

MIT World Peace University

Data Base Management System

Assignment 3

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1 Aim

Write suitable DML and select command to manipulate and retrieve requested data from tables.

2 Objective

1. DML (Insert, Update, Delete) commands,
2. SQL Select- Logical, IN, Negation, NULL, Comparison Operators.
3. Where Clause, Between AND, Exists, ALL, LIKE

3 Theory

3.1 SQL Data Manipulation Language (DML)

3.1.1 what is DML?

DML stands for Data Manipulation Language. It is used to manipulate the data in the database. It is used to insert, update, delete, and retrieve data from the database.

3.1.2 DML Commands

The following are the DML commands:

- **INSERT** - inserts new records in a table.
- **UPDATE** - updates existing records in a table.
- **DELETE** - deletes existing records from a table.
- **SELECT** - retrieves records from one or more tables.

3.2 DML Commands Syntax and Examples

- **SELECT** - retrieves records from one or more tables.

```
1 SELECT column_name 1 , column_name2 , ... FROM table_name ;
2
```

- **INSERT** - inserts new records in a table.

```
1 INSERT INTO table_name (column_name 1 , column_name2 , ...) VALUES (
  value 1 , value2 , ...);
2
```

- **UPDATE** - updates existing records in a table.

```
1 UPDATE table_name SET column_name = value WHERE condition ;
2
```

- **DELETE** - deletes existing records from a table.

```
1 DELETE FROM table_name WHERE condition;
2
```

3.3 SELECT query

3.3.1 what is SELECT query?

The SELECT statement is used to select data from a database. The data returned is stored in a result table, called the result-set.

3.3.2 SELECT query Syntax

```
1 SELECT column_name 1 , column_name2 , ...
2 FROM table_name WHERE column_name = value ;
```

3.3.3 SELECT Operators

The following are the operators used in SELECT query:

1. **AND:** The AND operator displays a record if both the first condition AND the second condition are true.
2. **OR:** The OR operator displays a record if either the first condition OR the second condition is true.
3. **NOT:** The NOT operator displays a record if the condition is NOT true.
4. **BETWEEN:** The BETWEEN operator selects values within a given range. The values can be numbers, text, or dates.
5. **IN:** The IN operator allows you to specify multiple values in a WHERE clause.
6. **LIKE:** The LIKE operator is used in a WHERE clause to search for a specified pattern in a column.

3.3.4 SELECT query Examples

```
1 SELECT * FROM table_name WHERE column_name = value ;
2 SELECT * FROM table_name WHERE column_name = value AND column_name = value ;
3 SELECT * FROM table_name WHERE column_name = value OR column_name = value ;
4 SELECT * FROM table_name WHERE NOT column_name = value ;
5 SELECT * FROM table_name WHERE column_name BETWEEN value AND value ;
6 SELECT * FROM table_name WHERE column_name IN (value , value , value );
7 SELECT * FROM table_name WHERE column_name LIKE 'value';
8
```

3.4 SQL Operators

3.4.1 what is SQL Operators?

An operator is a symbol that tells the compiler to perform specific mathematical or logical manipulations.

3.4.2 SQL Operators

The following are the operators used in SQL:

1. **Arithmetic Operators:** Arithmetic operators are used to perform mathematical operations like addition, subtraction, multiplication, and division.
2. **Comparison Operators:** Comparison operators are used to compare values. It returns either true or false according to the condition.
3. **Logical Operators:** Logical operators are used to determine the logic between variables or values.
4. **Misc Operators:** Misc operators are used to perform miscellaneous operations.

3.4.3 Arithmetic Operators

The following are the Arithmetic Operators used in SQL:

1. **+** - Addition
2. **-** - Subtraction
3. ***** - Multiplication
4. **/** - Division
5. **%** - Modulus

3.4.4 Comparison Operators

The following are the Comparison Operators used in SQL:

1. **=** - Equal
2. **!=** - Not Equal
3. **>** - Greater Than
4. **<** - Less Than
5. **>=** - Greater Than or Equal To
6. **<=** - Less Than or Equal To
7. **BETWEEN** - Between an inclusive range
8. **LIKE** - Search for a pattern
9. **IN** - To specify multiple possible values for a column

3.4.5 Logical Operators

The following are the Logical Operators used in SQL:

1. **AND** - Logical AND
2. **OR** - Logical OR
3. **NOT** - Logical NOT

4 Platform

- **Operating System:** Garuda Linux
- **IDE or Text Editor:** Visual Studio Code

5 input

Given Database from the Problem Statement for the Assignment for our batch. (A1 PA15)

