```
mysql> /* ----exp-6---- */


mysql> /* Creating DataBase ex6 */
mysql> create database ex6;
Query OK, 1 row affected (0.02 sec)

mysql> /* Using Database ex6 */
mysql> use ex6;
Database changed

mysql> /* Creating Passenger Table */
mysql> create table passenger(passportID integer Primary Key,Name varchar(20) Not Null,Age
integer not null,Sex char,Address varchar(20) not null);
Query OK, 0 rows affected (0.05 sec)

mysql> /* Creating Reservation Table */
mysql> create table reservation(PNR_No integer Primary Key,DOJ datetime,No_of_Seats integer
Not null,Destination char(10),Phone_No varchar(10) not null);
Query OK, 0 rows affected (0.03 sec)

mysql> /* Creating Ticket Table */
mysql> create table ticket(Ticket_No varchar(20) primary Key,DOJ date,Address
varchar(20),Contact_No varchar(10), BusNo varchar(20),SeatNo int,Source
varchar(20),Destination varchar(20));
Query OK, 0 rows affected (0.03 sec)

mysql> /* Inserting Values Into Passenger Table */
mysql> insert into passenger values(82302,'Smith',23,'M','Hyderabad');
Query OK, 1 row affected (0.02 sec)

mysql> insert into passenger values(82303,'Neha',23,'F','Hyderabad');
Query OK, 1 row affected (0.00 sec)

mysql> insert into passenger values(82304,'Neha',35,'F','Hyderabad');
Query OK, 1 row affected (0.01 sec)

mysql> insert into passenger values(82306,'Ramu',40,'M','Hyderabad');
Query OK, 1 row affected (0.01 sec)

mysql> insert into passenger values(82308,'Aakash',40,'M','Hyderabad');
Query OK, 1 row affected (0.01 sec)

mysql> insert into passenger values(82402,'Aravind',42,'M','Hyderabad');
Query OK, 1 row affected (0.01 sec)

mysql> insert into passenger values(82403,'Avinash',42,'M','Hyderabad');
Query OK, 1 row affected (0.01 sec)

mysql> insert into passenger values(82502,'Ramesh',23,'M','Hyderabad');
Query OK, 1 row affected (0.00 sec)

mysql> insert into passenger values(82602,'Rajesh',23,'M','Hyderabad');
Query OK, 1 row affected (0.00 sec)

mysql> /* Inserting Values Into Reservation Table */
mysql> insert into reservation values(10201,'2012.02.20 10:20:25',05,'HYD',9654235242);
Query OK, 1 row affected (0.01 sec)

mysql> insert into reservation values(10202,'2012.02.22 10:22:25',05,'HYD',9654232451);
Query OK, 1 row affected (0.01 sec)

mysql> insert into reservation values(10203,'2012.03.22 10:30:25',05,'DELHI',9654587960);
Query OK, 1 row affected (0.01 sec)

mysql> insert into reservation values(10204,'2012.03.26 11:30:45',05,'CHENNAI',9845761254);
Query OK, 1 row affected (0.01 sec)

mysql> /* Inserting Values Into Ticket Table */
mysql> insert into Ticket
values(82303,'2012.01.01','HYD','9876543201','003','5','HYD','DELHI');
Query OK, 1 row affected (0.00 sec)

mysql> insert into Ticket
values(82304,'2012.01.02','HYD','9876542301','014','5','HYD','MUMBAI');
Query OK, 1 row affected (0.01 sec)

mysql> insert into Ticket
values(82306,'2012.01.02','HYD','9876452301','014','5','HYD','MUMBAI');
```

```
Query OK, 1 row affected (0.01 sec)

mysql> insert into Ticket
values(82308,'2012.01.05','HYD','9867452301','012','5','HYD','BZW');
Query OK, 1 row affected (0.01 sec)

mysql> insert into Ticket
values(82402,'2012.01.07','HYD','8967452301','002','8','HYD','WARANGAL');
Query OK, 1 row affected (0.01 sec)

mysql> insert into Ticket
values(82403,'2012.01.10','HYD','8967452310','017','9','HYD','KAKINADA');
Query OK, 1 row affected (0.01 sec)

mysql> insert into Ticket
values(82502,'2012.01.10','HYD','8967453210','021','7','HYD','VIZAG');
