

## DDL QUERIES:

### 1.Create Database:

```
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.44 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE insurancedb;
Query OK, 1 row affected (0.08 sec)

mysql> USE insurancedb;
Database changed
```

### 2.Create Tables:

```
mysql> USE insurancedb;
Database changed
mysql> create table address_details(address_id int primary key,h_no varchar(6),city varchar(50),addressline1 varchar(50),state varchar(50),pin varchar(50));
Query OK, 0 rows affected (0.12 sec)

mysql> create table user_details(user_id int primary key,firstname varchar(50),lastname varchar(50),email varchar(50),mobileno varchar(50),address_id int references address_details(address_id),dob date);
Query OK, 0 rows affected (0.03 sec)

mysql> create table ref_policy_types(policy_type_code varchar(10) primary key,policy_type_name varchar(50));
Query OK, 0 rows affected (0.03 sec)

mysql> create table policy_sub_types(policy_type_id varchar(10) primary key,policy_type_code varchar(10) references ref_policy_types(policy_type_code),description varchar(50),yearsofpayments int,amount double,maturityperiod int,maturityamount double,validity int);
Query OK, 0 rows affected (0.03 sec)

mysql> create table user_policies(policy_no varchar(20) primary key,user_id int references user_details(user_id),date_registered date,policy_type_id varchar(10) references policy_sub_types(policy_type_id));
Query OK, 0 rows affected (0.03 sec)

mysql> create table policy_payments(receipno int primary key,user_id int references user_details(user_id),policy_no varchar(20) references user_policies(policy_no),dateofpayment date,amount double,fine double);
Query OK, 0 rows affected (0.03 sec)

mysql> create table policy_payments(receipno int primary key,user_id int references user_details(user_id),policy_no varchar(20) references user_policies(policy_no),dateofpayment date,amount double,fine double);|
```

## DML QUERIES:

### 1.address\_details:

```
mysql> insert into address_details values(1,'6-21','hyderabad','kphb','andhrapradesh',1254);
Query OK, 1 row affected (0.03 sec)

mysql> insert into address_details values(2,'7-81','chennai','seruseri','tamilnadu',16354);
Query OK, 1 row affected (0.02 sec)

mysql> insert into address_details values(3,'3-71','lucknow','street','uttarpradesh',86451);
Query OK, 1 row affected (0.02 sec)

mysql> insert into address_details values(4,'4-81','mumbai','iroli','maharashtra',51246);
Query OK, 1 row affected (0.02 sec)

mysql> insert into address_details values(5,'5-81','bangalore','mgroad','karnataka',125465);
Query OK, 1 row affected (0.00 sec)

mysql> insert into address_details values(6,'6-81','ahamadabad','street2','gujarat',125423);
Query OK, 1 row affected (0.02 sec)

mysql> insert into address_details values(7,'9-21','chennai','sholingapur','tamilnadu',654286);
Query OK, 1 row affected (0.02 sec)

mysql> |
```

### 2.user\_details:

```
mysql> insert into user_details values(1111,'raju','reddy','raju@gmail.com','9854261456',4,'1986-4-11');
Query OK, 1 row affected (0.02 sec)

mysql> insert into user_details values(2222,'vamsi','krishna','vamsi@gmail.com','9854261463',1,'1990-4-11');
Query OK, 1 row affected (0.01 sec)

mysql> insert into user_details values(3333,'naveen','reddy','naveen@gmail.com','9854261496',4,'1985-3-14');
Query OK, 1 row affected (0.00 sec)

mysql> insert into user_details values(4444,'raghava','rao','raghava@gmail.com','9854261412',4,'1985-9-21');
Query OK, 1 row affected (0.00 sec)

mysql> insert into user_details values(5555,'harsha','vardhan','harsha@gmail.com','9854261445',4,'1992-10-11');
Query OK, 1 row affected (0.02 sec)

mysql> |
```

### 3.ref\_policy\_types:

```
mysql> insert into ref_policy_types values('58934','car');
Query OK, 1 row affected (0.02 sec)

mysql> insert into ref_policy_types values('58539','home');
Query OK, 1 row affected (0.03 sec)

mysql> insert into ref_policy_types values('58683','life');
Query OK, 1 row affected (0.02 sec)

mysql> |
```

#### 4.policy\_sub\_types:

```
mysql> insert into policy_sub_types values('6893','58934','theft',1,5000,null,200000,1);
Query OK, 1 row affected (0.01 sec)

mysql> insert into policy_sub_types values('6894','58934','accident',1,20000,null,200000,3);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_sub_types values('6895','58539','fire',1,50000,null,500000,3);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_sub_types values('6896','58683','anandhlife',7,50000,15,1500000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_sub_types values('6897','58683','sukhlife',10,5000,13,300000,null);
Query OK, 1 row affected (0.02 sec)

mysql> |
```

