NIM   : *<isi dengan NIM>*
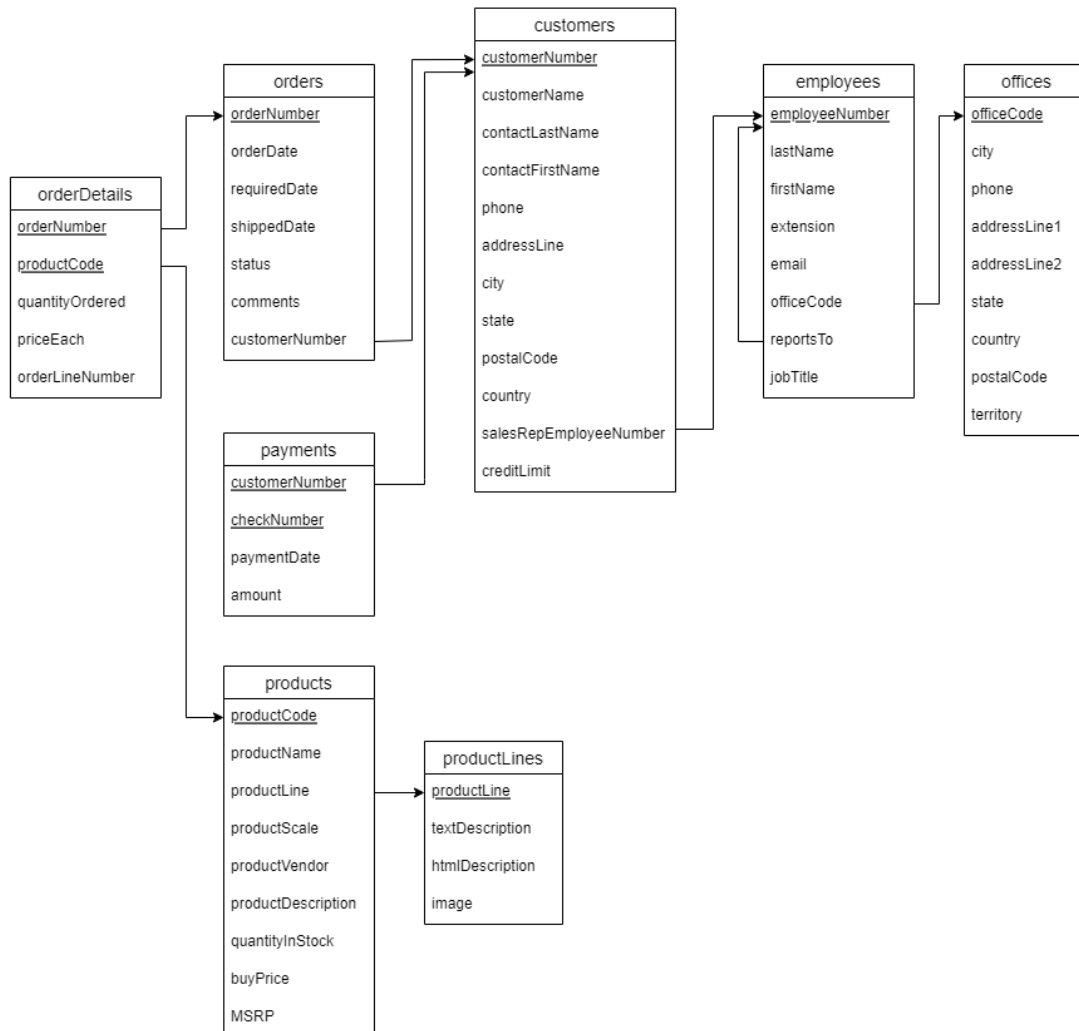Nama : *<isi dengan nama lengkap>*
Kelas : *<contoh: K0>*

Pembahasan Praktikum 2 IF2240 Basis Data

Materi: SQL (Part 2 & Part 3)

I.   Skema Basis Data

Diberikan skema basis data sebagai berikut, yang tersimpan dalam database `prak2`.
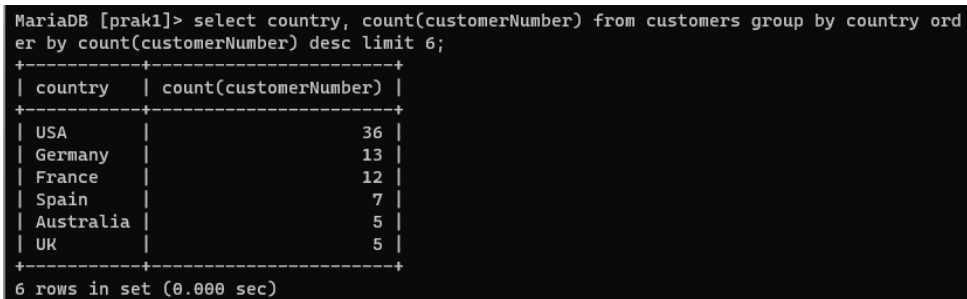Database ini memiliki isi yang sama dengan database `prak1`.

II. Soal

1. Buatlah query yang menampilkan 6 negara dengan pelanggan terbanyak terurut menurun berdasarkan jumlah pelanggan.
   (clue: Gunakan LIMIT untuk membatasi jumlah *rows* yang ditampilkan)

QUERY:
```
SELECT country, COUNT(customerNumber)
FROM customers
GROUP BY country
ORDER BY count(customerNumber) DESC
LIMIT 6;
```

SCREENSHOT:
```
MariaDB [prak1]> select country, count(customerNumber) from customers group by country ord
er by count(customerNumber) desc limit 6;
+-----------+-----------------------+
| country   | count(customerNumber) |
+-----------+-----------------------+
| USA       |                    36 |
| Germany   |                    13 |
| France    |                    12 |
| Spain     |                     7 |
| Australia |                     5 |
| UK        |                     5 |
+-----------+-----------------------+
6 rows in set (0.000 sec)
```