Query OK, 1 row affected (0.01 sec)

mysql> insert into Ticket
values(82602,'2012.01.11','HYD','8967543210','021','4','HYD','SHIRIDI');
Query OK, 1 row affected (0.01 sec)

mysql> /* Any */
mysql> select passportID,Name from passenger where Age > Any (select Age from passenger
where Age>30);
+------------+---------+
| passportID | Name    |
+------------+---------+
|      82306 | Ramu    |
|      82308 | Aakash  |
|      82402 | Aravind |
|      82403 | Avinash |
+------------+---------+
4 rows in set (0.01 sec)

mysql> /* All */
mysql> select all passportID,Name from passenger where age<30 and sex='M';
+------------+--------+
| passportID | Name   |
+------------+--------+
|      82302 | Smith  |
|      82502 | Ramesh |
|      82602 | Rajesh |
+------------+--------+
3 rows in set (0.00 sec)

mysql> /* in & not-in */
mysql> select PNR_No,No_of_Seats from cancellation where Bus_ID in ('AP123');
+--------+-------------+
| PNR_No | No_of_Seats |
+--------+-------------+
|  10201 |           2 |
|  10202 |           4 |
+--------+-------------+
2 rows in set (0.00 sec)

mysql> select PNR_No,No_of_Seats from cancellation where Bus_ID not in ('AP123');
+--------+-------------+
| PNR_No | No_of_Seats |
+--------+-------------+
|  10203 |           3 |
|  10204 |           5 |
+--------+-------------+
2 rows in set (0.00 sec)


mysql> /* Exists */
mysql> select * from passenger where exists(select * from ticket where
ticket.Ticket_No=passenger.passportID);
+------------+---------+-----+------+-----------+
| passportID | Name    | Age | Sex  | Address   |
+------------+---------+-----+------+-----------+
|      82303 | Neha    |  23 | F    | Hyderabad |
|      82304 | Neha    |  35 | F    | Hyderabad |
|      82306 | Ramu    |  40 | M    | Hyderabad |
|      82308 | Aakash  |  40 | M    | Hyderabad |
|      82402 | Aravind |  42 | M    | Hyderabad |
|      82403 | Avinash |  42 | M    | Hyderabad |
|      82502 | Ramesh  |  23 | M    | Hyderabad |
```

```
|      82602 | Rajesh  |  23 | M     | Hyderabad |
+-----------+---------+-----+------+-----------+
8 rows in set (0.00 sec)

mysql> /* Not Exists */
mysql> select * from passenger where not exists(select * from ticket where
ticket.Ticket_No=passenger.passportID);
+-----------+-------+-----+------+-----------+
| passportID | Name  | Age | Sex  | Address   |
+-----------+-------+-----+------+-----------+
|      82302 | Smith |  23 | M     | Hyderabad |
+-----------+-------+-----+------+-----------+
1 row in set (0.00 sec)


mysql> /* Union */
mysql> select Ticket_No from ticket Union select passportID from passenger ;
+-----------+
| Ticket_No |
+-----------+
| 82303     |
| 82304     |
| 82306     |
| 82308     |
| 82402     |
| 82403     |
| 82502     |
| 82602     |
| 82302     |
+-----------+
9 rows in set (0.00 sec)

mysql> /* Intersect */
mysql> select Distinct passportID from passenger where passportID in (select Ticket_No from
ticket);
+------------+
| passportID |
+------------+
|      82303 |
|      82304 |
|      82306 |
|      82308 |
|      82402 |
|      82403 |
|      82502 |
|      82602 |
+------------+
8 rows in set (0.00 sec)


mysql> /* ----exp-7---- */

musql> /* Using Tables w.r.t Experiment-6 */
mysql> /* count() */
mysql> select count(passportID) as N_passportID from passenger;
+--------------+
| N_passportID |
+--------------+
|            9 |
+--------------+
1 row in set (0.00 sec)

mysql> /* sum() */
