

# 1. Business Expansion

As part of business expansion efforts at a company, your help is needed to find all pairs of customers and agents who have been in contact more than once. For each such pair, display the user id, first name, and last name, and the customer id, name, and the number of their contacts. Order the result by user id ascending.

▼ Schema

There are 3 tables: customer, user\_account, contact.

| customer         |              |  |
|------------------|--------------|--|
| Name             | Type         | Description  |
| id               | int          | This is a primary key                                  |
| customer_name    | varchar(255) | Name of the customer                                   |
| city_id          | int          | A unique id for the city in which the customer resides |
| customer_address | varchar(255) | Customer's address                                     |
| contact_person   | varchar(255) | Person of contact. Can be null.                        |
| email            | varchar(128) | Email address of the customer                          |
| phone            | varchar(128) | Phone number for the customer                          |
| is_active        | int          | Boolean to denote if the customer is active            |

| user_account |              |   |
|--------------|--------------|---|
| Name         | Type         | Description                                     |
| id           | int          | This is a primary key                           |
| first_name   | varchar(64)  | First name of the user                          |
| last_name    | varchar(64)  | Last name of the user                           |
| user_name    | varchar(128) | user name for the user                          |
| password     | varchar(255) | password of the account                         |
| email        | varchar(128) | email address of the user                       |
| phone        | varchar(128) | contact number for the user. Can be null.       |
| is_active    | int          | Boolean to denote if the user_account is active |

| contact               |              |   |
|-----------------------|--------------|---|
| Name                  | Type         | Description                             |
| id                    | int          | This is a primary key                   |
| user_account_id       | int          | Foreign key referencing user_account.id |
| customer_id           | int          | Foreign key referencing customer.id     |
| contact_type_id       | int          | Type of the contact                     |
| contact_outcome_id    | int          | Can be null                             |
| additional_comment    | varchar(255) | Can be null                             |
| initiated_by_customer | int          | Boolean                                 |
| initiated_by_user     | int          | Boolean                                 |

## ▼ Sample Data Tables

| customer |                    |         |                       |                    |                               |            |           |
|----------|--------------------|---------|-----------------------|--------------------|-------------------------------|------------|-----------|
| id       | customer_name      | city_id | customer_address      | contact_person     | email                         | phone      | is_active |
| 1        | Drogerie Wien      | 1       | Deckergasse 15A       | Emil Steinbach     | emil@drogeriewien.com         | 094234234  | 1         |
| 2        | Cosmetics Store    | 4       | Watling Street 347    | Jeremy Corbyn      | jeremy@c-store.org            | 093923923  | 1         |
| 3        | Kosmetikstudio     | 3       | Rothenbaumchaussee 53 | Willy Brandt       | willy@kosmetikstudio.com      | 0941562222 | 0         |
| 4        | Neue Kosmetik      | 1       | Karlsplatz 2          | NULL               | info@neuekosmetik.com         | 094109253  | 1         |
| 5        | Bio Kosmetik       | 2       | Motzstraße 23         | Clara Zetkin       | clara@biokosmetik.org         | 093825825  | 1         |
| 6        | K-Wien             | 1       | Kärntner Straße 204   | Maria Rauch-Kallat | maria@kwien.org               | 093427002  | 1         |
| 7        | Natural Cosmetics  | 4       | Clerkenwell Road 14B  | Glenda Jackson     | glena.j@natural-cosmetics.com | 093555123  | 1         |
| 8        | Kosmetik Plus      | 2       | Unter den Linden 1    | Angela Merkel      | angela@k-plus.com             | 094727727  | 1         |
| 9        | New Line Cosmetics | 4       | Devonshire Street 92  | Oliver Cromwell    | oliver@nlc.org                | 093202404  | 0         |

| user_account |            |           |            |                                  |                      |            |           |
|--------------|------------|-----------|------------|----------------------------------|----------------------|------------|-----------|
| id           | first_name | last_name | user_name  | password                         | email                | phone      | is_active |
| 1            | Jürgen     | Klopp     | jklopp     | d0406ee29d848474a1897058df4634ad | jklopp@gmail.com     | 0933336777 | 1         |
| 2            | José       | Mourinho  | jmourinho  | 64bd7f38bef780050096bfb872084ac7 | jmourinho@gmail.com  | 093825125  | 1         |
| 3            | Josep      | Guardiola | jpuardiola | 98a87d2631b766915c9d1bf584c3fd7b | jpuardiola@gmail.com | NULL       | 1         |
| 4            | Alex       | Ferguson  | aferguson  | bda97a3a31b44206e6bc3d5f40f6023e | aferguson@gmail.com  | 093925645  | 0         |

| contact |                 |             |                 |                    |                              |                       |                   |
|---------|-----------------|-------------|-----------------|--------------------|------------------------------|-----------------------|-------------------|
| id      | user_account_id | customer_id | contact_type_id | contact_outcome_id | additional_comment           | initiated_by_customer | initiated_by_user |
| 1       | 4               | 7           | 1               | 4                  | customer agreed to our offer | 0                     | 1                 |
| 2       | 1               | 2           | 1               | 1                  | don't want our products      | 0                     | 1                 |
| 3       | 2               | 9           | 1               | 4                  | interested in our offer      | 0                     | 1                 |
| 4       | 3               | 1           | 1               | 2                  | call him tomorrow            | 0                     | 1                 |
| 5       | 1               | 6           | 1               | 4                  | purchased our products       | 0                     | 1                 |
| 6       | 4               | 3           | 1               | 4                  | customer agreed to our offer | 0                     | 1                 |
| 7       | 3               | 5           | 1               | 4                  | loves our products           | 0                     | 1                 |
| 8       | 4               | 4           | 1               | 4                  | customer agreed to our offer | 0                     | 1                 |
| 9       | 3               | 8           | 1               | 3                  | call him next month          | 0                     | 1                 |
| 10      | 4               | 7           | 2               | 2                  | call him next month          | 0                     | 1                 |
| 11      | 3               | 9           | 3               | 3                  | visit him next week          | 0                     | 1                 |

The pair of agents and customers represented by (user\_account\_id, customer\_id) who have been in contact more than once is (4, 7) only and have contacted each other twice.