**Name: Mohd Adil**

**Roll No: 20BCS042**

**Assignment 8**

Q)1

mysql> create table Passenger(

-> pid int,

-> pname varchar(10),

-> age int);

Query OK, 0 rows affected (0.07 sec)

mysql> create table Reservation(

-> pid int,

-> class varchar(2),

-> tid int);

Query OK, 0 rows affected (0.03 sec)

mysql> insert into Passenger

-> values

-> (0,'Sachin',65),

-> (1,'Rahul',66),

-> (2,'Sourav',67),

-> (3,'Anil',69);

Query OK, 4 rows affected (0.01 sec)

Records: 4 Duplicates: 0 Warnings: 0

mysql> insert into Reservation

-> values

-> (0,'AC',8200),

-> (1,'AC',8201),

-> (2,'SC',8201),

-> (5,'AC',8203),

-> (1,'SC',8204),

-> (3,'AC',8202);

Query OK, 6 rows affected (0.01 sec)

Records: 6 Duplicates: 0 Warnings: 0

mysql> select \* from passenger;

+------+--------+------+

| pid | pname | age |

+------+--------+------+

| 0 | Sachin | 65 |

| 1 | Rahul | 66 |

| 2 | Sourav | 67 |

| 3 | Anil | 69 |

+------+--------+------+

4 rows in set (0.00 sec)

mysql> select \* from reservation;

+------+-------+------+

| pid | class | tid |

+------+-------+------+

| 0 | AC | 8200 |

| 1 | AC | 8201 |

| 2 | SC | 8201 |

| 5 | AC | 8203 |

| 1 | SC | 8204 |

| 3 | AC | 8202 |

+------+-------+------+

6 rows in set (0.00 sec)

mysql> SELECT pid

-> FROM Reservation

-> WHERE class='AC' AND

-> EXISTS (SELECT \*

-> FROM Passenger

-> WHERE age > 65 AND

-> Passenger. pid = Reservation.pid);

+------+

| pid |

+------+

| 1 |

| 3 |

+------+

2 rows in set (0.00 sec)

Ans : 1,3

Q)2

mysql> create table Suppliers(

-> sid int,

-> sname varchar(10),

-> city varchar(10));

Query OK, 0 rows affected (0.04 sec)

mysql> create table Parts(

-> pid int,

-> pname varchar(10),

-> color varchar(10));

Query OK, 0 rows affected (0.03 sec)

mysql> create table Catalog(

-> sid int,

-> pid int,

-> cost float);

Query OK, 0 rows affected (0.03 sec)

mysql> insert into Suppliers

-> values

-> (1, 'Rahul', 'Mumbai'),

-> (2, 'Manoj', 'Delhi'),

-> (3, 'Suraj', 'Chennai');

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> insert into Parts

-> values

-> (1, 'Engine', 'Blue'),

-> (2, 'Motor', 'Red'),

-> (3, 'Wheel', 'Yellow'),

-> (4, 'Brakes', 'Green'),

-> (5, 'Clutch', 'Blue');

Query OK, 5 rows affected (0.02 sec)

Records: 5 Duplicates: 0 Warnings: 0

mysql> insert into Catalog

-> values

-> (1, 2, 450.78),

-> (2, 1, 567.78),

-> (3, 3, 234.89),

-> (3, 2, 675.45),

-> (1, 4, 345.45),

-> (3, 5, 678.23),

-> (2, 4, 345.45);

Query OK, 7 rows affected (0.01 sec)

Records: 7 Duplicates: 0 Warnings: 0

mysql> select \* from Suppliers;

+------+-------+---------+

| sid | sname | city |

+------+-------+---------+

| 1 | Rahul | Mumbai |

| 2 | Manoj | Delhi |

| 3 | Suraj | Chennai |

+------+-------+---------+

3 rows in set (0.00 sec)

mysql> select \* from parts;

+------+--------+--------+

| pid | pname | color |

+------+--------+--------+

| 1 | Engine | Blue |

| 2 | Motor | Red |

| 3 | Wheel | Yellow |

| 4 | Brakes | Green |

| 5 | Clutch | Blue |

+------+--------+--------+

5 rows in set (0.00 sec)

mysql> select \* from Catalog;

