

SQL Task

Date: 14-July-2022

Aim: Design at least 10 SQL queries for suitable database application using SQL DML statements: Insert, Select, Update, Delete with operators, functions, and set operator

Problem Statement:

1. Create table student with schema (roll_no, name, division, branch, city, marks).

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> create table Student (
  -> roll_no int,
  -> name varchar(40),
  -> division varchar(40),
  -> branch varchar(40),
  -> city varchar(20),
  -> marks int);
Query OK, 0 rows affected (0.04 sec)
```

2. Insert 10 records to the table Student

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> insert into
  -> student(roll_no,name,division,branch,city,marks)
  -> values
  -> (1,'usman','first','computer','bareilly','90'),
  -> (2,'jaish','second','it','kanpur',80),
  -> (3,'akash','second','computer','pune',70),
  -> (4,'amit','third','ec','pune',55),
  -> (5,'rahul','first','mechanical','mumbai',85),
  -> (6,'rakesh','fourth','ec','manali',51),
  -> (7,'rajesh','second','computer','pune',79),
  -> (8,'subhan','second','it','ratlam',75),
  -> (9,'sundar','third','ec','moradabad',65),
  -> (10,'saurabh','first','computer','pune',95),
  -> (10,'saurabh','first','computer','pune',95);
Query OK, 11 rows affected (0.04 sec)
Records: 11  Duplicates: 0  Warnings: 0
```

3. List all the students name with their corresponding city

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> select name,city from student;
+-----+-----+
| name  | city  |
+-----+-----+
| usman  | bareilly |
| jaish  | kanpur  |
| akash  | pune    |
| amit   | pune    |
| rahul  | mumbai  |
| rakesh | manali  |
| rajesh | pune    |
| subhan | ratlam  |
| sundar | moradabad |
| saurabh | pune    |
+-----+-----+
10 rows in set (0.00 sec)
```

4. List all the distinct names of the students

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> select distinct name from student;
+-----+
| name  |
+-----+
| usman  |
| jaish  |
| akash  |
| amit   |
| rahul  |
| rakesh |
| rajesh |
| subhan |
| sundar |
| saurabh |
+-----+
10 rows in set (0.00 sec)
```

5. List all the records of the students with all the attributes

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> select * from student;
```

roll_no	name	division	branch	city	marks
1	usman	first	computer	bareilly	90
2	jaish	second	it	kanpur	80
3	akash	second	computer	pune	70
4	amit	third	ec	pune	55
5	rahul	first	mechanical	mumbai	85
6	rakesh	fourth	ec	manali	51
7	rajesh	second	computer	pune	79
8	subhan	second	it	ratlam	75
9	sundar	third	ec	moradabad	65
10	saurabh	first	computer	pune	95

10 rows in set (0.00 sec)

6. List all the students whose marks are greater than 75

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> select name from student where marks>75;
```

name
usman
jaish
rahul
rajesh
saurabh

5 rows in set (0.00 sec)

7. List all the students whose name starts with the alphabet 'S'

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> select name from student where name like 's%';
+-----+
| name  |
+-----+
| subhan |
| sundar |
| saurabh |
+-----+
3 rows in set (0.00 sec)

mysql>
```

8. List all the students whose marks are in the range of 50 to 60

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> select name from student where marks>50 and marks<60
-> ;
+-----+
| name  |
+-----+
| amit  |
| rakesh |
+-----+
2 rows in set (0.00 sec)

mysql>
```

9. List all the students whose branch is 'computer' and city is 'pune'

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> select name from student where branch='computer' and city='pune';
+-----+
| name  |
+-----+
| akash  |
| rajesh |
| saurabh |
+-----+
3 rows in set (0.00 sec)

mysql> _
```

10. Update the branch of a student to 'IT' whose roll_no is 9

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> update student set branch='it' where roll_no=9;
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from student where roll_no=9;
+-----+-----+-----+-----+-----+-----+
| roll_no | name  | division | branch | city      | marks |
+-----+-----+-----+-----+-----+-----+
| 9      | sundar | third    | it     | moradabad | 65    |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

11. Delete the student record whose division is 'fourth'

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> delete from student where division='fourth';
Query OK, 1 row affected (0.01 sec)

mysql> select * from student;
+-----+-----+-----+-----+-----+-----+
| roll_no | name  | division | branch  | city      | marks |
+-----+-----+-----+-----+-----+-----+
| 1      | usman | first    | computer | bareilly  | 90    |
| 2      | jaish | second   | it       | kanpur    | 80    |
| 3      | akash | second   | computer | pune      | 70    |
| 4      | amit  | third    | ec       | pune      | 55    |
| 5      | rahul | first    | mechanical | mumbai   | 85    |
| 7      | rajesh | second   | computer | pune      | 79    |
| 8      | subhan | second   | it       | ratlam    | 75    |
| 9      | sundar | third    | it       | moradabad | 65    |
| 10     | saurabh | first    | computer | pune      | 95    |
+-----+-----+-----+-----+-----+-----+
9 rows in set (0.00 sec)
```

12. Create another table TE_Students with schema(roll_no, name)

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> create table te_students  
-> (  
-> roll_no int,  
-> name varchar(20));  
Query OK, 0 rows affected (0.08 sec)
```

13. List all the roll_no unionly in the relations student and TE_Students

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> select roll_no from student union all select roll_no from te_students;  
+-----+  
| roll_no |  
+-----+  
|      1 |  
|      2 |  
|      3 |  
|      4 |  
|      5 |  
|      7 |  
|      8 |  
|      9 |  
|     10 |  
+-----+  
9 rows in set (0.01 sec)
```

