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1. **Create a student table with the student id, name, and marks as attributes where the student id is the primary key.**
   Ans.:

```
create table student
(studentid int(3) primary key,
 name varchar(20) not null,
 marks decimal(5,2));
```

```
mysql> create table student
    -> (studentid int(3) primary key,
    -> name varchar(20) not null,
    -> marks decimal(5,2));
Query OK, 0 rows affected, 1 warning (0.04 sec)
```

2. **Insert the details of a new student in the above table.**

```
mysql> insert into student
    -> values(2,'Bharti',87.5);
Query OK, 1 row affected (0.01 sec)

mysql> insert into student
    -> values(3,'Chintu',62.5);
Query OK, 1 row affected (0.03 sec)
```

Table data:

```
mysql> select * from student;
+-----------+--------+-------+
| studentid | name   | marks |
+-----------+--------+-------+
|         1 | Arpit  | 78.50 |
|         2 | Bharti | 87.50 |
|         3 | Chintu | 62.50 |
|         4 | Charmi | 89.50 |
|         5 | Divya  | 80.00 |
+-----------+--------+-------+
5 rows in set (0.01 sec)
```

3. **Delete the details of a student in the above table.**

Ans.:

```
delete from student where studentid=5;
```

```
mysql> delete from student where studentid=5;
Query OK, 1 row affected (0.01 sec)

mysql> select * from student;
+-----------+--------+-------+
| studentid | name   | marks |
+-----------+--------+-------+
|         1 | Arpit  | 78.50 |
|         2 | Bharti | 87.50 |
|         3 | Chintu | 62.50 |
|         4 | Charmi | 89.50 |
+-----------+--------+-------+
4 rows in set (0.00 sec)
```

4. **Use the select command to get the details of the students with marks more than 80.**

Ans.:

```
select * from student where marks>80;
```

```
mysql> select * from student where marks>80;
+-----------+--------+-------+
| studentid | name   | marks |
+-----------+--------+-------+
|         2 | Bharti | 87.50 |
|         4 | Charmi | 89.50 |
+-----------+--------+-------+
2 rows in set (0.03 sec)
```

5. **Find the min, max, sum, and average of the marks in a student marks table.**

Ans. :

```
select max(marks), min(marks), sum(marks) , avg(marks)
from student;
```

```
mysql> select max(marks), min(marks), sum(marks) , avg(marks) from student;
+-----------+-----------+-----------+-----------+
| max(marks) | min(marks) | sum(marks) | avg(marks) |
+-----------+-----------+-----------+-----------+
|      89.50 |      62.50 |     318.00 |  79.500000 |
+-----------+-----------+-----------+-----------+
1 row in set (0.01 sec)
```

6. **Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.**

Ans.:

```
select country, count(customer_id) from customer group by
country;
```

7. **Write a SQL query to order the (student ID, marks) table in descending order of the marks.**

Ans.:

```
select * from student order by marks desc;
```

```
mysql> select * from student order by marks desc;
+------------+---------+-------+
| studentid | name    | marks |
+------------+---------+-------+
|          4 | Charmi  | 89.50 |
|          2 | Bharti  | 87.50 |
|          1 | Arpit   | 78.50 |
|          3 | Chintu  | 62.50 |
+------------+---------+-------+
4 rows in set (0.00 sec)
```

8. **Write a SQL query to display the marks without decimal places, display the reminder after diving marks by 3 and display the square of marks.**

Ans.:

```
select round(marks,0),mod(marks,3),pow(marks,2) from
student;
```

```
mysql> select round(marks,0),mod(marks,3),pow(marks,2) from student;
+---------------+-------------+-------------+
| round(marks,0) | mod(marks,3) | pow(marks,2) |
+---------------+-------------+-------------+
|            79 |        0.50 |     6162.25 |
|            88 |        0.50 |     7656.25 |
|            63 |        2.50 |     3906.25 |
|            90 |        2.50 |     8010.25 |
+---------------+-------------+-------------+
4 rows in set (0.00 sec)
```

9. Write a SQL query to display names into capital letters, small letters, display frist 3 letters of name, display last 3 letters of name, display the position the letter A in name