+------+------+--------+

| sid | pid | cost |

+------+------+--------+

| 1 | 2 | 450.78 |

| 2 | 1 | 567.78 |

| 3 | 3 | 234.89 |

| 3 | 2 | 675.45 |

| 1 | 4 | 345.45 |

| 3 | 5 | 678.23 |

| 2 | 4 | 345.45 |

+------+------+--------+

7 rows in set (0.00 sec)

mysql> SELECT S.sname

-> FROM Suppliers S

-> WHERE S.sid NOT IN (SELECT C.sid FROM Catalog C

-> WHERE C.pid NOT IN (SELECT P.pid FROM Parts P

-> WHERE P.color<> 'blue'))

-> ;

+-------+

| sname |

+-------+

| Rahul |

+-------+

1 row in set (0.01 sec)

Ans : Find the names of all suppliers who have not supplied a non-blue part.

Q)3

mysql> create table employee3(

-> name varchar(10),

-> sex varchar(1),

-> salary float,

-> deptName varchar(10));

Query OK, 0 rows affected (0.04 sec)

mysql> insert into employee3

-> values

-> ('Rahul', 'M', 45000.00, 'IT'),

-> ('Simran', 'F', 40000.00, 'HR'),

-> ('Raj', 'M', 35000.00, 'HR'),

-> ('Mukesh', 'M', 30000.00, 'ACC'),

-> ('Aditi', 'F', 30000.00, 'ACC'),

-> ('Harsh', 'M', 50000.00, 'IT');

Query OK, 6 rows affected (0.01 sec)

Records: 6 Duplicates: 0 Warnings: 0

mysql> select \* from employee3;

+--------+------+--------+----------+

| name | sex | salary | deptName |

+--------+------+--------+----------+

| Rahul | M | 45000 | IT |

| Simran | F | 40000 | HR |

| Raj | M | 35000 | HR |

| Mukesh | M | 30000 | ACC |

| Aditi | F | 30000 | ACC |

| Harsh | M | 50000 | IT |

+--------+------+--------+----------+

6 rows in set (0.00 sec)

mysql> Select deptName

-> From Employee3

-> Where sex = 'M'

-> Group by deptName

-> Having avg(salary) >

-> (select avg (salary) from Employee3);

+----------+

| deptName |

+----------+

| IT |

+----------+

1 row in set (0.01 sec)

Ans : the average salary of male employees is more than the average salary of

employees in the same department.

Q)4

mysql> create table book

-> (title varchar(255) not null,

-> price int not null unique);

Query OK, 0 rows affected (0.07 sec)

mysql> describe book;

+-------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+-------+--------------+------+-----+---------+-------+

| title | varchar(255) | NO | | NULL | |

| price | int | NO | PRI | NULL | |

+-------+--------------+------+-----+---------+-------+

2 rows in set (0.02 sec)

mysql> insert into book values

-> ('History',190),

-> ('Geography', 200),

-> ('Mathematics', 210),

-> ('Data Structure', 250),

-> ('DBMS', 240),

-> ('Linux', 180);

Query OK, 6 rows affected (0.01 sec)

Records: 6 Duplicates: 0 Warnings: 0

mysql> select \* from book;

+----------------+-------+

| title | price |

+----------------+-------+

| Linux | 180 |

| History | 190 |

| Geography | 200 |

| Mathematics | 210 |

| DBMS | 240 |

| Data Structure | 250 |

+----------------+-------+

6 rows in set (0.00 sec)

mysql> select title

-> from book as B

-> where (select count(\*) from book as T where T.price > B.price) < 5;

+----------------+

| title |

+----------------+

| History |

| Geography |

| Mathematics |

| DBMS |

| Data Structure |

+----------------+

5 rows in set (0.01 sec)

Ans : Titles of five most expensive books

Q)5

mysql> create table enrolled

-> (student varchar(255),

-> course varchar(2),

-> primary key(student,course));

Query OK, 0 rows affected (0.03 sec)

mysql> describe enrolled;

+---------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+--------------+------+-----+---------+-------+

| student | varchar(255) | NO | PRI | NULL | |

| course | varchar(2) | NO | PRI | NULL | |

+---------+--------------+------+-----+---------+-------+

2 rows in set (0.01 sec)

mysql> create table paid

-> (student varchar(255),

-> amount int,

-> primary key(student));

Query OK, 0 rows affected (0.03 sec)

mysql> describe paid;

