

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME,SAL FROM EMP where SAL>2000 AND (DEPTNO=10);
+-----+-----+
| ENAME | SAL   |
+-----+-----+
| CLARK | 2450.00 |
| KING  | 5000.00 |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

22) Query to display emp name, job, salary and department number of employees whose department no. is NOT 10 and salary is 1000

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME,JOB,DEPTNO,SAL FROM EMP where SAL=1000 AND (DEPTNO != 10);
Empty set (0.00 sec)

mysql>
```

23) Query to display emp name, job, salary and department no, whose commission is null

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME,JOB,SAL,DEPTNO FROM EMP where COMM IS NULL;
+-----+-----+-----+-----+
| ENAME | JOB   | SAL    | DEPTNO |
+-----+-----+-----+-----+
| SMITH | CLERK | 800.00 | 20    |
| JONES | MANAGER | 2975.00 | 20    |
| BLAKE | MANAGER | 2850.00 | 30    |
| CLARK | MANAGER | 2450.00 | 10    |
| SCOTT | ANALYST | 3000.00 | 20    |
| KING  | PRESIDENT | 5000.00 | 10    |
| ADAMS | CLERK | 1100.00 | 20    |
| JAMES | CLERK | 950.00 | 30    |
| FORD  | ANALYST | 3000.00 | 20    |
| MILLER | CLERK | 1300.00 | 10    |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql>
```

24) Query to display employee name, emp number job, hire date, salary commission and dept number whose commission is not null.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME,EMPNO,JOB,HIREDATE,SAL,COMM,DEPTNO FROM EMP where COMM IS NOT NULL;
+-----+-----+-----+-----+-----+-----+-----+
| ENAME | EMPNO | JOB     | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| ALLEN | 7499  | SALESMAN | 1981-02-20 | 1600.00 | 300.00 | 30    |
| WARD  | 7521  | SALESMAN | 1981-02-22 | 1250.00 | 500.00 | 30    |
| MARTIN | 7654  | SALESMAN | 1981-09-28 | 1250.00 | 1400.00 | 30    |
| TURNER | 7844  | SALESMAN | 1981-09-08 | 1500.00 | 0.00   | 30    |
+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>
```

25) Query to display data of employees (All fields) whose dept no. is not 10,30,40.

Command:

```
MySQL 8.0 Command Line Client

mysql> SELECT EMPNO,ENAME,JOB,HIREDATE,MGR,SAL,COMM,DEPTNO FROM EMP where DEPTNO = 20;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | HIREDATE | MGR   | SAL    | COMM   |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK | 1980-12-17 | 7902 | 800.00 | NULL   |
| 7566 | JONES | MANAGER | 1981-04-02 | 7839 | 2975.00 | NULL   |
| 7788 | SCOTT | ANALYST | 1987-07-13 | 7566 | 3000.00 | NULL   |
| 7876 | ADAMS | CLERK | 1987-05-23 | 7788 | 1100.00 | NULL   |
| 7902 | FORD  | ANALYST | 1981-12-03 | 7566 | 3000.00 | NULL   |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql>
```

26) Query to display emp name and salary of those whose salary is not 3000, 5800.
Command:

```
MySQL 8.0 Command Line Client

mysql> SELECT ENAME,SAL FROM EMP where SAL!= 3000 AND SAL !=5800;
+-----+-----+
| ENAME | SAL   |
+-----+-----+
| SMITH | 800.00 |
| ALLEN | 1600.00 |
| WARD  | 1250.00 |
| JONES | 2975.00 |
| MARTIN | 1250.00 |
| BLAKE | 2850.00 |
| CLARK | 2450.00 |
| KING  | 5000.00 |
| TURNER | 1500.00 |
| ADAMS | 1100.00 |
| JAMES | 950.00 |
| MILLER | 1300.00 |
+-----+-----+
12 rows in set (0.00 sec)

mysql>
```

27) Query to display distinct job from EMP table.
Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT DISTINCT(JOB) FROM EMP;
+-----+
| JOB   |
+-----+
| CLERK |
| SALESMAN |
| MANAGER |
| ANALYST |
| PRESIDENT |
+-----+
5 rows in set (0.01 sec)

mysql>
```