14. Display name of all the students belonging to relation student in upper case

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> select upper(name) from student;  
+-----+  
| upper(name) |  
+-----+  
| USMAN       |  
| JAISH       |  
| AKASH       |  
| AMIT        |  
| RAHUL       |  
| RAJESH      |  
| SUBHAN      |  
| SUNDAR      |  
| SAURABH     |  
+-----+  
9 rows in set (0.01 sec)
```

15. Display the binary and hex equivalent of marks for all the students belonging to student relation

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> select conv(marks,10,2) from student;
```

conv(marks,10,2)
1011010
1010000
1000110
110111
1010101
1001111
1001011
1000001
1011111

```
9 rows in set (0.00 sec)
```

```
mysql> select conv(marks,10,16) from student;
```

conv(marks,10,16)
5A
50
46
37
55
4F
4B
41
5F

```
9 rows in set (0.00 sec)
```

2. Aim: Design and Develop SQL DDL statements which demonstrate the use of SQL objects such as Table, View, Index, Sequence, Synonym Problem Statement:

1. Create table customers with schema (cust_id, cust_name, product, quantity, total_price)

```
C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> create table customers (  
-> cust_id int auto_increment primary key,  
-> cust_name varchar(40),  
-> product varchar(40),  
-> quantity int,  
-> total_price int);
```

```
Query OK, 0 rows affected (0.04 sec)
```

2. Use sequence/ auto-increment for incrementing customer ID and insert 5 customer records to the customers

```
mysql> describe customers;
```

Field	Type	Null	Key	Default	Extra
cust_id	int	NO	PRI	NULL	auto_increment
cust_name	varchar(40)	YES		NULL	
product	varchar(40)	YES		NULL	
quantity	int	YES		NULL	
total_price	int	YES		NULL	

```
5 rows in set (0.00 sec)
```

C:\Windows\System32\cmd.exe - mysql -u root -p

```
mysql> insert into customers
-> values
-> (1,'usman','mobile',3,15000);
Query OK, 1 row affected (0.01 sec)

mysql> insert into customers (cust_name,product,quantity,total_price)
-> values
-> ('akash','tv',10,100000),
-> ('vivek','smartwatch',5,25000),
-> ('preeti','desktop',2,50000),
-> ('dev','neckband',20,20000);
Query OK, 4 rows affected (0.04 sec)
Records: 4 Duplicates: 0 Warnings: 0

mysql> select * from customers;
```

cust_id	cust_name	product	quantity	total_price
1	usman	mobile	3	15000
2	akash	tv	10	100000
3	vivek	smartwatch	5	25000
4	preeti	desktop	2	50000
5	dev	neckband	20	20000

```
5 rows in set (0.00 sec)
```

3. Alter the table customers by adding one column 'price_per_qnty'


```
mysql> alter table customers
-> add column price_per_qty float;
Query OK, 0 rows affected (0.05 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> describe customers;
```

Field	Type	Null	Key	Default	Extra
cust_id	int	NO	PRI	NULL	auto_increment
cust_name	varchar(40)	YES		NULL	
product	varchar(40)	YES		NULL	
quantity	int	YES		NULL	
total_price	int	YES		NULL	
price_per_qty	float	YES		NULL	

```
6 rows in set (0.00 sec)
```

4. Create view 'cust_view' on customers displaying customer_id and customer name

```
cmd C:\Windows\System32\cmd.exe - mysql -u root -p
```

```
mysql> create view cust_view
-> as select cust_id, cust_name
-> from customers;
Query OK, 0 rows affected (0.01 sec)

mysql> describe cust_view;
```

Field	Type	Null	Key	Default	Extra
cust_id	int	NO		0	
cust_name	varchar(40)	YES		NULL	

```
2 rows in set (0.00 sec)
```

5. Update the view 'cust_view' to display customer ID, product and total price

```
mysql> alter view cust_view
-> as select cust_id, product, total_price
-> from customers;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from cust_view;
+-----+-----+-----+
| cust_id | product   | total_price |
+-----+-----+-----+
| 1       | mobile    | 15000       |
| 2       | tv        | 100000      |
| 3       | smartwatch | 25000       |
| 4       | desktop   | 50000       |
| 5       | neckband  | 20000       |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

6. Drop the view 'cust_view'

```
mysql> drop view cust_view;
Query OK, 0 rows affected (0.04 sec)
```

7. Create index 'cust_index' on customer name

```
mysql>
mysql>
mysql> create index cust_index
-> on customers(cust_name);
Query OK, 0 rows affected (0.10 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

8. Drop index 'cust_index'

```
C:\Windows\System32\cmd.exe - mysql -u root -p
mysql> drop index cust_index on customers;
Query OK, 0 rows affected (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

9. Use sequence/ auto-increment for incrementing customer id

10. Use the name alias for table customers(rename the table in query)

```
mysql> alter table customers
-> rename to cust_table;
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> show tables;
+-----+
| Tables_in_mydata |
+-----+
| cust_table        |
| student           |
| student_facebook  |
| te_students       |
+-----+
4 rows in set (0.04 sec)
```

11. Drop the table customers

```
mysql> drop table cust_table;
Query OK, 0 rows affected (0.05 sec)

mysql> show table;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that c
mysql> show tables;
+-----+
| Tables_in_mydata |
+-----+
| student           |
| student_facebook  |
| te_students       |
+-----+
3 rows in set (0.00 sec)

mysql> _
```