2. Tuliskan query yang memberikan nama customer, nama lengkap kontak pelanggan tersebut, negara, tanggal, serta jumlah pembayaran (amount) yang dilakukan pada April 2005!
   (clue: gunakan CONCAT() untuk menggabungkan string, YEAR() dan MONTH() untuk mengambil tahun dan bulan dari tanggal)

QUERY:
```
SELECT
    customerName,
    CONCAT(contactFirstName, ' ', contactLastName) AS contactName,
    country,
    paymentDate,
    amount
FROM
    customers natural inner join payments
WHERE
    YEAR(paymentDate) = 2005 and MONTH(paymentDate) = 4
```

SCREENSHOT:

```
MariaDB [prak2]> SELECT
    ->      customerName,
    ->      CONCAT(contactFirstName, ' ', contactLastName) AS contactName,
    ->      country,
    ->      paymentDate,
    ->      amount
    -> FROM
    ->      customers natural inner join payments
    -> WHERE
    ->      YEAR(paymentDate) = 2005 and MONTH(paymentDate) = 4
    -> ;
+-----------------------------+--------------------+-----------+-------------+----------+
| customerName                | contactName        | country   | paymentDate | amount   |
+-----------------------------+--------------------+-----------+-------------+----------+
| Mini Gifts Distributors Ltd.| Susan Nelson       | USA       | 2005-04-16  | 83598.04 |
| Anna's Decorations, Ltd     | Anna O'Hara        | Australia | 2005-04-30  | 29848.52 |
| Auto Canal+ Petit           | Dominique Perrier  | France    | 2005-04-23  | 12190.85 |
| Scandinavian Gift Ideas     | Martha Larsson     | Sweden    | 2005-04-18  | 27966.54 |
| FunGiftIdeas.com            | Violeta Benitez    | USA       | 2005-04-15  | 30293.77 |
+-----------------------------+--------------------+-----------+-------------+----------+
5 rows in set (0,001 sec)
```

3. Buatlah query untuk menampilkan nama customer yang mengandung nama "Mini" beserta jumlah dari seluruh produk yang pernah mereka pesan. Urutkan berdasarkan customer dengan jumlah pemesanan produk terbanyak.

QUERY:
```
SELECT customerName, SUM(quantityOrdered)
FROM customers as c, orders as o, orderdetails as od
WHERE customerName like '%Mini%'AND c.customerNumber = o.customerNumber AND
o.orderNumber = od.orderNumber
GROUP BY customerName
ORDER BY SUM(quantityOrdered) DESC;
```

SCREENSHOT:
```
MariaDB [prak2]> SELECT customerName, SUM(quantityOrdered)
    -> FROM customers as c, orders as o, orderdetails as od
    -> WHERE customerName like '%Mini%'AND c.customerNumber = o.customerNumber AND o.orderNumber = od.orderNumber
    -> GROUP BY customerName
    -> ORDER BY SUM(quantityOrdered) DESC;
+-----------------------------+----------------------+
| customerName                | SUM(quantityOrdered) |
+-----------------------------+----------------------+
| Mini Gifts Distributors Ltd.|                 6366 |
| Mini Creations Ltd.         |                 1140 |
| Baane Mini Imports          |                 1082 |
| Collectable Mini Designs Co.|                  954 |
| Mini Classics               |                  929 |
| Marseille Mini Autos        |                  804 |
| Mini Caravy                 |                  779 |
| Mini Wheels Co.             |                  692 |
| Online Mini Collectables    |                  572 |
| Mini Auto Werke             |                  532 |
+-----------------------------+----------------------+
10 rows in set (0,002 sec)
```

4. Buatlah query untuk menampilkan nama depan pegawai dan kode kantor pegawai yang telah melayani lebih dari 7 pelanggan. Tampilkan juga banyak pelanggan yang dilayani dan urutkan mengecil berdasarkan banyak pelanggan dilayani.

QUERY:

```
SELECT e.firstName, o.officeCode, COUNT(c.customerNumber) as numOfCustomers
FROM
        offices as o
        INNER JOIN employees as e ON e.officeCode = o.officeCode
        INNER JOIN customers as c ON c.salesRepEmployeeNumber =
e.employeeNumber
GROUP BY employeeNumber
HAVING numOfCustomers > 7
ORDER BY numOfCustomers DESC;
```

SCREENSHOT:

```
MariaDB [prak2]> SELECT e.firstName, o.officeCode, COUNT(c.customerNumber) as numOfCustomers
    -> FROM
    -> offices as o
    -> INNER JOIN employees as e ON e.officeCode = o.officeCode
    -> INNER JOIN customers as c ON c.salesRepEmployeeNumber = e.employeeNumber
    -> GROUP BY employeeNumber
    -> HAVING numOfCustomers > 7
    -> ORDER BY numOfCustomers DESC;
+-----------+------------+----------------+
| firstName | officeCode | numOfCustomers |
+-----------+------------+----------------+
| Pamela    | 4          |             10 |
| Barry     | 7          |              9 |
| George    | 3          |              8 |
| Larry     | 7          |              8 |
+-----------+------------+----------------+
4 rows in set (0,001 sec)
```

5. Buatlah query untuk menampilkan nomor pegawai, nama lengkap pegawai (firstName dan lastName), dan alamat email dari pegawai yang melayani pelanggan dengan 2 pemesanan terbanyak. Tampilkan juga nama pelanggan dan jumlah pemesanan yang dilakukannya.