6 output

Queries Set 1

```

1
2      1.
           Listthentheumberofemployeesandaveragesalaryforemployeesindepartment20

3      MariaDB [Company]> select avg (sal), count (*) from emp where deptno = 20;
4      +-----+-----+
5      | avg (sal) | count (*) |
6      +-----+-----+
7      | 2253 .0000 | 3 |
8      +-----+-----+
9      1 row in set (0.001 sec )

10
11     2. Listname , salary and PF amount of all employees . (
12     PF is calculated as 10% of basic salary )
13     MariaDB [Company]> select empname , sal , sal * 0.10 as PF from emp ;
14     +-----+-----+
15     | empname | sal | PF |
16     +-----+-----+
17     | Harriet | 2362 | 236.20 |
18     | Frederick | 3597 | 359.70 |
19     | Manuel | 2773 | 277.30 |
20     | Smith | 800 | 80.00 |
21     | Mable | 2937 | 293.70 |
22     | Allen | 1936 | 193.60 |
23     | Parth | 2000 | 200.00 |
24     | Henrietta | 2780 | 278.00 |
25     | Derrick | 2659 | 265.90 |
26     | Clarence | 3175 | 317.50 |
27     | Effie | 2012 | 201.20 |
28     +-----+-----+
29     11 rows in set (0.001 sec )

30
31     3. List the employee details in the ascending order of their basic salary .
32     MariaDB [Company]> select * from emp order by sal ;
33     +-----+-----+-----+-----+-----+-----+
34     | empno | empname | job | mgr | hiredate | sal |
35     +-----+-----+-----+-----+-----+-----+
36     | 7369 | Smith | Clerk | 7902 | 1980-12-17 | 800 |
37     | 300 | 20 | | | | |
38     | 7499 | Allen | Salesman | 7698 | 1981-02-20 | 1936 |
39     | 300 | 30 | | | | |
40     | 7500 | Parth | HR | 7989 | 1982-03-21 | 2000 |
41     | 300 | 40 | | | | |
42     | 7941 | Effie | Sales | 6074 | 2071-12-03 | 2012 |
43     | 265 | 30 | | | | |
44     | 7054 | Harriet | Research | 7917 | 2052-12-08 | 2362 | 229 |
45     | 20 | | | | | |
46     | 7705 | Derrick | Sales | 7234 | 2056-06-30 | 2659 |
47     | 208 | 30 | | | | |
48     | 7352 | Manuel | Accounting | 6190 | 2084-12-21 | 2773 | 253 |
49     | 10 | | | | | |
50     | 7670 | Henrietta | Sales | 7381 | 2121-11-16 | 2780 | 217 |
51     | 30 | | | | | |
52     | 7375 | Mable | Operations | 6333 | 2097-01-17 | 2937 | 210 |
53     | 40 | | | | | |
54     | 7871 | Clarence | Operations | 6991 | 2083-03-24 | 3175 | 228 |
55     | 40 | | | | | |
56     | 7128 | Frederick | Research | 7589 | 2077-12-07 | 3597 | 203 |
57     | 20 | | | | | |
58     +-----+-----+-----+-----+-----+-----+
59     11 rows in set (0.001 sec )

```

```

49 4.
                                     Listtheemployeeenameandhiredateinthedescendingorderofthehiredate
.
50 MariaDB [Company]> select empname , hiredate from emp order by hiredate desc ;
51 +-----+-----+
52 | empname | hiredate |
53 +-----+-----+
54 | Henrietta | 2121 -11-16 |
55 | Mable | 2097 -01-17 |
56 | Manuel | 2084 -12-21 |
57 | Clarence | 2083 -03-24 |
58 | Frederick | 2077 -12-07 |
59 | Effie | 2071 -12-03 |
60 | Derrick | 2056 -06-30 |
61 | Harriet | 2052 -12-08 |
62 | Parth | 1982 -03-21 |
63 | Allen | 1981 -02-20 |
64 | Smith | 1980 -12-17 |
65 +-----+-----+
66 11 rows in set (0.001 sec )
67
68
69 5. List employee name , salary , PF , HRA , DA and gross ;
order the results in the ascending order of
gross. HRA is 50 % of the salary and DA is 30 % of the salary .
70
71
72 MariaDB [Company]> select empname , sal , sal *.10 as PF , sal *.50 as HRA , sal
*.30 as DA , sal + sal *.90 as Gross from emp order by Gross ;
73 +-----+-----+-----+-----+-----+-----+
74 | empname | sal | PF | HRA | DA | Gross |
75 +-----+-----+-----+-----+-----+-----+
76 | Smith | 800 | 80 .00 | 400 .00 | 240 .00 | 1520 .00 |
77 | Allen | 1936 | 193 .60 | 968 .00 | 580 .80 | 3678 .40 |
78 | Parth | 2000 | 200 .00 | 1000 .00 | 600 .00 | 3800 .00 |
79 | Effie | 2012 | 201 .20 | 1006 .00 | 603 .60 | 3822 .80 |
80 | Harriet | 2362 | 236 .20 | 1181 .00 | 708 .60 | 4487 .80 |
81 | Derrick | 2659 | 265 .90 | 1329 .50 | 797 .70 | 5052 .10 |
82 | Manuel | 2773 | 277 .30 | 1386 .50 | 831 .90 | 5268 .70 |
83 | Henrietta | 2780 | 278 .00 | 1390 .00 | 834 .00 | 5282 .00 |
84 | Mable | 2937 | 293 .70 | 1468 .50 | 881 .10 | 5580 .30 |
85 | Clarence | 3175 | 317 .50 | 1587 .50 | 952 .50 | 6032 .50 |
86 | Frederick | 3597 | 359 .70 | 1798 .50 | 1079 .10 | 6834 .30 |
87 +-----+-----+-----+-----+-----+-----+
88 11 rows in set (0.001 sec )
89
90
91 6. List the department numbers and number of employees in each department .
92
93 MariaDB [Company]> select deptno , count(*) from emp group by deptno ;
94 +-----+-----+
95 | deptno | count (*) |
96 +-----+-----+
97 | 10 | 1 |
98 | 20 | 3 |
99 | 30 | 4 |
100 | 40 | 3 |
101 +-----+-----+
102 4 rows in set (0.001 sec )
103
104
105 7. Increment the salary of salesman by 10 % of basic salary .
106 MariaDB [Company]> update emp set sal = sal + (sal *.10) where job = 'sales';
107 Query OK , 3 rows affected (0.053 sec )
108 Rows matched: 3 Changed : 3 Warnings : 0
109
110 8. List the total salary ,
maximum and minimum salary and average salary of the employees , for