28) Query to retrieve total number of names from the employee table (use count)
Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT COUNT(*) AS 'EmployeeNO' FROM EMP;
+-----+
| EmployeeNO |
+-----+
|      14     |
+-----+
1 row in set (0.01 sec)

mysql>
```

29) Query to display top 3 entries from the emp table. (use limit)
Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT * FROM EMP LIMIT 3;
+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job      | Mgr   | hiredate | Sal    | comm   | Deptno |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK    | 7902  | 1980-12-17 | 800.00 | NULL    | 20     |
| 7499 | ALLEN | SALESMAN | 7698  | 1981-02-20 | 1600.00 | 300.00  | 30     |
| 7521 | WARD   | SALESMAN | 7698  | 1981-02-22 | 1250.00 | 500.00  | 30     |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

30) Query to display emp name, and job as employees from EMP table. (use concatenation)
Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT *, CONCAT(ENAME, ',', JOB) AS EMPLOYEE FROM EMP;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job      | Mgr   | hiredate | Sal    | comm   | Deptno | EMPLOYEE        |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK    | 7902  | 1980-12-17 | 800.00 | NULL    | 20     | SMITH,CLERK      |
| 7499 | ALLEN | SALESMAN | 7698  | 1981-02-20 | 1600.00 | 300.00  | 30     | ALLEN,SALESMAN   |
| 7521 | WARD   | SALESMAN | 7698  | 1981-02-22 | 1250.00 | 500.00  | 30     | WARD,SALESMAN    |
| 7566 | JONES  | MANAGER   | 7839  | 1981-04-02 | 2975.00 | NULL    | 20     | JONES,MANAGER    |
| 7654 | MARTIN | SALESMAN | 7698  | 1981-09-28 | 1250.00 | 1400.00 | 30     | MARTIN,SALESMAN  |
| 7698 | BLAKE  | MANAGER   | 7839  | 1981-05-01 | 2850.00 | NULL    | 30     | BLAKE,MANAGER    |
| 7782 | CLARK  | MANAGER   | 7839  | 1981-06-09 | 2450.00 | NULL    | 10     | CLARK,MANAGER    |
| 7788 | SCOTT  | ANALYST  | 7566  | 1987-07-13 | 3000.00 | NULL    | 20     | SCOTT,ANALYST    |
| 7839 | KING   | PRESIDENT | NULL   | 1981-11-17 | 5000.00 | NULL    | 10     | KING,PRESIDENT   |
| 7844 | TURNER | SALESMAN | 7698  | 1981-09-08 | 1500.00 | 0.00    | 30     | TURNER,SALESMAN  |
| 7876 | ADAMS  | CLERK    | 7788  | 1987-05-23 | 1100.00 | NULL    | 20     | ADAMS,CLERK      |
| 7900 | JAMES  | CLERK    | 7698  | 1981-12-03 | 950.00  | NULL    | 30     | JAMES,CLERK      |
| 7902 | FORD   | ANALYST  | 7566  | 1981-12-03 | 3000.00 | NULL    | 20     | FORD,ANALYST     |
| 7934 | MILLER | CLERK    | 7782  | 1982-01-23 | 1300.00 | NULL    | 10     | MILLER,CLERK     |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.01 sec)

mysql>
```

Exercise 3: To study DML Statements and work with group by, order by and having clauses.

1)Query to demonstrate alter , table syntax for adding a new column. (Use alter add) Add a new column to EMP Table 'annsal' (Annual Salary) and enter the annual salary of each employee into that column. (Use update)

Command:

```
MySQL 8.0 Command Line Client
mysql> UPDATE EMPSET Ansal= 9600 WHERE EMPNO = 7369;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'EMPSET' at line 1
mysql> UPDATE EMP SET Ansal= 9600 WHERE EMPNO = 7369;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 19200 WHERE EMPNO = 7499;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 15000 WHERE EMPNO = 7521;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 35700 WHERE EMPNO = 7566;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 15000 WHERE EMPNO = 7654;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 34200 WHERE EMPNO = 7698;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 29400 WHERE EMPNO = 7782;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
| 7788 | SCOTT | ANALYST | 7566 | 1987-07-13 | 3000.00 | NULL | 20 | 36000 |