QUERY:
```
SELECT customerName, employeeNumber, firstName, lastName, email,
COUNT(orderNumber)
FROM customers as c, orders as o, employees as e
WHERE c.customerNumber = o.customerNumber AND c.salesRepEmployeeNumber =
e.employeeNumber
GROUP BY c.customerName
ORDER BY count(orderNumber) DESC
LIMIT 2;
```

SCREENSHOT:

```
MariaDB [prak2]> SELECT customerName, employeeNumber, firstName, lastName, email, COUNT(orderNumber)
    -> FROM customers as c, orders as o, employees as e
    -> WHERE c.customerNumber = o.customerNumber AND c.salesRepEmployeeNumber = e.employeeNumber
    -> GROUP BY c.customerName
    -> ORDER BY count(orderNumber) DESC
    -> LIMIT 2;
+----------------------------+----------------+-----------+-----------+-------------------------------+--------------------+
| customerName               | employeeNumber | firstName | lastName  | email                         | COUNT(orderNumber) |
+----------------------------+----------------+-----------+-----------+-------------------------------+--------------------+
| Euro+ Shopping Channel     |           1370 | Gerard    | Hernandez | ghernande@classicmodelcars.com |                 26 |
| Mini Gifts Distributors Ltd. |         1165 | Leslie    | Jennings  | ljennings@classicmodelcars.com |                 17 |
+----------------------------+----------------+-----------+-----------+-------------------------------+--------------------+
2 rows in set (0,002 sec)
```
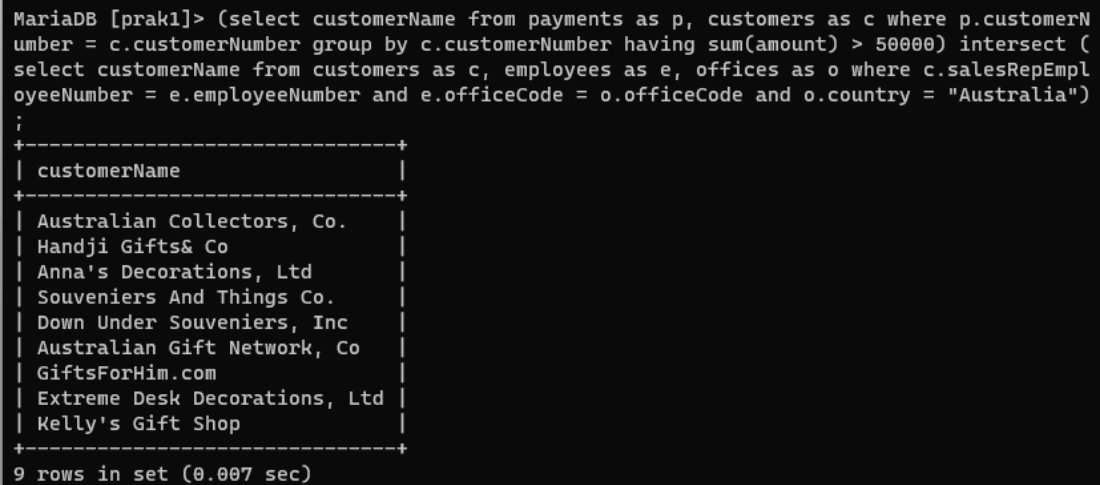
6. Buatlah query untuk menampilkan nama pelanggan yang memiliki total pembayaran lebih dari 50000 dan dilayani oleh pegawai yang bekerja di kantor yang terletak di negara "Australia".

QUERY:
```
(SELECT customerName
FROM
payments as p,
customers as c
WHERE p.customerNumber = c.customerNumber
GROUP BY
c.customerNumber
HAVING SUM(amount) > 50000)
INTERSECT
(SELECT customerName
FROM
customers AS c,
employees AS e,
offices AS o
WHERE
c.salesRepEmployeeNumber = e.employeeNumber AND e.officeCode = o.officeCode
AND o.country = "Australia");
```

SCREENSHOT:


```
MariaDB [prak1]> (select customerName from payments as p, customers as c where p.customerN
umber = c.customerNumber group by c.customerNumber having sum(amount) > 50000) intersect (
select customerName from customers as c, employees as e, offices as o where c.salesRepEmpl
oyeeNumber = e.employeeNumber and e.officeCode = o.officeCode and o.country = "Australia")
;
+-----------------------------+
| customerName                |
+-----------------------------+
| Australian Collectors, Co.  |
| Handji Gifts& Co            |
| Anna's Decorations, Ltd     |
| Souveniers And Things Co.   |
| Down Under Souveniers, Inc  |
| Australian Gift Network, Co |
| GiftsForHim.com             |
| Extreme Desk Decorations, Ltd |
| Kelly's Gift Shop           |
+-----------------------------+
9 rows in set (0.007 sec)
```

---

7. Buatlah query untuk menampilkan nomor order dan nama produk dengan kategori "Classic Cars" yang pernah dipesan dengan harga jual yang memberikan keuntungan 35-36% atau 104-105%. Tampilkan juga persentase keuntungan dari pemesanan produk tersebut serta urutkan mengecil berdasarkan persentase tersebut.

QUERY:
```
SELECT DISTINCT od.orderNumber, p.productName,
(priceEach-buyPrice)/buyPrice*100 AS "keuntungan"
FROM
      orderdetails as od,
      products as p,
```

```
        productlines as pl
WHERE
        od.productCode = p.productCode
        AND p.productLine = pl.productLine
        AND pl.productLine = "Classic Cars"
HAVING (keuntungan > 104 AND keuntungan < 105) OR (keuntungan > 35 AND
keuntungan < 36)
ORDER BY keuntungan DESC;
```