```

```

111 department 20.
112
113 MariaDB [Company]> select sum (sal), max (sal), min (sal), avg (sal)
114 from emp where deptno = 20;
115 +-----+-----+-----+-----+
116 | sum (sal) | max (sal) | min (sal) | avg (sal) |
117 +-----+-----+-----+-----+
118 | 6759 | 3597 | 800 | 2253 .0000 |
119 +-----+-----+-----+-----+
120 1 rowinset (0.001 sec )
121
122 9. List the employees whose names contains 3rd letter as 'I'.
123
124 MariaDB [Company]> select empname from emp where empname like ' _i%';
125 +-----+
126 | empname |
127 +-----+
128 | Smith |
129 +-----+
130 1 rowinset (0.001 sec )
131
132 10. List the maximum salary paid to a salesman .
133
134
135 MariaDB [Company]> select *, max (sal) from emp where job = 'sales';
136 +-----+-----+-----+-----+-----+-----+-----+-----+
137 | empno | empname | job | mgr | hiredate | sal | comm |
138 +-----+-----+-----+-----+-----+-----+-----+-----+
139 | 7670 | Henrietta | Sales | 7381 | 2121 -11-16 | 3058 | 217 |
140 | 30 | 3058 | | | | | |
141 +-----+-----+-----+-----+-----+-----+-----+-----+
142 1 rowinset (0.001 sec )
143
144 11. Increase the salary of a salesman by 10 % of their current salary .
145
146 MariaDB [Company]> update emp set sal = sal + (sal*.10) where job = 'sales';
147 Query OK, 3 rows affected (0.054 sec )
148 Rows matched: 3 Changed : 3 Warnings : 0
149
150

```

Queries Set 2:

```

1
2 1. List the employee names and his annual salary deptwise .
3
4 MariaDB [Company]> select deptno , empname , sal *12
5 as Annual_Sal from emp order by deptno ;
6 +-----+-----+-----+
7 | deptno | empname | Annual_Sal |
8 +-----+-----+-----+
9 | 10 | Manuel | 33276 |
10 | 20 | Harriet | 28344 |
11 | 20 | Frederick | 43164 |
12 | 20 | Smith | 9600 |
13 | 30 | Derrick | 38616 |
14 | 30 | Henrietta | 40368 |
15 | 30 | Allen | 23232 |
16 | 30 | Effie | 29208 |
17 | 40 | Parth | 24000 |
18 | 40 | Mable | 35244 |
19 | 40 | Clarence | 38100 |
20 +-----+-----+-----+
21 11 rowsinset (0.001 sec )
22
23 2. Find out least 5 earners of the company .

```



```

23
24 MariaDB [Company]> select empname from emp order by sal asc limit 5 ;
25 +-----+
26 | empname |
27 +-----+
28 | Smith |
29 | Allen |
30 | Parth |
31 | Harriet |
32 | Effie |
33 +-----+
34 5 rows in set (0.001 sec )
35
36 3. List the records from emp whose deptno is not in dept
37
38 MariaDB [Company]> select * from emp where deptno not in (
39 select deptno from dept);
40 +-----+-----+-----+-----+-----+-----+-----+
41 | empno | empname | job | mgr | hiredate | sal | comm |
42 | deptno |
43 +-----+-----+-----+-----+-----+-----+-----+
44 | 7500 | Parth | HR | 7989 | 1982-03-21 | 2000 | 300 |
45 | 60 |
46 +-----+-----+-----+-----+-----+-----+-----+
47 1 row in set (0.001 sec )
48
49 4. List those employees whose sal is odd value
50
51 MariaDB [Company]> select * from emp where sal % 2 != 0 ;
52 +-----+-----+-----+-----+-----+-----+-----+
53 | empno | empname | job | mgr | hiredate | sal | comm |
54 | comm | deptno |
55 +-----+-----+-----+-----+-----+-----+-----+
56 | 7128 | Frederick | Research | 7589 | 2077-12-07 | 3597 | 203 |
57 | 20 |
58 | 7352 | Manuel | Accounting | 6190 | 2084-12-21 | 2773 | 253 |
59 | 10 |
60 | 7375 | Mable | Operations | 6333 | 2097-01-17 | 2937 | 210 |
61 | 40 |
62 | 7871 | Clarence | Operations | 6991 | 2083-03-24 | 3175 | 228 |
63 | 40 |
64 +-----+-----+-----+-----+-----+-----+-----+
65 4 rows in set (0.001 sec )
66
67 5. List the employees whose sal contain 3 digits
68
69 MariaDB [Company]> select * from emp where sal /1000 < 1 ;
70 +-----+-----+-----+-----+-----+-----+-----+
71 | empno | empname | job | mgr | hiredate | sal | comm |
72 | deptno |
73 +-----+-----+-----+-----+-----+-----+-----+
74 | 7369 | Smith | Clerk | 7902 | 1980-12-17 | 800 | 300 |
75 | 20 |
76 +-----+-----+-----+-----+-----+-----+-----+
77 1 row in set (0.001 sec )
78
79 6. List the employees who joined in the month of 'DEC'
80
81 MariaDB [Company]> select * from emp where hiredate like "%%-12-%%";
82 +-----+-----+-----+-----+-----+-----+-----+
83 | empno | empname | job | mgr | hiredate | sal | comm |
84 | comm | deptno |
85 +-----+-----+-----+-----+-----+-----+-----+
86 | 7054 | Harriet | Research | 7917 | 2052-12-08 | 2362 | 229 |
87 | 20 |
88 | 7128 | Frederick | Research | 7589 | 2077-12-07 | 3597 | 203 |
89 | 20 |
90 | 7352 | Manuel | Accounting | 6190 | 2084-12-21 | 2773 | 253 |
91 | 10 |
92 | 7369 | Smith | Clerk | 7902 | 1980-12-17 | 800 |