```

```
MySQL 8.0 Command Line Client
mysql> UPDATE EMP SET Ansal= 34200 WHERE EMPNO = 7698;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 29400 WHERE EMPNO = 7782;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 36000 WHERE EMPNO = 7788;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 60000 WHERE EMPNO = 7839;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 18000 WHERE EMPNO = 7844;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 13200 WHERE EMPNO = 7876;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 11400 WHERE EMPNO = 7900;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> UPDATE EMP SET Ansal= 36000 WHERE EMPNO = 7902;
Query OK, 1 row affected (0.01 sec)
| 7788 | SCOTT | ANALYST | 7566 | 1987-07-13 | 3000.00 | NULL | 20 | 36000 |

```

```

MySQL 8.0 Command Line Client

mysql> UPDATE EMP SET Ansal= 15600 WHERE EMPNO = 7934;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> Select*from EMP;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr  | hiredate | Sal   | comm  | Deptno | Ansal |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK | 7902 | 1980-12-17 | 800.00 | NULL  | 20    | 9600  |
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30    | 19200 |
| 7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30    | 15000 |
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL  | 20    | 35700 |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30    | 15000 |
| 7698 | BLAKE  | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL  | 30    | 34200 |
| 7782 | CLARK  | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL  | 10    | 294000 |
| 7788 | SCOTT  | ANALYST | 7566 | 1987-07-13 | 3000.00 | NULL  | 20    | 36000  |
| 7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL  | 10    | 60000  |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00  | 30    | 18000  |
| 7876 | ADAMS  | CLERK  | 7788 | 1987-05-23 | 1100.00 | NULL  | 20    | 13200  |
| 7900 | JAMES  | CLERK  | 7698 | 1981-12-03 | 950.00  | NULL  | 30    | 11400  |
| 7902 | FORD   | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL  | 20    | 36000  |
| 7934 | MILLER | CLERK  | 7782 | 1982-01-23 | 1300.00 | NULL  | 10    | 15600  |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql> -

```

| 7788 | SCOTT | ANALYST | 7566 | 1987-07-13 | 3000.00 | NULL | 20 | 36000 |

2) Query to demonstrate Dropping of a column. Drop column 'annual'.
Command:

```

MySQL 8.0 Command Line Client

mysql> alter table emp drop ansal;
Query OK, 0 rows affected (0.26 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> -

```

| NULL | 20 | 36000 |

3) Query to modify datatype of existing field of column. (Any column that is integer, convert into decimal or float) (ordermaster or itemmaster) Describe table.
Command:

```
MySQL 8.0 Command Line Client
mysql> ALTER TABLE EMP MODIFY SAL FLOAT; Desc emp;
Query OK, 14 rows affected (0.19 sec)
Records: 14  Duplicates: 0  Warnings: 0

+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+
| Empno | int    | NO   | PRI | NULL    |       |
| Ename | varchar(50) | YES  |     | NULL    |       |
| Job   | varchar(10)  | YES  |     | NULL    |       |
| Mgr   | int    | YES  |     | NULL    |       |
| hiredate | date   | YES  |     | NULL    |       |
| SAL   | float   | YES  |     | NULL    |       |
| comm  | decimal(10,2) | YES  |     | NULL    |       |
| Deptno | int    | YES  | MUL | NULL    |       |
+-----+-----+-----+-----+
8 rows in set (0.03 sec)

mysql> ■
```



4)Query to demonstrate truncate table.

Command:

```
MySQL 8.0 Command Line Client
mysql> Truncate TABLE EMP;
Query OK, 0 rows affected (0.15 sec)

mysql> Select*from Emp;
Empty set (0.01 sec)

mysql> ■
```



5)Query to demonstrate updating of same 'expected date of dispatch' in OrderMaster.

