```
mysql> show tables;
+----------------------+
| Tables_in_insurancedb |
+----------------------+
| address_details      |
| policy_payments      |
| policy_sub_types     |
| ref_policy_types     |
| user_details         |
| user_policies        |
+----------------------+
6 rows in set (0.00 sec)

mysql> desc address_details;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| address_id  | int         | NO   | PRI | NULL    |       |
| h_no        | varchar(6)  | YES  |     | NULL    |       |
| city        | varchar(50) | YES  |     | NULL    |       |
| addressline1| varchar(50) | YES  |     | NULL    |       |
| state       | varchar(50) | YES  |     | NULL    |       |
| pin         | varchar(50) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql> desc policy_payments;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| receipno     | int         | NO   | PRI | NULL    |       |
| user_id      | int         | YES  |     | NULL    |       |
| policy_no    | varchar(20) | YES  |     | NULL    |       |
| dateofpayment| date        | YES  |     | NULL    |       |
| amount       | double      | YES  |     | NULL    |       |
| fine         | double      | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)

mysql> desc policy_sub_types;
+------------------+-------------+------+-----+---------+-------+
| Field            | Type        | Null | Key | Default | Extra |
+------------------+-------------+------+-----+---------+-------+
| policy_type_id   | varchar(10) | NO   | PRI | NULL    |       |
| policy_type_code | varchar(10) | YES  |     | NULL    |       |
| description      | varchar(50) | YES  |     | NULL    |       |
| yearsofpayements | int         | YES  |     | NULL    |       |
| amount           | double      | YES  |     | NULL    |       |
| maturityperiod   | int         | YES  |     | NULL    |       |
| maturityamount   | double      | YES  |     | NULL    |       |
| validity         | int         | YES  |     | NULL    |       |
+------------------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)

mysql> desc ref_policy_types;
+------------------+-------------+------+-----+---------+-------+
| Field            | Type        | Null | Key | Default | Extra |
+------------------+-------------+------+-----+---------+-------+
| policy_type_code | varchar(10) | NO   | PRI | NULL    |       |
| policy_type_name | varchar(50) | YES  |     | NULL    |       |
+------------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

```
mysql> desc user_details;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| user_id    | int         | NO   | PRI | NULL    |       |
| firstname  | varchar(50) | YES  |     | NULL    |       |
| lastname   | varchar(50) | YES  |     | NULL    |       |
| email      | varchar(50) | YES  |     | NULL    |       |
| mobileno   | varchar(50) | YES  |     | NULL    |       |
| address_id | int         | YES  |     | NULL    |       |
| dob        | date        | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
7 rows in set (0.00 sec)

mysql> ^C
mysql> desc  user_policies;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| policy_no      | varchar(20) | NO   | PRI | NULL    |       |
| user_id        | int         | YES  |     | NULL    |       |
| date_registered| date        | YES  |     | NULL    |       |
| policy_type_id | varchar(10) | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> /* 1. Display policytypeid, policytypename, description of all car policies */
mysql> SELECT
    ->      r.policy_type_code,
    ->      r.policy_type_name,
    ->      p.description
    -> FROM ref_policy_types r
    -> JOIN policy_sub_types p
    -> ON r.policy_type_code = p.policy_type_code;
+------------------+------------------+-------------+
| policy_type_code | policy_type_name | description |
+------------------+------------------+-------------+
| 58934            | car              | theft       |
| 58934            | car              | accident    |
| 58539            | home             | fire        |
| 58683            | life             | anandhlife  |
| 58683            | life             | sukhlife    |
+------------------+------------------+-------------+
5 rows in set (0.05 sec)

mysql>
mysql>
mysql> /* 2. Display policytypecode and number of policies in each code */
mysql> SELECT
    ->      policy_type_id AS policytypecode,
    ->      COUNT(*) AS NO_OF_POLICIES
    -> FROM user_policies
    -> GROUP BY policy_type_id;
+----------------+----------------+
| policytypecode | NO_OF_POLICIES |
+----------------+----------------+
| 6896           |              2 |
| 6895           |              1 |
| 6894           |              3 |
+----------------+----------------+
3 rows in set (0.00 sec)

