## **Classic Models: A Case Study**

## Queries using single table:

1. Retrieve the total number of Customers.

```
mysql> SELECT COUNT(DISTINCT(CustomerNumber)) AS TOTAL_CUSTOMERS FROM customers;
+-----+
| TOTAL_CUSTOMERS |
+-----+
| 122 |
+-----+
1 row in set (0.00 sec)
```

2. Retrieve total number of orders.

3. Retrieve total number of orders per customer.

```
mysql> SELECT CUSTOMERNUMBER, COUNT(ORDERNUMBER) AS TOTAL ORDERS
    -> FROM orders
    -> GROUP BY CUSTOMERNUMBER;
| CUSTOMERNUMBER | TOTAL_ORDERS |
             103 |
              112
              114
              119
              121
              124
                               17
              128
              129
              131
              141
                               26
              145
              146
              148
```

4. Retrieve total number of orders per status.

5. Retrieve total number of orders per order date.

6. Retrieve the earliest order date.

j 2003-03-18 j

```
mysql> SELECT ORDERDATE
    -> FROM orders
    -> ORDER BY ORDERDATE
    -> LIMIT 1;
+-----+
| ORDERDATE |
+-----+
| 2003-01-06 |
+-----+
1 row in set (0.01 sec)
```

7. Retrieve latest order date.

```
mysql> SELECT ORDERDATE
    -> FROM orders
    -> ORDER BY ORDERDATE DESC
    -> LIMIT 1;
+-----+
| ORDERDATE |
+-----+
| 2005-05-31 |
+-----+
1 row in set (0.00 sec)
```

8. Retrieve total number of orders per year.

```
mysql> SELECT YEAR(ORDERDATE) AS YEAR, COUNT(ORDERNUMBER) AS TOTAL_ORDERS
-> FROM orders
-> GROUP BY YEAR;
+----+
| YEAR | TOTAL_ORDERS |
+----+
| 2003 | 111 |
| 2004 | 151 |
| 2005 | 64 |
+----+
3 rows in set (0.00 sec)
```

9. Retrieve total number of orders per month.

mysql> SELECT MONTHNAME(ORDERDATE) AS MONTH, COUNT(ORDERNÚMBER)

-> FROM orders

-> GROUP BY MONTH;

+	L <del>-</del>
MONTH	COUNT(ORDERNUMBER)
January   February   March   April   May   June   July   August   September   October   November	25   26   27   29   29   19   18   17   20   31   63
+	L <del>-</del>

12 rows in set (0.00 sec)

10. Retrieve total number of orders per day of the week.

mysql> SELECT DAYNAME(ORDERDATE) AS DAY, COUNT(ORDERNUMBER) AS TOTAL ORDERS

- -> FROM orders
- -> GROUP BY DAY;

4		L
	DAY	TOTAL_ORDERS
     	Monday Thursday Friday Wednesday Tuesday Sunday Saturday	50   59   69   64   56   11

7 rows in set (0.00 sec)

11. Retrieve total number of orders per quarter.

mysql> SELECT QUARTER(ORDERDATE)AS QUARTER, COUNT(ORDERNUMBER) AS TOTAL ORDERS

- -> FROM orders
- -> GROUP BY QUARTER;

QUARTER	TOTAL_ORDERS
1	78
2	77
3	55
4	116

4 rows in set (0.00 sec)

12. Retrieve total number of orders per customer and status. Sort by Customer number.

mysql> SELECT CUSTOMERNUMBER,STATUS,COUNT(ORDERNUMBER)

- -> FROM orders
- -> GROUP BY CUSTOMERNUMBER, STATUS
- -> ORDER BY CUSTOMERNUMBER;

CUSTOMERNUMBER	+   STATUS	++   COUNT(ORDERNUMBER)
112   114   119   119	Shipped   Shipped   Shipped   In Process   Shipped	3   3   5   1   3   1   4

13. Retrieve total number of orders per customer per year. Sort by customer number.

mysql> SELECT CUSTOMERNUMBER, YEAR(ORDERDATE), COUNT(ORDERNUMBER) AS TOTAL ORDERS

- -> FROM orders
- -> GROUP BY CUSTOMERNUMBER, YEAR (ORDERDATE)
- -> ORDER BY CUSTOMERNUMBER;

CUSTOMERNUMBER	YEAR(ORDERDATE)	TOTAL_ORDERS
103	2003	1
103	2004	2
112	2003	1
112	2004	2
114	2003	2
114	2004	3
119	2004	2
119	2005	2
121	2003	2

14. Retrieve the total number of orders for the first 10 even weeks.

mysql> SELECT WEEK(ORDERDATE) AS WEEK, COUNT(ORDERNUMBER) AS TOTAL\_ORDERS

- -> FROM orders
- -> WHERE WEEK(ORDERDATE) % 2=0
- -> GROUP BY WEEK
- -> ORDER BY WEEK
- -> LIMIT 10;

+	++
WEEK	TOTAL_ORDERS
+	
0	1
j 2	i 5 i
•	
4	6
6	8
8	j 5 j
j 10	6
12	4
14	j 7 j
16	5
18	11
+	+
	'

10 rows in set (0.00 sec)

15. Retrieve total number of orders per status per year. Sort by status.

mysql> SELECT YEAR(ORDERDATE),STATUS,COUNT(ORDERNUMBER)

- -> FROM orders
- -> GROUP BY YEAR(ORDERDATE), STATUS
- -> ORDER BY STATUS;