Command:

```

MySQL 8.0 Command Line Client
mysql> UPDATE OrderMaster SET DATE_OF_DISPATCH = '2007-07-30' WHERE ORDERID = 4;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> Select*from ordermaster;
+-----+-----+-----+-----+-----+
| orderID | ordering_agency | itemID | item_name | date_of_order | date_of_dispatch |
+-----+-----+-----+-----+-----+
| 2 | Cipla | 4 | Paracetemol | 2001-11-24 | 2001-12-12 |
| 3 | Cipla | 2 | Crocin | 2001-11-24 | 2001-12-12 |
| 4 | Cipla | 2 | Allegra | 2001-11-24 | 2007-07-30 |
| 5 | CALADRYL | 8 | AZEE | 2010-08-08 | 2020-01-01 |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

The screenshot shows a Windows desktop environment with a MySQL 8.0 Command Line Client window open. The command `UPDATE OrderMaster SET DATE_OF_DISPATCH = '2007-07-30' WHERE ORDERID = 4;` is run, resulting in 1 row affected. A subsequent `Select*from ordermaster;` command is executed, displaying the updated record where ORDERID 4 has a date_of_dispatch of '2007-07-30'. The taskbar at the bottom shows various application icons and the date/time as 30-04-2021 22:35.

6)Query to demonstrate updating of description in Itemtable table where Item number is 3.
Command:

```

MySQL 8.0 Command Line Client
mysql> UPDATE ItemTable SET DESCRIPTION = 'with_Lemon' WHERE ITEMID = 3;
Query OK, 0 rows affected (0.00 sec)
Rows matched: 1 Changed: 0 Warnings: 0

mysql> Select*from itemtable;
+-----+-----+-----+-----+
| ITEMID | ITEMNAME | DESCRIPTION | PRICE |
+-----+-----+-----+-----+
| 1 | paint | colour | 20 |
| 2 | Lays | tasty | 25 |
| 3 | shampoo | with_Lemon | 60 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>

```

The screenshot shows a Windows desktop environment with a MySQL 8.0 Command Line Client window open. The command `UPDATE ItemTable SET DESCRIPTION = 'with_Lemon' WHERE ITEMID = 3;` is run, resulting in 0 rows affected. A subsequent `Select*from itemtable;` command is executed, showing the item with ITEMID 3 now has a description of 'with_Lemon'. The taskbar at the bottom shows various application icons and the date/time as 30-04-2021 22:52.

7)Query to sort all records in employee table in ascending and descending order by department number. (orderby)

Command:

Ascending Order:

```

MySQL 8.0 Command Line Client
mysql> SELECT * FROM EMP ORDER BY DEPTNO;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr   | hiredate | SAL   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450 | NULL  | 10    |
| 7839 | KING   | PRESIDENT | NULL  | 1981-11-17 | 5000 | NULL  | 10    |
| 7934 | MILLER | CLERK   | 7782 | 1982-01-23 | 1300 | NULL  | 10    |
| 7369 | SMITH  | CLERK   | 7902 | 1980-12-17 | 800  | NULL  | 20    |
| 7566 | JONES  | MANAGER | 7839 | 1981-04-02 | 2975 | NULL  | 20    |
| 7788 | SCOTT  | ANALYST | 7566 | 1987-07-13 | 3000 | NULL  | 20    |
| 7876 | ADAMS  | CLERK   | 7788 | 1987-05-23 | 1100 | NULL  | 20    |
| 7902 | FORD   | ANALYST | 7566 | 1981-12-03 | 3000 | NULL  | 20    |
| 7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600 | 300.00 | 30    |
| 7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1250 | 500.00 | 30    |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250 | 1400.00 | 30    |
| 7698 | BLAKE  | MANAGER | 7839 | 1981-05-01 | 2850 | NULL  | 30    |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500 | 0.00  | 30    |
| 7900 | JAMES  | CLERK   | 7698 | 1981-12-03 | 950  | NULL  | 30    |
| 7369 | SMITH  | CLERK   | 7902 | 1980-12-17 | 800  | NULL  | 20    |
| 7566 | JONES  | MANAGER | 7839 | 1981-04-02 | 2975 | NULL  | 20    |
| 7788 | SCOTT  | ANALYST | 7566 | 1987-07-13 | 3000 | NULL  | 20    |
| 7876 | ADAMS  | CLERK   | 7788 | 1987-05-23 | 1100 | NULL  | 20    |
| 7902 | FORD   | ANALYST | 7566 | 1981-12-03 | 3000 | NULL  | 20    |
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450 | NULL  | 10    |
| 7839 | KING   | PRESIDENT | NULL  | 1981-11-17 | 5000 | NULL  | 10    |
| 7934 | MILLER | CLERK   | 7782 | 1982-01-23 | 1300 | NULL  | 10    |
| 7369 | SMITH  | CLERK   | 7902 | 1980-12-17 | 800  | NULL  | 20    |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>

```

Descending Order:

```

MySQL 8.0 Command Line Client
mysql> SELECT * FROM EMP ORDER BY DEPTNO DESC;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr   | hiredate | SAL   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600 | 300.00 | 30    |
| 7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250 | 500.00 | 30    |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250 | 1400.00 | 30    |
| 7698 | BLAKE  | MANAGER | 7839 | 1981-05-01 | 2850 | NULL  | 30    |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500 | 0.00  | 30    |
| 7900 | JAMES  | CLERK   | 7698 | 1981-12-03 | 950  | NULL  | 30    |
| 7369 | SMITH  | CLERK   | 7902 | 1980-12-17 | 800  | NULL  | 20    |
| 7566 | JONES  | MANAGER | 7839 | 1981-04-02 | 2975 | NULL  | 20    |
| 7788 | SCOTT  | ANALYST | 7566 | 1987-07-13 | 3000 | NULL  | 20    |
| 7876 | ADAMS  | CLERK   | 7788 | 1987-05-23 | 1100 | NULL  | 20    |
| 7902 | FORD   | ANALYST | 7566 | 1981-12-03 | 3000 | NULL  | 20    |
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450 | NULL  | 10    |
| 7839 | KING   | PRESIDENT | NULL  | 1981-11-17 | 5000 | NULL  | 10    |
| 7934 | MILLER | CLERK   | 7782 | 1982-01-23 | 1300 | NULL  | 10    |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>

```

8)Query to sort emp name, job, emp number according to employee number.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME, JOB, EMPNO FROM EMP ORDER BY EMPNO;
+-----+-----+-----+
| ENAME | JOB   | EMPNO |
+-----+-----+-----+
| SMITH | CLERK | 7369 |
| ALLEN | SALESMAN | 7499 |
| WARD | SALESMAN | 7521 |
| JONES | MANAGER | 7566 |
| MARTIN | SALESMAN | 7654 |
| BLAKE | MANAGER | 7698 |
| CLARK | MANAGER | 7782 |
| SCOTT | ANALYST | 7788 |
| KING | PRESIDENT | 7839 |
| TURNER | SALESMAN | 7844 |
| ADAMS | CLERK | 7876 |
| JAMES | CLERK | 7900 |
| FORD | ANALYST | 7902 |
| MILLER | CLERK | 7934 |
+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

9)Query to calculate annual salary of all employees in employee table by adding annsal column and inserting the annual salary. Sort records in descending order according to annual salary and display emp name and salary.

Command:

```
MySQL 8.0 Command Line Client
mysql> select ENAME, SAL, 12*SAL AS ANNSAL FROM EMP ORDER BY SAL DESC;
+-----+-----+-----+
| ENAME | SAL   | ANNSAL |
+-----+-----+-----+
| KING | 5000 | 60000 |
| SCOTT | 3000 | 36000 |
| FORD | 3000 | 36000 |
| JONES | 2975 | 35700 |
| BLAKE | 2850 | 34200 |
| CLARK | 2450 | 29400 |
| ALLEN | 1600 | 19200 |
| TURNER | 1500 | 18000 |
| MILLER | 1300 | 15600 |
| WARD | 1250 | 15000 |
| MARTIN | 1250 | 15000 |
| ADAMS | 1100 | 13200 |
| JAMES | 950 | 11400 |
| SMITH | 800 | 9600 |
+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