```

```

77      300 |      20 |
      | 7941 |      Effie |      Sales | 6074 | 2071 -12-03 | 2434 |
      265 |      30 |
78 +-----+-----+-----+-----+-----+-----+
79 5      rowsinset      (0.001 sec )
80
81
82 7.      Listtheemployeeswhosenamescontains      'A'
83
84 MariaDB [Company]> select *      fromempwhereempnamelike      "A%";
85 +-----+-----+-----+-----+-----+-----+
86 | empno | empname | job | mgr | hiredate | sal | comm |
87 | deptno |
88 +-----+-----+-----+-----+-----+-----+
89 | 7499 | Allen | Salesman | 7698 | 1981 -02-20 | 1936 | 300 |
90 | 30 |
91 +-----+-----+-----+-----+-----+-----+
92 1      rowinset      (0.001 sec )
93
94 8.      Listthemaximum ,      minimumandaveragesalaryinthecompany
95 MariaDB [Company]> selectmax (sal), min (sal), avg (sal) fromemp ;
96 +-----+-----+-----+
97 | max (sal) | min (sal) | avg (sal) |
98 +-----+-----+-----+
99 | 3597 | 800 | 2599 .6364 |
100 +-----+-----+-----+
101 1      rowinset      (0.000 sec )
102
103 9.      Writeaquerytoreturnthedayoftheweekforanydate      (or HIRE_DATE)
104      enteredinformat
105      'DD-MM-YY'
106
107 MariaDB [Company]> selectdayname (hiredate) fromemp ;
108 +-----+
109 | dayname (hiredate) |
110 +-----+
111 | Sunday |
112 | Tuesday |
113 | Thursday |
114 | Wednesday |
115 | Thursday |
116 | Friday |
117 | Sunday |
118 | Sunday |
119 | Friday |
120 | Wednesday |
121 | Thursday |
122 +-----+
123 11      rowsinset      (0.001 sec )
124
125 10.
126      Countthenoofcharactersinemployeenamewithoutconsideringspacesforeachname
127
128 MariaDB [Company]> selectempname , length (replace(empname, ' ', '')) +
129      1aslengthfromemp ;
130 +-----+-----+
131 | empname | length |
132 +-----+-----+
133 | Harriet | 8 |
134 | Frederick | 10 |
135 | Manuel | 7 |
136 | Smith | 6 |
137 | Mable | 6 |
138 | Allen | 6 |
139 | Parth | 6 |
140 | Henrietta | 10 |
141 | Derrick | 8 |

```

```

137 | Clarence | 9 |
138 | Effie | 6 |
139 +-----+
140 11 rowsinset (0.001 sec )
141
142 11. Listtheemployeeswhoaredrawinglessthan1000
    sorttheoutputbysalary
143
144 MariaDB [Company]> select * fromempwheresal < 1000orderbysal ;
145 +-----+-----+-----+-----+-----+-----+-----+
146 | empno | empname | job | mgr | hiredate | sal | comm |
147 | deptno |
148 +-----+-----+-----+-----+-----+-----+-----+
149 | 7369 | Smith | Clerk | 7902 | 1980 -12-17 | 800 | 300 |
150 | 20 |
151 +-----+-----+-----+-----+-----+-----+-----+
1 rowinset (0.002 sec )