mysql> select sum(No_of_Seats) as Sum_of_Seats from reservation;
+--------------+
| Sum_of_Seats |
+--------------+
|           20 |
+--------------+
1 row in set (0.00 sec)

mysql> /* avg() */
mysql> select Avg(Age) as Avg_Age from passenger;
+---------+
| Avg_Age |
+---------+
| 32.3333 |
+---------+
1 row in set (0.00 sec)
```

```
mysql> /* min() */
mysql> select Min(Age) as Min_Age from passenger;
+---------+
| Min_Age |
+---------+
|      23 |
+---------+
1 row in set (0.00 sec)

mysql> /* max() */
mysql> select Max(Age) as Max_Age from passenger;
+---------+
| Max_Age |
+---------+
|      42 |
+---------+
1 row in set (0.00 sec)

mysql> /* Display First Column Value(s) in the Table */
mysql> select Ticket_No as First_Ticket_No from ticket Limit 1;
+-----------------+
| First_Ticket_No |
+-----------------+
| 82303           |
+-----------------+
1 row in set (0.00 sec)

mysql> /* Display Last Column Value(s) in the Table */
mysql> select Ticket_No as Last_Ticket_No from ticket order by Ticket_No Desc Limit 1;
+----------------+
| Last_Ticket_No |
+----------------+
| 82602          |
+----------------+
1 row in set (0.00 sec)

mysql> /* Group_Concat() using 'Group By Clause' */
mysql> select Sex,Group_Concat(Name) as "Name_Group_by_Sex" from passenger group by Sex;
+------+--------------------------------------------------+
| Sex  | Name_Group_by_Sex                                |
+------+--------------------------------------------------+
| F    | Neha,Neha                                        |
| M    | Smith,Ramu,Aakash,Aravind,Avinash,Ramesh,Rajesh |
+------+--------------------------------------------------+
2 rows in set (0.00 sec)

mysql> /* Having */
mysql> select Sex,Group_Concat(Name) as "Name_Group_by_Sex" from passenger group by Sex
having Sex='M';
+------+--------------------------------------------------+
| Sex  | Name_Group_by_Sex                                |
+------+--------------------------------------------------+
| M    | Smith,Ramu,Aakash,Aravind,Avinash,Ramesh,Rajesh |
+------+--------------------------------------------------+
1 row in set (0.00 sec)

mysql> /* Group By Clause */
mysql> select PNR_No,Sum(No_of_Seats) as Sum_of_Seats from reservation Group by PNR_No;
+--------+--------------+
| PNR_No | Sum_of_Seats |
+--------+--------------+
|  10201 |            5 |
|  10202 |            5 |
|  10203 |            5 |
|  10204 |            5 |
+--------+--------------+
4 rows in set (0.00 sec)

mysql> /* Creating View */
mysql> create view view_Reservation as Select PNR_No,Destination from Reservation;
Query OK, 0 rows affected (0.02 sec)

mysql> /* Display View-Values */
mysql> select * from view_Reservation;
+--------+-------------+
| PNR_No | Destination |
+--------+-------------+
|  10201 | HYD         |
```

```
|  10202 | HYD         |
|  10203 | DELHI       |
|  10204 | CHENNAI     |
+--------+-------------+
4 rows in set (0.00 sec)

mysql> /* Drop Created View */
mysql> drop view view_Reservation;
Query OK, 0 rows affected (0.01 sec)

mysql> /* Check the 'Drop View'- View Deleted? */
mysql> select * from view_Reservation;
ERROR 1146 (42S02): Table 'ex6.view_reservation' doesn't exist


mysql> /* ----exp-8---- */

mysql> /* Creating Tables */
mysql> create table Bus(Bus Varchar(10) primary key,Source Varchar(10),Destination
Varchar(10),Capacity int(2));
Query OK, 0 rows affected, 1 warning (0.03 sec)

