

- a) By using the following queries, we can have an overview of the data in the database, where the output shows the result of customers table.

```

3 • SELECT * FROM customers;
4 • SELECT * FROM employees;
5 • SELECT * FROM offices;
6 • SELECT * FROM orderdetails;
7 • SELECT * FROM orders;
8 • SELECT * FROM payments;
9 • SELECT * FROM productlines;
10 • SELECT * FROM products;
  
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1
103	Atelier graphique	Schmitt	Carine	40.32.2555	54, rue Royale
112	Signal Gift Stores	King	Jean	7025551838	8489 Strong St.
114	Australian Collectors, Co.	Ferguson	Peter	03 9520 4555	636 St Kilda Road
119	La Rochelle Gifts	Labruno	Janine	40.67.8555	67, rue des Cinquante Otages
121	Baane Mini Imports	Bergulfsen	Jonas	07-98 9555	Erling Skakkes gate 78
124	Mini Gifts Distributors Ltd.	Nelson	Susan	4155551450	5677 Strong St.
125	Havel & Zbyszek Co	Piestrzeniewicz	Zbyszek	(26) 642-7555	ul. Filtrów 68
128	Blauer See Auto, Co.	Keitel	Roland	+49 69 66 90 2555	Lyonerstr. 34
129	Mini Wheels Co	Murnighan	Julie	6505555787	5557 North Bendale Street

b) The following query is done to filter the employees of sales representatives only.

```
12 • SELECT * FROM employees WHERE jobTitle = 'Sales Rep';
```

employeeNumber	lastName	firstName	extension	email	officeCode	reportsTo	jobTitle
1165	Jennings	Leslie	x3291	ljennings@classicmodelcars.com	1	1143	Sales Rep
1166	Thompson	Leslie	x4065	lthompson@classicmodelcars.com	1	1143	Sales Rep
1188	Firrelli	Julie	x2173	jfirrelli@classicmodelcars.com	2	1143	Sales Rep
1216	Patterson	Steve	x4334	spatterson@classicmodelcars.com	2	1143	Sales Rep
1286	Tseng	Foon Yue	x2248	ftseng@classicmodelcars.com	3	1143	Sales Rep
1323	Vanauf	George	x4102	gvanauf@classicmodelcars.com	3	1143	Sales Rep
1337	Bondur	Loui	x6493	lbondur@classicmodelcars.com	4	1102	Sales Rep
1370	Hernandez	Gerard	x2028	ghernande@classicmodelcars.com	4	1102	Sales Rep
1401	Castillo	Pamela	x2759	pcastillo@classicmodelcars.com	4	1102	Sales Rep
1501	Rnnt	Larry	x2311	lhntt@classicmodelcars.com	7	1102	Sales Rep

employees 7 × Result 8 offices 9 Apply

c) The following query done to count the rows in customers table.

```
13 • SELECT COUNT(*) FROM customers;
```

COUNT(*)
122

d) The following query is done to see distinct countries in the office table to see how many countries office located at.

```
14 • SELECT DISTINCT country FROM offices;
```

country
USA
France
Japan
Australia
UK

The basic queries shown above a) till d) can be done for any other table in the database to have basic understanding of each table respectively.

- a) Count the Number of employees that work in the same city in descending order, output example as follows.

Number_of Employee

6

5

2

:

City

San Francisco

Paris

Boston

```
19 #a)
20 • SELECT COUNT(*) AS Number_of_Employees, o.city AS City
21 FROM employees e
22 JOIN offices o ON e.officeCode = o.officeCode
23 GROUP BY o.city
24 ORDER BY Number_of_Employees DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Number_of_Employees	City
6	San Francisco
5	Paris
4	Sydney
2	Boston
2	NYC
2	Tokyo
2	London

- b) Create a view called *staff_office1* that have list of staff in office code 1, output example as follows.

Name

Murphy, Diane

Patterson, Mary

Firrel, Jeff

City

San Francisco

San Francisco

San Francisco

Address

100, Market Street, Suite 300

100, Market Street, Suite 300

100, Market Street, Suite 300

Country

USA

USA

USA

```
26 #b)
27 • CREATE VIEW staff_office1 AS
28 SELECT CONCAT(e.lastName, ', ', e.firstName) AS Name, o.city, o.addressLine1, o.country
29 FROM employees e
30 JOIN offices o ON e.officeCode = o.officeCode
31 WHERE e.officeCode = '1';
32
33 • SELECT * FROM staff_office1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Name	city	addressLine1	country
Murphy, Diane	San Francisco	100 Market Street	USA
Patterson, Mary	San Francisco	100 Market Street	USA
Firrelli, Jeff	San Francisco	100 Market Street	USA
Bow, Anthony	San Francisco	100 Market Street	USA
Jennings, Leslie	San Francisco	100 Market Street	USA
Thompson, Leslie	San Francisco	100 Market Street	USA

c) Find the average credit limit of customer.