SCREENSHOT:

```
MariaDB [prak2]> SELECT DISTINCT od.orderNumber, p.productName, (priceEach-buyPrice)/buyPrice*100 AS "keuntungan"
    -> FROM
    -> orderdetails as od,
    -> products as p,
    -> productlines as pl
    -> WHERE
    -> od.productCode = p.productCode
    -> AND p.productLine = pl.productLine
    -> AND pl.productLine = "Classic Cars"
    -> HAVING (keuntungan > 104 AND keuntungan < 105) OR (keuntungan > 35 AND keuntungan < 36)
    -> ORDER BY keuntungan DESC;
+-------------+-------------------------------------+------------+
| orderNumber | productName                         | keuntungan |
+-------------+-------------------------------------+------------+
|       10419 | 1999 Indy 500 Monte Carlo SS        | 104.651163 |
|       10203 | 1982 Lamborghini Diablo             | 104.618227 |
|       10147 | 1982 Lamborghini Diablo             | 104.618227 |
|       10310 | 1982 Lamborghini Diablo             | 104.618227 |
|       10192 | 1982 Lamborghini Diablo             | 104.618227 |
|       10266 | 1948 Porsche Type 356 Roadster      | 104.552767 |
|       10343 | 1948 Porsche Type 356 Roadster      | 104.552767 |
|       10424 | 1952 Alpine Renault 1300            | 104.341651 |
|       10304 | 1952 Alpine Renault 1300            | 104.341651 |
|       10247 | 2001 Ferrari Enzo                   | 104.341458 |
|       10117 | 2001 Ferrari Enzo                   | 104.341458 |
|       10185 | 2001 Ferrari Enzo                   | 104.341458 |
|       10150 | 1982 Camaro Z28                     | 104.341285 |
|       10310 | 1992 Ferrari 360 Spider red         | 104.338896 |
|       10159 | 1957 Corvette Convertible           | 104.275704 |
|       10260 | 1969 Ford Falcon                    | 104.166165 |
|       10282 | 1969 Ford Falcon                    | 104.166165 |
|       10127 | 1969 Ford Falcon                    | 104.166165 |
|       10314 | 1969 Ford Falcon                    | 104.166165 |
|       10204 | 1957 Ford Thunderbird               | 104.150833 |
|       10404 | 1968 Dodge Charger                  |  35.936668 |
|       10253 | 1968 Dodge Charger                  |  35.936668 |
|       10320 | 1968 Dodge Charger                  |  35.936668 |
|       10394 | 1970 Triumph Spitfire               |  35.933420 |
|       10288 | 1970 Chevy Chevelle SS 454          |  35.824533 |
|       10380 | 1970 Chevy Chevelle SS 454          |  35.824533 |
|       10254 | 1970 Chevy Chevelle SS 454          |  35.824533 |
|       10239 | 1956 Porsche 356A Coupe             |  35.717192 |
|       10203 | 1948 Porsche 356-A Roadster         |  35.714286 |
|       10278 | 1948 Porsche 356-A Roadster         |  35.714286 |
|       10287 | 1993 Mazda RX-7                     |  35.588552 |
|       10393 | 1998 Chrysler Plymouth Prowler      |  35.484189 |
|       10407 | 1952 Citroen-15CV                   |  35.471024 |
|       10173 | 1952 Citroen-15CV                   |  35.471024 |
+-------------+-------------------------------------+------------+
34 rows in set (0,012 sec)
```

8. Buatlah query untuk menampilkan nomor pelanggan, nama pelanggan, rata-rata nominal dari semua pembayaran yang dilakukan pelanggan tersebut, dan banyak transaksi yang telah dilakukan oleh pelanggan dengan total semua pembayaran melebihi 500000. Urutkan mengecil berdasarkan banyak transaksi.

QUERY:

```
SELECT c.customerNumber, c.customerName, COUNT(p.checkNumber) as
countPayments
FROM
        customers as c
        INNER JOIN payments as p ON p.customerNumber = c.customerNumber
GROUP BY p.customerNumber
HAVING SUM(p.amount) > 500000
ORDER BY countPayments DESC;
```

SCREENSHOT:

```
MariaDB [prak2]> SELECT c.customerNumber, c.customerName, COUNT(p.checkNumber) as countPayments
    -> FROM
    -> customers as c
    -> INNER JOIN payments as p ON p.customerNumber = c.customerNumber
    -> GROUP BY p.customerNumber
    -> HAVING SUM(p.amount) > 500000
    -> ORDER BY countPayments DESC;
+----------------+---------------------------+---------------+
| customerNumber | customerName              | countPayments |
+----------------+---------------------------+---------------+
|            141 | Euro+ Shopping Channel    |            13 |
|            124 | Mini Gifts Distributors Ltd. |         9 |
+----------------+---------------------------+---------------+
2 rows in set (0,001 sec)
```

9. Buatlah query yang menampilkan nama customer, nama lengkap kontak customer tersebut, serta nomor telpon dari customer yang belum pernah membuat pesanan sama sekali! Nama lengkap kontak customer dibuat dalam kolom contactName yang terdiri dari nama depan dan nama belakang kontak tersebut (jangan lupa spasi).

QUERY:
```
SELECT
    customerName, CONCAT(contactFirstName, ' ', contactLastName)
contactName, phoneNumber
FROM
    customers
WHERE customerNumber not in (
    SELECT
        customerNumber
    FROM
        orders
);
```

SCREENSHOT:

```
MariaDB [prak1]> select customerName, concat(contactFirstName, ' ', contactLastName) contactName, phone from customer
s where customerNumber not in (select customerNumber from orders);
+-------------------------------+------------------------+------------------+
| customerName                  | contactName            | phone            |
+-------------------------------+------------------------+------------------+
| Havel & Zbyszek Co            | Zbyszek  Piestrzeniewicz | (26) 642-7555  |
| American Souvenirs Inc        | Keith Franco           | 2035557845       |
| Porto Imports Co.             | Isabel  de Castro      | (1) 356-5555     |
| Asian Shopping Network, Co    | Brydey Walker          | +612 9411 1555   |
| Nat??rlich Autos              | Horst  Kloss           | 0372-555188      |
| ANG Resellers                 | Alejandra  Camino      | (91) 745 6555    |
| Messner Shopping Network      | Renate  Messner        | 069-0555984      |
| Franken Gifts, Co             | Peter  Franken         | 089-0877555      |
| BG&E Collectables             | Ed Harrison            | +41 26 425 50 01 |
| Schuyler Imports              | Bradley Schuyler       | +31 20 491 9555  |
| Der Hund Imports              | Mel Andersen           | 030-0074555      |
| Cramer Spezialit?ñten, Ltd    | Philip  Cramer         | 0555-09555       |
| Asian Treasures, Inc.         | Patricia  McKenna      | 2967 555         |
| SAR Distributors, Co          | Armand Kuger           | +27 21 550 3555  |
| Kommission Auto               | Karin Josephs          | 0251-555259      |
| Lisboa Souveniers, Inc        | Lino  Rodriguez        | (1) 354-2555     |
| Precious Collectables         | Braun Urs              | 0452-076555      |
| Stuttgart Collectable Exchange | Rita  M??ller         | 0711-555361      |
| Feuer Online Stores, Inc      | Alexander  Feuer       | 0342-555176      |
| Warburg Exchange              | Sven  Ottlieb          | 0241-039123      |
| Anton Designs, Ltd.           | Carmen Anton           | +34 913 728555   |
| Mit Vergn??gen & Co.          | Hanna  Moos            | 0621-08555       |
| Kremlin Collectables, Co.     | Alexander  Semenov     | +7 812 293 0521  |
| Raanan Stores, Inc            | Raanan Altagar,G M     | + 972 9 959 8555 |
+-------------------------------+------------------------+------------------+
24 rows in set (0,001 sec)
```