Ans.:

```
select ucase(name), lcase(name), left(name,3),right(name,3), instr(name,'a') from student;
```

```
mysql> select ucase(name),lcase(name),left(name,3),right(name,3),instr(name,'a') from student;
+------------+------------+-------------+--------------+----------------+
| ucase(name) | lcase(name) | left(name,3) | right(name,3) | instr(name,'a') |
+------------+------------+-------------+--------------+----------------+
| ARPIT      | arpit      | Arp         | pit          |              1 |
| BHARTI     | bharti     | Bha         | rti          |              3 |
| CHINTU     | chintu     | Chi         | ntu          |              0 |
| CHARMI     | charmi     | Cha         | rmi          |              3 |
+------------+------------+-------------+--------------+----------------+
4 rows in set (0.01 sec)
```

10. Remove extra spaces from left, right and both sidesfrom the text - " Informatics Practices Class XII "

Ans.:

```
select ltrim("  Informatics Practices Class XII ") "Left Spaces", rtim("  Informatics Practices Class XII ") "Right Trim", trim("  Informatics Practices Class XII ");
```

```
mysql> select ltrim("  Informatics Practices Class XII  ") "Left Spaces", rtrim("    Informatics Practices Class XII
  ") "Right Trim", trim("      Informatics Practices Class XII     ") "Both";
+-------------------------------+-------------------------------+-------------------------------+
| Left Spaces                   | Right Trim                    | Both                          |
+-------------------------------+-------------------------------+-------------------------------+
| Informatics Practices Class XII   |     Informatics Practices Class XII | Informatics Practices Class XII |
+-------------------------------+-------------------------------+-------------------------------+
1 row in set (0.00 sec)
```

11. Display today's date in "Date/Month/Year" format

Ans.:

```
select concat(date(now()), concat("/",concat(month(now()), concat("/",year(now())))));
```

```
mysql> select concat(date(now()),concat("/",concat(month(now()),concat("/",year(now())))));
+-----------------------------------------------------------------------------+
| concat(date(now()),concat("/",concat(month(now()),concat("/",year(now())))) |
+-----------------------------------------------------------------------------+
| 2022-01-14/1/2022                                                           |
+-----------------------------------------------------------------------------+
1 row in set (0.01 sec)
```

12 Display dayname, monthname, day, dayname, day of month, day of year for today's date

Ans.:

```
mysql> select dayname(now()),monthname(now()),day(now()),dayname(now()),dayofmonth(now()),dayofyear(now());
+---------------+-----------------+-----------+---------------+------------------+-----------------+
| dayname(now()) | monthname(now()) | day(now()) | dayname(now()) | dayofmonth(now()) | dayofyear(now()) |
+---------------+-----------------+-----------+---------------+------------------+-----------------+
| Friday        | January         |        14 | Friday        |               14 |              14 |
+---------------+-----------------+-----------+---------------+------------------+-----------------+
1 row in set (0.01 sec)
```

Question 13:

Observe the following PARTICIPANTS and EVENTS table cerefully and write the name of the RDBMS operation which will be used to produce the output as shown in RESULT? Also, find the Degree and Cardinality of the RESULT.

PARTICIPANTS	
NO.	**Name**
1	Aruanabha Tariban
2	John Fedricks
3	Kanti Desai

EVENTS	
EVENTCODE	**EVENTNAME**
1001	IT Quiz
1002	Group Debate

No.	Name	EVENTCODE	EVENTNAME
1	Aruanabha Tariban	1001	IT Quiz
1	Aruanabha Tariban	1002	Group Debate
2	John Fedricks	1001	IT Quiz
2	John Fedricks	1002	Group Debata
3	Kanti Desai	1001	IT Quiz
3	Kanti Desai	1002	Group Debata

Answer: Cartesian Product Degree — 4

Cardinality = 6

Question 14:

Define degree and cardinality. Also, Based upon given table write degree and cardinality.

Patients

PatNo	PatName	Dept	DocID
1	Leena	ENT	100
2	Supreeth	Ortho	200
3	Madhu	ENT	100
4	Neha	ENT	100
5	Deepak	Ortho	200

Answer:

Degree is the number of attributes or columns present in a table. Cardinality is the number of tuples or rows present in a table.