```
36 • SELECT AVG(creditLimit) AS 'Average Credit Limit'
37 FROM customers;
```

Result Grid		Filter Rows:	Export:	Wrap Cell
	Average Credit Limit			
▶	67659.016393			

d) List the customer's name that have credit limit more than average credit limit.

```
39 #d)
40 • SELECT customerName AS Customers
41 FROM customers
42 WHERE creditLimit > (
43     SELECT AVG(creditLimit)
44     FROM customers);
```

Result Grid		Filter Rows:	Export:	Wrap Cell
	Customers			
▶	Signal Gift Stores			
	Australian Collectors, Co.			
	La Rochelle Gifts			
	Baane Mini Imports			
	Mini Gifts Distributors Ltd.			
	Land of Toys Inc.			
	Euro+ Shopping Channel			
	Danish Wholesale Imports			
	Saveley & Henriot, Co.			
	Dragon Souvenirs Ltd			

- e) List of customer name served by the sales representative as the following format.

Customer_Name	Contact	Salesperson_name	Position
Mini Gift Distributors Ltd	xxxx	Leslie	Sales Rep
:			
Technics Stores Inc	xxxxx	Leslie	Sales Rep
DieCast Collectables	xxxxx	Julie	Sales rep
:			

```

46 #e)
47 • SELECT c.customerName AS Customer_Name, c.phone AS Contact, e.firstName AS Salesperson_Name,
48     e.jobTitle AS Position
49 FROM customers c
50 JOIN employees e ON c.salesRepEmployeeNumber = e.employeeNumber;

```

Customer_Name	Contact	Salesperson_Name	Position
The Sharp Gifts Warehouse	4085553659	Leslie	Sales Rep
Signal Collectibles Ltd.	4155554312	Leslie	Sales Rep
Signal Gift Stores	7025551838	Leslie	Sales Rep
Toys4GrownUps.com	6265557265	Leslie	Sales Rep
Boards & Toys Co.	3105552373	Leslie	Sales Rep
Collectable Mini Designs Co.	7605558146	Leslie	Sales Rep
Men 'R' US Retailers, Ltd.	2155554369	Leslie	Sales Rep
West Coast Collectables Co.	3105553722	Leslie	Sales Rep
Cambridge Collectables Co.	6175555555	Julie	Sales Rep
Online Mini Collectables	6175557555	Julie	Sales Rep

- f) Count the number of customers served by each the sales representative in the company.

Number_of_Customer	Saleperson_name
12	Leslie
6	Julie
:	

```

52 #f)
53 • SELECT COUNT(c.customerNumber) AS Number_of_Customer, e.firstName AS Salesperson_name
54 FROM employees e
55 LEFT JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
56 WHERE e.jobTitle LIKE '%Sales Rep'
57 GROUP BY e.firstName;

```

Number_of_Customer	Saleperson_name
12	Leslie
6	Julie
6	Steve
7	Foon Yue
8	George
6	Loui
7	Gerard
10	Pamela
8	Larry
9	Barry

g) List the sales person that serve more than 10 customers.

```

59 #g)
60 • SELECT e.firstName AS Salesperson_Name, COUNT(c.customerNumber) AS Customer_Count
61 FROM employees e
62 JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
63 WHERE e.jobTitle LIKE '%Sales Rep'
64 GROUP BY e.firstName
65 HAVING COUNT(c.customerNumber) > 10;
66

```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
Salesperson_Name	Customer_Count			
Leslie	12			

h) Find the payment made by customer named Atelier graphique and output is as follows.

Customer name	Cheque Number	Date	Amount
Atelier graphique	HQ336336	2004-10-19	6066.78
Atelier graphique	JM555205	2003-06-05	1471.44
Atelier graphique	OM314933	2004-12-18	1676.14

```

58 #h)
59 • SELECT c.customerName AS `Customer name`, p.checkNumber AS `Cheque Number`,
70 p.paymentDate AS `Date`, p.amount AS `Amount`
71 FROM customers c
72 JOIN payments p ON c.customerNumber = p.customerNumber
73 WHERE c.customerName = 'Atelier graphique';

```

Result Grid				Filter Rows:	Export:	Wrap Cell Content:
Customer name	Cheque Number	Date	Amount			
Atelier graphique	HQ336336	2004-10-19	6066.78			
Atelier graphique	JM555205	2003-06-05	14571.44			
Atelier graphique	OM314933	2004-12-18	1676.14			

- i) Find the monthly quantity order by each product according to the following format.
(hint : use function month(date), year date in SQL),

Product_Name	Quantity_Order	Month_sale	Year_sale
1917 Grand Touring Sedan	97	1	2003
:	:	:	:
1932 Model A Ford J-Coupe	79	1	2003
:	:	:	:
XXXX	XXXXXX	12	2003
XXXX	XXXXXX	1	2004
:	:	:	:
XXXXXX	XXXXXXX	12	2004