10. Buatlah *query* yang menampilkan nomor customer dan nama customer yang pernah memesan salah satu atau beberapa di antara 3 produk dengan jumlah order tertinggi. Penentuan produk dengan jumlah order tertinggi dibatasi dalam *range* antara 900 dan 950 order. Nomor customer dan nama customer ditampilkan secara unik.
(clue: Gunakan LIMIT untuk membatasi jumlah *rows* yang ditampilkan)

QUERY:
```
SELECT DISTINCT customerNumber, customerName
FROM customers
NATURAL INNER JOIN orders
NATURAL INNER JOIN orderdetails AS od
INNER JOIN
(SELECT productCode FROM
(SELECT productCode, SUM(quantityOrdered) as sumQuant
FROM orderdetails
GROUP BY productCode) AS X
WHERE sumQuant BETWEEN 900 AND 950
ORDER BY sumQuant DESC LIMIT 3)
AS Y
ON od.productCode = Y.productCode;
```

SCREENSHOT:

```
MariaDB [prak2]> SELECT DISTINCT customerNumber, customerName
    -> FROM customers
    -> NATURAL INNER JOIN orders
    -> NATURAL INNER JOIN orderdetails AS od
    -> INNER JOIN
    -> (SELECT productCode FROM
    -> (SELECT productCode, SUM(quantityOrdered) as sumQuant
    -> FROM orderdetails
    -> GROUP BY productCode) AS X
    -> WHERE sumQuant BETWEEN 900 AND 950
    -> ORDER BY sumQuant DESC LIMIT 3)
    -> AS Y
    -> ON od.productCode = Y.productCode;
+----------------+-------------------------------+
| customerNumber | customerName                  |
+----------------+-------------------------------+
|            187 | AV Stores, Co.                |
|            112 | Signal Gift Stores            |
|            496 | Kelly's Gift Shop             |
|            276 | Anna's Decorations, Ltd       |
|            227 | Heintze Collectables          |
|            175 | Gift Depot Inc.               |
|            124 | Mini Gifts Distributors Ltd.  |
|            363 | Online Diecast Creations Co.  |
|            151 | Muscle Machine Inc            |
|            141 | Euro+ Shopping Channel        |
|            146 | Saveley & Henriot, Co.        |
|            209 | Mini Caravy                   |
|            323 | Down Under Souveniers, Inc    |
|            166 | Handji Gifts& Co              |
|            201 | UK Collectables, Ltd.         |
|            462 | FunGiftIdeas.com              |
|            450 | The Sharp Gifts Warehouse     |
|            282 | Souveniers And Things Co.     |
|            486 | Motor Mint Distributors Inc.  |
|            103 | Atelier graphique             |
|            353 | Reims Collectables            |
|            167 | Herkku Gifts                  |
|            239 | Collectable Mini Designs Co.  |
|            177 | Osaka Souveniers Co.          |
|            386 | L'ordine Souveniers           |
|            298 | Vida Sport, Ltd               |
|            299 | Norway Gifts By Mail, Co.     |
|            205 | Toys4GrownUps.com             |
|            145 | Danish Wholesale Imports      |
|            382 | Salzburg Collectables         |
|            350 | Marseille Mini Autos          |
|            242 | Alpha Cognac                  |
|            233 | Qu??bec Home Shopping Network  |
|            259 | Toms Spezialit?nten, Ltd      |
|            114 | Australian Collectors, Co.    |
|            250 | Lyon Souveniers               |
|            320 | Mini Creations Ltd.           |
|            186 | Toys of Finland, Co.          |
+----------------+-------------------------------+
38 rows in set (0,009 sec)
```

III. Soal Susulan Praktikum

1. Buatlah query yang menampilkan tahun, banyak customer, serta jumlah total `payment` untuk tiap tahunnya!
   (clue: gunakan YEAR() untuk mengambil tahun dari tipe data DATE)

QUERY:

```
SELECT YEAR(paymentDate), COUNT(customerNumber), SUM(amount)
FROM payments
GROUP BY YEAR(paymentDate)
```

SCREENSHOT:

```
MariaDB [prak2]> SELECT YEAR(paymentDate), COUNT(customerNumber), sum(amount)
    → FROM payments
    → GROUP BY YEAR(paymentDate)
    → ;
+-------------------+------------------------+-------------+
| YEAR(paymentDate) | COUNT(customerNumber)  | sum(amount) |
+-------------------+------------------------+-------------+
|              2003 |                    100 |  3250217.70 |
|              2004 |                    136 |  4313328.25 |
|              2005 |                     37 |  1290293.28 |
+-------------------+------------------------+-------------+
3 rows in set (0.001 sec)
```

2. Buatlah query yang menampilkan daftar employee yang memiliki nama belakang yang sama serta banyak employee yang memiliki nama belakang tersebut! Simpan kolom nama belakang tersebut sebagai kolom count.