Patients Degree = 4

Cardinality = 5

Question 15:
Consider the following tables SCHOOL and ADMIN and answer this question :
Give the output the following SQL queries :

1. Select Designation Count (*) From Admin Group By Designation Having Count (*) **<2;**
2. SELECT max (EXPERIENCE) FROM SCHOOL;
3. SELECT TEACHER FROM SCHOOL WHERE EXPERIENCE >12 ORDER BY TEACHER;
4. SELECT COUNT (*), GENDER FROM ADMIN GROUP BY GENDER;

TABLE: SCHOOL

CODE	TEACHER	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	RAVI SHANKAR	ENGLISH	12/3/2000	24	10
1009	PRIYA RAI	PHYSICS	03/09/1998	26	12
1203	LIS ANAND	ENGLISH	09/04/2000	27	5
1045	YASHRAJ	MATHS	24/8/2000	24	15
1123	GANAN	PHYSICS	16/7/1999	28	3
1167	HARISH B	CHEMISTRY	19/10/1999	27	5
1215	UMESH	PHYSICS	11/05/1998	22	16

TABLE: ADMIN

CODE	GENDER	DESIGNATION
1001	MALE	VICE PRINCIPAL
1009	FEMALE	COORDINATOR
1203	FEMALE	COORDINATOR
1045	MALE	HOD
1123	MALE	SENIOR TEACHER
1167	MALE	SENIOR TEACHER
1215	MALE	HOD

Answer:

(i)

VICE PRINCIPAL	01

(ii)

16

(iii)

UMESH
YASH RAJ

(iv)

5 MALE
2 FEMALE

Question 16:
Write SQL qureries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables TRANSPORT and TRIE

TABLE: TRANSPORT

TCODE	TTYPE	PERKM
103	ORDINARY BUS	90
105	SUV	40
104	CAR	20
103	ORDINARY BUS	90
101	VOLVO BUS	160
102	AC DELUXE BUS	140

Note:

- PERKS is Freight Charages per kilometer
- TTYPE is Transport Vehicle Type

TABLE: TRIP

NO	NAME	TDATE	KM	TCODE	NOP
11	Tanish Khan	2015-12-13	200	101	32
13	Danish Sahai	2016-06-21	100	103	45
15	Ram Kumar	2016-02-23	350	102	42
12	Fen Shen	2016-01-13	90	102	40
17	Aan Kumar	2015-02-10	75	104	2
14	Veena	2016-06-28	80	105	4
16	Rajpal Kirti	2016-06-06	200	101	25

Note:

- NO is Driver Number
- KM is Kilometer travelled
- NOP is number of travellers travelled in vehicle
- TDATE is Trip Date

1. To display NO, NAME, TDATE from the table TRIP in descending order of NO. 2. To display the NAME of the drivers from the table TRIP who are traveling by transport vehicle with code 101 or 103.

3. To display the NO and NAME of those drivers from the table TRIP who travelled between _2015-02-10‘ and ¸2015-04-01‘.
4. To display all the details from table TRIP in which the distance travelled is more than 100 KM in ascending order of NOP
5. SELECT COUNT (*), TCODE From TRIP
   GROUP BY TCODE HAVNING COUnT (*) > 1;
6. SELECT DISTINCT TCODE from TRIP;
7. SELECT A.TCODE, NAME, TTYPE
   FROM TRIP A, TRANSPORT B
   WHERE A. TCODE = B. TCODE AND KM <

90; 8. SELECT NAME, KM *PERKM
FROM TRIP A, TRANSPORT B
WHERE A. TCODE = B. TCODE AND A. TCODE = 105′;

Answer:

1. SELECT NO, NAME, TDATE FROM TRIP ORDER BY NO;
2. SELECT NAME FROM TRIP WHERE
   TCODE = 101 OR TCODE = 103;

3. SELECT NO AND NAME FROM TRIP WHERE _2015-02-10‘ <TDATE <_2015-04-01‘;
4. SELECT NO, NAME, TDATE, KM, TCODE FROM TRIP WHERE KM >100 ORDER BY NOP;
5. TO DISPLAY THE MORE THAN ONE COUNT OF TCODE FROM THE TABLE TRIP
6. TO DISPALY SEPERATE TCODE OF TABLE TRIP
7. TO DISPAY THE NAME AND CODE OF THOSE TRANS PORTERS, WHO HAVE TRAVELLED MORE THAN 90 KMS.
8. TO DISPLAY THE NAME AND EXPENDITARE OF A TRANSPORTER WHO HAVE TCODE AS 105.