2003   Cancelled   2   2004   Cancelled   4   2005   Disputed   3   2005   In Process   6   2004   On Hold   1   2005   On Hold   3   2003   Resolved   1   2004   Resolved   1   2005   Resolved   2	YEAR(ORDERDATE)	+   STATUS	COUNT(ORDERNUMBER)
2003   Shipped   108     2004   Shipped   145     2005   Shipped   50	2004 2005 2005 2004 2005 2003 2004 2005 2003 2004	Cancelled Disputed In Process On Hold On Hold Resolved Resolved Resolved Shipped	6   1   1   3   1   1   1   1   1   1   1

12 rows in set (0.00 sec)

16. Retrieve total number of orders per customer per year and quarter for the year of 2004 and 2005.

mysql> SELECT CUSTOMERNUMBER, YEAR(ORDERDATE) AS YEAR, QUARTER(ORDERDATE) AS QUARTER, COUNT(ORDERNUMBER) AS TOTAL ORDERS

- -> FROM orders
  -> WHERE YEAR(ORDERDATE) IN (2004,2005)
  -> GROUP BY CUSTOMERNUMBER,YEAR,QUARTER;

+				
YEAR	QUARTER	TOTAL_ORDERS		
+	+	+		
2004	1	2		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
2004	1	1		
	2004   2004	2004   1   2004   1		

17. Retrieve the top 5 longest customer names along with their lengths.

mysql> SELECT CUSTOMERNAME, LENGTH(CUSTOMERNAME)

- -> FROM customers
- -> ORDER BY LENGTH(CUSTOMERNAME) DESC
- -> LIMIT 5;

CUSTOMERNAME	LENGTH(CUSTOMERNAME)
Bavarian Collectables Imports, Co.   Royal Canadian Collectables, Ltd.   Stuttgart Collectable Exchange   Canadian Gift Exchange Network   Double Decker Gift Stores, Ltd	34     33     30     30

5 rows in set (0.00 sec)

18. Extract the first 5 characters of customer names and convert to uppercase.

```
mysql> SELECT UPPER(SUBSTRING(CUSTOMERNAME,1,5))
 -> FROM customers;
  | UPPER(SUBSTRING(CUSTOMERNAME,1,5)) |
+-----
| ATELI
 SIGNA
 AUSTR
 LA RO
 BAANE
 MINI
| HAVEL
| BLAUE
I MINI
LAND
| EURO+
```

19. Replace 'Ltd' with 'Limited' in customer names and display only those modified customer names.

```
mysql> SELECT REPLACE(CUSTOMERNAME, "Ltd", "Limited")
   -> FROM customers
   -> WHERE CUSTOMERNAME LIKE "% Ltd";
+----+
| REPLACE(CUSTOMERNAME, "Ltd", "Limited") |
+----+
| Toms Spezialitäten, Limited
 Anna's Decorations, Limited
 Vida Sport, Limited
 Cramer Spezialitäten, Limited
 Tokyo Collectables, Limited
| Extreme Desk Decorations, Limited
| Corrida Auto Replicas, Limited
Australian Collectables, Limited
| Double Decker Gift Stores, Limited
9 rows in set (0.00 sec)
```

20. Round the credit limit to the nearest thousand and display the customer name along with the rounded credit limit.

```
mysql> SELECT CUSTOMERNAME,ROUND(CREDITLIMIT)
 -> FROM customers;
+----+
| CUSTOMERNAME | ROUND(CREDITLIMIT) |
| Atelier graphique | 21000
 Signal Gift Stores
                                         71800
 Australian Collectors, Co.
                                      118200
81700
210500
 La Rochelle Gifts
 Baane Mini Imports
 Mini Gifts Distributors Ltd.
 Havel & Zbyszek Co
                                            0
                                         59700
 Blauer See Auto, Co.
                                         64600
 Mini Wheels Co.
 Land of Toys Inc.
                                        114900
                                       227600
 Euro+ Shopping Channel
 Volvo Model Replicas, Co
                                         53100
                                         83400
 Danish Wholesale Imports
 Saveley & Henriot, Co.
                                        123900
 Dragon Souveniers, Ltd.
                                         103800
| Muscle Machine Inc
                                         138500
```

## **Queries using Inner Join:**

10113 | Mini Gifts Distributors Ltd.

21. Retrieve the order numbers and customer names for all orders.

```
mysql> SELECT 0.ORDERNUMBER,C.CUSTOMERNAME FROM customers C INNER JOIN orders 0 ON C.CUSTOMERNUMBER=0.CUSTOMERNUMBER;
 ORDERNUMBER | CUSTOMERNAME
        10123 | Atelier graphique
        10298
                Atelier graphique
Atelier graphique
        10345
        10124
                Signal Gift Stores
        10278
                Signal Gift Stores
        10346 İ
                Signal Gift Stores
                Australian Collectors, Co.
        10120 İ
                Australian Collectors, Co.
        10125
        10223 i
                Australian Collectors, Co.
        10342
                Australian Collectors, Co.
        10347
                Australian Collectors, Co.
        10275
                La Rochelle Gifts
        10315 I
                La Rochelle Gifts
        10375
                La Rochelle Gifts
        10425
                La Rochelle Gifts
        10103
                Baane Mini Imports
        10158 i
                Baane Mini Imports
        10309
                Baane Mini Imports
        10325
                Baane Mini Imports
```

