

DAY 3**18 JULY_DBMS**

Aim: Design at least 10 SQL queries for suitable database application using SQL DML statements: all types of Join, Sub-Query.

Problem Statement

Q1. Create table Customers with schema (ID, name, age, address, salary)

ANS:-

```
mysql> create table customers (id int not null primary key auto_increment, name varchar(40) not null, age int not null, address varchar(40) not null, salary double not null);
```

Query OK, 0 rows affected (0.03 sec)

```
mysql> show tables;
```

```
+-----+
| Tables_in_dbmsassignment |
+-----+
| customers                |
| customers_record         |
| facebook_user_registration |
| student                  |
| te_students              |
+-----+
```

5 rows in set (0.00 sec)

```
mysql> desc customers;
```

```
+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id    | int    | NO   | PRI | NULL    | auto_increment |
| name  | varchar(40) | NO   |     | NULL    |                |
| age   | int    | NO   |     | NULL    |                |
| address | varchar(40) | NO   |     | NULL    |                |
| salary | double | NO   |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
```

5 rows in set (0.00 sec)

Q2. Create table Orders with Schema(O_ID, o_date, customer_id, amount)?

ANS:-

```
mysql> create table orders (o_id int not null primary key auto_increment, o_date date not null, customer_id int not null, amount int not null);
```

Query OK, 0 rows affected (0.04 sec)

```
mysql> show tables;
```

```
+-----+
| Tables_in_dbmsassignment |
+-----+
| customers                |
| customers_record         |
| facebook_user_registration |
| orders                   |
| student                  |
| te_students              |
+-----+
6 rows in set (0.00 sec)
```

```
mysql> desc orders;
```

```
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| o_id  | int  | NO   | PRI | NULL    | auto_increment |
| o_date | date | NO   |     | NULL    |                 |
| customer_id | int | NO   |     | NULL    |                 |
| amount | int  | NO   |     | NULL    |                 |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

Desc
```

Q3. Insert 5 records to each table keeping few customer ids common to both the tables ?
ANS:-

Insertion of records into customers

```
mysql> insert into customers(name,age,address,salary) values("aditya",23,"svs pg
kharadi",45000),("devansh",22,"somnath
nagar",50000),("abhishek",27,"mumbai",40000),("usman",25,"lucknow",41000),("dev",26,"b
hopal",43000);
```

Query OK, 5 rows affected (0.01 sec)

Records: 5 Duplicates: 0 Warnings: 0

```
mysql> select * from customers;
```

```
+----+-----+-----+-----+-----+
| id | name   | age | address   | salary |
+----+-----+-----+-----+-----+
| 1 | aditya | 23 | svs pg kharadi | 45000 |
| 2 | devansh | 22 | somnath nagar | 50000 |
| 3 | abhishek | 27 | mumbai      | 40000 |
| 4 | usman   | 25 | lucknow     | 41000 |
| 5 | dev     | 26 | bhopal      | 43000 |
+----+-----+-----+-----+-----+
```

5 rows in set (0.00 sec)

Insertion of records in orders table

```
mysql> insert into orders (o_date,customer_id,amount)
```

```
values("2022-07-2",1,1200),("2022-06-25",2,2300),("2022-07-12",4,4300),("2022-06-28",3,1324),("2022-07-18",5,2300);
```

Query OK, 5 rows affected (0.01 sec)

Records: 5 Duplicates: 0 Warnings: 0

```
mysql> select * from orders;
```

```
+-----+-----+-----+-----+
| o_id | o_date   | customer_id | amount |
+-----+-----+-----+-----+
| 1 | 2022-07-02 | 1 | 1200 |
| 2 | 2022-06-25 | 2 | 2300 |
| 3 | 2022-07-12 | 4 | 4300 |
| 4 | 2022-06-28 | 3 | 1324 |
| 5 | 2022-07-18 | 5 | 2300 |
+-----+-----+-----+-----+
```

5 rows in set (0.00 sec)

Q4. Perform the inner join on customers and orders table to enlist the id, name, amount and o date?