Question 17:
Write SQL commands for the queries (i) to (iv) and output for (v) & (viii) based on a table COMPANY and CUSTOMER.

COMPANY

CID	NAME	CITY	PRODUCTNAME
111	SONY	DELHI	TV
222	NOKIA	MUMBAI	MOBILE
333	ONIDA	DELHI	TV
444	SONY	MUMBAI	MOBILE
555	BLACKBERRY	MADRAS	MOBILE
666	DELL	DELHI	LAPTOP

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	ROHAN SHARMA	70,000	20	222
102	DEEPAK KUMAR	50,000	10	666
103	MOHAN KUMAR	30,000	5	111
104	SAHIL BANSAL	35,000	3	333
105	NEHA SONI	25,000	7	444
106	SONAL AGGARWAL	20,000	5	333
107	ARUN SINGH	50,000	15	666

1. To display those company name which are having prize less than 30000. 2. To display the name of the companies in reverse alphabetical order.
3. To increase the prize by 1000 for those customer whose name starts with „S? 4. To add one more column totalprice with decimal] 10,2) to the table customer 5.
SELECT COUNT(*) , CITY FROM COMPANY GROUP BY CITY;
6. SELECT MIN(PRICE), MAX(PRICE) FROM CUSTOMER WHERE QTY>10;
7. SELECT AVG(QTY) FROM CUSTOMER WHERE NAME LIKE —%r%;
8. SELECT PRODUCTNAME,CITY, PRICE FROM COMPANY, CUSTOMER WHERE

COMPANY.
CID=CUSTOMER.CID
AND
PRODUCTNAME=‖MOBIL
E‖;

Answer:

1. SELECT NAME FROM COMPANY WHERE COMPANY.CID=CUSTOMER. CID AND **PRICE < 30000;**
2. SELECT NAME FROM COMPANY ORDER BY NAME DESC;
3. UPDATE CUSTOMER
   SET PRICE =
   PRICE + 1000
   WHERE NAME
   LIKE _S%';
4. ALTER TABLE CUSTOMER ADD TOTALPRICE DECIMAL(10,2);
5.

3	DELHI
2	MUMBAI
1	MADRAS

6. **50000,70000**
7. **11**
8.

MOBILE	MUMBAI	70000
MOBILE	MUMBAI	25000

Question 18:

Consider the following tables WORKER and PAYLEVEL and answer (a) and (b) parts of this question:

Table: WORKER

ECODE	NAME	DESIGN	PLEVEL	DOJ	DOB
11	Radhe Shyam	Supervisor	P001	13-Sep-2004	23-Aug-1981
12	Chander Nath	Operator	P003	22-Feb-2010	12-Jul-1987
13	Fizza	Operator	P003	14-Jun-2009	14-Oct-1983
15	Ameen Ahmed	Mechanic	P002	21-Aug-2006	13-Mar-1984
18	Sanya	Clerk	P002	19-Dec-2005	09-Jun-1983

Table : PAYLEVEL

PLEVEL	PAY	ALLOWANCE
P001	26000	12000
P002	22000	10000
P003	12000	6000

(a) Write SQL commands for the following statements:

1. To display the name of all Workers in descending order of DOB.
2. To display NAME and DESIGN of those Workers, whose PLEVEL is either P001 or
3. To display the content of all the workers table, whose DOB is in between '19-JAN- 1984′ and '18-JAN-1987′.
4. To add a new row with the following: 19, _DayaKishore', _Operator', _P003′, '19- Sep-2008', _ll-Jul-1984'

(b) Give the output of the following SQL queries :