22. Retrieve the order numbers and product names for all orders.

```
mysql> SELECT 0.ORDERNUMBER, P. PRODUCTNAME
   -> FROM orders O INNER JOIN orderdetails
          OD ON O.ORDERNUMBER=OD.ORDERNUMBER
    ->
          INNER JOIN products
          P ON OD.PRODUCTCODE=P.PRODUCTCODE
    -> limit 100;
+-----+
 ORDERNUMBER | PRODUCTNAME
       10107 | 1969 Harley Davidson Ultimate Chopper |
        10121 | 1969 Harley Davidson Ultimate Chopper
10134 | 1969 Harley Davidson Ultimate Chopper
        10145 | 1969 Harley Davidson Ultimate Chopper
       10159 | 1969 Harley Davidson Ultimate Chopper
        10168 | 1969 Harley Davidson Ultimate Chopper
        10180 | 1969 Harley Davidson Ultimate Chopper
10188 | 1969 Harley Davidson Ultimate Chopper
        10201 | 1969 Harley Davidson Ultimate Chopper
        10211 | 1969 Harley Davidson Ultimate Chopper
        10223 | 1969 Harley Davidson Ultimate Chopper |
```

23. Retrieve the order numbers and the first and last names of the employees who managed them.

- 24. Retrieve the names of all customers and their sales representatives, displaying the customer name, and the sales representative's first and last name.
- mysql> SELECT C.CUSTOMERNAME, E.FIRSTNAME, E.LASTNAME
  - -> FROM customers C INNER JOIN employees E
  - -> ON C.SALESREPEMPLOYEENUMBER=E.EMPLOYEENUMBER;

A	L	
CUSTOMERNAME	FIRSTNAME	LASTNAME
Atelier graphique   Signal Gift Stores   Australian Collectors, Co.   La Rochelle Gifts   Baane Mini Imports   Mini Gifts Distributors Ltd.   Blauer See Auto, Co.   Mini Wheels Co.   Land of Toys Inc.   Euro+ Shopping Channel   Volvo Model Replicas, Co	Gerard Leslie Andy Gerard Barry Leslie Barry Leslie George Gerard	Hernandez  Thompson  Fixter  Hernandez  Jones  Jennings  Jennings  Vanauf  Hernandez  Jones
Danish Wholesale Imports	Pamela	Castillo
Saveley & Henriot, Co.	Loui	Bondur
Dragon Souveniers, Ltd.	Mami	Nishi

25. Retrieve the product names and their respective order quantities, displaying the product name and quantity ordered.

- mysql> SELECT P.PRODUCTNAME,O.QUANTITYORDERED
  - -> FROM products P INNER JOIN orderdetails 0
  - -> ON P.PRODUCTCODE=0.PRODUCTCODE;
- 26. Retrieve the order numbers and their respective total prices.
- mysql> SELECT ORDERNUMBER, SUM(PRICEEACH) AS TOTAL PRICE
  - -> FROM orderdetails
  - -> GROUP BY ORDERNUMBER;

+	L <del>.</del>
ORDERNUMBER	TOTAL_PRICE
10100   10101   10102   10103   10104   10105	301.84     352.00     138.68     1520.37     1251.89     1479.71
10100	1427.20     793 21

mysql> SELECT 0.ORDERNUMBER, E.FIRSTNAME, E.LASTNAME

- -> FROM orders O INNER JOIN customers C
- -> ON O.CUSTOMERNUMBER=C.CUSTOMERNUMBER
- -> INNER JOIN employees E
- -> ON C.SALESREPEMPLOYEENUMBER=E.EMPLOYEENUMBER;

	+	+
FIRSTNAME	LASTNAME	į
l Leclie	l lennings	ï
Lestie	l acilitinas	ı
Leslie	Jennings	
Leslie	Jennings	Ĺ
Leslie	Jennings	İ
Leslie	Jennings	İ
Leslie	Jennings	İ
Leslie	Jennings	İ
Leslie		İ
leslie	lennings	i
	Leslie   Leslie   Leslie   Leslie   Leslie   Leslie   Leslie   Leslie	Leslie   Jennings   Leslie   Jennings   Leslie   Jennings   Leslie   Jennings   Leslie   Jennings   Leslie   Jennings   Leslie   Jennings

27. Retrieve the names of all customers with their order numbers and order dates.

mysql> SELECT C.CUSTOMERNAME, O.ORDERNUMBER, O.ORDERDATE

- -> FROM customers C INNER JOIN orders 0
- -> ON C.CUSTOMERNUMBER=O.CUSTOMERNUMBER;

4	L	L
CUSTOMERNAME	ORDERNUMBER	ORDERDATE
Online Diecast Creations Co. Blauer See Auto, Co. Vitachrome Inc. Baane Mini Imports Euro+ Shopping Channel Danish Wholesale Imports Rovelli Gifts Land of Toys Inc. Cruz & Sons Co. Motor Mint Distributors Inc.	10100   10101   10102   10103   10104   10105   10106   10107   10108	2003-01-06     2003-01-09     2003-01-10     2003-01-29     2003-01-31     2003-02-11     2003-02-17     2003-02-24     2003-03-03

28. Retrieve the first and last names of all employees with their office locations.

mysql> SELECT E.FIRSTNAME, E.LASTNAME, O.CITY

- -> FROM employees E INNER JOIN offices 0
- -> ON E.OFFICECODE=0.OFFICECODE;