10)Query to demonstrate employee number, name and salary of those emp whose job is analyst.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT EMPNO, ENAME, SAL FROM EMP WHERE JOB='ANALYST';
+-----+-----+-----+
| EMPNO | ENAME | SAL   |
+-----+-----+-----+
| 7788  | SCOTT | 3000 |
| 7902  | FORD  | 3000 |
+-----+-----+-----+
2 rows in set (0.01 sec)

mysql>
```

14 rows in set (0.00 sec) --+ 7839 | 1981-04-02 | 2975 | NULL | 20 |



11)Query to demonstrate minimum and maximum salary of all employees.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT ENAME, SAL FROM EMP ORDER BY SAL;
+-----+-----+
| ENAME | SAL   |
+-----+-----+
| SMITH | 800  |
| JAMES | 950  |
| ADAMS | 1100 |
| WARD  | 1250 |
| MARTIN | 1250 |
| MILLER | 1300 |
| TURNER | 1500 |
| ALLEN | 1600 |
| CLARK | 2450 |
| BLAKE | 2850 |
| JONES | 2975 |
| SCOTT | 3000 |
| FORD  | 3000 |
| KING  | 5000 |
+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

14 rows in set (0.00 sec) --+ 7839 | 1981-04-02 | 2975 | NULL | 20 |



12)Query to demonstrate average salary of all employees.

Command:

```
MySQL 8.0 Command Line Client

mysql> SELECT ENAME, AVG (SAL) FROM EMP;
+-----+-----+
| ENAME | AVG (SAL) |
+-----+-----+
| SMITH | 2073.214285714286 |
+-----+-----+
1 row in set (0.01 sec)

mysql>
```



13)Query to demonstrate total salary of all employees

Command:

```
MySQL 8.0 Command Line Client

mysql> SELECT ENAME,SUM(SAL) FROM EMP;
+-----+-----+
| ENAME | SUM(SAL) |
+-----+-----+
| SMITH | 29025 |
+-----+-----+
1 row in set (0.01 sec)

mysql>
```



14)Query to demonstrate maximum salaries of employees who are Clerks.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT JOB, MAX(SAL) FROM EMP WHERE JOB='CLERK' GROUP BY JOB ORDER BY MAX(SAL) DESC;
+-----+-----+
| JOB | MAX(SAL) |
+-----+-----+
| CLERK |      1300 |
+-----+-----+
1 row in set (0.01 sec)

mysql>
```



15)Query to demonstrate minimum salary of employees who are Managers.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT JOB, MIN(SAL) FROM EMP WHERE JOB='MANAGER' GROUP BY JOB ORDER BY MIN(SAL) DESC;
+-----+-----+
| JOB | MIN(SAL) |
+-----+-----+
| MANAGER |      2450 |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```



16)Query to demonstrate total salary of employees who are in department no. 30.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT SUM(SAL) AS TOTSAL FROM EMP WHERE DEPTNO=30;
+-----+
| TOTSAL |
+-----+
|    9400 |
+-----+
1 row in set (0.00 sec)

mysql> _
```

17)Query to demonstrate average salary of employees whose department number is 10.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT AVG(SAL) AS AVGSAL FROM EMP WHERE DEPTNO=10;
+-----+
| AVGSAL |
+-----+
| 2916.6666666666665 |
+-----+
1 row in set (0.00 sec)

mysql> _
```

18)Query to demonstrate number of rows whose department no. is 10.