mysql>
mysql>
mysql> /* 3. Display userid, firstname, lastname, email, mobileno who are residing in Chennai */
mysql> SELECT
    ->      u.user_id,
    ->      u.firstname,
    ->      u.lastname,
    ->      u.email,
    ->      u.mobileno
    -> FROM user_details u
    -> JOIN address_details a
    -> ON u.address_id = a.address_id
    -> WHERE a.city = 'Chennai';
Empty set (0.00 sec)
```

```
mysql> /* 4. Display userid, firstname lastname as USER_NAME, email, mobileno who has taken car policies */
mysql> SELECT
    ->      u.user_id,
    ->      CONCAT(u.firstname, ' ', u.lastname) AS USER_NAME,
    ->      u.email,
    ->      u.mobileno
    -> FROM user_details u
    -> JOIN user_policies up
    -> ON u.user_id = up.user_id;
+---------+---------------+--------------------+------------+
| user_id | USER_NAME     | email              | mobileno   |
+---------+---------------+--------------------+------------+
|    1111 | raju reddy    | raju@gmail.com     | 9854261456 |
|    1111 | raju reddy    | raju@gmail.com     | 9854261456 |
|    1111 | raju reddy    | raju@gmail.com     | 9854261456 |
|    2222 | vamsi krishna | vamsi@gmail.com    | 9854261463 |
|    3333 | naveen reddy  | naveen@gmail.com   | 9854261496 |
|    4444 | raghava rao   | raghava@gmail.com  | 9854261412 |
+---------+---------------+--------------------+------------+
6 rows in set (0.00 sec)

mysql>
mysql>
mysql> /* 5. Display userid, firstname, lastname who has taken car policies but not home policies */
mysql> SELECT DISTINCT
    ->      u.user_id,
    ->      u.firstname,
    ->      u.lastname
    -> FROM user_details u
    -> JOIN user_policies up
    -> ON u.user_id = up.user_id
    -> WHERE up.policy_type_id = 'CAR'
    -> AND u.user_id NOT IN (
    ->      SELECT user_id
    ->      FROM user_policies
    ->      WHERE policy_type_id = 'HOME'
    -> );
Empty set (0.00 sec)

mysql>
mysql>
mysql> /* 6. Display policytypecode, policytypename which policytype has maximum number of policies */
mysql> SELECT
    ->      r.policy_type_code,
    ->      r.policy_type_name
    -> FROM ref_policy_types r
    -> JOIN user_policies u
    -> ON r.policy_type_code = u.policy_type_id
    -> GROUP BY r.policy_type_code, r.policy_type_name
    -> ORDER BY COUNT(*) DESC
    -> LIMIT 1;
Empty set (0.00 sec)

mysql>
mysql>
mysql> /* 7. Display userid, firstname, lastname, city, state whose city is ending with 'bad' */
mysql> SELECT
    ->      u.user_id,
    ->      u.firstname,
    ->      u.lastname,
    ->      a.city,
    ->      a.state
    -> FROM user_details u
    -> JOIN address_details 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 (0.00 sec)

mysql>
```

```
mysql> /* 8. Display userid, firstname, lastname, policyno, dateregistered who has registered before May 2012 */
mysql> SELECT
    ->     u.user_id,
    ->     u.firstname,
    ->     u.lastname,
    ->     up.policy_no,
    ->     up.date_registered
    -> FROM user_details u
    -> JOIN 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)

mysql>
mysql>
mysql> /* 9. Display userid, firstname, lastname who has taken more than one policy */
mysql> SELECT
    ->     u.user_id,
    ->     u.firstname,
    ->     u.lastname
    -> FROM user_details u
    -> JOIN user_policies up
    -> ON u.user_id = up.user_id
    -> GROUP BY u.user_id, u.firstname, u.lastname
    -> HAVING COUNT(up.policy_no) > 1;
+---------+-----------+----------+
| user_id | firstname | lastname |
+---------+-----------+----------+
|    1111 | raju      | reddy    |
+---------+-----------+----------+
1 row in set (0.00 sec)

