |

+-----------------+----------+

3 rows in set (0.07 sec)

mysql> insert into employee values( 1,'sam',20000,'nashik'),(2,'aditya',30000,'pune'),(3,'prathm',40000,'bangluru');

Query OK, 3 rows affected (0.10 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select\*from employee;

+--------+----------+------------+----------+

| emp\_id | emp\_name | emp\_salary | emp\_city |

+--------+----------+------------+----------+

| 1 | sam | 20000 | nashik |

| 2 | aditya | 30000 | pune |

| 3 | prathm | 40000 | bangluru |

| 4 | sanya | 20000 | bangluru |

| 5 | aniket | 30000 | pune |

| 6 | payal | 40000 | nashik |

+--------+----------+------------+----------+

6 rows in set (0.00 sec)

mysql> select sum(emp\_salary),emp\_city from employee group by emp\_city;

+-----------------+----------+

| sum(emp\_salary) | emp\_city |

+-----------------+----------+

| 60000 | nashik |

| 60000 | pune |

| 60000 | bangluru |

+-----------------+----------+

3 rows in set (0.00 sec)

mysql> insert into stud1 values('sam',1, 22,'nagpur'),('payal',2,23,'pune');

Query OK, 2 rows affected (0.11 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> insert into stud1 values('rohini',3,23,'pune'),('rekha',4,24,'hydrabad');

Query OK, 2 rows affected (0.05 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> select\*from stud1;

+--------+------+------+---------+

| name | id | age | address |

+--------+------+------+---------+

| sam | 1 | 22 | nagpur |

| payal | 2 | 23 | pune |

| rohini | 3 | 23 | pune |

| rekha | 4 | 24 | hydrabad |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

mysql> select count(age)as countage from stud1;

+----------+

| countage |

+----------+

| 4 |

+----------+

1 row in set (0.08 sec)

mysql> select \*from stud1 limit 2;

+--------+------+------+---------+

| name | id | age | address |

+--------+------+------+---------+

| sam | 1 | 22 | nagpur |

| payal | 2 | 23 | pune |

+--------+------+------+---------+

2 rows in set (0.00 sec)

mysql> select distinct age from stud1;

+------+

| age |

+------+

| 22 |

| 23 |

| 24 |

+------+

3 rows in set (0.11 sec)

mysql> select count(age) as totalage from stud1;

+----------+

| totalage |

+----------+

| 4 |

+----------+

1 row in set (0.00 sec)

mysql> select count(\*)from stud1;

+----------+

| count(\*) |

+----------+

| 4 |

+----------+

1 row in set (0.29 sec)

mysql> select count(distinct age)as totalage from stud1;

+----------+

| totalage |

+----------+

| 3 |

+----------+

1 row in set (0.02 sec)

mysql> select count( age)as totalage from stud1 where name='sam';

+----------+

| totalage |

+----------+

| 1 |

+----------+

1 row in set (0.09 sec)

mysql> select age from stud1 order by age desc limit 1;

+------+

| age |

+------+

| 24 |

+------+

1 row in set (0.09 sec)

mysql> select name from stud1 order by name desc limit 1;

+--------+

| name |

+--------+

| rohini |

+--------+

1 row in set (0.02 sec)

mysql> select name from stud1 order by name asc limit 1;

+--------+

| name |

+--------+

| sam |

+--------+

1 row in set (0.00 sec)

mysql> select age from stud1 order by age asc limit 1;

+------+

| age |

+------+

| 22 |

+------+

1 row in set (0.00 sec)

mysql> select sum(age) as totalage from stud1 where age>20;

+----------+

| totalage |

+----------+

| 92 |

+----------+

1 row in set (0.03 sec)

mysql> select sum(age) as totalage from stud1 where age>22;

+----------+

| totalage |

+----------+

| 70 |

+----------+

1 row in set (0.00 sec)