1. SELECT COUNT (PLEVEL), PLEVEL FROM WORKER GROUP BY PLEVEL;
2. SELECT MAX(DOB), MIN(DOJ) FROM WORKER;
3. SELECT Name,PAY FROM WORKER W,PAYLEVEL P WHERE W.LEVEL= P.PLEVEL AND W.ECODE<13;
4. SELECT PLEVEL, PAYLEVEL WHERE PLEVEL=‖POO3″;

*Answer:**(a)***

1. SELECT NAME FROM WORKER ORDER BY DOBDESC;
2. SELECT NAME, DESIGN FROM WORKER WHERE PLEVEL=‖POOO1″ OR PLEVEL=‖POO2″;
3. SELECT * FROM WORKER WHERE DOB BETWEEN '19-JAN-1984 AND '18-JAN-1987′;
4. INSERT INTO WORKER VALUES (19,‖DayaKISHORE‖,—oPERATOR‖, **—P0003‖,'19-Sep-2008′,'11-Jul-1984′)'**

(b)

(i)

count (PLEVEL)	PLEVEL
1	P001
2	P002
2	P003

(ii)

Max (DOB)	Min (DOJ)
12-Jul-1987	13-Sep-2004

(iii)

Name	Pay
Radhe Shyam	26000
Chander Nath	12000

(iv)

Plevel	Pay
P003	18000

Question 19:

Consider the following tables SCHOOL and ADMIN and answer this question :

Table : SCHOOL

CODE	TEACHER NAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	Ravi Shankar	English	12/3/2000	24	10
1009	Priya Rai	Physics	03/09/1998	26	12
1203	Lisa Anand	English	09/04/2000	27	5
1045	Yashraj	Maths	24/08/2000	24	15
1123	Ganan	Physics	16/07/1999	28	3
1167	Harish B	Chemistry	19/10/1999	27	5
1215	Umesh	Physics	11/05/1998	22	16

Code	Gender	Designation
1001	Male	Vice Principla
1009	Female	Co-ordinator
1203	Female	Co-ordinator
1045	Male	HOD
1123	Male	Senior Teacher
1167	Male	Senior Teacher
1215	Male	HOD

Write SQL statements for the following:

1. To display TEACHERNAME, PERIODS of all teachers whose periods are more than 25.
2. To display all the information from the table SCHOOL in descending order of experience.
3. To display DESIGNATION without dupli¬cate entries from the table ADMIN. 4. To display TEACHERNAME, CODE and corresponding DESIGNATION from **tables SCHOOL and ADMIN of Male teachers.**

Answer:

1. SELECT TEACHERNAME, PERIODS FROM SCHOOL WHERE PERIODS>25:
2. SELECT * FROM SCHOOL;
3. SELECT DISTINCT DESIGNATION FROM ADMIN;
4. SELECT TEACHERNAME.CODE DESIGNATION FROM SCHOOL.CODE = ADMIN.CODE WHERE GENDER = MALE;

Question 20:

Write SQL commands for the queries (i) to (iv) and output for (v) to (viii) based on the tables Watches‘ and Sale given below.

Watches

Watchid	Watch_Name	Price	Type	Qty_Store
W001	High Time	10000	Unisex	100
W002	Life Time	15000	Ladies	150
W003	Wave	20000	Gents	200
W004	High Fashion	7000	Unisex	250
W004	Golden Time	25000	Gents	100

Sale

Watchid	Qty_Sold	Quarter
W001	10	1
W003	5	1
W002	20	2
W003	10	2
W001	15	3
W002	20	3
W005	10	3
W003	15	4

1. TO DISPLAY ALL THE DETAILS OF THOSE WATCHES WHOSE NAME ENDS WITH _TIME‘
2. TO DISPLAY WATCH‘S NAME AND PRICE OF THOSE WATCHES WHICH HAVE PRICE RANGE IN BE-TWEEN 5000-15000.
3. TO DISPLAY TOTAL QUANTITY IN STORE OF UNISEX TYPE WATCHES.
4. TO DISPLAY WATCH NAME AND THEIR QUANTITY SOLD IN FIRST QUARTER;

Answer:

1. SELECT * FROM WATCHES WHERE WATCH_NAME LIKE _%TIME‘
   (Vi mark for SELECT query) (Vi mark for where clause)
2. SELECT WATCH_NAME, PRICE WATCH WHERE PRICE BETWEEN 5000 AND **15000;**
   (Vi mark for SELECT query) (Vz mark for where clause)