mysql> create table Bus_Audit(ID int primary key Auto_Increment,Source Varchar(10) Not
Null,ChangedOn TimeStamp Default Null,Action Varchar(10) Default Null);
Query OK, 0 rows affected (0.04 sec)

mysql> /* Inserting Values into Tables */
mysql> insert into Bus values('TS229','Hyderabad','Khammam','30');
Query OK, 1 row affected (0.01 sec)

mysql> insert into Bus values('TS292','Hyderabad','Warangal','30');
Query OK, 1 row affected (0.01 sec)

mysql> insert into Bus values('TS922','Hyderbad','Kazipet','30');
Query OK, 1 row affected (0.01 sec)

mysql> /* Table Values After Inserting and Before Creating Triggers */
mysql> select * from Bus;
+-------+-----------+-------------+----------+
| Bus   | Source    | Destination | Capacity |
+-------+-----------+-------------+----------+
| TS229 | Hyderabad | Khammam     |       30 |
| TS292 | Hyderabad | Warangal    |       30 |
| TS922 | Hyderbad  | Kazipet     |       30 |
+-------+-----------+-------------+----------+
3 rows in set (0.00 sec)

mysql> select * from Bus_Audit;
Empty set (0.00 sec)

mysql> /* Creating Triggers: Insert,Update,Delete */
mysql> Delimiter /*
mysql> Create Trigger Before_OnInsert_Bus Before Insert On Bus
    -> For Each Row
    -> Begin
    -> Insert into Bus_Audit
    -> Set Action='Insert',Source=New.Source,ChangedOn=Now();
    -> End /*
Query OK, 0 rows affected (0.01 sec)

mysql> Delimiter /*
mysql> Create Trigger Before_OnUpdate_Bus Before Update On Bus
    -> For Each Row
    -> Begin
    -> Insert into Bus_Audit
    -> Set Action='Delete',Source=Old.Source,ChangedOn=Now();
    -> End /*
Query OK, 0 rows affected (0.02 sec)

mysql> Delimiter /*
mysql> Create Trigger Before_OnDelete_Bus Before Delete On Bus
    -> For Each Row
    -> Begin
    -> Insert into Bus_Audit
    -> Set Action='Delete',Source=Old.Source,ChangedOn=Now();
    -> End /*
Query OK, 0 rows affected (0.01 sec)

mysql> Delimiter ;
```

```
mysql> /* Inserting Values w.r.t. Insert Trigger */
mysql> insert into Bus values('TS299','Khammam','Hyderabad','30');
Query OK, 1 row affected (0.01 sec)

mysql> /* Table Values w.e.o. (with effective of) Insert Trigger */
mysql> select * from Bus;
+-------+-----------+-------------+----------+
| Bus   | Source    | Destination | Capacity |
+-------+-----------+-------------+----------+
| TS229 | Hyderabad | Khammam     |       30 |
| TS292 | Hyderabad | Warangal    |       30 |
| TS299 | Khammam   | Hyderabad   |       30 |
| TS922 | Hyderbad  | Kazipet     |       30 |
+-------+-----------+-------------+----------+
4 rows in set (0.00 sec)

mysql> Select * from Bus_Audit;
+----+---------+---------------------+--------+
| ID | Source  | ChangedOn           | Action |
+----+---------+---------------------+--------+
|  1 | Khammam | 2022-05-22 11:02:11 | Insert |
+----+---------+---------------------+--------+
1 row in set (0.00 sec)

mysql> /* Updating Values w.r.t. Update Trigger */
mysql> Update Bus set Source='VijayaWada' where Bus='TS229';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> /* Table Values w.e.o. Update Trigger */
mysql> select * from Bus;
+-------+------------+-------------+----------+
| Bus   | Source     | Destination | Capacity |
+-------+------------+-------------+----------+
| TS229 | VijayaWada | Khammam     |       30 |
| TS292 | Hyderabad  | Warangal    |       30 |
| TS299 | Khammam    | Hyderabad   |       30 |
| TS922 | Hyderbad   | Kazipet     |       30 |
+-------+------------+-------------+----------+