ANS:-

```
mysql> SELECT Orders.OrderID, ustomers.CustomerNameCu;
```

ERROR 1109 (42S02): Unknown table 'Orders' in field list

```
mysql> select id,name,amount,o_date from customers inner join orders on
customers.id=orders.customer_id;
```

```

+----+-----+-----+-----+
| id | name  | amount | o_date |
+----+-----+-----+-----+
| 1 | aditya | 1200 | 2022-07-02 |
| 2 | devansh | 2300 | 2022-06-25 |
| 4 | usman  | 4300 | 2022-07-12 |
| 3 | abhishek | 1324 | 2022-06-28 |
| 5 | dev    | 2300 | 2022-07-18 |
+----+-----+-----+-----+
5 rows in set (0.00 sec)

```

Q5. Perform the left outer join on customers and orders table to enlist the id, name, amount and o date?

ANS:-mysql> select id,name,amount,o_date from customers left join orders on customers.id=orders.customer_id;

```

+----+-----+-----+-----+
| id | name  | amount | o_date |
+----+-----+-----+-----+
| 1 | aditya | 1200 | 2022-07-02 |
| 2 | devansh | 2300 | 2022-06-25 |
| 3 | abhishek | 1324 | 2022-06-28 |
| 4 | usman  | 4300 | 2022-07-12 |
| 5 | dev    | 2300 | 2022-07-18 |
+----+-----+-----+-----+
5 rows in set (0.00 sec)

```

Q6. Perform the right outer join on customers and orders table to enlist the id, name, amount and o_date?

ANS:-

mysql> select id,name,amount,o_date from customers right join orders on customers.id=orders.customer_id;

```

+----+-----+-----+-----+
| id | name  | amount | o_date |
+----+-----+-----+-----+
| 1 | aditya | 1200 | 2022-07-02 |
| 2 | devansh | 2300 | 2022-06-25 |
| 4 | usman  | 4300 | 2022-07-12 |
| 3 | abhishek | 1324 | 2022-06-28 |
| 5 | dev    | 2300 | 2022-07-18 |
+----+-----+-----+-----+
5 rows in set (0.00 sec)

```

Q7. Perform the full outer join on customers and orders table to enlist the id, name, amount and o_date by using 'union all set operation ?

ANS:-

```
mysql> select * from customers left join orders on customers.id = orders.customer_id
-> union select * from customers left join orders on customers.id = orders.customer_id;
```

id	name	age	address	salary	o_id	o_date	customer_id	amount
1	aditya	23	svs pg kharadi	45000	1	2022-07-02	1	1200
2	devansh	22	somnath nagar	50000	2	2022-06-25	2	2300
3	abhishek	27	mumbai	40000	4	2022-06-28	3	1324
4	usman	25	lucknow	41000	3	2022-07-12	4	4300
5	dev	26	bhopal	43000	5	2022-07-18	5	2300

5 rows in set (0.00 sec)

mysql>

Q8. Perform the self join on customers table to enlist the pair of customers belonging to same address?

ANS:-

```
mysql> select * from customers as t1,customers as t2 where t1.address=t2.address and t1.id <>t2.id;
```

id	name	age	address	salary	id	name	age	address	salary
6	anuj	24	somnath nagar	45000	2	devansh	22	somnath nagar	50000
2	devansh	22	somnath nagar	50000	6	anuj	24	somnath nagar	45000

2 rows in set (0.00 sec)

Q9. Perform the Cross/ Cartesian join on customers and orders table to enlist the id, name, amount and o_date?