3. SELECT SUM (QTY STORE) FROM WATCHES WHERE TYPE LIKE _UNISEX‘;
(Vz mark for SELECT query) (Vi mark for where clause)
4. SELECT WATCHNAME, QTY SOLD FROM WATCHES W,SALE S WHERE W. WATCHID = S. WATCHID
AND QUARTER = 1;

Question 21:

Answer the questions (a) and (b) on the basis of the following tables SHOP and ACCESSORIES.

Table: SHOP

Id	SName	Area
S001	ABC computronics	CP
S002	All Infotech Media	GK II
S003	Tech Shop	CP
S004	Geeks Tecno Soft	Nehru Place
S005	Hitech Tech Store	Nehru Place

Table: ACCESSORIES

No	Name	Price	Id
A01	Mother Board	12000	S01
A02	Hard Disk	5000	S01
A03	Keyboard	500	S02
A04	Mouse	300	S01
A05	Mother Board	13000	S02
A06	Keyboard	400	S03
A07	LCD	6000	S04
T08	LCD	5500	S05
T09	Mouse	350	S05
T10	Hard Disk	4500	S03

(a) Write the SQL queries:

1. To display Name and Price of all the Accessories in ascending order of their Price. 2. To display Id and SName of all Shop located in Nehru Place.
3. To display Minimum and Maximum Price of each Name of Accessories.
4. To display Name, Price of all Accessories and their respective SName wherethey are available.

(b) Write the output of the following SQL

1. SELECT DISTINCT NAME FROM ACCESSORIES WHERE PRICE> =5000;
2. SELECT AREA, COUNT(*) FROM SHOPPE GROUP BY AREA;
3. SELECT COUNT (DISTINCT AREA) FROM SHOPPE;
4. SELECT NAME, PRICE*0.05 DISCOUNT FROM ACCESSORIES WHERE SNO IN (‘S02’,’S03’);

Answer:

(a)

1. SELECT Name, Price FROM ACCESSORIES ORDER BY Price Asc;
2. SELECT ID SName FROM SHOP WHERE Area=‖Nehru Place‖;
3. SELECT Name, max (Price); min(Price) FROM ACCESSORIES, Group By Name; 4. SELECT Name,price, Sname FROM

ACCESSORIES, SHOP WHERE SHOE ID=ACCESSORIES.ID;

(b)

(i)

Name
Mother Board
Hard Disk
LCD

(ii)

Area	**count**
CP	2
GK II	1
Nehru Place	2

(iii)

count(Distinct Area)
3

(iv)

Name	**DISCOUNT**
Keyboard	25
Motherboard	650
Keyboard	20
Harddisk	225

Question 22:

Write SQL queries for:

Table: Applicants

ID	Name	Course	Phone
1	Ravi	BCA	4210716
2	Rita	MBA	215611
3	Sunil	MCA	321157
4	Kumar	BCA	512771

Table: Courses

Name	Duration	Fee
MBA	2 year	40,000
MCA	3 year	70,000
BCA	3 year	20,000

1. To display name, fee, gender, joinyear about the applicants, who have joined before 2010.
2. To display names of applicants, who are playing fee more than 30000. 3. To display names of all applicants in ascending order of their joinyear.
4. To display the year and the total number of applicants joined in each YEAR from the table APPLICANTS.
5. To display the C_ID (i.e., CourselD) and the number of applicants registered in the course from the APPLICANTS and table.
6. To display the applicant‘s name with their respective course‘s name from the tables APPLICANTS and COURSES.
7. Give the output of following SQL statements:
   - SELECT Name, Joinyear FROM APPLICANTS WHERE GENDER=‘F‘ and C_ID=‘A02′;
   - SELECT MIN (Joinyear) FROM APPLICANTS **WHERE Gender=‘m‘;**
   - SELECT AVG (Fee) FROM APPLICANTS WHERE C_ID=‘A0T OR C_ID=‘A05′;
   - SELECT SUM- (Fee), C_ID FROM C_ ID GROUP BY C_ID **HAVING COUNT(*)=2;**