#### 5.user\_policies:

```
mysql> insert into user_policies values('689314',1111,'1994-4-18','6896');
Query OK, 1 row affected (0.01 sec)

mysql> insert into user_policies values('689316',1111,'2012-5-18','6895');
Query OK, 1 row affected (0.00 sec)

mysql> insert into user_policies values('689317',1111,'2012-6-20','6894');
Query OK, 1 row affected (0.02 sec)

mysql> insert into user_policies values('689318',2222,'2012-6-21','6894');
Query OK, 1 row affected (0.02 sec)

mysql> insert into user_policies values('689320',3333,'2012-6-18','6894');
Query OK, 1 row affected (0.00 sec)

mysql> insert into user_policies values('689420',4444,'2012-4-09','6896');
Query OK, 1 row affected (0.02 sec)

mysql> |
```

## 6.policy\_payments:

```
mysql> insert into user_policies values('689314',1111,'1994-4-18','6896');
Query OK, 1 row affected (0.01 sec)

mysql> insert into user_policies values('689316',1111,'2012-5-18','6895');
Query OK, 1 row affected (0.00 sec)

mysql> insert into user_policies values('689317',1111,'2012-6-20','6894');
Query OK, 1 row affected (0.02 sec)

mysql> insert into user_policies values('689318',2222,'2012-6-21','6894');
Query OK, 1 row affected (0.02 sec)

mysql> insert into user_policies values('689320',3333,'2012-6-18','6894');
Query OK, 1 row affected (0.00 sec)

mysql> insert into user_policies values('689420',4444,'2012-4-09','6896');
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(121,4444,'689420','2012-4-09',50000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(345,4444,'689420','2013-4-09',50000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(300,1111,'689317','2012-6-20',20000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(225,1111,'689316','2012-5-18',20000,null);
Query OK, 1 row affected (0.00 sec)

mysql> insert into policy_payments values(227,1111,'689314','1994-4-18',50000,null);
Query OK, 1 row affected (0.00 sec)

mysql> insert into policy_payments values(100,1111,'689314','1995-4-10',50000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(128,1111,'689314','1996-4-11',50000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(96,1111,'689314','1997-4-18',50000,200);
Query OK, 1 row affected (0.03 sec)

mysql> insert into policy_payments values(101,1111,'689314','1998-4-09',50000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(105,1111,'689314','1999-4-08',50000,null);
Query OK, 1 row affected (0.00 sec)

mysql> insert into policy_payments values(120,1111,'689314','2000-4-05',50000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(367,2222,'689318','2012-6-21',20000,null);
Query OK, 1 row affected (0.02 sec)

mysql> insert into policy_payments values(298,3333,'689320','2012-6-18',20000,null);
Query OK, 1 row affected (0.02 sec)

mysql> |
```

## *Solve the following Queries:*

1:

```
mysql> SELECT ps.policy_type_id,r.policy_type_name,ps.description FROM policy_sub_types ps JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code WHERE r.policy_type_name='car';
```

policy_type_id	policy_type_name	description
6893	car	theft
6894	car	accident

```
2 rows in set (0.02 sec)
```

2:

```
mysql> SELECT policy_type_code,COUNT(*) AS NO_OF_POLICIES FROM policy_sub_types GROUP BY policy_type_code;
```

policy_type_code	NO_OF_POLICIES
58934	2
58539	1
58683	2

```
3 rows in set (0.01 sec)
```

3:

```
mysql> SELECT u.user_id,u.firstname,u.lastname,u.email,u.mobilenos FROM user_details u JOIN address_details a ON u.address_id=a.address_id WHERE a.city='chennai';
```

Empty set (0.00 sec)

4:

```
mysql> SELECT DISTINCT u.user_id,CONCAT(u.firstname,' ',u.lastname) AS USER_NAME,u.email,u.mobilenos FROM user_details u JOIN user_policies up ON u.user_id=up.user_id JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code WHERE r.policy_type_name='car';
```

user_id	USER_NAME	email	mobilenos
1111	raju reddy	raju@gmail.com	9854261456
2222	vamsi krishna	vamsi@gmail.com	9854261463
3333	naveen reddy	naveen@gmail.com	9854261496

```
3 rows in set (0.02 sec)
```