mysql>
mysql>
mysql> /* 10. Display policytypecode, policytypename, policytypeid, userid, policyno whose maturity falls in August 2013 */
mysql> SELECT
    ->     ps.policy_type_code,
    ->     r.policy_type_name,
    ->     ps.policy_type_id,
    ->     up.user_id,
    ->     up.policy_no
    -> FROM policy_sub_types ps
    -> JOIN ref_policy_types r
    -> ON ps.policy_type_code = r.policy_type_code
    -> JOIN user_policies up
    -> ON ps.policy_type_id = up.policy_type_id
    -> WHERE MONTH(DATE_ADD(up.date_registered, INTERVAL ps.maturityperiod YEAR)) = 8
    -> AND YEAR(DATE_ADD(up.date_registered, INTERVAL ps.maturityperiod YEAR)) = 2013;
Empty set (0.00 sec)

mysql>
mysql>
mysql> /* 11. Display policytypecode, policytypename, policytypeid whose maturity amount is double than the total paid amount */
mysql> SELECT
    ->     ps.policy_type_code,
    ->     r.policy_type_name,
    ->     ps.policy_type_id
    -> FROM policy_sub_types ps
    -> JOIN ref_policy_types r
    -> ON ps.policy_type_code = r.policy_type_code
    -> JOIN policy_payments pp
    -> ON ps.policy_type_id = pp.policy_no
    -> GROUP BY ps.policy_type_code, r.policy_type_name, ps.policy_type_id, ps.maturityamount
    -> HAVING ps.maturityamount = 2 * SUM(pp.amount);
Empty set (0.00 sec)
```

```
mysql> /* 12. Display userid and total amount paid by the customer */
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 (0.00 sec)

mysql>
mysql>
mysql> /* 13. Display user_id, policy_no, total amount paid by the customer for each policy */
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)

mysql>
mysql>
mysql> /* 14. Display user_id, policy_no, balance_amount for each policy */
mysql> SELECT
    ->     pp.user_id,
    ->     pp.policy_no,
    ->     (ps.maturityamount - SUM(pp.amount)) AS balance_amount
    -> FROM policy_payments pp
    -> JOIN policy_sub_types ps
    -> ON pp.policy_no = ps.policy_type_id
    -> GROUP BY pp.user_id, pp.policy_no, ps.maturityamount;
Empty set (0.00 sec)

mysql>
mysql>
mysql> /* 15. Display user_id, policy_no, balancepayment years with alias BALANCE_YEARS */
mysql> SELECT
    ->     up.user_id,
    ->     up.policy_no,
    ->     (ps.maturityperiod - 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.user_id, up.policy_no, ps.maturityperiod;
+---------+-----------+---------------+
| user_id | policy_no | BALANCE_YEARS |
+---------+-----------+---------------+
|    1111 | 689314    |             8 |
|    1111 | 689316    |          NULL |
|    1111 | 689317    |          NULL |
|    2222 | 689318    |          NULL |
|    3333 | 689320    |          NULL |
|    4444 | 689420    |            13 |
+---------+-----------+---------------+
6 rows in set (0.00 sec)

mysql>
mysql>
```

```
mysql> /* 16. users who have taken car, home and life policies */
mysql> SELECT DISTINCT
    ->     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 pst ON up.policy_type_id = pst.policy_type_id
    -> JOIN ref_policy_types rpt ON pst.policy_type_code = rpt.policy_type_code
    -> WHERE rpt.policy_type_name IN ('Car', 'Home', 'Life')
    -> GROUP BY u.user_id
    -> HAVING COUNT(DISTINCT rpt.policy_type_name) = 3;
+---------+-----------+----------+
| user_id | firstname | lastname |
+---------+-----------+----------+
|    1111 | raju      | reddy    |
+---------+-----------+----------+
1 row in set (0.00 sec)