FIRSTNAME   LASTNAME   CITY   Diane   Murphy   San Francisco   Mary   Patterson   San Francisco	+	+	+
Mary   Patterson   San Francisco	FIRSTNAME	LASTNAME	CITY
Jeff	Mary   Jeff   Anthony   Leslie   Leslie   Julie   Steve   Foon Yue   George	Patterson   Firrelli   Bow   Jennings   Thompson   Firrelli   Patterson   Tseng   Vanauf   Bondur	San Francisco     San Francisco     San Francisco     San Francisco     San Francisco     Boston     Boston     NYC     Paris

29. Retrieve the order numbers, statuses, and customer names for all orders.

## mysql> SELECT 0.0RDERNUMBER, 0.STATUS, C.CUSTOMERNAME

- -> FROM orders O INNER JOIN customers C
- -> ON O.CUSTOMERNUMBER=C.CUSTOMERNUMBER;

+	<b></b>	_+
ORDERNUMBER	STATUS	CUSTOMERNAME
10100   10101   10102   10103   10104   10105   10106	+	Online Diecast Creations Co.     Blauer See Auto, Co.     Vitachrome Inc.     Baane Mini Imports     Euro+ Shopping Channel     Danish Wholesale Imports     Rovelli Gifts
10107	Shipped	Land of Toys Inc.
10108	Shipped	Cruz & Sons Co.
10109	Shipped	Motor Mint Distributors Inc.

#### 30. Retrieve the names of all customers and their total number of orders.

mysql> SELECT C.CUSTOMERNAME, COUNT(0.ORDERNUMBER) AS TOTAL ORDERS

- -> FROM customers C INNER JOIN orders O ON
  - -> C.CUSTOMERNUMBER=0.CUSTOMERNUMBER
  - -> GROUP BY CUSTOMERNAME;

+	+
CUSTOMERNAME	TOTAL_ORDERS
+	++
Atelier graphique	3
Signal Gift Stores	3
Australian Collectors, Co.	5
La Rochelle Gifts	4
Baane Mini Imports	4
Mini Gifts Distributors Ltd.	17
Blauer See Auto, Co.	4
Mini Wheels Co.	j 3 j
Land of Toys Inc.	j 4 j
Euro+ Shopping Channel	j 26 j
Volvo Model Replicas, Co	j 4 j
Danich Wholocala Imports	i ei

## 31. Retrieve the names of all products and their total quantities ordered.

mysql> SELECT P.PRODUCTNAME, SUM(0.QUANTITYORDERED) AS TOTAL QTY

- -> FROM products P INNER JOIN orderdetails 0
- -> ON P.PRODUCTCODE=0.PRODUCTCODE
- -> GROUP BY PRODUCTNAME;

4		L
PRODUCTNAME	TOTAL_QTY	
1969 Harley Davidson Ultimate Chopper	1057	ĺ
1952 Alpine Renault 1300	961	ı
1996 Moto Guzzi 1100i	999	ĺ
2003 Harley-Davidson Eagle Drag Bike	985	ĺ
1972 Alfa Romeo GTA	1030	ĺ
1962 LanciaA Delta 16V	932	ĺ
1968 Ford Mustang	933	İ
2001 Ferrari Enzo	1019	İ
1958 Setra Bus	972	İ
2002 Suzuki XREO	1028	ĺ
1969 Corvair Monza	963	ĺ
1968 Dodge Charger	925	ĺ

32. List all employees with the total number of customers they handle. Retrieve employee first name, last name and total number of customers handled by them.

mysql> SELECT E.FIRSTNAME, E.LASTNAME, COUNT(C.CUSTOMERNUMBER) AS TOTAL CUSTOMERS

- -> FROM employees E INNER JOIN customers C
- -> ON E.EMPLOYEENUMBER=C.SALESREPEMPLOYEENUMBER
- -> GROUP BY E.EMPLOYEENUMBER;

+	+	++
FIRSTNAME	LASTNAME	TOTAL_CUSTOMERS
FIRSTNAME	LASINAME	TOTAL_CUSTOMERS
+		
Peter	Marsh	j 5 j
Mami	Nishi	I 5 l
Mami	Nishi	5
Martin	Gerard	6
+	+	+

15 rows in set (0.00 sec)

- 33. Retrieve the order numbers and their respective total prices.
- 34. Retrieve the names of all customers and their total sales amounts.

mysql> SELECT C.CUSTOMERNAME, SUM(OD.PRICEEACH) AS TOTAL SALES AMOUNT

- -> FROM customers C INNER JOIN orders O
  - -> ON C.CUSTOMERNUMBER=O.CUSTOMERNUMBER
  - -> INNER JOIN orderdetails OD ON
  - -> 0.ORDERNUMBER=OD.ORDERNUMBER
  - -> GROUP BY C.CUSTOMERNUMBER;

+	
CUSTOMERNAME	TOTAL_SALES_AMOUNT
Atelier graphique   Signal Gift Stores   Australian Collectors, Co.   La Rochelle Gifts   Baane Mini Imports   Mini Gifts Distributors Ltd.   Blauer See Auto, Co.   Mini Wheels Co.   Land of Toys Inc.   Euro+ Shopping Channel   Volvo Model Replicas, Co   Danish Wholesale Imports   Saveley & Henriot, Co.	601.49   2527.32   5159.19   4554.76   3107.71   16746.58   2124.05   1996.81   4575.97   22680.00   2008.56   3460.78   3769.59