5:

```
mysql> SELECT DISTINCT u.user_id,u.firstname,u.lastname FROM user_details u WHERE u.user_id IN (SELECT up.user_id FROM user_policies up JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code WHERE r.policy_type_name='car') AND u.user_id NOT IN (SELECT up.user_id FROM user_policies up JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code WHERE r.policy_type_name='home');
```

user_id	firstname	lastname
2222	vamsi	krishna
3333	naveen	reddy

```
2 rows in set (0.01 sec)
```

6:

```
mysql> SELECT r.policy_type_code,r.policy_type_name FROM ref_policy_types r JOIN policy_sub_types ps
ON r.policy_type_code=ps.policy_type_code GROUP BY r.policy_type_code,r.policy_type_name ORDER BY C
OUNT(*) DESC LIMIT 1;
+-----+-----+
| policy_type_code | policy_type_name |
+-----+-----+
| 58934            | car              |
+-----+-----+
1 row in set (0.00 sec)
```

7:

```
mysql> SELECT u.user_id,u.firstname,u.lastname,a.city,a.state FROM user_details u JOIN address_detai
ls a ON u.address_id=a.address_id WHERE a.city LIKE '%bad';
+-----+-----+-----+-----+-----+
| user_id | firstname | lastname | city      | state      |
+-----+-----+-----+-----+-----+
| 2222    | vamsi     | krishna  | hyderabad | andhrapradesh |
+-----+-----+-----+-----+-----+
1 row in set (0.02 sec)
```

8:

```
mysql> SELECT u.user_id,u.firstname,u.lastname,up.policy_no,up.date_registered FROM user_details u J
OIN user_policies up ON u.user_id=up.user_id WHERE up.date_registered<'2012-05-01';
+-----+-----+-----+-----+-----+
| user_id | firstname | lastname | policy_no | date_registered |
+-----+-----+-----+-----+-----+
| 1111    | raju     | reddy   | 689314    | 1994-04-18      |
| 4444    | raghava  | rao     | 689420    | 2012-04-09      |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

9:

```
mysql> SELECT u.user_id,u.firstname,u.lastname FROM user_details u JOIN user_policies up ON u.user_i
d=up.user_id GROUP BY u.user_id HAVING COUNT(up.policy_no)>1;
+-----+-----+-----+
| user_id | firstname | lastname |
+-----+-----+-----+
| 1111    | raju     | reddy   |
+-----+-----+-----+
1 row in set (0.00 sec)
```

10:

```
mysql> SELECT r.policy_type_code,r.policy_type_name,ps.policy_type_id,up.user_id,up.policy_no FROM u
ser_policies up JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_ty
pes r ON ps.policy_type_code=r.policy_type_code WHERE DATE_ADD(up.date_registered,INTERVAL ps.maturity
period YEAR) BETWEEN '2013-08-01' AND '2013-08-31';
Empty set (0.02 sec)
```

11:

```
mysql> SELECT r.policy_type_code,r.policy_type_name,ps.policy_type_id FROM policy_sub_types ps JOIN ref_policy_ty
pes r ON ps.policy_type_code=r.policy_type_code JOIN user_policies up ON ps.policy_type_id=up.policy_type_id JOIN
policy_payments pp ON up.policy_no=pp.policy_no GROUP BY r.policy_type_code,r.policy_type_name,ps.policy_type_id
HAVING MAX(ps.maturityamount)=2*SUM(pp.amount);
Empty set (0.00 sec)
```

12:

```
mysql> SELECT user_id,SUM(amount) AS total_amount FROM policy_payments GROUP BY user_id;
```

user_id	total_amount
1111	390000
4444	100000
3333	20000
2222	20000

4 rows in set (0.02 sec)

13:

```
mysql> SELECT user_id,policy_no,SUM(amount) AS total_amount FROM policy_payments GROUP BY user_id,policy_no;
```

user_id	policy_no	total_amount
1111	689314	350000
4444	689420	100000
1111	689316	20000
3333	689320	20000
1111	689317	20000
2222	689318	20000

6 rows in set (0.00 sec)

14:

```
mysql> SELECT up.user_id,up.policy_no,ps.maturityamount-SUM(pp.amount) AS balance_amount FROM user_policies up JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN policy_payments pp ON up.policy_no=pp.policy_no GROUP BY up.policy_no;
```

user_id	policy_no	balance_amount
1111	689314	1150000
4444	689420	1400000
1111	689316	480000
3333	689320	180000
1111	689317	180000
2222	689318	180000

6 rows in set (0.02 sec)

15:

```
mysql> SELECT up.user_id,up.policy_no,ps.years_of_payments-COUNT(pp.receipno) AS BALANCE_YEARS FROM user_policies up JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id LEFT JOIN policy_payments pp ON up.policy_no=pp.policy_no GROUP BY up.policy_no;
```

user_id	policy_no	BALANCE_YEARS
1111	689314	0
1111	689316	0
1111	689317	0
2222	689318	0
3333	689320	0
4444	689420	5

6 rows in set (0.00 sec)

16:

```
mysql> SELECT u.user_id,u.firstname,u.lastname FROM user_details u JOIN user_policies up ON u.user_id=up.user_id JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code GROUP BY u.user_id HAVING COUNT(DISTINCT r.policy_type_name)=3;
+-----+-----+-----+
| user_id | firstname | lastname |
+-----+-----+-----+
| 1111 | raju | reddy |
+-----+-----+-----+
1 row in set (0.02 sec)
```

17:

```
mysql> SELECT r.policy_type_code,SUM(pp.amount) AS total_amount FROM policy_payments pp JOIN user_policies up ON pp.policy_no=up.policy_no JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code GROUP BY r.policy_type_code;
+-----+-----+
| policy_type_code | total_amount |
+-----+-----+
| 58683 | 450000 |
| 58539 | 20000 |
| 58934 | 60000 |
+-----+-----+
3 rows in set (0.00 sec)
```

18:

```
mysql> SELECT u.user_id,CONCAT(u.firstname,' ',u.lastname) AS user_name,r.policy_type_code,ps.policy_type_id FROM user_details u JOIN user_policies up ON u.user_id=up.user_id JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code GROUP BY u.user_id,r.policy_type_code,ps.policy_type_id HAVING COUNT(DISTINCT ps.policy_type_id)>1;
Empty set (0.02 sec)
```

19:

```
mysql> SELECT r.policy_type_code,r.policy_type_name FROM ref_policy_types r JOIN policy_sub_types ps ON r.policy_type_code=ps.policy_type_code GROUP BY r.policy_type_code,r.policy_type_name ORDER BY COUNT(ps.policy_type_id) ASC LIMIT 1;
+-----+-----+
| policy_type_code | policy_type_name |
+-----+-----+
| 58539 | home |
+-----+-----+
1 row in set (0.00 sec)
```

20:

```
mysql> SELECT u.user_id,CONCAT(u.firstname,' ',u.lastname) AS user_name,a.city AS address,u.mobilenr,r.policy_type_code,ps.policy_type_id,r.policy_type_name FROM user_details u JOIN address_details a ON u.address_id=a.address_id JOIN user_policies up ON u.user_id=up.user_id JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code JOIN policy_payments pp ON up.policy_no=pp.policy_no GROUP BY u.user_id,up.policy_no,a.city,u.mobilenr,r.policy_type_code,ps.policy_type_id,r.policy_type_name,ps.yearsofpayments HAVING COUNT(pp.receipno)=ps.yearsofpayments;
+-----+-----+-----+-----+-----+-----+-----+
| user_id | user_name | address | mobilenr | policy_type_code | policy_type_id | policy_type_name |
+-----+-----+-----+-----+-----+-----+-----+
| 1111 | raju reddy | mumbai | 9854261456 | 58683 | 6896 | life |
| 1111 | raju reddy | mumbai | 9854261456 | 58539 | 6895 | home |
| 3333 | naveen reddy | mumbai | 9854261496 | 58934 | 6894 | car |
| 1111 | raju reddy | mumbai | 9854261456 | 58934 | 6894 | car |
| 2222 | vamsi krishna | hyderabad | 9854261463 | 58934 | 6894 | car |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.02 sec)
```



21:

```
mysql> SELECT u.user_id,CONCAT(u.firstname,' ',u.lastname) AS user_name,a.city AS address,u.mobileno,r.policy_type_code,ps.policy_type_id,
r.policy_type_name,up.date_registered FROM user_policies up JOIN user_details u ON up.user_id=u.user_id JOIN address_details a ON u.address_id=a.address_id JOIN policy_sub_types ps ON up.policy_type_id=ps.policy_type_id JOIN ref_policy_types r ON ps.policy_type_code=r.policy_type_code ORDER BY up.date_registered DESC LIMIT 2;
```

user_id	user_name	address	mobileno	policy_type_code	policy_type_id	policy_type_name	date_registered
2222	vamsi krishna	hyderabad	9854261463	58934	6894	car	2012-06-21
1111	raju reddy	mumbai	9854261456	58934	6894	car	2012-06-20

2 rows in set (0.00 sec)