18)Query &
Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT COUNT(DEPTNO) AS DEPCOUNT FROM EMP WHERE DEPTNO=10;
+-----+
| DEPCOUNT |
+-----+
|      3   |
+-----+
1 row in set (0.00 sec)

mysql>
```



19)Query to demonstrate deletion of description from the ItemMaster table where Item number is 6.
Command:

```
MySQL 8.0 Command Line Client
mysql> DELETE FROM ITEMTABLE WHERE ITEMID = 6;
Query OK, 0 rows affected (0.01 sec)

mysql>
```



20)Query to display data of employee table ordered by emp name and department no. (Ascending and descending).

Command:

Ascending Order:

```
MySQL 8.0 Command Line Client

mysql> SELECT * FROM EMP ORDER BY ENAME;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr   | hiredate | SAL   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7876 | ADAMS | CLERK | 7788 | 1987-05-23 | 1100 | NULL  | 20    |
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600 | 300.00 | 30    |
| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850 | NULL  | 30    |
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450 | NULL  | 10    |
| 7902 | FORD  | ANALYST | 7566 | 1981-12-03 | 3000 | NULL  | 20    |
| 7900 | JAMES | CLERK  | 7698 | 1981-12-03 | 950  | NULL  | 30    |
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975 | NULL  | 20    |
| 7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000 | NULL  | 10    |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250 | 1400.00 | 30    |
| 7934 | MILLER | CLERK  | 7782 | 1982-01-23 | 1300 | NULL  | 10    |
| 7788 | SCOTT | ANALYST | 7566 | 1987-07-13 | 3000 | NULL  | 20    |
| 7369 | SMITH | CLERK  | 7902 | 1980-12-17 | 800  | NULL  | 20    |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500 | 0.00  | 30    |
| 7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250 | 500.00 | 30    |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.01 sec)

mysql>
```

FROM EMP ORDER BY DEPTNO;

```
MySQL 8.0 Command Line Client

mysql> SELECT * FROM EMP ORDER BY DEPTNO;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr   | hiredate | SAL   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7782 | CLARK | MANAGER | 7839 | 1981-06-09 | 2450 | NULL  | 10    |
| 7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000 | NULL  | 10    |
| 7934 | MILLER | CLERK  | 7782 | 1982-01-23 | 1300 | NULL  | 10    |
| 7369 | SMITH | CLERK  | 7902 | 1980-12-17 | 800  | NULL  | 20    |
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975 | NULL  | 20    |
| 7788 | SCOTT | ANALYST | 7566 | 1987-07-13 | 3000 | NULL  | 20    |
| 7876 | ADAMS | CLERK  | 7788 | 1987-05-23 | 1100 | NULL  | 20    |
| 7902 | FORD  | ANALYST | 7566 | 1981-12-03 | 3000 | NULL  | 20    |
| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600 | 300.00 | 30    |
| 7521 | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250 | 500.00 | 30    |
| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250 | 1400.00 | 30    |
| 7698 | BLAKE | MANAGER | 7839 | 1981-05-01 | 2850 | NULL  | 30    |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500 | 0.00  | 30    |
| 7900 | JAMES | CLERK  | 7698 | 1981-12-03 | 950  | NULL  | 30    |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

Descending Order:

```
MySQL 8.0 Command Line Client

mysql> SELECT * FROM EMP ORDER BY ENAME DESC;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr  | hiredate | SAL   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7521  | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250 | 500.00 | 30   |
| 7844  | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500 | 0.00   | 30   |
| 7369  | SMITH  | CLERK   | 7902 | 1980-12-17 | 800  | NULL    | 20   |
| 7788  | SCOTT  | ANALYST | 7566 | 1987-07-13 | 3000 | NULL    | 20   |
| 7934  | MILLER | CLERK   | 7782 | 1982-01-23 | 1300 | NULL    | 10   |
| 7654  | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250 | 1400.00 | 30   |
| 7839  | KING   | PRESIDENT | NULL | 1981-11-17 | 5000 | NULL    | 10   |
| 7566  | JONES  | MANAGER | 7839 | 1981-04-02 | 2975 | NULL    | 20   |
| 7900  | JAMES   | CLERK   | 7698 | 1981-12-03 | 950  | NULL    | 30   |
| 7902  | FORD   | ANALYST | 7566 | 1981-12-03 | 3000 | NULL    | 20   |
| 7782  | CLARK  | MANAGER | 7839 | 1981-06-09 | 2450 | NULL    | 10   |
| 7698  | BLAKE  | MANAGER | 7839 | 1981-05-01 | 2850 | NULL    | 30   |
| 7499  | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600 | 300.00 | 30   |
| 7876  | ADAMS  | CLERK   | 7788 | 1987-05-23 | 1100 | NULL    | 20   |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

FROM EMP ORDER BY DEPTNO DESC;