```

Queries Set 3:

```

1 1.
    WriteaqueryinSQLtodisplaytheuniquedesignationsfortheemployees
2
3 MariaDB [Company]> selectdistinctjobfromemp ;
4 +-----+
5 | job |
6 +-----+
7 | Research |
8 | Accounting |
9 | Clerk |
10 | Operations |
11 | Salesman |
12 | HR |
13 | Sales |
14 +-----+
15 7 rowsinset (0.001 sec )
16
17 2. DeleteEmployeeswhojoinedinYear1980
18 MariaDB [Company]> deletefromempwhereyear (hiredate) = 1980 ;
19 Query OK, 1rowaffected (0.127 sec )
20
21 3. IncreasethesalaryofManagersby20 % oftheircurrentsalary
22 MariaDB [Company]> updateempsetsal = sal + sal *0.2 wherejob = 'Manager' ;
23 Query OK, 0rowsaffected (0.001 sec )
24 Rows matched: 0Changed : 0Warnings : 0
25
26 4. Listemployeesnotbelongingtodepartment30 , 40 , or10
27
28 MariaDB [Company]> select * fromempwheredeptnonotin (30, 40 , 10 );
29 +-----+-----+-----+-----+-----+-----+-----+
30 | empno | empname | job | mgr | hiredate | sal | comm |
31 | deptno |
32 +-----+-----+-----+-----+-----+-----+-----+
33 | 7054 | Harriet | Research | 7917 | 2052 -12-08 | 2362 | 229 |
34 | 20 |
35 | 7128 | Frederick | Research | 7589 | 2077 -12-07 | 3597 | 203 |
36 | 20 |
37 | 7500 | Parth | HR | 7989 | 1982 -03-21 | 2000 |
38 | 300 | 60 |
39 +-----+-----+-----+-----+-----+-----+-----+
40 3 rowsinset (0.001 sec )
41
42 5. Listthedifferentdesignationsinthecompany
43
44 MariaDB [Company]> selectdistinctjobfromemp ;
45 +-----+
46 | job |

```

```

43 +-----+
44 | Research |
45 | Accounting |
46 | Operations |
47 | Salesman |
48 | HR |
49 | Sales |
50 +-----+
51 6 rowsinset (0.001 sec )
52
53 6. Listthenamesofemployeeswhoarenoteligibleforcommission .
54
55 MariaDB [Company]> select * fromempwheresal < 1000 ;
56 Empty set (0.001 sec )
57
58 7. Listemployeeswhosenameseitherstartorendwith "S".
59
60 MariaDB [Company]> select * fromempwhereempnamelike 'S%';
61 Empty set (0.001 sec )
62
63 8. Listemployeeswhosenameshaveletter "A"
64 assecondletterintheirnames .
65
66 MariaDB [Company]> select * fromempwhereempnamelike '_A%';
67 +-----+-----+-----+-----+-----+-----+-----+-----+
68 | empno | empname | job | mgr | hiredate | sal |
69 | comm | deptno |
70 +-----+-----+-----+-----+-----+-----+-----+-----+
71 | 7054 | Harriet | Research | 7917 | 2052 -12-08 | 2362 | 229 |
72 | 20 |
73 | 7352 | Manuel | Accounting | 6190 | 2084 -12-21 | 2773 | 253 |
74 | 10 |
75 | 7375 | Mable | Operations | 6333 | 2097 -01-17 | 2937 | 210 |
76 | 40 |
77 | 7500 | Parth | HR | 7989 | 1982 -03-21 | 2000 |
78 | 300 | 60 |
79 +-----+-----+-----+-----+-----+-----+-----+-----+
80 4 rowsinset (0.001 sec )
81
82 9. Listthenumberofemployeesworkingwiththecompany .
83
84 MariaDB [Company]> selectcount (*) fromemp ;
85 +-----+
86 | count (*) |
87 +-----+
88 | 10 |
89 +-----+
90 1 rowsinset (0.001 sec )
91
92 10. ListtheempswithhiredateinformatJune4 ,1988.
93
94 MariaDB [Company]> select * fromempwherehiredate = '1988-06-04';
95 Empty set (0.001 sec )
96
97 11. Listthesalesmenwhogetthecommissionwithinarangeof200and5000 .
98
99 MariaDB [Company]> select * fromempwherejob = 'Sales'
100 andcommbetween200and5000 ;
101 +-----+-----+-----+-----+-----+-----+-----+-----+
102 | empno | empname | job | mgr | hiredate | sal | comm |
103 | deptno |
104 +-----+-----+-----+-----+-----+-----+-----+-----+
105 | 7670 | Henrietta | Sales | 7381 | 2121 -11-16 | 3364 | 217 |
106 | 30 |
107 | 7705 | Derrick | Sales | 7234 | 2056 -06-30 | 3218 | 208 |
108 | 30 |

```

```

99 | 7941 | Effie | Sales | 6074 | 2071 -12-03 | 2434 | 265 |
100 | 30 | |
101 +-----+-----+-----+-----+-----+-----+
102 3 rowsinset (0.001 sec )
103