Answer:

1. SELECT NAME,FEE,GENDER,JOINYEAR FROM APPLICANTS **WHERE J OINYE AR <2010**
2. SELECT NAME FROM APPLICANTS WHERE FEE >30000
3. SELECT NAME FROM APPLICANTS ORDERBY JOINYEAR ASC
4. SELECT YEAR, COUNT]*) FROM APPLICANTS GROUP BY YEAR;

5. SELECT C_ID, COUNT]*) FROM APPLICANTS, COURSES GROUP BY ID WHERE APPLICANTS.C_ID=COURSES. C_ID
6. SELECT NAME,COURSE FROM APPLICANTS, COURSES
   WHERE APPLICANTS. C_ID=COURSES. C_ID
   - Avisha 2009
   - 2009
   - 67
   - **55000 A01**

Question 23:

Write SQL queries for (a) to (g) and write the output for the SQL queries mentioned shown in (hi) to (h4) parts on the basis of table ITEMS and TRADERS :

Table: ITEMS

CODE	INAME	QTY	PRICE	COMPANY	TCODE
1001	DIGITAL PAD 12i	120	11000	XENITA	T01
1006	LED SCREEN 40	70	38000	SANTORA	T02
1004	CAR GPS SYSTEM	50	21500	GEOKNOW	T01
1003	DIGITAL CAMERA 12X	160	8000	DIGICLICK	T02
1005	PEN DRIVE 32 GB	600	1200	STOREHOME	T03

Table: TRADERS

TCode	TName	City
T01	ELECTRONIC SALES	MUMBAI
T03	BUSY STORE CORP	DELHI
T02	DISP HOUSE INC	CHENNAI

1. To display the details of all the items in ascending order of item names (i.e., INAME).
2. To display item name and price of all those items, whose price is in the range of 10000 and 22000 (both values inclusive).
3. To display the number of items, which are traded by each trader. Theexpected output of this query should be:
4. To display the price, item name and quantity (i.e., qty) of those items which have quantity more than 150.
5. To display the names of those traders, who are either from DELHI or from MUMBAI.
6. To display the names of the companies and the names of the items in descending order of company names.
7. Obtain the outputs of the following SQL queries based on the data given in tables ITEMS and TRADERS above.
   - SELECT MAX (PRICE), MIN (PRICE) FROM ITEMS;
   - SELECT PRICE*QTY FROM ITEMS WHERE CODE-1004;
   - SELECT DISTINCT TCODE FROM ITEMS;
   - SELECT INAME, TNAME FROM ITEMS I, TRADERS T WHERE I.TCODE=T.TCODE AND QTY< 100;

Answer:

1. SELECT INAME FROM ITEMS ORDER BY INAME ASC;
2. SELECT INAME, PRICE FROM ITEMS WHERE PRICE => 10000 AND PRICE **=< 22000; (c) SELECT TCODE, COUNT (CODE) FROM ITEMS GROUP BY TCODE;**

3. SELECT PRICE, INAME, QTY FROM ITEMS WHERE (QTY> 150);
4. SELECT TNAME FROM TRADERS WHERE (CITY = –DELHI‖) OR (CITY = **—MUMBAI‖)**
5. SELECT COMPANY, INAME FROM ITEMS
   ORDER BY COMPANY DESC;
6. **(hi) 38000**
   1200 (h2)1075000 (h3)T01
   T0
   2
   TO
   3
   (h4) LED SCREEN 40 DISP HOUSE INC CAR GPS SYSTEM ELECTRONICS SALES

Question 24:

Consider the following tables CARDEN and CUSTOMER and answer (b) and (c) parts of this question:

Table : CARDEN

Ccode	CarName	Make	Colour	Capacity	Charges
501	A-Star	Suzuki	RED	3	14
503	Indigo	Tata	SILVER	3	12
502	Innova	Toyota	WHITE	7	15
509	SX4	Suzuki	SILVER	4	14
510	C Class	Mercedes	RED	4	35

Table : CUSTOMER

Code	Cname	Ccode
1001	Hernant Sahu	501
1002	Raj Lal	509
1003	Feroza Shah	503
1004	Ketan Dhal	502

