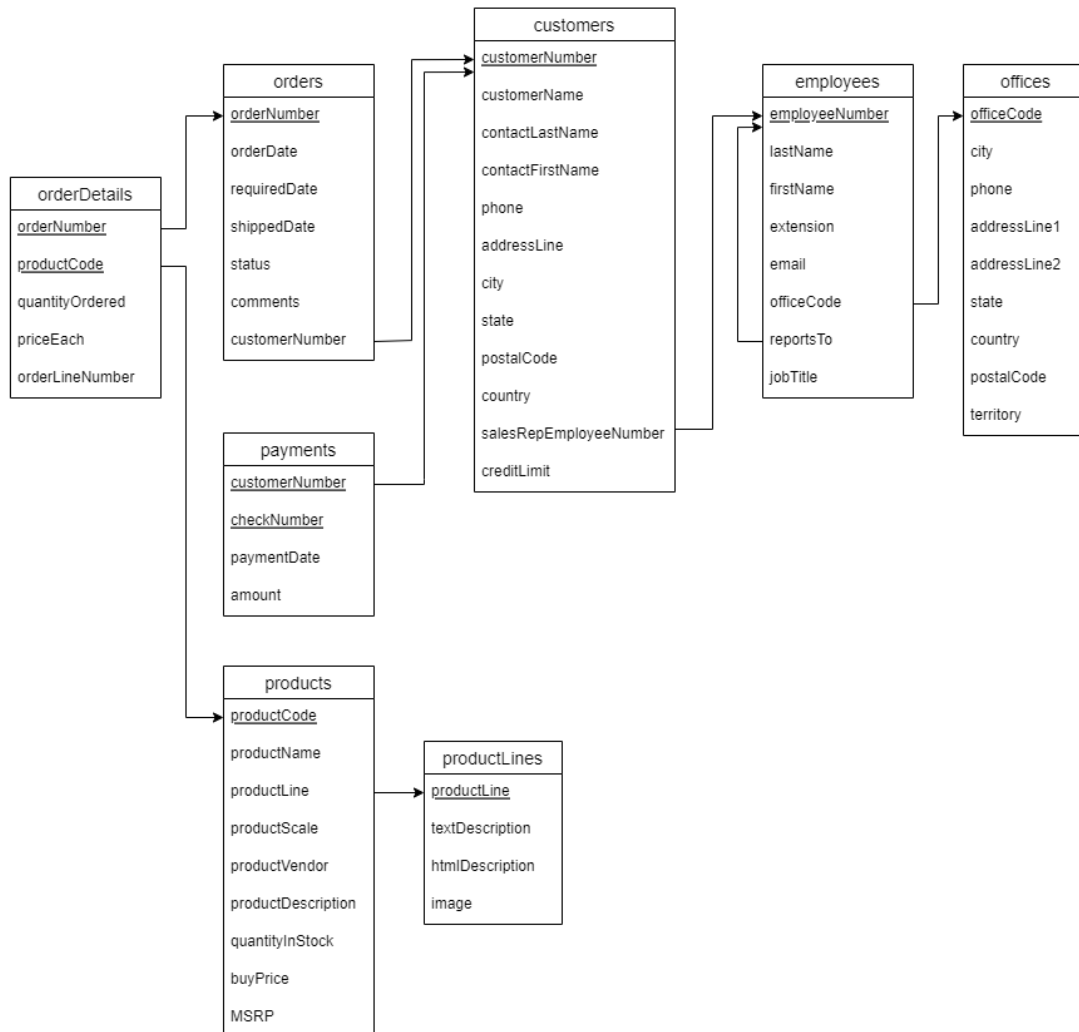


Lembar Kerja Susulan Praktikum 2 IF2240 Basis Data

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`.



I. Soal

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) AS yearPayment, COUNT(customerNumber) AS  
countCustomer, SUM(amount) as totalPayment  
FROM customers NATURAL JOIN payments  
GROUP BY yearPayment;
```

SCREENSHOT:

```
MariaDB [prak1]> SELECT YEAR(paymentDate) AS yearPayment, COUNT(customerNumber) AS countCustomer, SUM(  
amount) as totalPayment  
-> FROM customers NATURAL JOIN payments  
-> GROUP BY yearPayment;  
+-----+-----+-----+  
| yearPayment | countCustomer | totalPayment |  
+-----+-----+-----+  
| 2003 | 100 | 3250217.70 |  
| 2004 | 136 | 4313328.25 |  
| 2005 | 37 | 1290293.28 |  
+-----+-----+-----+  
3 rows in set (0.003 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) AS count  
FROM employees  
GROUP BY lastName  
HAVING count > 1;
```

SCREENSHOT:

```
MariaDB [prak1]> SELECT lastName, COUNT(employeeNumber) AS count  
-> FROM employees  
-> GROUP BY lastName  
-> HAVING count > 1;  
+-----+-----+  
| lastName | count |  
+-----+-----+  
| Bondur | 2 |  
| Firrelli | 2 |  
| Patterson | 3 |  
+-----+-----+  
3 rows in set (0.003 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 ASC;
```

SCREENSHOT:

```

MariaDB [prak1]> SELECT productName, buyPrice
-> FROM products
-> WHERE buyPrice > (SELECT AVG(buyPrice) FROM products)
-> ORDER BY buyPrice ASC;

```

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

SCREENSHOT:

```

MariaDB [prak1]> SELECT productCode, productName
-> FROM products p
-> WHERE p.productCode IN
-> (SELECT od.productCode
-> FROM payments p
-> NATURAL JOIN customers c
-> NATURAL JOIN orders o
-> NATURAL JOIN orderDetails od
-> GROUP BY c.customerNumber
-> HAVING count(p.checkNumber) > 10)
-> AND p.productLine LIKE '%Cars%';

```

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 (0.007 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) AS sumProductOrdered
FROM customers c NATURAL JOIN orders o NATURAL JOIN orderDetails od
WHERE customerName LIKE '%Gift%'
GROUP BY customerName
ORDER BY sumProductOrdered;

```

SCREENSHOT:

```
MariaDB [prak1]> SELECT customerName, SUM(quantityOrdered) AS sumProductOrdered
-> FROM customers c NATURAL JOIN orders o NATURAL JOIN orderDetails od
-> WHERE customerName LIKE '%Gift%'
-> GROUP BY customerName
-> ORDER BY sumProductOrdered;
```

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

22 rows in set (0.002 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 employeeNumber, CONCAT(firstName, ' ', lastName) as employeeName, email,
customerName, COUNT(orderNumber) AS countOrder
FROM employees e NATURAL JOIN customers c NATURAL JOIN orders o
WHERE e.employeeNumber = c.salesRepEmployeeNumber and o.customerNumber =
c.customerNumber
GROUP BY customerName
HAVING countOrder >= 5;
```

SCREENSHOT:

```

MariaDB [prakt1]> SELECT employeeNumber, CONCAT(firstName, ' ', lastName) as employeeName, email, customerName, COUNT(ord
erNumber) AS countOrder
-> FROM employee e NATURAL JOIN customers c NATURAL JOIN orders o
-> WHERE e.employeeNumber = c.salesRepEmployeeNumber and o.customerNumber = c.customerNumber
-> GROUP BY customerName
-> HAVING countOrder >= 5;
ERROR 1146 (42S02): Table 'prakt1.employee' doesn't exist
MariaDB [prakt1]> SELECT employeeNumber, CONCAT(firstName, ' ', lastName) as employeeName, email, customerName, COUNT(ord
erNumber) AS countOrder
-> FROM employees e NATURAL JOIN customers c NATURAL JOIN orders o
-> WHERE e.employeeNumber = c.salesRepEmployeeNumber and o.customerNumber = c.customerNumber
-> GROUP BY customerName
-> HAVING countOrder >= 5;
+-----+-----+-----+-----+-----+
| employeeNumber | employeeName | email | customerName | countOrder |
+-----+-----+-----+-----+-----+
| 1611 | Andy Fixter | afixter@classicmodelcars.com | Australian Collectors, Co. | 5 |
| 1401 | Pamela Castillo | pcastillo@classicmodelcars.com | Danish Wholesale Imports | 5 |
| 1612 | Peter Marsh | pmarsh@classicmodelcars.com | Down Under Souvenirs, Inc | 5 |
| 1621 | Mami Nishi | mnishi@classicmodelcars.com | Dragon Souvenirs, Ltd. | 5 |
| 1370 | Gerard Hernandez | ghernande@classicmodelcars.com | Euro+ Shopping Channel | 26 |
| 1165 | Leslie Jennings | ljennings@classicmodelcars.com | Mini Gifts Distributors Ltd. | 17 |
| 1337 | Loui Bondur | lbondur@classicmodelcars.com | Reims Collectables | 5 |
+-----+-----+-----+-----+-----+
7 rows in set (0.002 sec)

```

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.

a) orderDate 2004

QUERY:

```

SELECT DISTINCT orderNumber, productName, (priceEach - buyPrice)/buyPrice * 100 AS
profitPercentage
FROM products p NATURAL JOIN orderDetails od NATURAL JOIN orders o
WHERE p.productLine = "Vintage Cars" AND YEAR(orderDate) = 2004
HAVING profitPercentage BETWEEN 106 AND 107
ORDER BY profitPercentage DESC;

```

SCREENSHOT:

```

MariaDB [prakt1]> SELECT DISTINCT orderNumber, productName, (priceEach - buyPrice)/buyPrice * 100 AS pr
ofitPercentage
-> FROM products p NATURAL JOIN orderDetails od NATURAL JOIN orders o
-> WHERE p.productLine = "Vintage Cars" AND YEAR(orderDate) = 2004
-> HAVING profitPercentage BETWEEN 106 AND 107
-> ORDER BY profitPercentage DESC;
+-----+-----+-----+
| orderNumber | productName | profitPercentage |
+-----+-----+-----+
| 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 (0.004 sec)

```

b) paymentDate 2004

QUERY:

```

SELECT DISTINCT orderNumber, productName, (priceEach - buyPrice)/buyPrice * 100 AS
profitPercentage

```



```

FROM products p NATURAL JOIN orderDetails od NATURAL JOIN orders o NATURAL JOIN
payments py
WHERE p.productLine = "Vintage Cars" AND YEAR(paymentDate) = 2004
HAVING profitPercentage BETWEEN 106 AND 107
ORDER BY profitPercentage DESC;

```

SCREENSHOT:

```

MariaDB [prakt1]> SELECT DISTINCT orderNumber, productName, (priceEach - buyPrice)/buyPrice * 100 AS pr
ofitPercentage
-> FROM products p NATURAL JOIN orderDetails od NATURAL JOIN orders o NATURAL JOIN payments py
-> WHERE p.productLine = "Vintage Cars" AND YEAR(paymentDate) = 2004
-> HAVING profitPercentage BETWEEN 106 AND 107
-> ORDER BY profitPercentage DESC;

```

orderNumber	productName	profitPercentage
10312	1928 Mercedes-Benz SSK	106.987321
10227	1936 Mercedes-Benz 500K Special Roadster	106.677659
10194	1939 Cadillac Limousine	106.525497
10322	1932 Model A Ford J-Coupe	106.515048
10410	1938 Cadillac V-16 Presidential Limousine	106.501698
10353	1928 Ford Phaeton Deluxe	106.238643
10416	1928 Ford Phaeton Deluxe	106.238643

7 rows in set (0.008 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
WHERE customerName NOT IN
(SELECT customerName
FROM customers c NATURAL JOIN orders o NATURAL JOIN orderDetails od NATURAL JOIN
products p
WHERE p.productVendor = "Min Lin Diecast");

```

SCREENSHOT:

```

MariaDB [prakt1]> SELECT customerName
-> FROM customers
-> WHERE customerName NOT IN
-> (SELECT customerName
-> FROM customers c NATURAL JOIN orders o NATURAL JOIN orderDetails od NATURAL JOIN products p
-> WHERE p.productVendor = "Min Lin Diecast");
+-----+
| customerName |
+-----+
| Atelier graphique |
| Havel & Zbyszek Co |
| Handji Gifts& Co |
| American Souvenirs Inc |
| Porto Imports Co. |
| La Corne D'abondance, Co. |
| Asian Shopping Network, Co |
| Mini Caravy |
| Nat??rlich Autos |
| ANG Resellers |
| Messner Shopping Network |
| Franken Gifts, Co |
| BG&E Collectables |
| Schuyler Imports |
| Der Hund Imports |
| Cramer Spezialit?iten, Ltd |
| Asian Treasures, Inc. |
| SAR Distributors, Co |
| Kommission Auto |
| Lisboa Souvenirs, Inc |
| Precious Collectables |
| Stuttgart Collectable Exchange |
| Feuer Online Stores, Inc |
| Warburg Exchange |
| Anton Designs, Ltd. |
| Frau da Collezione |
| Mit Vergn??gen & Co. |
| Kremlin Collectables, Co. |
| Raanan Stores, Inc |
| Iberia Gift Imports, Corp. |
| Signal Collectibles Ltd. |
+-----+
31 rows in set (0.008 sec)

```

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 p
WHERE p.buyPrice > ALL
(SELECT priceEach
FROM customers c NATURAL JOIN orders o NATURAL JOIN orderDetails od
WHERE c.phone = "3105552373");

```

SCREENSHOT:

```

MariaDB [prak1]> SELECT productName
-> FROM products p
-> WHERE p.buyPrice > ALL
-> (SELECT priceEach
-> FROM customers c NATURAL JOIN orders o NATURAL JOIN orderDetails od
-> WHERE c.phone = "3105552373");
+-----+
| productName |
+-----+
| 1962 LanciaA Delta 16V |
| 1998 Chrysler Plymouth Prowler |
+-----+
2 rows in set (0.002 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 c1 WHERE c1.country =
"USA") SELECT c.customerNumber, customerName, creditLimit, CONCAT(firstName, ' ',
lastName) as employeeName
FROM customers c NATURAL JOIN employees e NATURAL JOIN X
WHERE c.salesRepEmployeeNumber = e.employeeNumber AND c.creditLimit < X.value;

```

SCREENSHOT:

```

MariaDB [praki]> WITH X(value) AS (SELECT AVG(creditLimit) FROM customers c1 WHERE c1.country = "USA") SE
LECT c.customerNumber, customerName, creditLimit, CONCAT(firstName, ' ', lastName) as employeeName
-> FROM customers c NATURAL JOIN employees e NATURAL JOIN X
-> WHERE c.salesRepEmployeeNumber = e.employeeNumber AND c.creditLimit < X.value;

```

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 Souvenirs	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 (0.002 sec)