35. Retrieve the first and last names of all employees and their total sales amounts.

```
-> ON E.EMPLOYEENUMBER=C.SALESREPEMPLOYEENUMBER
   -> INNER JOIN orders 0 ON
   -> C.CUSTOMERNUMBER=0.CUSTOMERNUMBER
   -> INNER JOIN orderdetails OD ON
   -> 0.ORDERNUMBER=OD.ORDERNUMBER
   -> GROUP BY E.EMPLOYEENUMBER;
| FIRSTNAME | LASTNAME | TOTAL SALES |
                           34668.30
 Gerard
          | Hernandez |
 Leslie
           | Thompson |
 Andy
           Fixter
                            16687.78
                       20700.90
           Jones
           | Jennings | 30218.96
| Vanauf | 19149.94
 Leslie
           Castillo
                            25148.59
           Bondur
                          16225.21
 Loui
 Mami
             Nishi
                            12635.69
 Foon Yue | Tseng
                       13900.31
           | Patterson | 13973.26
| Marsh | 16177.49
| Firrelli | 11195.13
 Steve
 Peter
 Julie
         | Bott |
| Gerard |
                            20898.67
 Larry
 Martin
                          10582.34
```

mysql> SELECT E.FIRSTNAME, E.LASTNAME, SUM(OD.PRICEEACH) AS TOTAL SALES

-> FROM employees E INNER JOIN customers C

15 rows in set (0.01 sec)

2 rows in set (0.01 sec)

36. Retrieve the customer numbers, names, and total sales amounts for customers with sales above \$10,000.

37. Retrieve the customer numbers, names, and average sales values for customers with an average order value exceeding \$3500.

38. Retrieve the customer numbers, names, and total number of orders for customers with more than 5 orders.

49

124 | Mini Gifts Distributors Ltd. | 128 | Blauer See Auto, Co. | 129 | Mini Wheels Co.

131 | Land of Toys Inc.

39. Retrieve the product codes, names, and total sales for products with sales above \$1,80,000.

mysql> SELECT P.PRODUCTCODE, P.PRODUCTNAME, SUM(PRICEEACH\*QUANTITYORDERED) AS TOTAL SALES

- -> FROM products P INNER JOIN orderdetails 0
- -> ON P.PRODUCTCODE=0.PRODUCTCODE
- -> GROUP BY P.PRODUCTCODE
- -> HAVING TOTAL SALES>180000;

PRODUCTCODE	PRODUCTNAME	TOTAL_SALES
S10_1949	1952 Alpine Renault 1300	190017.96
S12_1108	2001 Ferrari Enzo	190755.86
S18_3232	1992 Ferrari 360 Spider red	276839.98

3 rows in set (0.01 sec)

40. Retrieve the product codes, names, and average quantities ordered for products with an average above 30.

mysql> SELECT P.PRODUCTCODE, P.PRODUCTNAME, ROUND (AVG (QUANTITYORDERED)) AS AVG QTY

- -> FROM products P INNER JOIN orderdetails 0
- -> ON P.PRODUCTCODE=0.PRODUCTCODE
- -> GROUP BY P.PRODUCTCODE
- -> HAVING AVG QTY>30;

	L	L	_
PRODUCTCODE	PRODUCTNAME	AVG_QTY	ļ
S10_1678   S10_1949   S10_2016   S10_4698   S10_4757   S10_4962   S12_1099	1969 Harley Davidson Ultimate Chopper   1952 Alpine Renault 1300   1996 Moto Guzzi 1100i   2003 Harley-Davidson Eagle Drag Bike   1972 Alfa Romeo GTA   1962 LanciaA Delta 16V   1968 Ford Mustang	38 34 36 35 37 33	+
S12_1108   S12_1666	2001 Ferrari Enzo   1958 Setra Bus	38	ļ
l S12 2823	l 2002 Suzuki XREO	ı 37	I

41. Retrieve the employee numbers, first and last names, and sales amounts for employees with sales above \$500,000.

mysql> SELECT E.EMPLOYEENUMBER, E.FIRSTNAME, E.LASTNAME, SUM(OD.PRICEEACH\*OD.QUANTITYORDERED) AS SALES AMOUNT

- -> FROM employees E INNER JOIN customers C
- -> ON E.EMPLOYEENUMBER=C.SALESREPEMPLOYEENUMBER
- -> INNER JOIN orders 0 ON
- -> C.CUSTOMERNUMBER=0.CUSTOMERNUMBER
- -> INNER JOIN orderdetails OD ON
- -> 0.ORDERNUMBER=OD.ORDERNUMBER
- -> GROUP BY E.EMPLOYEENUMBER
- -> HAVING SALES\_AMOUNT>500000;

EMPLOYEENUMBER	FIRSTNAME	LASTNAME	SALES_AMOUNT
1370   1611   1504   1165   1323   1401   1337   1216   1612	Gerard Andy Barry Leslie George Pamela Loui Steve Peter Larry	Hernandez   Fixter   Jones   Jennings   Vanauf   Castillo   Bondur   Patterson   Marsh	1258577.81   562582.59   704853.91   1081530.54   669377.05   868220.55   569485.75   505875.42   584593.76   732096.79
+		+	r <del>-</del>

10 rows in set (0.01 sec)

42. Retrieve the year and total payment amount for payments exceeding \$1,000,000.

```
-> FROM payments
   -> GROUP BY YEAR, CUSTOMERNUMBER
   -> HAVING TOTAL AMOUNT>100000;
| YEAR | TOTAL AMOUNT |
+----+
 2004 | 127155.96 |
 2005 | 184842.63
 2004 | 231562.53
 2003 | 167783.08
 2003
          189840.15
 2004
          293765.51
        232133.32
 2005 I
 2003 |
        150123.15
 2003 | 117634.88
 2004 | 105420.57 |
2004 | 108777.92 |
+----+
11 rows in set (0.00 sec)
```

mysql> SELECT YEAR(PAYMENTDATE) AS YEAR, SUM(AMOUNT) AS TOTAL AMOUNT

43. Retrieve the year and average order value for years where the average order value exceeds \$1,000.

```
mysql> SELECT YEAR(0.0RDERDATE) AS YEAR,AVG(0D.QUANTITYORDERED*0D.PRICEEACH) AS AVG_ORDER_VALUE
    -> FROM orders 0 INNER JOIN orderdetails 0D
    -> ON 0.0RDERNUMBER=OD.ORDERNUMBER
    -> GROUP BY YEAR
    -> HAVING AVG_ORDER_VALUE >1000;
+----+
| YEAR | AVG_ORDER_VALUE |
+----+
| 2003 | 3153.372994 |
| 2004 | 3177.977136 |
| 2005 | 3386.112256 |
+----+
3 rows in set (0.00 sec)
```

44. Retrieve the product line and total sales amount for product lines with total sales exceeding \$200,000.

45. Retrieve the country and total sales amount for countries with total sales exceeding \$500,000.

46. Retrieve the office name and sales amount for offices (cities) with total sales exceeding \$300,000.

```
mysql> SELECT OFS.CITY AS OFFICE,SUM(OD.QUANTITYORDERED * OD.PRICEEACH) AS TOTAL SALES
    -> FROM offices OFS INNER JOIN employees E
    -> ON E.OFFICECODE=OFS.OFFICECODE
    -> INNER JOIN customers C ON
    -> C.SALESREPEMPLOYEENUMBER =E.EMPLOYEENUMBER
    -> INNER JOIN orders 0
    -> ON C.CUSTOMERNUMBER=O.CUSTOMERNUMBER
    -> INNER JOIN orderdetails OD ON
    -> 0.ORDERNUMBER=OD.ORDERNUMBER
    -> GROUP BY OFS.OFFICECODE
    -> HAVING TOTAL_SALES >300000;
+-----
| OFFICE | TOTAL SALES |
 Paris | 3083761.58
 San Francisco | 1429063.57 |
Sydney | 1147176.35 |
London | 1436950.70 |
NYC | 1157589.72 |
Tokyo | 457110.07 |
Boston | 892538.62 |
7 rows in set (0.01 sec)
```

# **Queries using Left Join:**

47. Retrieve the names of all customers along with their order numbers, even if they have no orders.

```
-> FROM customers C LEFT JOIN orders 0
   -> ON C.CUSTOMERNUMBER=O.CUSTOMERNUMBER;
CUSTOMERNAME
                                    | ORDERNUMBER |
 Atelier graphique
                                           10123
                                            10298
 Atelier graphique
 Atelier graphique
                                           10345
 Signal Gift Stores
                                           10124
 Signal Gift Stores
                                           10278
 Signal Gift Stores
                                          10346
                                          10120
10125
 Australian Collectors, Co.
 Australian Collectors, Co.
 Australian Collectors, Co.
                                           10223
 Australian Collectors, Co.
                                           10342
 Australian Collectors, Co.
                                           10347
 La Rochelle Gifts
                                           10275
 La Rochelle Gifts
                                            10315
 La Rochelle Gifts
                                            10375
```

mysql> SELECT C.CUSTOMERNAME, O.ORDERNUMBER

48. Retrieve the names of all products along with their order quantities, even if there are no orders.

mysql> SELECT P.PRODUCTNAME, SUM(OD.QUANTITYORDERED) AS ORDEREDQUANTITY

- -> FROM products P LEFT JOIN orderdetails OD
- -> ON P.PRODUCTCODE=OD.PRODUCTCODE
- -> GROUP BY P.PRODUCTCODE;

+	L
PRODUCTNAME	ORDEREDQUANTITY
1969 Harley Davidson Ultimate Chopper   1952 Alpine Renault 1300   1996 Moto Guzzi 1100i   2003 Harley-Davidson Eagle Drag Bike   1972 Alfa Romeo GTA   1962 LanciaA Delta 16V   1968 Ford Mustang   2001 Ferrari Enzo	1057   961   999   985   1030   932   933
1958 Setra Bus   2002 Suzuki XREO	972     1028
1969 Corvair Monza	963

49. Retrieve the first and last names of all employees along with the names of the customers they handle, even if they have no customers.

mysql> SELECT E.FIRSTNAME, E.LASTNAME, C.CUSTOMERNAME

- -> FROM employees E LEFT JOIN customers C
- -> ON E.EMPLOYEENUMBER=C.SALESREPEMPLOYEENUMBER;

4		L	L
FIRSTNAME	LASTNAME	CUSTOMERNAME	
Diane   Mary   Jeff   William   Gerard   Anthony   Leslie   Leslie   Leslie   Leslie	Murphy Patterson Firrelli Patterson Bondur Bow Jennings Jennings Jennings Jennings	NULL NULL NULL NULL NULL NULL NULL NULL	

50. Retrieve the names of all customers along with their sales representatives (employee), even if they have no sales representative. Display the customer's name, and the sales representative's first and last name.

nysql> SELECT C.CUSTOMERNAME, E.FIRSTNAME, E.LASTNAME

- -> FROM customers C LEFT JOIN employees E
- -> ON E.EMPLOYEENUMBER=C.SALESREPEMPLOYEENUMBER;