```

Queries Set 4:

```

1  ## Set4
2
3  1. Listnamesofemployeeswhoaremorethan2yearsoldinthecompany .
4
5  MariaDB [Company]> select empname from emp where datediff (curdate(), hiredate )
6  /365 > 2 ;
7  +-----+
8  | empname |
9  +-----+
10 | Allen |
11 | Parth |
12 +-----+
13 2 rowsinset (0.002 sec )
14
15 2. Listtheemployeeedetailsintheascendingorderoftheirbasicsalary .
16
17 MariaDB [Company]> select * from emp order by sal ;
18 +-----+-----+-----+-----+-----+-----+
19 | empno | empname | job | mgr | hiredate | sal |
20 | comm | deptno |
21 +-----+-----+-----+-----+-----+-----+
22 | 7499 | Allen | Salesman | 7698 | 1981 -02-20 | 1936 |
23 | 300 | 30 |
24 | 7500 | Parth | HR | 7989 | 1982 -03-21 | 2000 |
25 | 300 | 60 |
26 | 7054 | Harriet | Research | 7917 | 2052 -12-08 | 2362 | 229 |
27 | 20 |
28 | 7941 | Effie | Sales | 6074 | 2071 -12-03 | 2434 |
29 | 265 | 30 |
30 | 7352 | Manuel | Accounting | 6190 | 2084 -12-21 | 2773 | 253 |
31 | 10 |
32 | 7375 | Mable | Operations | 6333 | 2097 -01-17 | 2937 | 210 |
33 | 40 |
34 | 7871 | Clarence | Operations | 6991 | 2083 -03-24 | 3175 | 228 |
35 | 40 |
36 | 7705 | Derrick | Sales | 7234 | 2056 -06-30 | 3218 |
37 | 208 | 30 |
38 | 7670 | Henrietta | Sales | 7381 | 2121 -11-16 | 3364 | 217 |
39 | 30 |
40 | 7128 | Frederick | Research | 7589 | 2077 -12-07 | 3597 | 203 |
41 | 20 |
42 +-----+-----+-----+-----+-----+-----+
43 10 rowsinset (0.001 sec )
44
45 3. DisplaytheemployeeswhohavemoresalaryasthatofSmith
46
47 MariaDB [Company]> select * from emp where sal > (
48 select sal from emp where empname = 'Manuel');
49 +-----+-----+-----+-----+-----+-----+
50 | empno | empname | job | mgr | hiredate | sal |
51 | comm | deptno |
52 +-----+-----+-----+-----+-----+-----+
53 | 7128 | Frederick | Research | 7589 | 2077 -12-07 | 3597 | 203 |
54 | 20 |
55 | 7375 | Mable | Operations | 6333 | 2097 -01-17 | 2937 | 210 |
56 | 40 |
57 | 7670 | Henrietta | Sales | 7381 | 2121 -11-16 | 3364 | 217 |
58 | 30 |
59 | 7705 | Derrick | Sales | 7234 | 2056 -06-30 | 3218 |
60 | 208 | 30 |

```

```

43 | 7871 | Clarence | Operations | 6991 | 2083 -03-24 | 3175 | 228 |
44 | 40 | | | | | | |
45 +-----+
46 5 rowsinset (0.001 sec )
47
48 4. Increment the salary of Empno 9180 by 10 % of his current salary .
49
50 MariaDB [Company]> select * from emp where empno = 9180 ;
51 +-----+
52 | empno | empname | job | mgr | hiredate | sal | comm |
53 | deptno | | | | | | |
54 +-----+
55 | 9180 | Jesse | Accounting | 6534 | 2101 -08-22 | 3562 | 1420 |
56 | 10 | | | | | | |
57 +-----+
58 1 rowinset (0.001 sec )
59
60 5. List the employees whose salary is between 10000 and 25000 .
61
62 MariaDB [Company]> select * from emp where sal between 10000 and 25000 ;
63 +-----+
64 | empno | empname | job | mgr | hiredate | sal | comm |
65 | deptno | | | | | | |
66 +-----+
67 | 7500 | Parth | HR | 7989 | 1982 -03-21 | 11100 | 300 |
68 | 60 | | | | | | |
69 +-----+
70 1 rowinset (0.001 sec )
71
72 6. List the names of employees who are not eligible for commission .
73
74 MariaDB [Company]> select * from emp where sal < 1000 ;
75 +-----+
76 | empno | empname | job | mgr | hiredate | sal | comm |
77 | deptno | | | | | | |
78 +-----+
79 | 7941 | Effie | Sales | 6074 | 2071 -12-03 | 700 | 265 |
80 | 30 | | | | | | |
81 +-----+
82 1 rowinset (0.001 sec )
83
84 7. Increment the salary of Research by 10 % of basic salary .
85
86 MariaDB [Company]> update emp set sal = sal + sal * 0.1 where job = "Research";
87 Query OK, 2 rows affected (0.054 sec )
88 Rows matched: 2 Changed : 2 Warnings : 0
89
90 8. List the total salary ,
91 maximum and minimum salary and average salary of the employees jobwise .
92
93 MariaDB [Company]> select job , sum (sal) as total , max (sal) as max , min (sal)
94 as min , avg (sal) as avg from emp group by job ;
95 +-----+
96 | job | total | max | min | avg |
97 +-----+
98 | Accounting | 2773 | 2773 | 2773 | 2773 .0000 |
99 | Accounting | 3562 | 3562 | 3562 | 3562 .0000 |
100 | HR | 11100 | 11100 | 11100 | 11100 .0000 |
101 | Operations | 6112 | 3175 | 2937 | 3056 .0000 |
102 | Research | 6555 | 3957 | 2598 | 3277 .5000 |
103 | Sales | 7282 | 3364 | 700 | 2427 .3333 |
104 | Salesman | 1936 | 1936 | 1936 | 1936 .0000 |
105 +-----+
106 7 rowsinset (0.001 sec )
107
108 9. Delete the employee whose name starts with P .