```
MySQL 8.0 Command Line Client

mysql> SELECT * FROM EMP ORDER BY DEPTNO DESC;
+-----+-----+-----+-----+-----+-----+-----+-----+
| Empno | Ename | Job   | Mgr  | hiredate | SAL   | comm  | Deptno |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499  | ALLEN | SALESMAN | 7698 | 1981-02-20 | 1600 | 300.00 | 30   |
| 7521  | WARD  | SALESMAN | 7698 | 1981-02-22 | 1250 | 500.00 | 30   |
| 7654  | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250 | 1400.00 | 30   |
| 7698  | BLAKE  | MANAGER | 7839 | 1981-05-01 | 2850 | NULL    | 30   |
| 7844  | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500 | 0.00   | 30   |
| 7900  | JAMES   | CLERK   | 7698 | 1981-12-03 | 950  | NULL    | 30   |
| 7369  | SMITH  | CLERK   | 7902 | 1980-12-17 | 800  | NULL    | 20   |
| 7566  | JONES  | MANAGER | 7839 | 1981-04-02 | 2975 | NULL    | 20   |
| 7788  | SCOTT  | ANALYST | 7566 | 1987-07-13 | 3000 | NULL    | 20   |
| 7876  | ADAMS  | CLERK   | 7788 | 1987-05-23 | 1100 | NULL    | 20   |
| 7902  | FORD   | ANALYST | 7566 | 1981-12-03 | 3000 | NULL    | 20   |
| 7782  | CLARK  | MANAGER | 7839 | 1981-06-09 | 2450 | NULL    | 10   |
| 7839  | KING   | PRESIDENT | NULL | 1981-11-17 | 5000 | NULL    | 10   |
| 7934  | MILLER | CLERK   | 7782 | 1982-01-23 | 1300 | NULL    | 10   |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

mysql>
```

21)Query to display dept no, and sum salary from employee grouped by department no.
Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT DEPTNO, SUM(SAL) FROM EMP GROUP BY DEPTNO;
+-----+-----+
| DEPTNO | SUM(SAL) |
+-----+-----+
|    10 |     8750 |
|    20 |    10875 |
|    30 |     9400 |
+-----+-----+
3 rows in set (0.00 sec)

mysql>
```



22)Select department no, count * from employee, group by department no. having count more than 4.

Command:

```
MySQL 8.0 Command Line Client
mysql> SELECT DEPTNO, COUNT(*)FROM Emp GROUP BY DEPTNO HAVING COUNT(*)>4;
+-----+-----+
| DEPTNO | COUNT(*) |
+-----+-----+
|    20 |      5 |
|    30 |      6 |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```



23)Query to display total salary of employees from each department. Display dept name and salary. (joining emp.deptno. = dept.deptno., groupby dept name)

Command:

```
MySQL 8.0 Command Line Client
mysql> USE trialDB;
Database changed
mysql> USE trialDB;
Database changed
mysql> USE trialDB;
Database changed
mysql> SELECT DNAME, SAL, SUM(SAL) FROM EMP LEFT JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO UNION ALL SELECT DNAME, SAL, SUM(SAL) FROM EMP RIGHT JOIN DEPT ON EMP.DEPTNO = DEPT.D
EPTNO GROUP BY DNAME;
+-----+-----+-----+
| DNAME | SAL  | SUM(SAL) |
+-----+-----+-----+
| RESEARCH | 880  | 29825 |
| ACCOUNTING | 2450 | 8750 |
| RESEARCH | 880  | 10875 |
| SALES    | 1600 | 9400 |
| OPERATIONS | NULL | NULL   |
+-----+-----+-----+
5 rows in set (0.02 sec)

mysql>
```

Exercise 4: Working with SQL joins.

1. Write a query to display employee number, emp name, job, dept no, dept name, and location from emp and dept table. (natural /inner/ equi join)
Command: