EXPERIMENT-7
PRE-LAB

1. What are the pseudo columns in SQL? Give some examples

DBMS Skill-7 190031187

1. A pseudo-column is an oracle assigned values but not stored on disk. pseudo columns are not actual columns in a table but they behave like columns. for example, you can select values from a pseudo column. However, you cannot insert into, update or delete from a pseudo column.

2. What is the difference between NVL and NVL2 functions?

2. In SQL, NVL() converts a null value to an actual value. Data types that can be used are date, character and number. Datatype must match with each other i.e expr1 and expr2 must of same datatype.

Syntax is NVL(expr1, expr2)

expr1 is the source value or expression that may contain a null
expr2 is the target value for converting the null

The NVL2 function examines the first expression. If the first expression is not null, then the NVL2 function returns the second expression. If the first expression is null, then the third expression is returned i.e. If expr1 is not null, NVL2 returns expr2 If expr1 is null, NVL2 returns expr3. The argument expr1 can have any data type

Syntax NVL2 (expr1, expr2, expr3)

expr1 is source value or expression that may contain null

expr2 is the value returned if expr1 is not null

expr3 is the value returned if expr1 is null

3. What is the difference between Nested Subquery and Correlated Subquery?

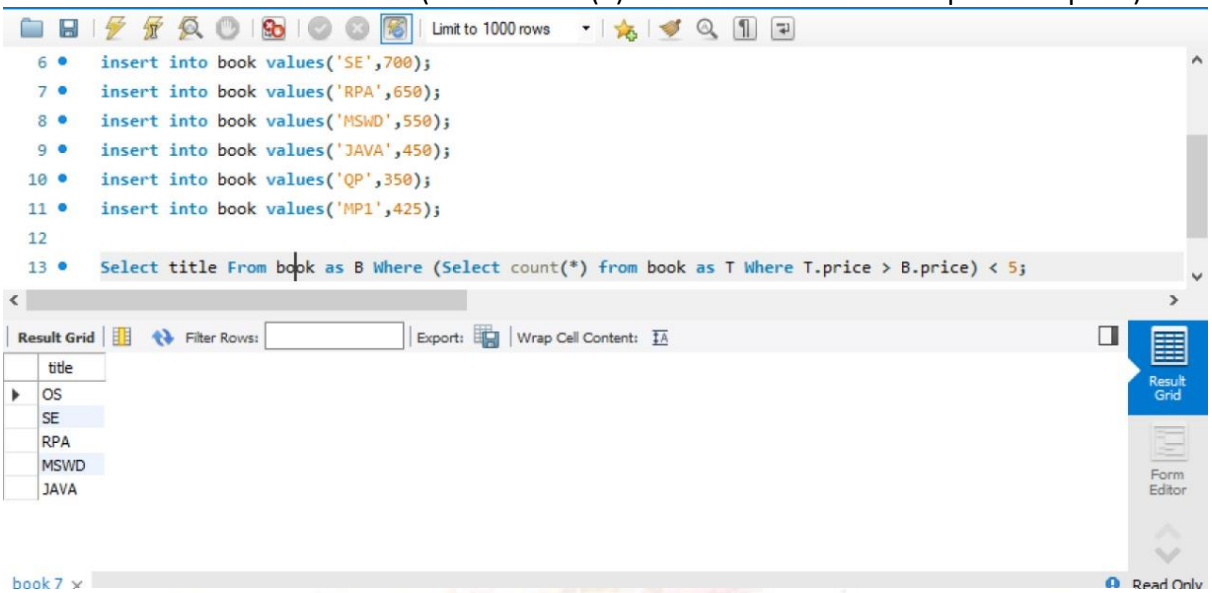
3. With a normal nested subquery, the inner SELECT query runs first and executes once returning values to be used by main query. A correlated subquery, however, executes once for each candidate row considered by the outer query. In other words the inner query is driven by the outer query

5. In domain relational calculus "there exist" can be expressed as?

5. In domain relational calculus "there exist" can be expressed as ∃ x (P1(X)) where ∃ is used to denote "same" values in relational calculus.

6. The relation book (title, price) contains the titles and prices of different books. Assuming that no two books have the same price, what does the following SQL query list?

Select title from book as B where(Select count(*) from book as T where T.price > B.price) < 5



6. It lists the titles of books having top 5 prices

4. A relational schema for a train reservation database is given below. Passenger (pid, pname, age) Reservation (pid, class, tid)

Table: Passenger

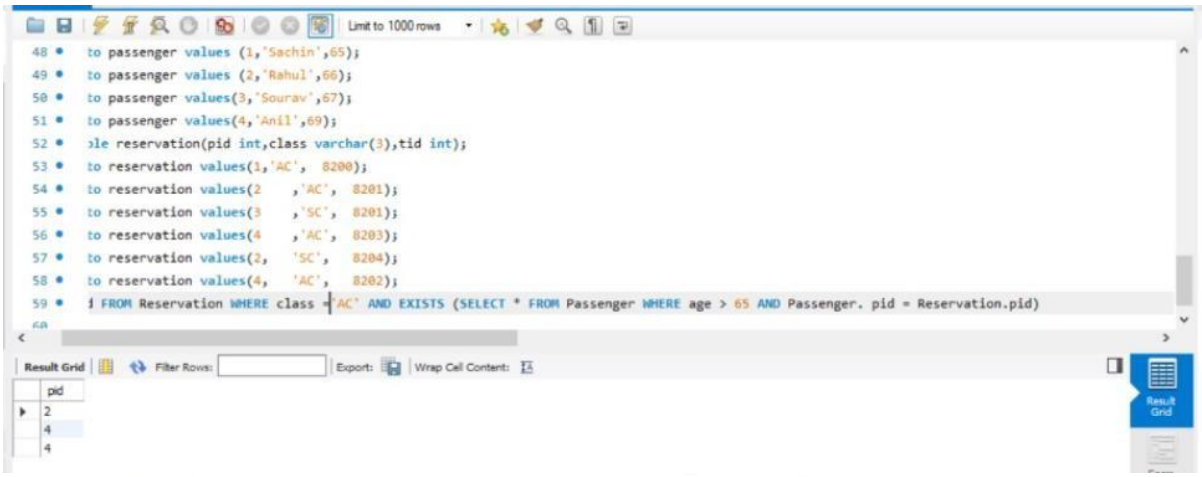
pid	pname	age
1	Sachin	65
2	Rahul	66
3	Sourav	67
4	Anil	69

Table : Reservation

pid	class	tid
1	AC	8200
2	AC	8201
3	SC	8201
4	AC	8203
2	SC	8204
4	AC	8202

What pids are returned by the following SQL query for the above instance of the tables? and give the explanation

SELECT pid FROM Reservation WHERE class 'AC' AND EXISTS (SELECT * FROM Passenger WHERE age > 65 AND Passenger. pid = Reservation.pid)



```
48 • to passenger values (1,'Sachin',65);
49 • to passenger values (2,'Rahul',66);
50 • to passenger values(3,'Sourav',67);
51 • to passenger values(4,'Anil',69);
52 • ble reservation(pid int,class varchar(3),tid int);
53 • to reservation values(1,'AC',  8200);
54 • to reservation values(2    ,'AC',  8201);
55 • to reservation values(3    ,'SC',  8201);
56 • to reservation values(4    ,'AC',  8203);
57 • to reservation values(2,   'SC',   8204);
58 • to reservation values(4,   'AC',   8202);
59 • d FROM Reservation WHERE class = 'AC' AND EXISTS (SELECT * FROM Passenger WHERE age > 65 AND Passenger. pid = Reservation.pid)
```

pid
2
4
4

4. Explanation:-

The above is the output to the query given in question it return 2,4,4 because in the query they use "exists" keyword so the queries on the left and right of the EXISTS keyword must be satisfies so according to the query in reservation and passenger tables pid=1 exists age in passenger is not greater than 65 so condition fails and it is same with pid=3, pid=2 but in this case the class in reservation is not equal to "AC" so the remaining 2,4,4 gets displayed.

INLAB

1. Create the required table with the constraints.

```
create database skill7;
use skill7;
create table Navy(NID int,Name varchar(20),Rank1 varchar(2),City    varchar(20),M_ID int);
insert into Navy(NID,Name,Rank1,City,M_ID) values(100,'Raju','C','Hyderabad',600),(101,'Rahul','A','Lahore',601),(102,'Bharath','B','Delhi',600),
(103,'David','A','Mumbai',600),(104,'Kishore','C','Hyderabad',602),(105,'Kumar','C','Mumbai',602),(106,'Eswar','A','Delhi',603),(107,'Praveen','C','Hyderabad',604),
(108,'Lohith','B','Delhi',601),(109,'Mohan','C','Delhi',601);
select * from Navy;
create table Army(AID int,Name varchar(20),Rank1 varchar(2),City varchar(30),M_ID int);
```

Result Grid

NID	Name	Rank1	City	M_ID
100	Raju	C	Hyderabad	600
101	Rahul	A	Lahore	601
102	Bharath	B	Delhi	600
103	David	A	Mumbai	600
104	Kishore	C	Hyderabad	602
105	Kumar	C	Mumbai	602
106	Eswar	A	Delhi	603
107	Praveen	C	Hyderabad	604
108	Lohith	B	Delhi	601
109	Mohan	C	Delhi	601

```
select * from Navy;
create table Army(AID int,Name varchar(20),Rank1 varchar(2),City varchar(30),M_ID int);
insert into Army(AID,Name,Rank1,City,M_ID) values(200,'Arun','A','Delhi',601),(201,'Hari','B','Hyderabad',601),(202,'Gopi','C','Lahore',602),
(203,'Jayanth','A','Delhi',601),(204,'Deepak','B','Mumbai',600),(205,'Nandu','C','Hyderabad',600),(206,'Mohan','A','Lahore',603),(207,'Kamal','B','Hyderabad',605),
(208,'Gopal','A','Delhi',602),(209,'Raju','C','Delhi',601);
select * from Army;
create table Airforce(AFID int,Name varchar(20),Rank1 varchar(2),City varchar(20),M_ID int);
insert into Airforce(AFID,Name,Rank1,City,M_ID) values(300,'Kalyan','B','Lahore',601),(301,'David','A','Delhi',603),(302,'Gagan','C','Hyderabad',602),
```

Result Grid

AID	Name	Rank1	City	M_ID
200	Arun	A	Delhi	601
201	Hari	B	Hyderabad	601
202	Gopi	C	Lahore	602
203	Jayanth	A	Delhi	601
204	Deepak	B	Mumbai	600
205	Nandu	C	Hyderabad	600
206	Mohan	A	Lahore	603
207	Kamal	B	Hyderabad	605
208	Gopal	A	Delhi	602
209	Raju	C	Delhi	601

```
(203,'Jayanth','A','Delhi',601),(204,'Deepak','B','Mumbai',600),(205,'Nandu','C','Hyderabad',600),(206,'Mohan','A','Lahore',603),(207,'Kamal','B','Hyderabad',605),
(208,'Gopal','A','Delhi',602),(209,'Raju','C','Delhi',601);
select * from Army;
create table Airforce(AFID int,Name varchar(20),Rank1 varchar(2),City varchar(20),M_ID int);
insert into Airforce(AFID,Name,Rank1,City,M_ID) values(300,'Kalyan','B','Lahore',601),(301,'David','A','Delhi',603),(302,'Gagan','C','Hyderabad',602),
(303,'Kiran','B','Delhi',602),(304,'Ramu','A','Lahore',603),(305,'Pramod','C','Mumbai',601),(306,'Amar','C','Delhi',603),(307,'Verma','C','Delhi',604),
(308,'Naveen','B','Hyderabad',602),(309,'Charan','A','Hyderabad',601);
select * from Airforce;
```

Result Grid

AFID	Name	Rank1	City	M_ID
300	Kalyan	B	Lahore	601
301	David	A	Delhi	603
302	Gagan	C	Hyderabad	602
303	Kiran	B	Delhi	602
304	Ramu	A	Lahore	603
305	Pramod	C	Mumbai	601
306	Amar	C	Delhi	603
307	Verma	C	Delhi	604
308	Naveen	B	Hyderabad	602
309	Charan	A	Hyderabad	601

```
insert into Airforce(AFID,Name,Rank1,City,M_ID) values(300,'Kalyan','B','Lahore',601),(301,'David','A','Delhi',603),(302,'Gagan','C','Hyderabad',602),
(303,'Kiran','B','Delhi',602),(304,'Ramu','A','Lahore',603),(305,'Pramod','C','Mumbai',601),(306,'Amar','C','Delhi',603),(307,'Verma','C','Delhi',604),
(308,'Naveen','B','Hyderabad',602),(309,'Charan','A','Hyderabad',601);
select * from Airforce;
create table Mission(MID int,Name varchar(20),M_spot varchar(10),T_ID int,Sol_ID int,Com_Officer int);
insert into Mission(MID,Name,M_spot,T_ID,Sol_ID,Com_Officer) values(600,'AAP','Delhi',701,1,301),(601,'GID','Lahore',702,2,302),(602,'CID','Mumbai',703,3,201),
(603,'VIP','Bangalore',704,4,206),(604,'HIG','Kolkata',705,5,207),(605,'BBC','Shimla',706,6,106),(606,'ORA','Kashmir',707,7,104),(607,'XYZ','Lucknow',708,8,103),
(608,'ABC','Chennai',709,9,102);
```

MID	Name	M_spot	T_ID	Sol_ID	Com_Officer
600	AAP	Delhi	701	1	301
601	GID	Lahore	702	2	302
602	CID	Mumbai	703	3	201
603	VIP	Bangalore	704	4	206
604	HIG	Kolkata	705	5	207
605	BBC	Shimla	706	6	106
606	ORA	Kashmir	707	7	104
607	XYZ	Lucknow	708	8	103
608	ABC	Chennai	709	9	102

```
select * from Mission;
create table Pantry(ID int,Year int,Loc varchar(20),Dept varchar(20),Service_Capa int);
insert into Pantry(ID,Year,Loc,Dept,Service_Capa) values(900,2016,'Mumbai','Medical',10),(901,2015,'Delhi','Logistics',20),(902,2014,'Hyderabad','Stores',30),
(903,2018,'Darjeeling','Sports',40),(904,2019,'Cuttack','Kitchen',50),(905,2011,'Kolkata','Housekeeping',15);
select * from Pantry;
create table Stores(SID int,SNAME varchar(20),AREA varchar(20),CATEGORY varchar(20),ITEMCAPACITY int,HOLDCAPACITY int);
insert into Stores(SID,SNAME,AREA,CATEGORY,ITEMCAPACITY,HOLDCAPACITY) values(1111,'NAVY','NAVYCAMP','WEAPON',25,50),(1112,'ARMY','ARMYCAMP','GENERAL',100,150),
(1113,'AIRFORCE','AIRFORCECAMP','WEAPON',200,250);
```

ID	Year	Loc	Dept	Service_Capa
900	2016	Mumbai	Medical	10
901	2015	Delhi	Logistics	20
902	2014	Hyderabad	Stores	30
903	2018	Darjeeling	Sports	40
904	2019	Cuttack	Kitchen	50
905	2011	Kolkata	Housekeeping	15

```
select * from Mission;
create table Pantry(ID int,Year int,Loc varchar(20),Dept varchar(20),Service_Capa int);
insert into Pantry(ID,Year,Loc,Dept,Service_Capa) values(900,2016,'Mumbai','Medical',10),(901,2015,'Delhi','Logistics',20),(902,2014,'Hyderabad','Stores',30),
(903,2018,'Darjeeling','Sports',40),(904,2019,'Cuttack','Kitchen',50),(905,2011,'Kolkata','Housekeeping',15);
select * from Pantry;
create table Stores(SID int,SNAME varchar(20),AREA varchar(20),CATEGORY varchar(20),ITEMCAPACITY int,HOLDCAPACITY int);
insert into Stores(SID,SNAME,AREA,CATEGORY,ITEMCAPACITY,HOLDCAPACITY) values(1111,'NAVY','NAVYCAMP','WEAPON',25,50),(1112,'ARMY','ARMYCAMP','GENERAL',100,150),
(1113,'AIRFORCE','AIRFORCECAMP','WEAPON',200,250);
```

SID	SNAME	AREA	CATEGORY	ITEMCAPACITY	HOLDCAPACITY
1111	NAVY	NAVYCAMP	WEAPON	25	50
1112	ARMY	ARMYCAMP	GENERAL	100	150
1113	AIRFORCE	AIRFORCECAMP	WEAPON	200	250

200

2. Write a SQL statement to display the details of officers whose rank is ‘C’.

```
select * from Pantry;
create table Stores(SID int,SNAME varchar(20),AREA varchar(20),CATEGORY varchar(20),ITEMCAPACITY int,HOLDCAPACITY int);
insert into Stores(SID,SNAME,AREA,CATEGORY,ITEMCAPACITY,HOLDCAPACITY) values(1111,'NAVY','NAVYCAMP','WEAPON',25,50),(1112,'ARMY','ARMYCAMP','GENERAL',100,150),
(1113,'AIRFORCE','AIRFORCECAMP','WEAPON',200,250);
select * from Stores;
create table officers(select * from Navy union all select * from Army union all select * from Airforce);#2
select NID as Officer_ID,Name as Officer_Name,Rank1 as Rank_Of_the_Officer from officers where Rank1="C";#2
```

Officer_ID	Officer_Name	Rank_Of_the_Officer
100	Raju	C
104	Kishore	C
105	Kumar	C
107	Praveen	C
109	Mohan	C
202	Gopi	C
205	Nandu	C
209	Raju	C
302	Gagan	C
305	Pramod	C
306	Amar	C
307	Verma	C

3. Write a SQL statement to fetch the count of navy officers who are not working in 'Chennai 'unit.

```
insert into Stores(SID,SNAME,AREA,CATEGORY,ITEMCAPACITY,HOLDCAPACITY) values(1111,'NAVY','NAVYCAMP','WEAPON',25,50),(1112,'ARMY','ARMYCAMP','GENERAL',100,150),
(1113,'AIRFORCE','AIRFORCECAMP','WEAPON',200,250);
select * from Stores;
create table officers(select * from Navy union all select * from Army union all select * from Airforce);#2
select NID as Officer_ID,Name as Officer_Name,Rank1 as Rank_Of_the_Officer from officers where Rank1="C";#2
select count(*) from Navy where City!='Chennai';#3
select distinct m.Name from Mission m,Army a join Navy n where a.M_ID=m.MID and m.MID=n.M_ID;#4
```

count(*)
10

4. Write a SQL query to display joint operation done by navy and army.

```
insert into Stores(SID,SNAME,AREA,CATEGORY,ITEMCAPACITY,HOLDCAPACITY) values(1111,'NAVY','NAVYCAMP','WEAPON',25,50),(1112,'ARMY','ARMYCAMP','GENERAL',100,150),
(1113,'AIRFORCE','AIRFORCECAMP','WEAPON',200,250);
select * from Stores;
create table officers(select * from Navy union all select * from Army union all select * from Airforce);#2
select NID as Officer_ID,Name as Officer_Name,Rank1 as Rank_Of_the_Officer from officers where Rank1="C";#2
select count(*) from Navy where City!='Chennai';#3
select distinct m.Name from Mission m,Army a join Navy n where a.M_ID=m.MID and m.MID=n.M_ID;#4
```

Name
AAP
GID
CID
VIP

5. Create a mission table with following information

```
select * from Mission;
create table Pantry(ID int,Year int,Loc varchar(20),Dept varchar(20),Service_Capa int);
insert into Pantry(ID,Year,Loc,Dept,Service_Capa) values(900,2016,'Mumbai','Medical',10),(901,2015,'Delhi','Logistics',20),(902,2014,'Hyderabad','Stores',30),
(903,2018,'Darjeeling','Sports',40),(904,2019,'Cuttack','Kitchen',50),(905,2011,'Kolkata','Housekeeping',15);
select * from Pantry;
create table Stores(SID int,SNAME varchar(20),AREA varchar(20),CATEGORY varchar(20),ITEMCAPACITY int,HOLDCAPACITY int);
insert into Stores(SID,SNAME,AREA,CATEGORY,ITEMCAPACITY,HOLDCAPACITY) values(1111,'NAVY','NAVYCAMP','WEAPON',25,50),(1112,'ARMY','ARMYCAMP','GENERAL',100,150),
```

MID	Name	M_spot	T_ID	Sol_ID	Com_Officer
600	AAP	Delhi	701	1	301
601	GID	Lahore	702	2	302
602	CID	Mumbai	703	3	201
603	VIP	Bangalore	704	4	206
604	HIG	Kolkata	705	5	207
605	BBC	Shimla	706	6	106
606	ORA	Kashmir	707	7	104
607	XYZ	Lucknow	708	8	103
608	ABC	Chennai	709	9	102

6. Create table named store and display all details stores with maximum capacity of 100 and above.

```
create table officers(select * from Navy union all select * from Army union all select * from Airforce);#2
select NID as Officer_ID,Name as Officer_Name,Rank1 as Rank_Of_the_Officer from officers where Rank1="C";#2
select count(*) from Navy where City!='Chennai';#3
select distinct m.Name from Mission m,Army a join Navy n where a.M_ID=m.MID and m.MID=n.M_ID;#4
select * from Mission;#5
create table new_stores(select * from Stores where HOLDCAPACITY>=100);#6
select * from new_stores;#6
```

SID	SNAME	AREA	CATEGORY	ITEMCAPACITY	HOLDCAPACITY
1112	ARMY	ARMYCAMP	GENERAL	100	150
1113	AIRFORCE	AIRFORCECAMP	WEAPON	200	250

7. Write a SQL query to display mission done by navy and weapons used by them. Weapons table is given. Hence, I created the weapon table with some data.

```
insert into weapon values('Missile',602);#7
insert into weapon values('M416',603);#7
insert into weapon values('UMP9_GUN',604);#7
select * from weapon;
select distinct z.Name as Mission_Name,w.Weapon_Name from(select m.Name,m.MID from Navy n inner join Mission m on m.MID=n.M_ID) z inner join weapon w on z.MID=w.M_ID;
select * from Pantry where Dept='Medical';#8
create table department(ID int,age int,salary bigint);
```

Mission_Name	Weapon_Name
AAP	AK-47
GID	Mission Gun
CID	Missile
VIP	M416
HIG	UMP9_GUN

8. Select the record from department table those who are working in medical section and pantry.

Department table is not given. Hence, I used the pantry table.

```
insert into weapon values('Missile',602);#7
insert into weapon values('M416',603);#7
insert into weapon values('UMP9_GUN',604);#7
select * from weapon;
select distinct z.Name as Mission_Name,w.Weapon_Name from(select m.Name,m.MID from Navy n inner join Mission m on m.MID=n.M_ID) z inner join weapon w on z.MID=w.M_ID;
select * from Pantry where Dept='Medical';#8
create table department(ID int,age int,salary bigint);
```