QUERY:
SELECT lastName, COUNT(employeeNumber) count
FROM employees
GROUP BY lastName
HAVING COUNT(employeeNumber)>1

SCREENSHOT:

```
MariaDB [prak2]> select lastName, count(employeeNumber) count from employees group by lastName having count(employeeNumber)>1;
+-----------+-------+
| lastName  | count |
+-----------+-------+
| Bondur    |     2 |
| Firrelli  |     2 |
| Patterson |     3 |
+-----------+-------+
3 rows in set (0.001 sec)
```

3. Buatlah query untuk menampilkan nama produk dengan harga beli melebihi rata-rata harga beli dari semua produk. Tampilkan juga harga beli dari produk tersebut dan urutkan membesar berdasarkan harga beli.

QUERY:
SELECT productName, buyPrice
FROM products
WHERE buyPrice > (SELECT AVG(buyPrice) FROM products)
ORDER BY buyPrice

SCREENSHOT:

```
+---------------------------------------+----------+
| productName                           | buyPrice |
+---------------------------------------+----------+
| F/A 18 Hornet 1/72                    |    54.40 |
| 1957 Chevy Pickup                     |    55.70 |
| 1974 Ducati 350 Mk3 Desmo             |    56.13 |
| 1999 Indy 500 Monte Carlo SS          |    56.76 |
| 1985 Toyota Supra                     |    57.01 |
| 1936 Chrysler Airflow                 |    57.46 |
| 1917 Maxwell Touring Car              |    57.54 |
| 1940 Ford Pickup Truck                |    58.33 |
| 1932 Model A Ford J-Coupe             |    58.48 |
| 1969 Dodge Charger                    |    58.73 |
| ATA: B757-300                         |    59.33 |
| 1937 Lincoln Berline                  |    60.62 |
| 18th Century Vintage Horse Carriage   |    60.74 |
| 1913 Ford Model T Speedster           |    60.78 |
| 1997 BMW R 1100 S                     |    60.86 |
| 1962 Volkswagen Microbus              |    61.34 |
| 2002 Chevy Corvette                   |    62.11 |
| 1948 Porsche Type 356 Roadster        |    62.16 |
| 1941 Chevrolet Special Deluxe Cabriolet |  64.58 |
| 1965 Aston Martin DB5                 |    65.96 |
| 2002 Suzuki XREO                      |    66.27 |
| 1928 British Royal Navy Airplane      |    66.74 |
| 1997 BMW F650 ST                      |    66.92 |
| Collectable Wooden Train              |    67.56 |
| Diamond T620 Semi-Skirted Tanker      |    68.29 |
| 1903 Ford Model A                     |    68.30 |
| America West Airlines B757-200        |    68.80 |
| 1996 Moto Guzzi 1100i                 |    68.99 |
| 1992 Porsche Cayenne Turbo Silver     |    69.78 |
| 1957 Corvette Convertible             |    69.93 |
| 1928 Mercedes-Benz SSK                |    72.56 |
| 1952 Citroen-15CV                     |    72.82 |
| 1976 Ford Gran Torino                 |    73.49 |
| 1964 Mercedes Tour Bus                |    74.86 |
| 1968 Dodge Charger                    |    75.16 |
| 1980s Black Hawk Helicopter           |    77.27 |
| 1992 Ferrari 360 Spider red           |    77.90 |
| 1958 Setra Bus                        |    77.90 |
| 18th century schooner                 |    82.34 |
| 1969 Ford Falcon                      |    83.05 |
| 1993 Mazda RX-7                       |    83.51 |
| 1940s Ford truck                      |    84.76 |
| 1972 Alfa Romeo GTA                   |    85.68 |
| 1917 Grand Touring Sedan              |    86.70 |
| 1969 Corvair Monza                    |    89.14 |
+---------------------------------------+----------+
| 1969 Corvair Monza                    |    89.14 |
| 2003 Harley-Davidson Eagle Drag Bike  |    91.02 |
| 1970 Triumph Spitfire                 |    91.92 |
| 1995 Honda Civic                      |    93.89 |
| 1968 Ford Mustang                     |    95.34 |
| 2001 Ferrari Enzo                     |    95.59 |
| 1956 Porsche 356A Coupe               |    98.30 |
| 1952 Alpine Renault 1300              |    98.58 |
| 1998 Chrysler Plymouth Prowler        |   101.51 |
| 1962 LanciaA Delta 16V                |   103.42 |
+---------------------------------------+----------+
54 rows in set (0.002 sec)
```

4. Buatlah query untuk menampilkan kode dan nama dari produk dengan productLine mengandung kata 'Cars' yang pernah dipesan oleh pelanggan yang pernah melakukan pembayaran lebih dari 10 kali.

QUERY:

```
SELECT productCode, productName
FROM products
WHERE products.productCode IN
        (SELECT od.productCode
        FROM payments as p
        NATURAL INNER JOIN customers as c
        NATURAL INNER JOIN orders as o
        NATURAL INNER JOIN orderDetails as od
        GROUP BY c.customerNumber
        HAVING count(p.checkNumber) > 10)
AND productLine LIKE '%Cars%';
```

SCREENSHOT:

```
+-------------+----------------------------------+
| productCode | productName                      |
+-------------+----------------------------------+
| S10_1949    | 1952 Alpine Renault 1300         |
| S10_4757    | 1972 Alfa Romeo GTA              |
| S10_4962    | 1962 LanciaA Delta 16V           |
| S12_1099    | 1968 Ford Mustang                |
| S12_1108    | 2001 Ferrari Enzo                |
| S12_3148    | 1969 Corvair Monza               |
| S12_3380    | 1968 Dodge Charger               |
| S18_1129    | 1993 Mazda RX-7                  |
| S18_1342    | 1937 Lincoln Berline             |
| S18_1589    | 1965 Aston Martin DB5            |
| S18_1749    | 1917 Grand Touring Sedan         |
| S18_2325    | 1932 Model A Ford J-Coupe        |
| S18_3140    | 1903 Ford Model A                |
| S18_4027    | 1970 Triumph Spitfire            |
| S24_3151    | 1912 Ford Model T Delivery Wagon |
| S24_3969    | 1936 Mercedes Benz 500k Roadster |
| S50_1341    | 1930 Buick Marquette Phaeton     |
+-------------+----------------------------------+
17 rows in set (0.023 sec)
```

5. Buatlah query untuk menampilkan nama customer yang mengandung "Gift" beserta jumlah dari seluruh produk yang pernah mereka pesan. Urutkan berdasarkan customer dengan jumlah pemesanan produk terkecil.