ANS:-

```
mysql> select id,name,amount,o_date from customers cross join orders;
```

id	name	amount	o_date
----	------	--------	--------

id	name	amount	o_date
1	aditya	2300	2022-07-18
1	aditya	1324	2022-06-28
1	aditya	4300	2022-07-12
1	aditya	2300	2022-06-25
1	aditya	1200	2022-07-02
2	devansh	2300	2022-07-18
2	devansh	1324	2022-06-28
2	devansh	4300	2022-07-12
2	devansh	2300	2022-06-25
2	devansh	1200	2022-07-02
3	abhishek	2300	2022-07-18
3	abhishek	1324	2022-06-28
3	abhishek	4300	2022-07-12
3	abhishek	2300	2022-06-25
3	abhishek	1200	2022-07-02
4	usman	2300	2022-07-18
4	usman	1324	2022-06-28
4	usman	4300	2022-07-12
4	usman	2300	2022-06-25
4	usman	1200	2022-07-02
5	dev	2300	2022-07-18
5	dev	1324	2022-06-28
5	dev	4300	2022-07-12
5	dev	2300	2022-06-25
5	dev	1200	2022-07-02
6	anuj	2300	2022-07-18
6	anuj	1324	2022-06-28
6	anuj	4300	2022-07-12
6	anuj	2300	2022-06-25
6	anuj	1200	2022-07-02

30 rows in set (0.00 sec)

10. Design the sub query with select statement for displaying all the details of the customers having salary greater than 20000?

ANS:-

```
mysql> select * from customers where salary>20000;
```

```

+----+-----+----+-----+-----+
| id | name   | age | address      | salary |
+----+-----+----+-----+-----+
| 1 | aditya | 23 | svs pg kharadi | 45000 |
| 2 | devansh | 22 | somnath nagar | 50000 |
| 3 | abhishek | 27 | mumbai       | 40000 |
| 4 | usman   | 25 | lucknow      | 41000 |
| 5 | dev     | 26 | bhopal       | 43000 |
| 6 | anuj    | 24 | somnath nagar | 45000 |
+----+-----+----+-----+-----+
6 rows in set (0.00 sec)

```

mysql>

11. Create a backup table- cust_bkp' of the table customers by using insert statement with the subquery?

ANS:-

```

mysql> create table cust_bkp as select * from customers;
Query OK, 6 rows affected (0.04 sec)
Records: 6 Duplicates: 0 Warnings: 0

```

```

mysql> select * from cust_bkp;
+----+-----+----+-----+-----+
| id | name   | age | address      | salary |
+----+-----+----+-----+-----+
| 1 | aditya | 23 | svs pg kharadi | 45000 |
| 2 | devansh | 22 | somnath nagar | 50000 |
| 3 | abhishek | 27 | mumbai       | 40000 |
| 4 | usman   | 25 | lucknow      | 41000 |
| 5 | dev     | 26 | bhopal       | 43000 |
| 6 | anuj    | 24 | somnath nagar | 45000 |
+----+-----+----+-----+-----+
6 rows in set (0.00 sec)

```

12 Update the salaries by 10% of all the customers(in customers table) having age greater than or equals to 24 by using subquery with update clause(by using backup table cust_bkp) ?

ANS:-

```

mysql> update cust_bkp set salary =salary+(salary*10/100) where age>=24;
Query OK, 4 rows affected (0.01 sec)

```

Rows matched: 4 Changed: 4 Warnings: 0

The above query will not affect the customers table because the cust_bkp is only the backup,

So the below query will be used to update the salary in the customers table.

```
mysql> update customers set salary =salary+(salary*10/100) where age>=24;
```

Query OK, 4 rows affected (0.01 sec)

Rows matched: 4 Changed: 4 Warnings: 0

```
mysql> select * from customers;
```

id	name	age	address	salary
1	aditya	23	svs pg kharadi	45000
2	devansh	22	somnath nagar	50000
3	abhishek	27	mumbai	44000
4	usman	25	lucknow	45100
5	dev	26	bhopal	47300
6	anuj	24	somnath nagar	49500

6 rows in set (0.00 sec)

13. Delete all the customers having age greater than 26 by using delete clause with the subquery?

ANS:-

```
mysql> delete from customers where age >26;
```

Query OK, 1 row affected (0.01 sec)

```
mysql> select * from customers;
```

id	name	age	address	salary
1	aditya	23	svs pg kharadi	45000
2	devansh	22	somnath nagar	50000
4	usman	25	lucknow	45100
5	dev	26	bhopal	47300
6	anuj	24	somnath nagar	49500

5 rows in set (0.00 sec)