ID	Year	Loc	Dept	Service_Capa
900	2016	Mumbai	Medical	10

9. Delete the record who is age above 59 from department table.

Before deleting:

```
create table department(ID int,age int primary key,salary bigint);
insert into department(ID,age,salary) values(1,40,40000),(2,55,50000),(3,60,55000),(4,45,50000);
select * from department;
```

ID	age	salary
1	40	40000
4	45	50000
2	55	50000
3	60	55000

After deleting:

```
create table department(ID int,age int primary key,salary bigint);
insert into department(ID,age,salary) values(1,40,40000),(2,55,50000),(3,60,55000),(4,45,50000);
select * from department;
DELETE from department where age>=59;#9
select * from department;
```

ID	age	salary
1	40	40000
4	45	50000
2	55	50000

10. Display the weapons details group by design of year.

```
alter table weapon add column Design_Year varchar(20);
update weapon set Design_Year="2018" where M_ID=604;
select * from weapon group by Design_Year;#10
select sum(ITEMCAPACITY) from stores where CATEGORY="WEAPON";#11
select * from Navy;#13
```

Weapon_Name	M_ID	Design_Year
AK-47	600	2014
Missile	602	2015
M416	603	2018

11. Display the count of weapons in store.

```
select sum(ITEMCAPACITY) from stores where CATEGORY="WEAPON";#11
```

sum(ITEMCAPACITY)
225

12. Select the record whose mission is conducted in south zone.

```
update weapon set design_year="2020" where M_ID=604;#10
select * from weapon group by design_year;#10
select sum(ITEMCAPACITY) from stores where CATEGORY="WEAPON";#11
select * from Mission where M_spot like 'B%';#12
```

MID	Name	M_spot	T_ID	Sol_ID	Com_Officer
603	VIP	Bangalore	704	4	206

13. Select the officer details of navy.

```
create table Navy(NID int,Name varchar(20),Rank1 varchar(2),City    varchar(20),M_ID int);
insert into Navy(NID,Name,Rank1,City,M_ID) values(100,'Raju','C','Hyderabad',600),(101,'Rahul','A','Lahore',601),(102,'Bharath','B','Delhi',600),
(103,'David','A','Mumbai',600),(104,'Kishore','C','Hyderabad',602),(105,'Kumar','C','Mumbai',602),(106,'Eswar','A','Delhi',603),(107,'Praveen','C','Hyderabad',604),
(108,'Lohith','B','Delhi',601),(109,'Mohan','C','Delhi',601);
select * from Navy;
```

NID	Name	Rank1	City	M_ID
100	Raju	C	Hyderabad	600
101	Rahul	A	Lahore	601
102	Bharath	B	Delhi	600
103	David	A	Mumbai	600
104	Kishore	C	Hyderabad	602
105	Kumar	C	Mumbai	602
106	Eswar	A	Delhi	603
107	Praveen	C	Hyderabad	604
108	Lohith	B	Delhi	601
109	Mohan	C	Delhi	601

14. List the solider count details group by salary.

```
alter table weapon add column design_year varchar(20);#10
update weapon set design_year="2020" where M_ID=604;#10
select * from weapon group by design_year;#10
select sum(ITEMCAPACITY) from stores where CATEGORY="WEAPON";#11
select * from Mission where M_spot like 'B%';#12
select * from Navy;#13
select * from department group by salary;#14
```

ID	age	salary
1	40	40000
4	45	50000
NULL	NULL	NULL

15. replace the location of store of item capacity to 100 of store id is 2.

```
59 •  update Stores set Area='Weapon' where SID=1112;#15
```