QUERY:
```
SELECT customerName, SUM(quantityOrdered)
FROM customers as c, orders as o, orderdetails as od
WHERE customerName like '%Gift%'AND c.customerNumber = o.customerNumber
AND o.orderNumber = od.orderNumber
GROUP BY customerName
ORDER BY SUM(quantityOrdered) DESC;
```

SCREENSHOT:

```
+--------------------------------+----------------------+
| customerName                   | SUM(quantityOrdered) |
+--------------------------------+----------------------+
| Mini Gifts Distributors Ltd.   |                 6366 |
| La Rochelle Gifts              |                 1832 |
| The Sharp Gifts Warehouse      |                 1656 |
| Rovelli Gifts                  |                 1650 |
| Kelly's Gift Shop              |                 1647 |
| Corporate Gift Ideas Co.       |                 1447 |
| Scandinavian Gift Ideas        |                 1359 |
| Handji Gifts& Co               |                 1236 |
| Gifts4AllAges.com              |                 1036 |
| GiftsForHim.com                |                 1003 |
| Herkku Gifts                   |                  973 |
| Signal Gift Stores             |                  929 |
| Gift Depot Inc.                |                  903 |
| FunGiftIdeas.com               |                  903 |
| giftsbymail.co.uk              |                  895 |
| Norway Gifts By Mail, Co.      |                  787 |
| Canadian Gift Exchange Network |                  703 |
| Classic Gift Ideas, Inc        |                  668 |
| Gift Ideas Corp.               |                  666 |
| Iberia Gift Imports, Corp.     |                  589 |
| Australian Gift Network, Co    |                  545 |
| Double Decker Gift Stores, Ltd |                  357 |
+--------------------------------+----------------------+
22 rows in set (0.003 sec)
```

6. Buatlah query untuk menampilkan nomor pegawai, nama lengkap pegawai (firstName dan lastName), dan alamat email dari pegawai yang melayani pelanggan dengan 5 pemesanan paling sedikit. Tampilkan juga nama pelanggan dan jumlah pemesanan yang dilakukannya.

QUERY:
SELECT customerName, employeeNumber, firstName, lastName, email,
COUNT(orderNumber)
FROM customers as c, orders as o, employees as e
WHERE c.customerNumber = o.customerNumber AND c.salesRepEmployeeNumber
= e.employeeNumber
GROUP BY c.customerName
ORDER BY count(orderNumber) ASC
LIMIT 5;

SCREENSHOT:

```
+-------------------------------------+----------------+-----------+----------+-------------------------------+--------------------+
| customerName                        | employeeNumber | firstName | lastName | email                         | COUNT(orderNumber) |
+-------------------------------------+----------------+-----------+----------+-------------------------------+--------------------+
| Bavarian Collectables Imports, Co.  |           1504 | Barry     | Jones    | bjones@classicmodelcars.com   |                  1 |
| Amica Models & Co.                  |           1401 | Pamela    | Castillo | pcastillo@classicmodelcars.com|                  2 |
| Canadian Gift Exchange Network      |           1323 | George    | Vanauf   | gvanauf@classicmodelcars.com  |                  2 |
| giftsbymail.co.uk                   |           1501 | Larry     | Bott     | lbott@classicmodelcars.com    |                  2 |
| West Coast Collectables Co.         |           1166 | Leslie    | Thompson | lthompson@classicmodelcars.com|                  2 |
+-------------------------------------+----------------+-----------+----------+-------------------------------+--------------------+
```

7. Buatlah query untuk menampilkan nomor order dan nama produk dengan kategori "Vintage Cars" yang memberikan keuntungan 106-107% serta dibeli pada tahun 2004. Tampilkan juga persentase keuntungan dari pemesanan produk tersebut serta urutkan mengecil berdasarkan persentase tersebut.

QUERY:
SELECT DISTINCT orderNumber, productName, (priceEach-buyPrice)/buyPrice*100 AS "keuntungan"
FROM
orders NATURAL JOIN orderDetails NATURAL JOIN products

WHERE
productLine = "Vintage Cars"
AND YEAR(orderDate) = 2004
HAVING (keuntungan > 106 AND keuntungan < 107)
ORDER BY keuntungan DESC;

SCREENSHOT:
```
+-------------+---------------------------------------+------------+
| orderNumber | productName                           | keuntungan |
+-------------+---------------------------------------+------------+
|       10312 | 1928 Mercedes-Benz SSK                | 106.987321 |
|       10227 | 1936 Mercedes-Benz 500K Special Roadster | 106.677659 |
|       10322 | 1932 Model A Ford J-Coupe             | 106.515048 |
|       10353 | 1928 Ford Phaeton Deluxe              | 106.238643 |
+-------------+---------------------------------------+------------+
4 rows in set (0.00 sec)
```

8. Buatlah *query* untuk menampilkan seluruh nama customer yang tidak pernah melakukan pemesanan terhadap produk yang dipasok oleh vendor "Min Lin Diecast"!

QUERY:
SELECT customerName
FROM customers c1
WHERE NOT EXISTS
(SELECT *
FROM customers c2, orders o, orderdetails od, products p
WHERE c2.customerNumber = o.customerNumber AND o.orderNumber = od.orderNumber AND d od.productCode = p.productCode AND productVendor = "Min Lin Diecast" AND c1.customerNumber = c2.customerNumber);

9. Buatlah *query* untuk menampilkan nama produk yang harga belinya lebih mahal daripada harga satuan dari seluruh produk yang pernah dipesan oleh customer dengan nomor telepon "3105552373"!