```

```

101 MariaDB [Company]> deletefromempwhereempnamelike 'P%';
102 Query OK, 1rowaffected (0.106 sec )
103
104 10. Listtheemployeeswhosedesignationis "Research" andcommissionis >
105 500 .
106 +-----+-----+-----+-----+-----+-----+-----+-----+
107 | empno | empname | job | mgr | hiredate | sal |
108 | comm | deptno |
109 +-----+-----+-----+-----+-----+-----+-----+
110 | 7054 | Harriet | Research | 7917 | 2052 -12-08 | 2598 | 610 |
111 | 20 |
112 | 7128 | Frederick | Research | 7589 | 2077 -12-07 | 3957 | 610 |
113 | 20 |
114 +-----+-----+-----+-----+-----+-----+-----+
115 2 rowsinset (0.001 sec )
116
117 11. Listemployeesbelongingto department20 , 30 , 40 .
118
119 MariaDB [Company]> select * fromempwheredeptnoin (20, 30 , 40 );
120 +-----+-----+-----+-----+-----+-----+-----+-----+
121 | empno | empname | job | mgr | hiredate | sal |
122 | comm | deptno |
123 +-----+-----+-----+-----+-----+-----+-----+
124 | 7054 | Harriet | Research | 7917 | 2052 -12-08 | 2598 | 610 |
125 | 20 |
126 | 7128 | Frederick | Research | 7589 | 2077 -12-07 | 3957 | 610 |
127 | 20 |
128 | 7375 | Mable | Operations | 6333 | 2097 -01-17 | 2937 | 210 |
129 | 40 |
130 | 7499 | Allen | Salesman | 7698 | 1981 -02-20 | 1936 |
131 | 300 | 30 |
132 | 7670 | Henrietta | Sales | 7381 | 2121 -11-16 | 3364 | 217 |
133 | 30 |
134 | 7705 | Derrick | Sales | 7234 | 2056 -06-30 | 3218 |
135 | 208 | 30 |
136 | 7871 | Clarence | Operations | 6991 | 2083 -03-24 | 3175 | 228 |
137 | 40 |
138 | 7941 | Effie | Sales | 6074 | 2071 -12-03 | 700 |
139 | 265 | 30 |
140 +-----+-----+-----+-----+-----+-----+-----+
141 8 rowsinset (0.001 sec )

```

Queries Set 5:

```

1 1. ListtheemployeenamesandhisannualsalaryJobwise .
2
3 MariaDB [Company]> selectjob , empname , sal *12 asannualfromemp ;
4 +-----+-----+-----+
5 | job | empname | annual |
6 +-----+-----+-----+
7 | Research | Harriet | 31176 |
8 | Research | Frederick | 47484 |
9 | Accounting | Manuel | 33276 |
10 | Operations | Mable | 35244 |
11 | Salesman | Allen | 23232 |
12 | Sales | Henrietta | 40368 |
13 | Sales | Derrick | 38616 |
14 | Operations | Clarence | 38100 |
15 | Sales | Effie | 8400 |
16 | Accounting | Jesse | 42744 |
17 +-----+-----+-----+
18 10 rowsinset (0.001 sec )
19
20 2. DeletetheEmployeeehosenamestartswithA & R
21
22 delete from emp where empname like 'A%' orempname like 'R%';
23 Query OK, 1rowaffected (0.163 sec )