Output

Action Output

#	Time	Action	Message
370	22:43:51	select * from weapon group by design_year LIMIT 0, 1000	2 row(s) returned
371	22:43:51	select sum(ITEMCAPACITY) from stores where CATEGORY="WEAPON" LIMIT 0, 1000	1 row(s) returned
372	22:43:51	select * from Mission where M_spot like 'B%' LIMIT 0, 1000	1 row(s) returned
373	22:43:51	select * from Navy LIMIT 0, 1000	10 row(s) returned
374	22:43:51	select * from department group by salary LIMIT 0, 1000	2 row(s) returned
375	22:43:51	update Stores set Area='Weapon' where SID=1112	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
376	22:44:22	select * from Stores LIMIT 0, 1000	3 row(s) returned
377	22:44:36	update Stores set Area='Weapon' where SID=1112	0 row(s) affected Rows matched: 1 Changed: 0 Warnings: 0

POSTLAB

1. The following unnormalized table named PRODUCT is transformed to first normal form (1NF) by splitting it into two tables which have X and Y rows (such that X <Y) respectively. Both the tables have Z columns.

Product-ID	*Colors*	*Price*
1	Red,Green	15.0
2	Blue	18.0
3	Yellow,Pink	2.5

What are the values of X, Y, Z? Enter these integers, each on a new line, in the text-box below. Do not leave any leading or trailing spaces.

Ans. x=3, y= 5, z=2

2. The wizard in the SQL city got a list of house numbers in a database. Now he sorts all the house numbers and gives them a particular rank that starts from 1 based on their values in ascending order. Suppose that the house numbers are 145 , 60 and 82 then house no 60 gets rank 1 , house 82 gets rank 2 and house 145 gets rank 3. Now the wizard has to solve a complex problem. He has to count total pairs of house numbers (a,b) in the database such that they follow the following rules -

- *a* is smaller than *b*
- *a* is odd but *b* is even
- rank of *a* is even and rank of *b* is odd

Input Format:
Table : houses

Field	Type
house_number	int

Sample:

house_number
320
121
674
415

Output:

answer
0

Explanation: There is no pair of houses that satisfies the given conditions

Ans.

```
set @count=0;
CREATE TABLE new AS (SELECT *, @count: =@count+1 AS Rank FROM houses) ORDER
BY Rank ASC;

CREATE TABLE a SELECT house_number FROM new WHERE ((house_number%2! = 0)
&& (Rank%2 = 0));

CREATE TABLE b SELECT house_number FROM new WHERE ((house_number%2 = 0)
&& (Rank%2! = 0));

SELECT COUNT (*) AS Answer FROM a JOIN b WHERE (a.house_number <
b.house_number);
```

3. You are given two sets. Set A = {1,2,3,4,5,6} Set B = {2,3,4,5,6,7,8}
   How many elements are present in?
   Only enter the correct integer in the answering box. Do not include any extra spaces, tabs or newlines.

Ans.

Condition not given in question. Hence,
I do A U B. A U B= {1,2,3,4,5,6,7,8}
Total elements=8

4. You are given two sets. Set A = {1,2,3,4,5,6} Set B = {2,3,4,5,6,7,8}
   How many elements are present in A - B?
   Only enter the correct integer in the answering box. Do not include any extra spaces, tabs or newlines.

Ans. A-B = {1} Total elements=1

5. Consider the following data table named Student.

Student Name	Number	Sex
Ben	3412	M
Dan	1234	M
Nel	2341	F

What is the count of rows returned in the following relational selection?
σ(Number<3000)(Student)
Only enter a single integer. Do not include any extra spaces or newlines.

Ans. 2

6. Let R and S be two relations with the following schema R (P,Q,R1,R2,R3) S (P,Q,S1,S2) Where {P, Q} is the key for both schemas. Which of the following queries are equivalent? (GATE 2008 CS exam).

(A) Only I and II
(B) Only I and III
(C) Only I, II and III
(D) Only I, III and IV

I. $\Pi_P(R \bowtie S)$
II. $\Pi_P(R) \bowtie \Pi_P(S)$
III. $\Pi_P(\Pi_{P,Q}(R) \cap \Pi_{P,Q}(S))$
IV. $\Pi_P(\Pi_{P,Q}(R) - (\Pi_{P,Q}(R) - \Pi_{P,Q}(S)))$

Ans. D