+---------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+---------+--------------+------+-----+---------+-------+

| student | varchar(255) | NO | PRI | NULL | |

| amount | int | YES | | NULL | |

+---------+--------------+------+-----+---------+-------+

2 rows in set (0.01 sec)

mysql> insert into enrolled values

-> ('Mohd Adil', 'CS'),

-> ('Soban Farooq', 'CS'),

-> ('Asad', 'EC'),

-> ('Khalid', 'EC'),

-> ('Sarfaraz', 'EC'),

-> ('Atif', 'ME'),

-> ('Hamza', 'CE'),

-> ('Ayaz', 'EE');

Query OK, 8 rows affected (0.01 sec)

Records: 8 Duplicates: 0 Warnings: 0

mysql> select \* from enrolled;

+--------------+--------+

| student | course |

+--------------+--------+

| Asad | EC |

| Atif | ME |

| Ayaz | EE |

| Hamza | CE |

| Khalid | EC |

| Mohd Adil | CS |

| Sarfaraz | EC |

| Soban Farooq | CS |

+--------------+--------+

8 rows in set (0.00 sec)

mysql> insert into paid values

-> ('Soban Farooq', 15000),

-> ('Sarfaraz', 15000);

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> insert into paid values

-> ('Asad', 15000),

-> ('Hamza', 15000),

-> ('Atif', 80000);

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select \* from paid;

+--------------+--------+

| student | amount |

+--------------+--------+

| Asad | 15000 |

| Atif | 80000 |

| Hamza | 15000 |

| Sarfaraz | 15000 |

| Soban Farooq | 15000 |

+--------------+--------+

5 rows in set (0.00 sec)

mysql> select student from enrolled where student in (select student from paid);

+--------------+

| student |

+--------------+

| Asad |

| Atif |

| Hamza |

| Sarfaraz |

| Soban Farooq |

+--------------+

5 rows in set (0.00 sec)

mysql> select student from paid where student in (select student from enrolled);

+--------------+

| student |

+--------------+

| Asad |

| Atif |

| Hamza |

| Sarfaraz |

| Soban Farooq |

+--------------+

5 rows in set (0.01 sec)

mysql> select E.student from enrolled E, paid P

-> where E.student = P.student;

+--------------+

| student |

+--------------+

| Asad |

| Atif |

| Hamza |

| Sarfaraz |

| Soban Farooq |

+--------------+

5 rows in set (0.00 sec)

mysql> select student from paid where exists

-> (select \* from enrolled where enrolled.student = paid.student);

+--------------+

| student |

+--------------+

| Asad |

| Atif |

| Hamza |

| Sarfaraz |

| Soban Farooq |

+--------------+

5 rows in set (0.00 sec)

Ans: All queries return identical row set from any database

Q)6

mysql> create table account

-> (customer varchar(255),

-> balance int not null,

-> primary key(customer));

Query OK, 0 rows affected (0.02 sec)

mysql> describe account;

+----------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------+--------------+------+-----+---------+-------+

| customer | varchar(255) | NO | PRI | NULL | |

| balance | int | NO | | NULL | |

+----------+--------------+------+-----+---------+-------+

2 rows in set (0.01 sec)

mysql> insert into account values

-> ('20BCS042', 25000),

-> ('20BCS049', 30000),

-> ('20BCS001', 16000),

-> ('20BCS044', 20000),

-> ('20BCS083', 35000),

-> ('20BCS041', 35000);

Query OK, 6 rows affected (0.01 sec)

Records: 6 Duplicates: 0 Warnings: 0

mysql> select \* from account;

+----------+---------+

| customer | balance |

+----------+---------+

| 20BCS001 | 16000 |

| 20BCS041 | 35000 |

| 20BCS042 | 25000 |

| 20BCS044 | 20000 |

| 20BCS049 | 30000 |

| 20BCS083 | 35000 |

+----------+---------+

6 rows in set (0.00 sec)

mysql> select A.customer, count(B.customer)

-> from account A,account B

-> where A.balance <= B.balance

-> group by A.customer;

+----------+-------------------+

| customer | count(B.customer) |

+----------+-------------------+

| 20BCS001 | 6 |

| 20BCS083 | 2 |

| 20BCS049 | 3 |

| 20BCS044 | 5 |

| 20BCS042 | 4 |

| 20BCS041 | 2 |

+----------+-------------------+

6 rows in set (0.01 sec)

mysql> select A.customer, 1+count(B.customer)

-> from account A,account B

-> where A.balance < B.balance

-> group by A.customer;

+----------+---------------------+

| customer | 1+count(B.customer) |

+----------+---------------------+

| 20BCS049 | 3 |

| 20BCS044 | 5 |

| 20BCS042 | 4 |

| 20BCS001 | 6 |

+----------+---------------------+

4 rows in set (0.00 sec)

Ans : (1) Query1 will produce the same row set as Query2 for some but not all databases.