4 rows in set (0.00 sec)

mysql> Select * from Bus_Audit;
+----+-----------+---------------------+--------+
| ID | Source    | ChangedOn           | Action |
+----+-----------+---------------------+--------+
|  1 | Khammam   | 2022-05-22 11:02:11 | Insert |
|  2 | Hyderabad | 2022-05-22 11:03:49 | Update |
+----+-----------+---------------------+--------+
2 rows in set (0.00 sec)

mysql> /* Deleting Values w.r.t. Delete Trigger */
mysql> delete from Bus where Bus='TS229';
Query OK, 1 row affected (0.00 sec)

mysql> /* Table Values w.e.o. Delete Trigger */
mysql> select * from Bus;
+-------+-----------+-------------+----------+
| Bus   | Source    | Destination | Capacity |
+-------+-----------+-------------+----------+
| TS292 | Hyderabad | Warangal    |       30 |
| TS299 | Khammam   | Hyderabad   |       30 |
| TS922 | Hyderbad  | Kazipet     |       30 |
+-------+-----------+-------------+----------+
3 rows in set (0.00 sec)

mysql> Select * from Bus_Audit;
+----+------------+---------------------+--------+
| ID | Source     | ChangedOn           | Action |
+----+------------+---------------------+--------+
|  1 | Khammam    | 2022-05-22 11:02:11 | Insert |
|  2 | Hyderabad  | 2022-05-22 11:03:49 | Update |
|  3 | VijayaWada | 2022-05-22 11:04:40 | Delete |
+----+------------+---------------------+--------+
3 rows in set (0.00 sec)

mysql> /* Dropping/Deleting Created Triggers */
mysql> Drop Trigger Before_OnInsert_Bus;
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> Drop Trigger Before_OnUpdate_Bus;
Query OK, 0 rows affected (0.01 sec)

mysql> Drop Trigger Before_OnDelete_Bus;
Query OK, 0 rows affected (0.02 sec)


mysql> /* ----exp-9---- */


mysql> use exp9
Database changed

mysql> /* Creating Table 'Student' */
mysql> create table student(stud_id int(2),stud_code int(3),stud_name varchar(25),subject
varchar(25),marks int(3),phone varchar(10));
Query OK, 0 rows affected, 3 warnings (0.04 sec)

mysql> /* Inserting Values into the Table */
mysql> insert into student values
    -> ('1','101','Mark','English','68','9876543210'),
    -> ('2','102','Joseph','Physics','70','9876543201'),
    -> ('3','103','John','Maths','70','9876542301'),
    -> ('4','104','Barack','Maths','90','9876452301'),
    -> ('5','105','Rinky','Maths','85','9867452301'),
    -> ('6','106','Adam','Science','92','8967452301'),
    -> ('7','107','Andrew','Science','83','8967450123'),
    -> ('8','108','Brayan','Science','85','8945670123'),
    -> ('9','109','Alexander','Biology','67','9845670123'),
    -> ('10','110','Aditya','Science','80','7075417016');
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> /* Displaying Values from the Table */
mysql> select * from student;
+---------+-----------+-----------+---------+-------+------------+
| stud_id | stud_code | stud_name | subject | marks | phone      |
+---------+-----------+-----------+---------+-------+------------+
|       1 |       101 | Mark      | English |    68 | 9876543210 |
|       2 |       102 | Joseph    | Physics |    70 | 9876543201 |
|       3 |       103 | John      | Maths   |    70 | 9876542301 |
|       4 |       104 | Barack    | Maths   |    90 | 9876452301 |
|       5 |       105 | Rinky     | Maths   |    85 | 9867452301 |
|       6 |       106 | Adam      | Science |    92 | 8967452301 |
|       7 |       107 | Andrew    | Science |    83 | 8967450123 |
|       8 |       108 | Brayan    | Science |    85 | 8945670123 |