mysql>
mysql> /* 17. total amount paid for each policy department */
mysql> SELECT
    ->     pst.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 pst ON up.policy_type_id = pst.policy_type_id
    -> GROUP BY pst.policy_type_code;
+------------------+--------------+
| policy_type_code | total_amount |
+------------------+--------------+
| 58683            |       450000 |
| 58539            |        20000 |
| 58934            |        60000 |
+------------------+--------------+
3 rows in set (0.00 sec)

mysql>
mysql> /* 18. users registered more than one policy under same policy code */
mysql> SELECT
    ->     up.user_id,
    ->     u.firstname,
    ->     pst.policy_type_code,
    ->     up.policy_type_id
    -> FROM user_policies up
    -> JOIN user_details u ON up.user_id = u.user_id
    -> JOIN policy_sub_types pst ON up.policy_type_id = pst.policy_type_id
    -> GROUP BY up.user_id, pst.policy_type_code
    -> HAVING COUNT(*) > 1;
ERROR 1055 (42000): Expression #4 of SELECT list is not in GROUP BY clause and contains nonaggregated column 'insurancedb.up.policy_type_id' which is not
functionally dependent on columns in GROUP BY clause; this is incompatible with sql_mode=only_full_group_by
mysql>
mysql> /* 19. policy department with minimum number of policies */
mysql> SELECT
    ->     pst.policy_type_code,
    ->     rpt.policy_type_name
    -> FROM user_policies up
    -> JOIN policy_sub_types pst ON up.policy_type_id = pst.policy_type_id
    -> JOIN ref_policy_types rpt ON pst.policy_type_code = rpt.policy_type_code
    -> GROUP BY pst.policy_type_code, rpt.policy_type_name
    -> ORDER BY COUNT(*) ASC
    -> LIMIT 1;
+------------------+------------------+
| policy_type_code | policy_type_name |
+------------------+------------------+
| 58539            | home             |
+------------------+------------------+
1 row in set (0.00 sec)
```

```
mysql> /* 20. users who have completed all payments */
mysql> SELECT
    ->     u.user_id,
    ->     CONCAT(u.firstname,' ',u.lastname) AS user_name,
    ->     a.addressline1,
    ->     u.mobileno,
    ->     pst.policy_type_code,
    ->     pst.policy_type_id,
    ->     rpt.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 pst ON up.policy_type_id = pst.policy_type_id
    -> JOIN ref_policy_types rpt ON pst.policy_type_code = rpt.policy_type_code
    -> JOIN policy_payments pp ON up.policy_no = pp.policy_no
    -> GROUP BY up.policy_no, pst.maturityperiod
    -> HAVING COUNT(pp.receipno) = pst.maturityperiod;
Empty set (0.00 sec)

mysql>
mysql> /* 21. users registered latest two */
mysql> SELECT
    ->     u.user_id,
    ->     CONCAT(u.firstname,' ',u.lastname) AS user_name,
    ->     a.addressline1,
    ->     u.mobileno,
    ->     pst.policy_type_code,
    ->     pst.policy_type_id,
    ->     rpt.policy_type_name,
    ->     up.date_registered
    -> 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 pst ON up.policy_type_id = pst.policy_type_id
    -> JOIN ref_policy_types rpt ON pst.policy_type_code = rpt.policy_type_code
    -> ORDER BY up.date_registered DESC
    -> LIMIT 2;
+---------+---------------+-------------+------------+------------------+----------------+------------------+-----------------+
| user_id | user_name     | addressline1 | mobileno   | policy_type_code | policy_type_id | policy_type_name | date_registered |
+---------+---------------+-------------+------------+------------------+----------------+------------------+-----------------+
|    2222 | vamsi krishna | kphb        | 9854261463 | 58934            | 6894           | car              | 2012-06-21      |
|    1111 | raju reddy    | iroli       | 9854261456 | 58934            | 6894           | car              | 2012-06-20      |
+---------+---------------+-------------+------------+------------------+----------------+------------------+-----------------+
2 rows in set (0.00 sec)
```