(4) Neither Query1 nor Query2 is a correct implementation of the specification

Option (c) is correct 1 and 4

Q)7

mysql> create table Loan\_Records

-> (BorrowerBank\_Manager varchar(255),

-> Loan\_Amount int);

Query OK, 0 rows affected (0.05 sec)

mysql> describe Loan\_Records;

+----------------------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+----------------------+--------------+------+-----+---------+-------+

| BorrowerBank\_Manager | varchar(255) | YES | | NULL | |

| Loan\_Amount | int | YES | | NULL | |

+----------------------+--------------+------+-----+---------+-------+

2 rows in set (0.01 sec)

mysql> insert into Loan\_Records values

-> ('Ramesh Sunderajan', 10000),

-> ('Suresh Ramgopal', 15000),

-> ('Mahesh Sunderajan', 7000);

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select \* from Loan\_Records;

+----------------------+-------------+

| BorrowerBank\_Manager | Loan\_Amount |

+----------------------+-------------+

| Ramesh Sunderajan | 10000 |

| Suresh Ramgopal | 15000 |

| Mahesh Sunderajan | 7000 |

+----------------------+-------------+

3 rows in set (0.00 sec)

mysql> select count(\*) from ((select BorrowerBank\_Manager from Loan\_Records) as S NATURAL JOIN (select BorrowerBank\_Manager,Loan\_Amount from Loan\_Records) as T);

+----------+

| count(\*) |

+----------+

| 3 |

+----------+

1 row in set (0.00 sec)

Ans : 3

Q)8

mysql> create table employee

-> (empId int,

-> name varchar(255),

-> department varchar(1),

-> salary int,

-> primary key(empId));

Query OK, 0 rows affected (0.04 sec)

mysql> describe employee;

+------------+--------------+------+-----+---------+-------+

| Field | Type | Null | Key | Default | Extra |

+------------+--------------+------+-----+---------+-------+

| empId | int | NO | PRI | NULL | |

| name | varchar(255) | YES | | NULL | |

| department | varchar(1) | YES | | NULL | |

| salary | int | YES | | NULL | |

+------------+--------------+------+-----+---------+-------+

4 rows in set (0.01 sec)

mysql> insert into employee values

-> (101,"ABC","2",40000),

-> (102,"DEF","4",35000),

-> (103,"GHH","1",80000),

-> (104,"IJK","5",50000),

-> (105,"LMN","3",45000),

-> (106,"PQR","2",55000),

-> (107,"RST","4",65000),

-> (108,"UVW","1",100000),

-> (109,"WXY","5",25000),

-> (110,"XYZ","3",85000);

Query OK, 10 rows affected (0.01 sec)

Records: 10 Duplicates: 0 Warnings: 0

mysql> select \* from employee;

+-------+------+------------+--------+

| empId | name | department | salary |

+-------+------+------------+--------+

| 101 | ABC | 2 | 40000 |

| 102 | DEF | 4 | 35000 |

| 103 | GHH | 1 | 80000 |

| 104 | IJK | 5 | 50000 |

| 105 | LMN | 3 | 45000 |

| 106 | PQR | 2 | 55000 |

| 107 | RST | 4 | 65000 |

| 108 | UVW | 1 | 100000 |

| 109 | WXY | 5 | 25000 |

| 110 | XYZ | 3 | 85000 |

+-------+------+------------+--------+

10 rows in set (0.00 sec)

mysql> Select e.empId

-> From employee e

-> Where not exists

-> (Select \* From employee s

-> where s.department = "5" and

-> s.salary >=e.salary);

+-------+

| empId |

+-------+

| 103 |

| 106 |

| 107 |

| 108 |

| 110 |

+-------+

5 rows in set (0.00 sec)

mysql> Select e.empId

-> From employee e

-> Where e.salary > Any

-> ( Select distinct salary

-> From employee s

-> Where s.department = "5");