CUSTOMERNAME	FIRSTNAME	LASTNAME	
Atelier graphique   Signal Gift Stores   Australian Collectors, Co.   La Rochelle Gifts   Baane Mini Imports   Mini Gifts Distributors Ltd.   Havel & Zbyszek Co	Gerard Leslie Andy Gerard Barry Leslie	Hernandez     Thompson     Fixter     Hernandez     Jones     Jennings	-
Blauer See Auto, Co.	Barry	Jones	
Mini Wheels Co.	Leslie	Jennings	
Land of Toys Inc.	George	Vanauf	

51. Retrieve the names of all customers along with their order statuses, even if they have no orders.

mysql> SELECT C.CUSTOMERNAME,0.STATUS
 -> FROM customers C LEFT JOIN orders 0
 -> ON C.CUSTOMERNUMBER=0.CUSTOMERNUMBER;

+	+
CUSTOMERNAME	STATUS
1. 44-14	Chi
Atelier graphique	Shipped
Atelier graphique	Shipped
Atelier graphique	Shipped
Signal Gift Stores	Shipped
Signal Gift Stores	Shipped
Signal Gift Stores	Shipped
Australian Collectors, Co.	Shipped
Australian Collectors, Co.	Shipped
Australian Collectors, Co.	Shipped
Australian Collectors, Co.	Shipped
Australian Collectors, Co.	Shipped
La Rochelle Gifts	Shipped
La Rochelle Gifts	Shipped
La Rochelle Gifts	Shipped
La Rochelle Gifts	In Process
Baane Mini Imports	Shipped
Baane Mini Imports	Shipped

## **Queries using Nested Sub-Queries:**

52. Retrieve the product codes and names for items ordered by customers in the USA.

mysql> SELECT P.PRODUCTCODE, P.PRODUCTNAME

- -> FROM customers C INNER JOIN orders O
- -> ON C.CUSTOMERNUMBER=O.CUSTOMERNUMBER
- -> INNER JOIN orderdetails OD
- -> ON OD.ORDERNUMBER=0.ORDERNUMBER
- -> INNER JOIN products P ON
- -> P.productcode=OD.productcode
- -> WHERE C.COUNTRY="USA" LIMIT 100;

		_
PRODUCTCODE		ļ
S18_1749 S18_2248 S18_2325 S18_4409 S18_4933 S24_1046	1917 Grand Touring Sedan 1911 Ford Town Car 1932 Model A Ford J-Coupe 1932 Alfa Romeo 8C2300 Spider Sport 1957 Ford Thunderbird 1970 Chevy Chevelle SS 454	+
S24_1937	1939 Chevrolet Deluxe Coupe	ļ
S24_2022	1938 Cadillac V-16 Presidential Limousine	ļ
S24_2766	1949 Jaguar XK 120	
S24 2887	1952 Citroen-15CV	

53. Retrieve the employee number, first name, and last name of employees who report to manager 'Murphy'.

```
mysql> SELECT EMPLOYEENUMBER,FIRSTNAME,LASTNAME
    -> FROM employees
    -> WHERE REPORTSTO=
    -> (SELECT EMPLOYEENUMBER FROM employees
    -> WHERE LASTNAME="Murphy");
+-----+
| EMPLOYEENUMBER | FIRSTNAME | LASTNAME |
+-----+
| 1056 | Mary | Patterson |
| 1076 | Jeff | Firrelli |
+-----+
2 rows in set (0.00 sec)
```

54. Retrieve the order numbers for orders that include products from the 'Motorcycles' product line.

```
mysql> SELECT 0.ORDERNUMBER
   -> FROM orders O INNER JOIN orderdetails OD
   -> ON O.ORDERNUMBER=OD.ORDERNUMBER
   -> INNER JOIN products P
   -> ON OD.productcode=P.productcode
   -> WHERE PRODUCTLINE="Motorcycles";
+----+
| ORDERNUMBER |
+----+
       10107 I
       10121
       10134
       10145
       10159
       10168
       10180
       10188
       10201
       10211
       10223
       10237 I
```

55. Retrieve the names of customers who have placed orders.

```
mysql> SELECT DISTINCT CUSTOMERNAME
   -> FROM customers C INNER JOIN orders 0 ON
   -> C.CUSTOMERNUMBER=0.CUSTOMERNUMBER
    -> WHERE O.ORDERNUMBER IS NOT NULL;
+-----+
 CUSTOMERNAME
 Atelier graphique
 Signal Gift Stores
 Australian Collectors, Co.
 La Rochelle Gifts
 Baane Mini Imports
 Mini Gifts Distributors Ltd.
 Blauer See Auto, Co.
 Mini Wheels Co.
 Land of Toys Inc.
 Euro+ Shopping Channel
 Valua Madal Danlicas Co
```

56. Retrieve the city and country of offices located in countries where customers are present.

57. Retrieve the product codes and names for products with orders exceeding 50.

58. Retrieve the employee number, first name, and last name of employees who have customers in their territory.

59. Retrieve the order numbers for orders shipped to 'France'.

```
mysql> SELECT ORDERNUMBER
   -> FROM orders
    -> WHERE STATUS="Shipped"
    -> AND CUSTOMERNUMBER IN
   -> (SELECT CUSTOMERNUMBER
   -> FROM customers
   -> WHERE COUNTRY="France");
+----+
ORDERNUMBER
     10123 |
       10298
       10345
       10275
       10315
       10375
       10194
       10208
       10227
       10180
       10224
       10114 I
```