1. Give a suitable example of a table with sample data and illustrate Primary and Alternate Keys in it.
2. Write SQL commands for the following statements:
   - To display the names of all the silver coloured cars.
   - To display names of car, make and capacity of cars in descending order of their sitting capacity.
   - To display the highest charges at which a vehicle can be hired from CARDEN.
   - To display the customer name and the corresponding name of the cars hired by them.
3. Give the output of the following SQL queries:
   - SELECT COUNT(DISTINCT Make) FROM CARDEN;
   - SELECT MAX(Charges), MIN (Charges) FROM CARDEN;
   - SELECT COUNTS), Make FROM CARDEN;

Answer:

1. Primary Key of CARDEN = Ccode
   CARDEN Alternate Key = CarName:
   Primary key of Customer = Code
   Alternate Key of Customer =
   Cname 2
2. SELECT CarName From

CARDEN WHERE Color =
―SILVER‖;

3. SELECT CarName, Make, Capacity From CARDEN ORDER BY Capacity DESC;
4. SELECT MAX(Charges) Frm CARDEN;
5. ELECT Cname, CarName From CARDEN, CUSTOMER WHERE CARDEN. Ccode = CUSTOMER. Ccode;

6. (i) 4

(ii) MAX(Charges) MIN
(Charges) 35 112

(iii) 5

(iv) SX4

C Class

Question 25. Database Connectivity

Implementation Python and MySQL connectivity

(A) Install mysql connector

1 Open 'Command Prompt' (Run as administrator)
2 Type following command:
pip install mysql-connector-python

(B) Steps for creating database connectivity application

1 import mysql.connector
or
import mysql.connector as SqlCntr
2 Establish connection: (*Connection means a unique session with a database connected from within a program*)
It requires for things:
hostname="localhost" server address
user="root" user as per your MySQL
passwd ="1234" password as perMySQL
database="test" database created inMySQL

```
Myconn = mysql.connector.connect(hostname="localhost",
user="root",
passwd="1234"
database="test")
```

3 Creating Cursor Object: (*Cursor is responsible for submitting various SQL statements to a database server*.)

```
Mycursor = Myconn.cursor()
```

4 Execute SQL query:

```
Mycursor.execute( "your sql query" )
```

5 Mycursor.close()
6 Myconn.close()

Practical Implementation

We have created 'student' table in "test" database in MySQL.

Field Name	Data Type	Constraints	Remark
Rollno	Int	Primary Key	
Name	Varchar(20)		
DOB	Date		
Python	Int	Marks of python	
Mysql	Int	Marks of mysql	

```
Enter roll number: 101
Enter your name: Geet
Enter date of birth(yyyy-mm-dd): 2004-06-25
Enter marks of Python: 88
Enter marks of MySQL: 96
```

Insert a record

```
import mysql.connector as connector
conn = connector.connect(host="localhost", database="test",
user="root",passwd="1234")
if conn.is_connected():
#prepare sql query
rln = input("Enter roll number: ")
nm = input("Enter your name: ")
hbd = input('Enter date of birth(yyyy-mm-dd): ')
python = input('Enter marks of Python: ')
mysql = input('Enter marks of MySQL: ')
sql_query = "insert into student values({} , '{}' , '{}', {},
{})".format(rln,nm,hbd,python,mysql)
#execute sql query
cur = conn.cursor()
cur.execute(sql_query)
conn.commit()
cur.close()
conn.close()
else:
print("Something is wrong in connection")
```

output

Display records

```
import mysql.connector as connector
conn = connector.connect(host="localhost", database="test", user="root",passwd="1234")
if conn.is_connected():
#prepare sql query
sql_query = "select rollno, name, dob, python, mysql, python+mysql from student"
#execute sql query
cur = conn.cursor()
cur.execute(sql_query)
result = cur.fetchall()
for row in result:
for val in row:
print(val, end="\t")
print()
cur.close()
conn.close()
else:
print("Something is wrong in connection")
```

Output

```
101 Geet 2004-06-25 88 96 184
102 Shakti2005-12-26 54 56 110
119 Diya 2006-07-21 89 99 188
```