+-------+

| empId |

+-------+

| 101 |

| 102 |

| 103 |

| 104 |

| 105 |

| 106 |

| 107 |

| 108 |

| 110 |

+-------+

9 rows in set (0.00 sec)

Ans: Q2 is correct Query

Q)9

mysql> create table r(

-> w varchar(2),

-> x varchar(2));

Query OK, 0 rows affected (0.03 sec)

mysql> create table s(

-> y varchar(2),

-> z varchar(2));

Query OK, 0 rows affected (0.03 sec)

mysql> insert into r

-> values

-> ('AA', 'AB'),

-> ('DD', 'CC'),

-> ('EE', 'FF');

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> insert into s

-> values

-> ('ZZ', 'WW'),

-> ('ZZ', 'XX');

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

mysql> select distinct w,x from r,s;

+------+------+

| w | x |

+------+------+

| AA | AB |

| DD | CC |

| EE | FF |

+------+------+

3 rows in set (0.01 sec)

Ans : r has no duplicates and s is non-empty

Q)10

mysql> create table Student(

-> Roll\_No int,

-> Student\_Name varchar(10));

Query OK, 0 rows affected (0.11 sec)

mysql> create table Performance(

-> Roll\_No int,

-> Course varchar(10),

-> Marks int);

Query OK, 0 rows affected (0.02 sec)

mysql> insert into Student

-> values

-> (1, 'Raj'),

-> (2, 'Rohit'),

-> (3, 'Raj');

Query OK, 3 rows affected (0.02 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> insert into Performance

-> values

-> (1, 'Math', 80),

-> (1, 'English', 70),

-> (2, 'Math', 75),

-> (3, 'English', 80),

-> (2, 'Physics', 65),

-> (3, 'Math', 80);

Query OK, 6 rows affected (0.01 sec)

Records: 6 Duplicates: 0 Warnings: 0

mysql> select \* from Student;

+---------+--------------+

| Roll\_No | Student\_Name |

+---------+--------------+

| 1 | Raj |

| 2 | Rohit |

| 3 | Raj |

+---------+--------------+

3 rows in set (0.01 sec)

mysql> select \* from Performance;

+---------+---------+-------+

| Roll\_No | Course | Marks |

+---------+---------+-------+

| 1 | Math | 80 |

| 1 | English | 70 |

| 2 | Math | 75 |

| 3 | English | 80 |

| 2 | Physics | 65 |

| 3 | Math | 80 |

+---------+---------+-------+

6 rows in set (0.01 sec)

mysql> SELECT S.Student\_Name, sum(P.Marks)

-> FROM Student S, Performance P

-> WHERE S. Roll\_No=P.Roll\_No

-> GROUP BY S.Student\_Name;

+--------------+--------------+

| Student\_Name | sum(P.Marks) |

+--------------+--------------+

| Raj | 310 |

| Rohit | 140 |

+--------------+--------------+

2 rows in set (0.01 sec)

Ans : 2

Q)11

mysql> create table Cinema(

-> theater varchar(10),

-> address varchar(10),

-> capacity int);

Query OK, 0 rows affected (0.04 sec)

mysql> insert into Cinema

-> values

-> ('PVR', 'Delhi', 5000),

-> ('SRS', 'Mumbai', 4500),

-> ('Waves', 'Bangalore', 3000),

-> ('IMAX', 'Chennai', 4200);

Query OK, 4 rows affected (0.01 sec)

Records: 4 Duplicates: 0 Warnings: 0

mysql> select \* from Cinema;

+---------+-----------+----------+

| theater | address | capacity |

+---------+-----------+----------+

| PVR | Delhi | 5000 |

| SRS | Mumbai | 4500 |

| Waves | Bangalore | 3000 |

| IMAX | Chennai | 4200 |

+---------+-----------+----------+

4 rows in set (0.00 sec)

mysql> SELECT P1.address FROM Cinema P1 WHERE P1.capacity >= All(select P2. capacity from Cinema P2);

+---------+

| address |

+---------+

| Delhi |

+---------+

1 row in set (0.00 sec)

Ans : WHERE P1.capacity >= All(select P2. capacity from Cinema P2)

Thank You