60. Retrieve the names of customers who placed orders between 2003-01-01 and 2003-12-31.

```
mysql> SELECT CUSTOMERNAME
    -> FROM customers
   -> WHERE CUSTOMERNUMBER IN
   -> (SELECT CUSTOMERNUMBER
   -> FROM orders
   -> WHERE ORDERDATE
   -> BETWEEN "2003-01-01" AND "2003-12-31");
| CUSTOMERNAME
+-----+
Online Diecast Creations Co.
 Blauer See Auto, Co.
 Vitachrome Inc.
 Baane Mini Imports
 Euro+ Shopping Channel
 Danish Wholesale Imports
 Rovelli Gifts
I Land of Tovs Inc.
```

61. Retrieve the order numbers for orders with a specific status.

```
mysql> SELECT ORDERNUMBER
-> FROM orders
-> WHERE STATUS="Shipped"
-> AND ORDERNUMBER IN(
-> SELECT ORDERNUMBER FROM
-> orderdetails);
+-----+
| ORDERNUMBER |
+-----+
| 10100 |
| 10101 |
| 10102 |
| 10103 |
| 10104 |
| 10105 |
| 10106 |
| 10107 |
```

62. Retrieve the names of customers with credit limits exceeding a specified amount 50000.

```
mysql> SELECT CUSTOMERNAME
   -> FROM customers
   -> WHERE CREDITLIMIT>50000
   -> AND CUSTOMERNUMBER IN
   -> (SELECT CUSTOMERNUMBER
   -> FROM orders);
+-----+
 CUSTOMERNAME
 Signal Gift Stores
 Australian Collectors, Co.
 La Rochelle Gifts
 Baane Mini Imports
 Mini Gifts Distributors Ltd.
 Blauer See Auto, Co.
 Mini Wheels Co.
 Land of Toys Inc.
 Euro+ Shopping Channel
```

63. Retrieve the employee number, first name, and last name of employees working in 'San Francisco'.

```
..., . . . . . . . . .
mysql> SELECT EMPLOYEENUMBER, LASTNAME, FIRSTNAME
   -> FROM employees
   -> WHERE OFFICECODE IN
   -> (SELECT OFFICECODE
   -> FROM offices
   -> WHERE CITY="San Francisco");
+----+
 EMPLOYEENUMBER | LASTNAME | FIRSTNAME |
           1002 | Murphy | Diane
           1056 | Patterson | Mary
           1076 | Firrelli | Jeff
           1143 | Bow
                           | Anthony
           1165 | Jennings | Leslie
           1166 | Thompson | Leslie
6 rows in set (0.00 sec)
```

64. Retrieve the product codes and names for products from 'Autoart Studio Design' vendor.

65. Retrieve the order numbers for orders with a total price exceeding a 1000.

```
mysql> SELECT ORDERNUMBER
   -> FROM orders
   -> WHERE ORDERNUMBER IN
   -> (SELECT ORDERNUMBER
   -> FROM orderdetails
   -> GROUP BY ORDERNUMBER
   -> HAVING SUM(PRICEEACH*QUANTITYORDERED) > 1000);
+----+
| ORDERNUMBER |
       10123 |
       10298
       10345
       10124
       10278
       10346
       10120
       10125
       10223
       10342
```

66. Retrieve the product codes and names for products ordered by customers from Spain.

67. Retrieve the city and country of offices located in cities where customers have placed orders.

| S12 1099 | 1968 Ford Mustang

68. Retrieve the employee number, last name, and first name of employees with customers in their office's country.

```
mysql> SELECT EMPLOYEENUMBER, LASTNAME, FIRSTNAME
   -> FROM employees
   -> WHERE OFFICECODE IN (
   -> SELECT OFFICECODE
   -> FROM offices
   -> WHERE COUNTRY IN
   -> (SELECT COUNTRY
   -> FROM customers));
+----+
 EMPLOYEENUMBER | LASTNAME | FIRSTNAME |
+----+
          1002 | Murphy | Diane
          1056 | Patterson | Mary
          1076 | Firrelli | Jeff
         1143 | Bow | Anthony
1165 | Jennings | Leslie
1166 | Thompson | Leslie
          1188 | Firrelli | Julie
          1216 | Patterson | Steve
```

## **Queries using Correlated Sub Queries:**

69. Retrieve the product codes and names for products priced above the average price of all products.

70. Retrieve the names of customers with credit limits higher than the average credit limit in their country.

```
mysql> SELECT CUSTOMERNAME
   -> FROM customers C1
   -> WHERE C1.CREDITLIMIT >
   -> (SELECT AVG(C2.CREDITLIMIT)
   -> FROM customers C2
   -> WHERE C1.COUNTRY=C2.COUNTRY);
+-----+
I CUSTOMERNAME
+----+
| Australian Collectors, Co.
I La Rochelle Gifts
 Mini Gifts Distributors Ltd.
 Blauer See Auto, Co.
 Land of Toys Inc.
 Euro+ Shopping Channel
 Saveley & Henriot, Co.
 Dragon Souveniers, Ltd.
 Muscle Machine Inc
 Diecast Classics Inc.
 Technics Stores Inc.
 Handji Gifts& Co
 Herkku Gifts
 Daedalus Designs Imports
 La Corne D'abondance, Co.
 Gift Depot Inc.
 Toys of Finland, Co.
 AV Stores, Co.
 Clover Collections, Co.
| UK Collectables, Ltd.
```