QUERY:
```
SELECT productName
FROM products WHERE buyPrice > ALL
( SELECT priceEach
FROM customers c, orders o, orderdetails od
WHERE c.customerNumber = o.customerNumber AND o.ordernumber = od.orderNumber
AND c.phone = "3105552373" );
```

SCREENSHOT:

```
MariaDB [prak1]> select productName from products where buyPrice > all (select priceEach from customers c, o
rders o, orderdetails od where c.customerNumber = o.customerNumber and o.ordernumber = od.orderNumber and c.
phone = "3105552373");
+-------------------------------+
| productName                   |
+-------------------------------+
| 1962 LanciaA Delta 16V        |
| 1998 Chrysler Plymouth Prowler |
+-------------------------------+
2 rows in set (0.001 sec)
```

10. Buatlah *query* untuk menampilkan nomor customer, nama customer, limit kredit, dan nama lengkap employee yang melayaninya. Customer yang ditampilkan merupakan customer yang mempunyai *credit limit* yang lebih rendah daripada rata-rata *credit limit* customer dari negara USA. Nama lengkap employee merupakan gabungan antara nama depan dan nama belakangnya.
Clue: gunakan CONCAT untuk menggabungkan nama lengkap employee

QUERY:
WITH X(value) AS (SELECT AVG(creditLimit) FROM customers
WHERE country = 'USA')
SELECT c.customerNumber, customerName, creditLimit,
CONCAT(firstName, ' ', lastName) AS employeeName
FROM customers c
INNER JOIN employees e
ON c.salesRepEmployeeNumber = e.employeeNumber,
X WHERE creditLimit < X.value;

SCREENSHOT:

```
+--------------+---------------------------------+-------------+------------------+
| customerNumber | customerName                  | creditLimit | employeeName     |
+--------------+---------------------------------+-------------+------------------+
|          103 | Atelier graphique               |    21000.00 | Gerard Hernandez |
|          112 | Signal Gift Stores              |    71800.00 | Leslie Thompson  |
|          128 | Blauer See Auto, Co.            |    59700.00 | Barry Jones      |
|          129 | Mini Wheels Co.                 |    64600.00 | Leslie Jennings  |
|          144 | Volvo Model Replicas, Co        |    53100.00 | Barry Jones      |
|          168 | American Souvenirs Inc          |        0.00 | Foon Yue Tseng   |
|          173 | Cambridge Collectables Co.      |    43400.00 | Julie Firrelli   |
|          181 | Vitachrome Inc.                 |    76400.00 | Foon Yue Tseng   |
|          189 | Clover Collections, Co.         |    69400.00 | Barry Jones      |
|          198 | Auto-Moto Classics Inc.         |    23000.00 | Steve Patterson  |
|          204 | Online Mini Collectables        |    68700.00 | Julie Firrelli   |
|          209 | Mini Caravy                     |    53800.00 | Gerard Hernandez |
|          211 | King Kong Collectables, Co.     |    58600.00 | Mami Nishi       |
|          216 | Enaco Distributors              |    60300.00 | Martin Gerard    |
|          219 | Boards & Toys Co.               |    11000.00 | Leslie Thompson  |
|          233 | Qu??bec Home Shopping Network    |    48700.00 | Foon Yue Tseng   |
|          242 | Alpha Cognac                    |    61100.00 | Gerard Hernandez |
|          250 | Lyon Souveniers                 |    68100.00 | Loui Bondur      |
|          256 | Auto Associ??s & Cie.           |    77900.00 | Gerard Hernandez |
|          324 | Stylish Desk Decors, Co.        |    77000.00 | Larry Bott       |
|          328 | Tekni Collectables Inc.         |    43000.00 | George Vanauf    |
|          333 | Australian Gift Network, Co     |    51600.00 | Andy Fixter      |
|          344 | CAF Imports                     |    59600.00 | Martin Gerard    |
|          347 | Men 'R' US Retailers, Ltd.      |    57700.00 | Leslie Thompson  |
|          350 | Marseille Mini Autos            |    65000.00 | Loui Bondur      |
|          357 | GiftsForHim.com                 |    77700.00 | Peter Marsh      |
|          362 | Gifts4AllAges.com               |    41900.00 | Steve Patterson  |
|          376 | Precious Collectables           |        0.00 | Martin Gerard    |
|          379 | Collectables For Less Inc.      |    70700.00 | Julie Firrelli   |
|          381 | Royale Belge                    |    23500.00 | Pamela Castillo  |
|          382 | Salzburg Collectables           |    71700.00 | Pamela Castillo  |
|          415 | Bavarian Collectables Imports, Co. |  77000.00 | Barry Jones      |
|          424 | Classic Legends Inc.            |    67500.00 | Foon Yue Tseng   |
|          447 | Gift Ideas Corp.                |    49700.00 | George Vanauf    |
|          450 | The Sharp Gifts Warehouse       |    77600.00 | Leslie Jennings  |
|          452 | Mini Auto Werke                 |    45300.00 | Pamela Castillo  |
|          456 | Microscale Inc.                 |    39800.00 | Foon Yue Tseng   |
|          471 | Australian Collectables, Ltd    |    60300.00 | Andy Fixter      |
|          473 | Frau da Collezione              |    34800.00 | Pamela Castillo  |
|          475 | West Coast Collectables Co.     |    55400.00 | Leslie Thompson  |
|          484 | Iberia Gift Imports, Corp.      |    65700.00 | Martin Gerard    |
|          486 | Motor Mint Distributors Inc.    |    72600.00 | George Vanauf    |
|          487 | Signal Collectibles Ltd.        |    60300.00 | Leslie Jennings  |
|          489 | Double Decker Gift Stores, Ltd  |    43300.00 | Larry Bott       |
+--------------+---------------------------------+-------------+------------------+
44 rows in set (0.00 sec)
```