```

75 #i)
76 • SELECT p.productName AS Product_Name, SUM(od.quantityOrdered) AS Quantity_Order,
77      EXTRACT(MONTH FROM o.orderDate) AS Month_sale, EXTRACT(YEAR FROM o.orderDate) AS Year_sale
78 FROM orderdetails od
79 JOIN orders o ON od.orderNumber = o.orderNumber
80 JOIN products p ON od.productCode = p.productCode
81 GROUP BY p.productName, Month_sale, Year_sale;

```

Product_Name	Quantity_Order	Month_sale	Year_sale
1917 Grand Touring Sedan	30	1	2003
1911 Ford Town Car	50	1	2003
1932 Alfa Romeo 8C2300 Spider Sport	22	1	2003
1936 Mercedes Benz 500k Roadster	49	1	2003
1932 Model A Ford J-Coupe	25	1	2003
1928 Mercedes-Benz SSK	26	1	2003
1939 Chevrolet Deluxe Coupe	45	1	2003
1938 Cadillac V-16 Presidential Limousine	46	1	2003
1937 Lincoln Berline	39	1	2003

- j) Assuming attribute **MSRP** in **products** table is the sales price of each product. List the product that have profit >50.

```

84 • SELECT productName AS "Product with >50 profit", MSRP - buyPrice AS "Profit"
85 FROM products
86 WHERE MSRP - buyPrice >50
87 ORDER BY productName;

```

Product with >50 profit	Profit
1903 Ford Model A	68.29
1917 Grand Touring Sedan	83.30
1928 Mercedes-Benz SSK	96.19
1932 Model A Ford J-Coupe	68.65
1940 Ford Pickup Truck	58.34
1948 Porsche Type 356 Roadster	79.12
1952 Alpine Renault 1300	115.72
1957 Chevy Pickup	62.80
1957 Corvette Convertible	78.87

- k) The management want to send the invoice with total amount (calculate based quantity order * price) for each order to customer as follows.

Customer Name	Order Number	Total Amount
XXXXX	XXXXX	XXXXXX

```

90  #k)
91  • SELECT c.customerName AS `Customer Name`, o.orderNumber AS `Order Number`,
92  SUM(od.quantityOrdered * od.priceEach) AS `Total Amount`
93  FROM customers c
94  JOIN orders o ON c.customerNumber = o.customerNumber
95  JOIN orderdetails od ON o.orderNumber = od.orderNumber
96  GROUP BY c.customerNumber, o.orderNumber;

```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
Customer Name	Order Number	Total Amount			
Atelier graphique	10123	14571.44			
Atelier graphique	10298	6066.78			
Atelier graphique	10345	1676.14			
Signal Gift Stores	10124	32641.98			
Signal Gift Stores	10278	33347.88			
Signal Gift Stores	10346	14191.12			
Australian Collectors, Co.	10120	45864.03			
Australian Collectors, Co.	10125	7565.08			

- l) Find the subtotal of quantity in stock for each product line according to product vendor.

Line	Vendor	Stock
Classic Car	Autoart	68
Classic Car	Exoto Design	3442
:		
Motorcycle	Autoart	7603
:		

```

99  #l)
100 • SELECT p.productLine as "Line", p.productVendor as "Vendor" ,
101  SUM(p.quantityInStock) AS "Stock"
102  FROM products p
103  GROUP BY p.productLine, p.productVendor
104  ORDER BY p.productLine, p.productVendor;

```




Result Grid			Filter Rows:	Export:	Wrap Cell Content:
Line	Vendor	Stock			
Classic Cars	Carousel DieCast Legends	17673			
Classic Cars	Classic Metal Creations	34415			
Classic Cars	Exoto Designs	12729			
Classic Cars	Gearbox Collectibles	41113			
Classic Cars	Highway 66 Mini Classics	15782			
Classic Cars	Min Lin Diecast	17234			
Classic Cars	Motor City Art Classics	3252			
Classic Cars	Red Start Diecast	8164			
Classic Cars	Second Gear Diecast	19182			

m) Rank the Product *buyPrice* according to the vendor.

```

l07      #m)
l08 •    SELECT p.productVendor AS Product_Vendor, p.productName AS Product_Name,
l09      p.buyPrice AS Product_Price,
l10      ROW_NUMBER() OVER (PARTITION BY p.productVendor ORDER BY p.buyPrice) AS Price_Rank
l11      FROM products p
l12      ORDER BY p.productVendor, p.buyPrice;

```

result Grid  Filter Rows: <input type="text"/> Export:  Wrap Cell Content: 				
Product_Vendor	Product_Name	Product_Price	Price_Rank	
Autoart Studio Design	1937 Horch 930V Limousine	26.30	1	
Autoart Studio Design	The Schooner Bluenose	34.00	2	
Autoart Studio Design	2002 Yamaha YZR M1	34.17	3	
Autoart Studio Design	1900s Vintage Bi-Plane	34.25	4	
Autoart Studio Design	1932 Model A Ford J-Coupe	58.48	5	
Autoart Studio Design	1997 BMW R. 1100 S	60.86	6	
Autoart Studio Design	1962 Volkswagen Microbus	61.34	7	
Autoart Studio Design	1968 Ford Mustang	95.34	8	
Carousel DieCast Legends	1958 Chevy Corvette Limited Edition	15.91	1	