|       9 |       109 | Alexander | Biology |    67 | 9845670123 |
|      10 |       110 | Aditya    | Science |    80 | 7075417016 |
+---------+-----------+-----------+---------+-------+------------+
10 rows in set (0.00 sec)

mysql> /* Procedure without any Arguments */
mysql> Delimiter //
mysql> Create Procedure get_merit_student()
    -> Begin
    -> Select * from student where marks>70;
    -> Select Count(stud_code) as Total_Student from student;
    -> End //
Query OK, 0 rows affected (0.02 sec)

mysql> Delimiter ;
mysql> Call get_merit_student();
+---------+-----------+-----------+---------+-------+------------+
| stud_id | stud_code | stud_name | subject | marks | phone      |
+---------+-----------+-----------+---------+-------+------------+
|       4 |       104 | Barack    | Maths   |    90 | 9876452301 |
|       5 |       105 | Rinky     | Maths   |    85 | 9867452301 |
|       6 |       106 | Adam      | Science |    92 | 8967452301 |
|       7 |       107 | Andrew    | Science |    83 | 8967450123 |
|       8 |       108 | Brayan    | Science |    85 | 8945670123 |
|      10 |       110 | Aditya    | Science |    80 | 7075417016 |
+---------+-----------+-----------+---------+-------+------------+
6 rows in set (0.00 sec)

+---------------+
| Total_Student |
+---------------+
|            10 |
+---------------+
```

```
1 row in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)

mysql> /* Procedure with IN() Parameter */
mysql> Delimiter //
mysql> Create Procedure get_student(in var_i int)
    -> Begin
    -> Select * from student limit var_i;
    -> Select count(stud_code) as Total_Sudent from student;
    -> End //
Query OK, 0 rows affected (0.01 sec)

mysql> Delimiter ;
mysql> Call get_student(5);
+---------+-----------+-----------+---------+-------+------------+
| stud_id | stud_code | stud_name | subject | marks | phone      |
+---------+-----------+-----------+---------+-------+------------+
|       1 |       101 | Mark      | English |    68 | 9876543210 |
|       2 |       102 | Joseph    | Physics |    70 | 9876543201 |
|       3 |       103 | John      | Maths   |    70 | 9876542301 |
|       4 |       104 | Barack    | Maths   |    90 | 9876452301 |
|       5 |       105 | Rinky     | Maths   |    85 | 9867452301 |
+---------+-----------+-----------+---------+-------+------------+
5 rows in set (0.01 sec)

+--------------+
| Total_Sudent |
+--------------+
|           10 |
+--------------+
1 row in set (0.01 sec)

Query OK, 0 rows affected (0.02 sec)

mysql> /* Procedure with Out() Parameter */
mysql> Delimiter //
mysql> Create Procedure display_max_marks(Out highest_marks int)
    -> Begin
    -> Select max(marks) into highest_marks from student;
    -> End //
Query OK, 0 rows affected (0.01 sec)

mysql> Delimiter ;
mysql> Call display_max_marks(@M);
Query OK, 1 row affected (0.00 sec)

mysql> Select @M;
+------+
| @M   |
+------+
|   92 |
+------+
1 row in set (0.00 sec)

mysql> /* Procedure with INOUT() Parameters */
mysql> Delimiter //
mysql> Create Procedure display_marks(inout var_io int)
    -> Begin
    -> Select marks into var_io from student where stud_id=var_io;
    -> End //
Query OK, 0 rows affected (0.01 sec)

mysql> Delimiter ;
mysql> Set @M='3';
Query OK, 0 rows affected (0.00 sec)

mysql> Call display_marks(@M);
Query OK, 1 row affected (0.00 sec)

mysql> Select @M;
+------+
| @M   |
+------+
|   70 |
+------+
1 row in set (0.00 sec)
```