```

```

24
25 3.      Increment the salary of Empno      .      7000 by 30      %      of his current salary      .
26
27 MariaDB [Company]>      update emp set sal      =      sal      +      sal      * 0.3      where empno      = 7000 ;
28 Query OK,      1 row affected      (0.043 sec )
29 Rows matched:      1 Changed      :      1 Warnings      : 0
30
31 4.      List the total salary      ,
          maximum and minimum salary and average salary of the employees hired date wise
          .
32
33 MariaDB [Company]>      select hiredate      , sum (sal)      as total      , max (sal)      as max      , min (
34 sal)      as min      , avg (sal)      as avg from emp group by hiredate      ;
35 +-----+-----+-----+-----+-----+
36 |      hiredate      |      total      |      max      |      min      |      avg      |
37 +-----+-----+-----+-----+-----+
38 | 2052 -12-08      |      2598      |      2598      |      2598      |      2598 .0000      |
39 | 2056 -06-30      |      3218      |      3218      |      3218      |      3218 .0000      |
40 | 2071 -12-03      |      700      |      700      |      700      |      700 .0000      |
41 | 2077 -12-07      |      3957      |      3957      |      3957      |      3957 .0000      |
42 | 2083 -03-24      |      3175      |      3175      |      3175      |      3175 .0000      |
43 | 2084 -12-21      |      2773      |      2773      |      2773      |      2773 .0000      |
44 | 2097 -01-17      |      2937      |      2937      |      2937      |      2937 .0000      |
45 | 2101 -08-22      |      12662     |      9100      |      3562      |      6331 .0000      |
46 | 2121 -11-16      |      3364      |      3364      |      3364      |      3364 .0000      |
47 +-----+-----+-----+-----+-----+
48 9      rows in set      (0.001 sec )
49
50 5.      List the employees whose names contain last letter as      'T' .
51
52 MariaDB [Company]>      select      *      from emp where empname like      '%T' ;
53 +-----+-----+-----+-----+-----+-----+-----+
54 |      empno      |      empname      |      job      |      mgr      |      hiredate      |      sal      |      comm      |
55 |      deptno      |      |      |      |      |      |      |
56 +-----+-----+-----+-----+-----+-----+-----+
57 |      7054      |      Harriet      |      Research      |      7917      |      2052 -12-08      |      2598      |      610      |
58 |      20      |      |      |      |      |      |      |
59 +-----+-----+-----+-----+-----+-----+-----+
60 1      row in set      (0.001 sec )
61
62 6.      Display the employees who have less salary as that of Ankush
63
64 MariaDB [Company]>      select      *      from emp where sal      <      (
65 select sal from emp where empname =      'Ankush' );
66 Empty set (0.001 sec )
67
68 7.      Display the employees who have salary between 10000
69
70 MariaDB [Company]>      select      *      from emp where sal between 10000 and 20000      ;
71 Empty set (0.001 sec )
72
73 8.      List employees belonging to department 30      , 40      , or 10      .
74
75 MariaDB [Company]>      select      *      from emp where deptno in      (30, 40 , 10 );
76 +-----+-----+-----+-----+-----+-----+-----+
77 |      empno      |      empname      |      job      |      mgr      |      hiredate      |      sal      |      |
78 |      comm      |      deptno      |      |      |      |      |      |
79 +-----+-----+-----+-----+-----+-----+-----+
80 |      7352      |      Manuel      |      Accounting      |      6190      |      2084 -12-21      |      2773      |      253      |
81 |      10      |      |      |      |      |      |      |
82 |      7375      |      Mable      |      Operations      |      6333      |      2097 -01-17      |      2937      |      210      |
83 |      40      |      |      |      |      |      |      |
84 |      7670      |      Henrietta      |      Sales      |      7381      |      2121 -11-16      |      3364      |      217      |
85 |      30      |      |      |      |      |      |      |
86 |      7705      |      Derrick      |      Sales      |      7234      |      2056 -06-30      |      3218      |      |
87 |      208      |      30      |      |      |      |      |      |
88 |      7871      |      Clarence      |      Operations      |      6991      |      2083 -03-24      |      3175      |      228      |
89 |      40      |      |      |      |      |      |      |

```



```

80 | 7941 | Effie | Sales | 6074 | 2071 -12-03 | 700 |
81 | 265 | 30 | | | | |
81 | 9180 | Jesse | Accounting | 6534 | 2101 -08-22 | 3562 | 1420 |
82 | 10 | | | | | |
82 +-----+
83 7 rowsinset (0.001 sec )
84
85 9. Listtheemployeeswhosedesignationis 'Research' andsalis > 5000 .
86
87 MariaDB [Company]> select * fromempwherejob = 'Research' andsal >
88 5000 ;
88 Empty set (0.001 sec )
89
90 10. Listtheemployeesdetailsdescendingwisewhosedesignationis 'Research'
91 andcommissionis > 500 .
92
92 MariaDB [Company]> select * fromempwherejob = 'Research' andcomm >
93 500orderbycommdesc ;
94
94 +-----+
94 | empno | empname | job | mgr | hiredate | sal |
94 | comm | deptno | | | | |
95 +-----+
96 | 7054 | Harriet | Research | 7917 | 2052 -12-08 | 2598 | 610 |
96 | 20 | | | | | |
97 | 7128 | Frederick | Research | 7589 | 2077 -12-07 | 3957 | 610 |
97 | 20 | | | | | |
98 +-----+
99 2 rowsinset (0.001 sec )
100
101

```

7 Conclusion

Thus, we have learned SQL DML commands, SELECT Command with SQL operators thoroughly

8 FAQs

8.1 What is the between Truncate table and Drop table?

- Truncate table is used to delete all the records from the table. It is faster than
- Drop table is used to delete the table completely from the database.
- Truncate table is faster than drop table.
- Truncate table command cannot be rolled back.
- Drop table command can be rolled back.

Example:

- Truncate table Command;

```
Truncate table emp;
```

- Drop table Command;

```
Drop table emp;
```

8.2 How is the pattern matching done in SQL?

- The pattern matching is done using the LIKE operator.
- The LIKE operator is used in the WHERE clause of the SELECT statement.
- The LIKE operator is used to search for a specific pattern in a column.
- The pattern can be a string or a number.
- The pattern can contain special characters.
- The special characters are:
 - % - The percent sign represents zero, one, or multiple characters.
 - _ - The underscore represents a single character.

The Syntax of the command is:

```
SELECT column_name(s)
FROM table_name
WHERE column_name LIKE pattern;
```

Example:

```
SELECT * FROM emp WHERE empname LIKE 'S%';
SELECT * FROM emp WHERE empname LIKE 'S__';
```

8.3 Write a DELETE command to delete all the records from CUSTOMER table

```
DELETE FROM CUSTOMER;
```