SQL EDA Project — Classic Models Database

-- Part 1: Basic Exploration

-- 1 List all customers from USA

```
select * from customers;
SELECT
    *
FROM
    customers
WHERE
    country = 'USA';
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimit
112	Signal Gift Stores	King	Jean	7025551838	8489 Strong St.	NULL	Las Vegas	NV	83030	USA	1166	71800.00
124	Mini Gifts Distributors Ltd.	Nelson	Susan	4155551450	5677 Strong St.	NULL	San Rafael	CA	97562	USA	1165	210500.00
129	Mini Wheels Co.	Murphy	Julie	6505555787	5557 North Pendale Street	NULL	San Francisco	CA	94217	USA	1165	64600.00
131	Land of Toys Inc.	Lee	Kwai	2125557818	897 Long Airport Avenue	NULL	NYC	NY	10022	USA	1323	114900.00
151	Muscle Machine Inc	Young	Jeff	2125557413	4092 Furth Circle	Suite 400	NYC	NY	10022	USA	1286	138500.00
157	Diecast Classics Inc.	Leong	Kelvin	2155551555	7586 Pompton St.	NULL	Allentown	PA	70267	USA	1216	100600.00
161	Technics Stores Inc.	Hashimoto	Juri	6505556809	9408 Furth Circle	NULL	Burlingame	CA	94217	USA	1165	84600.00
168	American Souvenirs Inc	Franco	Keith	2035557845	149 Spinnaker Dr.	Suite 101	New Haven	CT	97823	USA	1286	0.00
173	Cambridge Collectables Co.	Tseng	Jerry	6175555555	4658 Baden Av.	NULL	Cambridge	MA	51247	USA	1188	43400.00
175	Gift Depot Inc.	King	Julie	2035552570	25593 South Bay Ln.	NULL	Bridgewater	CT	97562	USA	1323	84300.00

customers 1 | Apply

Description : The query lists all customers located in the USA. Useful for region-specific analysis and targeting

2 Show all products where stock is less than 500 units.

```sql
select * from products;
SELECT
   productCode, productName,quantityInStock
FROM
    products
WHERE
    quantityInStock > 500;
```

Result Grid | Filter Rows: | Export:

	productCode	productName	profitMargin
▶	S10_1949	1952 Alpine Renault 1300	115.72

Description : Low-stock products are identified. Helps in inventory control and restocking decisions.

3 Find employees working in the Paris office

```
select * from employees;
select * from offices;
select e.employeeNumber,e.lastName,e.firstName,o.city
from
employees  e
right join
offices o on e.officeCode=o.officeCode
where city='paris';
```

employeeNumber	lastName	firstName	city
1102	Bondur	Gerard	Paris
1337	Bondur	Loui	Paris
1370	Hernandez	Gerard	Paris
1401	Castillo	Pamela	Paris
1702	Gerard	Martin	Paris

Description : Employees mapped to the Paris office are retrieved. Confirms HR and office assignments

4 Get orders with status = 'Cancelled'.

```sql
select * from orders
where status = 'Cancelled';

-- 5 List all customers whose credit limit > 100000
select * from customers
where creditlimit > 100000 ;
```

Result Grid | Filter Rows: | Export:

employeeNumber	lastName	firstName	city
1102	Bondur	Gerard	Paris
1337	Bondur	Loui	Paris
1370	Hernandez	Gerard	Paris
1401	Castillo	Pamela	Paris
1702	Gerard	Martin	Paris

Description : Orders with status “Cancelled” are shown. Highlights transaction failures and customer churn risk.

5 List all customers whose credit limit > 100000

```
select * from customers
where creditlimit > 100000 ;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumbe
114	Australian Collectors, Co.	Ferguson	Peter	03 9520 4555	636 St Kilda Road	Level 3	Melbourne	Victoria	3004	Australia	1611
119	La Rochelle Gifts	Labrune	Janine	40.67.8555	67, rue des Cinquante Otages	NULL	Nantes	NULL	44000	France	1370
124	Mini Gifts Distributors Ltd.	Nelson	Susan	4155551450	5677 Strong St.	NULL	San Rafael	CA	97562	USA	1165
131	Land of Toys Inc.	Lee	Kwai	2125557818	897 Long Airport Avenue	NULL	NYC	NY	10022	USA	1323
141	Euro+ Shopping Channel	Freyre	Diego	(91) 555 94 44	C/ Moralzarzal, 86	NULL	Madrid	NULL	28034	Spain	1370
146	Saveley & Henriot, Co.	Saveley	Mary	78.32.5555	2, rue du Commerce	NULL	Lyon	NULL	69004	France	1337
148	Dragon Souveniers, Ltd.	Natividad	Eric	+65 221 7555	Bronz Sok.	Bronz Apt. 3/6 Tesvikiye	Singapore	NULL	079903	Singapore	1621
151	Muscle Machine Inc	Young	Jeff	2125557413	4092 Furth Circle	Suite 400	NYC	NY	10022	USA	1286
157	Diecast Classics Inc.	Leong	Kelvin	2155551555	7586 Pompton St.	NULL	Allentown	PA	70267	USA	1216

Description : High-credit customers are listed. These are premium clients for upselling opportunities.

6 Find customers who have no assigned sales representative

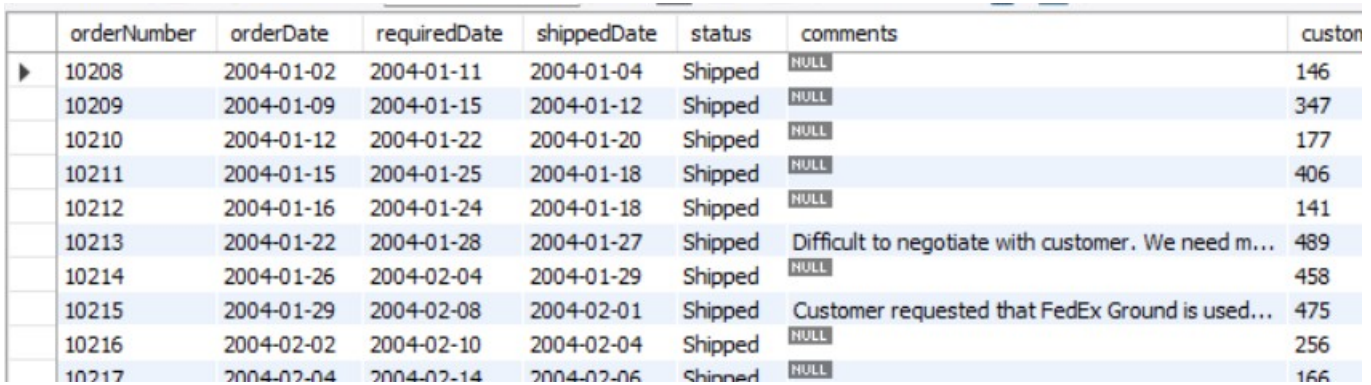
```
select * from customers;
select * from customers
where salesRepEmployeeNumber is null;
```

customerNumber	customerName	contactLastName	contactFirstName	phone	addressLine1	addressLine2	city	state	postalCode	country	salesRepEmployeeNumber	creditLimi
125	Havel & Zbyszek Co	Piestrzeniewicz	Zbyszek	(26) 642-7555	ul. Filtrowa 68	NULL	Warszawa	NULL	01-012	Poland	NULL	0.00
169	Porto Imports Co.	de Castro	Isabel	(1) 356-5555	Estrada da saúde n. 58	NULL	Lisboa	NULL	1756	Portugal	NULL	0.00
206	Asian Shopping Network, Co	Walker	Brydey	+612 9411 1555	Suntec Tower Three	8 Temasek	Singapore	NULL	038988	Singapore	NULL	0.00
223	Natürlich Autos	Kloss	Horst	0372-555188	Taucherstraße 10	NULL	Cunewalde	NULL	01307	Germany	NULL	0.00
237	ANG Resellers	Camino	Alejandra	(91) 745 6555	Gran Vía, 1	NULL	Madrid	NULL	28001	Spain	NULL	0.00
247	Messner Shopping Network	Messner	Renate	069-0555984	Magazinweg 7	NULL	Frankfurt	NULL	60528	Germany	NULL	0.00
273	Franken Gifts, Co	Franken	Peter	089-0877555	Berliner Platz 43	NULL	München	NULL	80805	Germany	NULL	0.00
293	BG&E Collectables	Harrison	Ed	+41 26 425 50 01	Rte des Arsenaux 41	NULL	Fribourg	NULL	1700	Switzerland	NULL	0.00
303	Schuyler Imports	Schuyler	Bradley	+31 20 491 9555	Kingsfordweg 151	NULL	Amsterdam	NULL	1043 GR	Netherlands	NULL	0.00

Description : Customers lacking assigned sales representatives are identified. Indicates gaps in sales coverage.

7 Show all orders placed in 2004.

```
SELECT * FROM orders
WHERE orderDate BETWEEN '2004-01-01' and '2004-12-31';
```



orderNumber	orderDate	requiredDate	shippedDate	status	comments	custon
10208	2004-01-02	2004-01-11	2004-01-04	Shipped	NULL	146
10209	2004-01-09	2004-01-15	2004-01-12	Shipped	NULL	347
10210	2004-01-12	2004-01-22	2004-01-20	Shipped	NULL	177
10211	2004-01-15	2004-01-25	2004-01-18	Shipped	NULL	406
10212	2004-01-16	2004-01-24	2004-01-18	Shipped	NULL	141
10213	2004-01-22	2004-01-28	2004-01-27	Shipped	Difficult to negotiate with customer. We need m...	489
10214	2004-01-26	2004-02-04	2004-01-29	Shipped	NULL	458
10215	2004-01-29	2004-02-08	2004-02-01	Shipped	Customer requested that FedEx Ground is used...	475
10216	2004-02-02	2004-02-10	2004-02-04	Shipped	NULL	256
10217	2004-02-04	2004-02-14	2004-02-06	Shipped	NULL	166

Description : Orders from 2004 are extracted. Supports year-wise performance and trend analysis.

Part 2: Joins Practice

1 Show all orders along with the customer name

```
select * from customers;
select * from orders;
 select o.orderNumber,
  o.orderDate,
c.customerName
    from
   orders  o
    right join
    customers  c on o.customerNumber=c.customerNumber;
```

orderNumber	orderDate	customerName
10123	2003-05-20	Atelier graphique
10298	2004-09-27	Atelier graphique
10345	2004-11-25	Atelier graphique
10124	2003-05-21	Signal Gift Stores
10278	2004-08-06	Signal Gift Stores
10346	2004-11-29	Signal Gift Stores
10120	2003-04-29	Australian Collectors, Co.
10125	2003-05-21	Australian Collectors, Co.
10223	2004-02-20	Australian Collectors, Co.
10342	2004-11-24	Australian Collectors, Co.

Description : Orders are joined with customer names. Provides a complete view of transactions per client.

2 Show each customer with their sales representative’s name

```
select* from employees;
select c.customerName,e.firstName as sales_representative’s_name
from
employees  e
right join
customers  c on e.employeeNumber=c.salesRepEmployeeNumber;
```

customerName	sales_representative’s_name
Atelier graphique	Gerard
Signal Gift Stores	Leslie
Australian Collectors, Co.	Andy
La Rochelle Gifts	Gerard
Baane Mini Imports	Barry
Mini Gifts Distributors Ltd.	Leslie
Havel & Zbyszek Co	NULL
Blauer See Auto, Co.	Barry
Mini Wheels Co.	Leslie
Land of Toys Inc.	George

Description : Each customer is mapped to their sales representative. Ensures accountability in client management.

3 Find all employees and the office city they work in.

```
select e.employeeNumber,e.firstName,o.city
   from
employees  e
   right join
  offices  o on e.officeCode=o.officeCode;
```

employeeNumber	firstName	city
1002	Diane	San Francisco
1056	Mary	San Francisco
1076	Jeff	San Francisco
1143	Anthony	San Francisco
1165	Leslie	San Francisco
1166	Leslie	San Francisco
1188	Julie	Boston
1216	Steve	Boston
1286	Foon Yue	NYC
1323	George	NYC

Result 3

Description : Employees are displayed with their office city. Confirms organizational distribution across locations

4 Show each order with its ordered products and quantities.

```
select * from products;
select * from orderdetails;
 select p.productName,o.quantityOrdered
    from
products  p
    right join
  orderdetails  o on p.productCode=o.productCode;
```

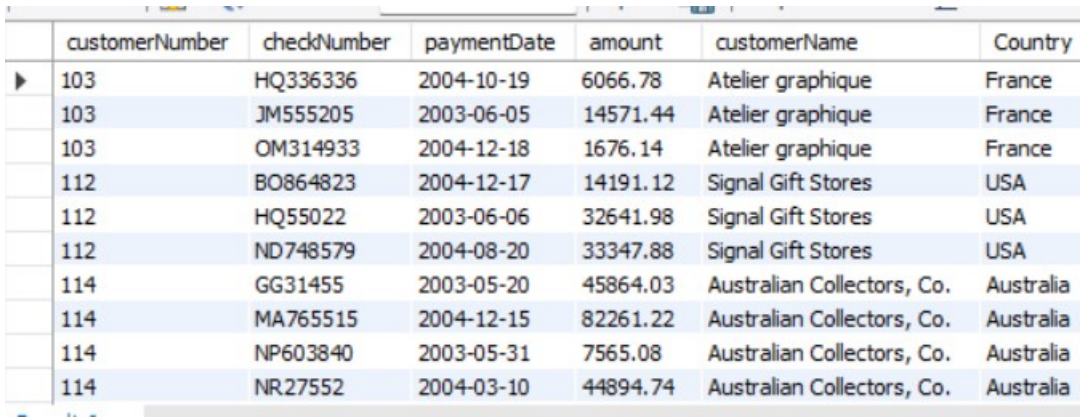
productName	quantityOrdered
1917 Grand Touring Sedan	30
1911 Ford Town Car	50
1932 Alfa Romeo 8C2300 Spider Sport	22
1936 Mercedes Benz 500k Roadster	49
1932 Model A Ford J-Coupe	25
1928 Mercedes-Benz SSK	26
1939 Chevrolet Deluxe Coupe	45
1938 Cadillac V-16 Presidential Limousine	46
1937 Lincoln Berline	39
1936 Mercedes-Benz 500K Special Roadster	41

Result 4

Description : Orders are linked with product names and quantities. Helps in demand forecasting and product popularity checks.

5 List all payments with customer name and country.

```
select p.*,c.customerName,c.Country
   from
payments  p
   right join
customers  c on p.customerNumber=c.customerNumber;
```



customerNumber	checkNumber	paymentDate	amount	customerName	Country
103	HQ336336	2004-10-19	6066.78	Atelier graphique	France
103	JM555205	2003-06-05	14571.44	Atelier graphique	France
103	OM314933	2004-12-18	1676.14	Atelier graphique	France
112	BO864823	2004-12-17	14191.12	Signal Gift Stores	USA
112	HQ55022	2003-06-06	32641.98	Signal Gift Stores	USA
112	ND748579	2004-08-20	33347.88	Signal Gift Stores	USA
114	GG31455	2003-05-20	45864.03	Australian Collectors, Co.	Australia
114	MA765515	2004-12-15	82261.22	Australian Collectors, Co.	Australia
114	NP603840	2003-05-31	7565.08	Australian Collectors, Co.	Australia
114	NR27552	2004-03-10	44894.74	Australian Collectors, Co.	Australia

Description : Payments are shown with customer details. Integrates financial data with customer profiles.

6 Show all customers who have never placed an order.

```
select * from customers;
select * from orders;
select c.customerName,c.customerName,o.orderNumber
    from
customers  c
 left join
orders  o on c.customerNumber=o.customerNumber
where o.customerNumber is null;
```

customerNumber	checkNumber	paymentDate	amount	customerName	Country
103	HQ336336	2004-10-19	6066.78	Atelier graphique	France
103	JM555205	2003-06-05	14571.44	Atelier graphique	France
103	OM314933	2004-12-18	1676.14	Atelier graphique	France
112	BO864823	2004-12-17	14191.12	Signal Gift Stores	USA
112	HQ55022	2003-06-06	32641.98	Signal Gift Stores	USA
112	ND748579	2004-08-20	33347.88	Signal Gift Stores	USA
114	GG31455	2003-05-20	45864.03	Australian Collectors, Co.	Australia
114	MA765515	2004-12-15	82261.22	Australian Collectors, Co.	Australia

Result 6 ×

Description : Inactive customers are identified. Highlights accounts for re-engagement strategies.

7 Find employees who don’t manage anyone.

```
 select e1.*
from employees e1
left join employees e2 on e1.employeeNumber = e2.reportsTo
where e2.employeeNumber  is null;
```

employeeNumber	lastName	firstName	extension	email	officeCode	reportsTo	jobTitle
1076	Firrelli	Jeff	x9273	jfirrelli@classicmodelcars.com	1	1002	VP Marketing
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

Result 7

Description : Employees without direct reports are listed. Shows individual contributors versus managers.

Part 3: Aggregates & Grouping

1 Count how many customers each country has.

```
select country, COUNT(*) as customer_count
from customers
group by country;
```

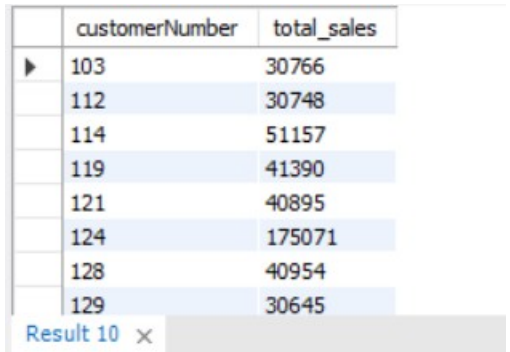
country	customer_count
France	12
USA	36
Australia	5
Norway	1
Poland	1
Germany	13
Spain	7
Sweden	2

Result 8

Description : Customer counts are summarized by country. Reveals geographic distribution and market penetration.

2 Find the total sales amount for each customer.

```
select customerNumber, SUM(orderNumber)as total_sales
from orders
group by  customerNumber;
```



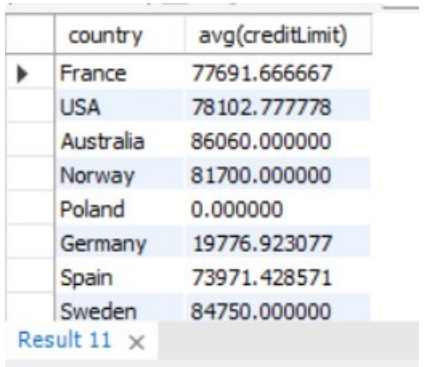
customerNumber	total_sales
103	30766
112	30748
114	51157
119	41390
121	40895
124	175071
128	40954
129	30645

Result 10

Description : Sales totals are aggregated per customer. Identifies high-value clients and sales concentration.

3 Show the average credit limit per country.

```
select country, avg(creditLimit)
from customers
group by country;
```



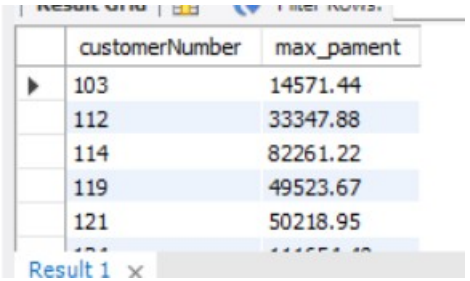
country	avg(creditLimit)
France	77691.666667
USA	78102.777778
Australia	86060.000000
Norway	81700.000000
Poland	0.000000
Germany	19776.923077
Spain	73971.428571
Sweden	84750.000000

Result 11

Description : Average credit limits are calculated by country. Shows financial capacity trends across regions.

4 Find the maximum payment amount per customer

```sql
select customerNumber, max(amount) as max_pament
from payments
group by customerNumber;
```



customerNumber	max_pament
103	14571.44
112	33347.88
114	82261.22
119	49523.67
121	50218.95

Result 1

Description : The highest payment per customer is retrieved. Highlights peak transaction values.

5 Count the number of products in each product line.

```sql
select ProductLine,count(*)as product_count
from products
group by productLine;
```

	ProductLine	product
▶	Classic Cars	38
	Motorcycles	13
	Planes	12
	Ships	9
	Trains	3
	Trucks and Buses	11
	Vintage Cars	24

Description : Products are grouped by product line. Shows catalog diversity and product distribution.

6 Find which employee manages the most customers.

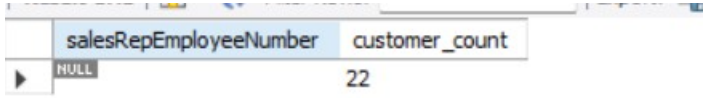
```sql
select salesRepEmployeeNumber ,count(*)as customer_count
from customers
group by salesRepEmployeeNumber
order by customer_count desc
limit 1;
```

salesRepEmployeeNumber	customer_count
NULL	22

Description : The employee with the highest customer count is identified. Highlights workload distribution.

7 Get the monthly sales totals for 2004.

```
select month(orderDate) as month_ ,sum(orderNumber)as monthly_sales
from orders
where year(orderDate) = 2004
group by  month_
order by monthly_sales desc
limit 1;
```



salesRepEmployeeNumber	customer_count
NULL	22

Description : Monthly sales totals are calculated. Supports seasonal trend analysis and peak month identification.

8 Find the top 5 customers by total payments.

```sql
select customerNumber, sum(amount) as total_payment
from payments
group by customerNumber
order by total_payment desc
limit 5;
```

customerNumber	total_payment
141	715738.98
124	584188.24
114	180585.07
151	177913.95
148	156251.03

Description : The top 5 customers by payments are highlighted. Represents the most profitable accounts

Part 4: Subqueries & Insights

1 Find customers who made payments greater than the average payment.

```
select customerNumber, customerName, amount
from customers
join payments using(customerNumber)
where amount > (
  select avg(amount) from payments
);
```

customerNumber	customerName	amount
112	Signal Gift Stores	32641.98
112	Signal Gift Stores	33347.88
114	Australian Collectors, Co.	45864.03
114	Australian Collectors, Co.	82261.22
114	Australian Collectors, Co.	44894.74
119	La Rochelle Gifts	47924.19
119	La Rochelle Gifts	49523.67
121	Baane Mini Imports	50218.95

Result 16

Description : Customers making payments greater than the average are listed. Identifies financially strong clients.

2 List products that have never been ordered.

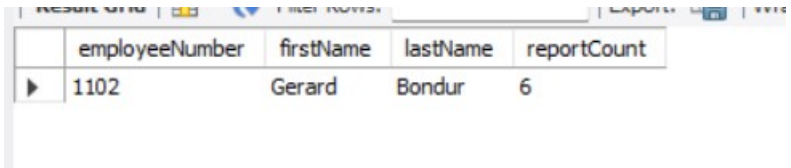
```
5  select productCode, productName
6  from products
7  where productCode not in (
8    select productCode from orderdetails
9  );
```

	productCode	productName
▶	S18_3233	1985 Toyota Supra
*	NULL	NULL

Description : Products that have never been ordered are identified. Helps in data log optimization decisions.

3 Find the employee with the highest number of direct reports.

```sql
select e.employeeNumber, e.firstName, e.lastName, COUNT(r.employeeNumber) as reportCount
from employees e
left join employees r on e.employeeNumber = r.reportsTo
group by e.employeeNumber, e.firstName, e.lastName
order by reportCount desc
limit 1;
```



employeeNumber	firstName	lastName	reportCount
1102	Gerard	Bondur	6

Description : The employee managing the most direct reports is found. Shows leadership hierarchy and team size distribution.

4 Show orders that contain the most expensive product.

```
select o.orderNumber, p.productCode, p.productName, od.priceEach
from orders o
join orderdetails od using (orderNumber)
join products p using (productCode)
where od.priceEach = (
    select MAX(priceEach)from orderdetails
);
```

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

orderNumber	productCode	productName	priceEach
10103	S10_1949	1952 Alpine Renault 1300	214.30
10228	S10_1949	1952 Alpine Renault 1300	214.30
10312	S10_1949	1952 Alpine Renault 1300	214.30

Description : Shows orders that include the most expensive product.

5 List the top 3 offices with the highest total sales.

```
210 •  select o.officeCode, o.city, SUM(od.quantityOrdered * od.priceEach) as totalSales
211    from offices o
212    join employees e using (officeCode)
213    join customers c on e.employeeNumber = c.salesRepEmployeeNumber
214    join orders ord using    (customerNumber)
215    join orderdetails od using (orderNumber)
216    group by o.officeCode, o.city
217    order by totalSales desc
218    limit 3;
219
```

Result Grid | Filter Rows:

officeCode	city	totalSales
4	Paris	3083761.58
7	London	1436950.70
1	San Francisco	1429063.57

Description : Lists the top 3 offices with the highest total sales calculated from order details.

Part 5: Stored Procedures

1 Create a procedure to get all orders by a given customer.

```
DELIMITER $$
CREATE PROCEDURE GetOrdersByCustomer(IN customerNumber INT)
BEGIN
    SELECT o.orderNumber, o.orderDate, o.status, o.comments
    FROM orders o
    WHERE o.customerNumber = customerNumber
    ORDER BY o.orderDate;
END$$

DELIMITER ;
call  GetOrdersByCustomer (112);
```

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

orderNumber	orderDate	status	comments
10124	2003-05-21	Shipped	Customer very concerned about the exact color…
10278	2004-08-06	Shipped	NULL
10346	2004-11-29	Shipped	NULL

Result 3

Description : Creates a procedure to fetch all orders for a given customer number.

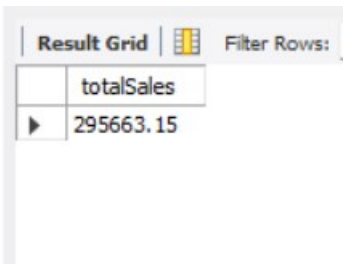
2 Find total sales between two date

```
DELIMITER $$

CREATE PROCEDURE GetTotalSalesBetweenDates(IN startDate DATE, IN endDate DATE)
BEGIN
    SELECT SUM(od.quantityOrdered * od.priceEach) AS totalSales
    FROM orders o
    JOIN orderdetails od ON o.orderNumber = od.orderNumber
    WHERE o.orderDate BETWEEN startDate AND endDate;
END$$

DELIMITER ;

call GetTotalSalesBetweenDates('2003-01-21','2003-03-16')
```



Description : Creates a procedure to calculate the total sales revenue within a specified date range.

3 Show the best-selling product line

```
DELIMITER $$

CREATE PROCEDURE GetBestSellingProductLine()
BEGIN
    SELECT p.productLine, SUM(od.quantityOrdered) AS totalUnit
    FROM orderdetails od
    JOIN products p ON od.productCode = p.productCode
    GROUP BY p.productLine
    ORDER BY totalUnitsSold DESC
    LIMIT 1;
END$$

DELIMITER ;
```

Result Grid | Filter Rows: | Export:

productLine	totalUnitsSold
Classic Cars	35582

Description : Creates a procedure to find the product line with the highest total units sold.

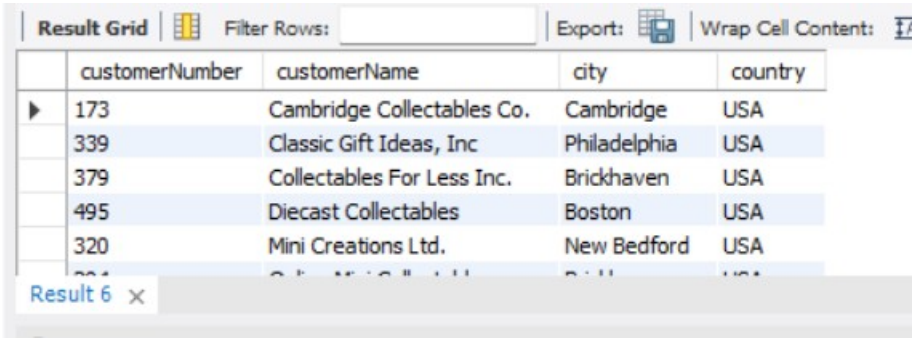
4 Display all customers handled by an employee

```
DELIMITER $$

CREATE PROCEDURE GetCustomersByEmployee(IN employeeNumber INT)
BEGIN
    SELECT c.customerNumber, c.customerName, c.city, c.country
    FROM customers c
    WHERE c.salesRepEmployeeNumber = employeeNumber
    ORDER BY c.customerName;
END$$

DELIMITER ;

call GetCustomersByEmployee(1188);
```



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

customerNumber	customerName	city	country
173	Cambridge Collectables Co.	Cambridge	USA
339	Classic Gift Ideas, Inc	Philadelphia	USA
379	Collectables For Less Inc.	Brickhaven	USA
495	Diecast Collectables	Boston	USA
320	Mini Creations Ltd.	New Bedford	USA

Result 6

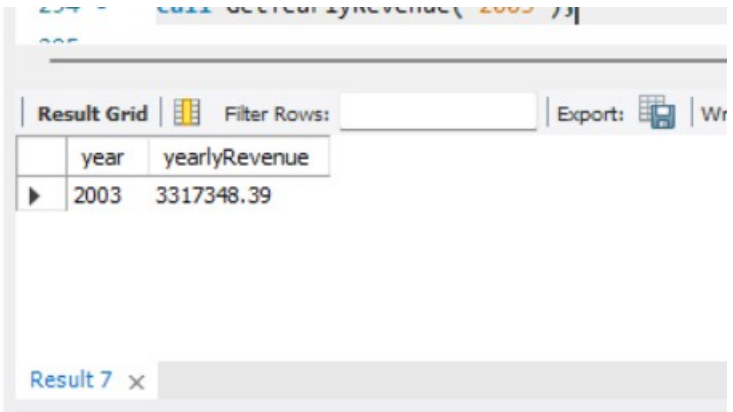
Description : Creates a procedure to display all customers assigned to a specific sales representative (employee)

5 Calculate yearly revenue given an input year

```
DELIMITER $$

CREATE PROCEDURE GetYearlyRevenue(IN inputYear INT)
BEGIN
    SELECT inputYear AS year,
           SUM(od.quantityOrdered * od.priceEach) AS yearlyRevenue
    FROM orders o
    JOIN orderdetails od ON o.orderNumber = od.orderNumber
    WHERE YEAR(o.orderDate) = inputYear;
END$$

DELIMITER ;
call GetYearlyRevenue('2003');
```

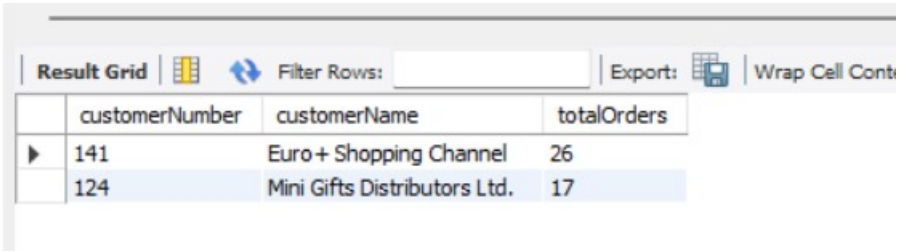


Description : Creates a procedure to calculate the total yearly revenue for a given input year.

Part 6: Advanced Clauses

1 Find customers who placed more than 5 orders.

```
SELECT   c.customerNumber, c.customerName, COUNT(o.orderNumber) AS totalOrders
FROM customers c
JOIN orders o ON c.customerNumber = o.customerNumber
GROUP BY c.customerNumber, c.customerName
HAVING COUNT(o.orderNumber) > 5
ORDER BY totalOrders DESC;
```



customerNumber	customerName	totalOrders
141	Euro+ Shopping Channel	26
124	Mini Gifts Distributors Ltd.	17

Description : Uses having to find customers who have placed more than 5 orders.

2 List product lines where the average MSRP > 100.

```sql
SELECT p.productLine, AVG(p.MSRP) AS avgMSRP
FROM products p
GROUP BY p.productLine
HAVING AVG(p.MSRP) > 100
ORDER BY avgMSRP DESC;
```

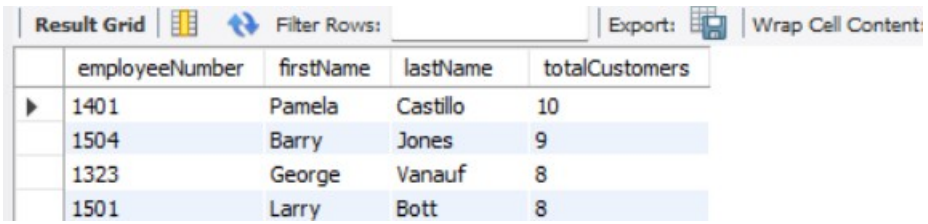
Result Grid | Filter Rows: | Export:

productLine	avgMSRP
Classic Cars	118.021053
Trucks and Buses	103.183636

Description : Lists product lines where the average Manufacturer's Suggested Retail Price (MSRP) is greater than $100.

3 Show employees with more than 3 customers assigned.

```
SELECT e.employeeNumber, e.firstName, e.lastName, COUNT(c.customerNumber) AS totalCustomers
FROM employees e
JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
GROUP BY e.employeeNumber, e.firstName, e.lastName
HAVING COUNT(c.customerNumber) > 3
ORDER BY totalCustomers DESC;
```

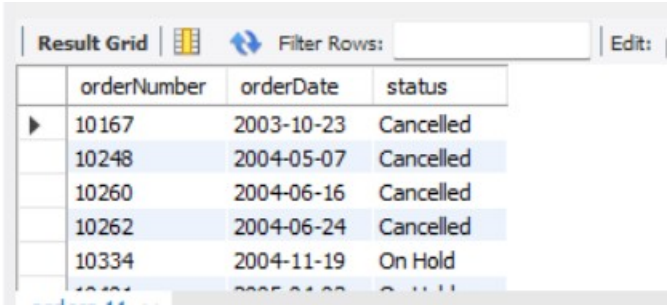


employeeNumber	firstName	lastName	totalCustomers
1401	Pamela	Castillo	10
1504	Barry	Jones	9
1323	George	Vanauf	8
1501	Larry	Bott	8

Description : Finds employees assigned to more than 3 customers.

4 Display orders where the shipped Date is NULL.

```
 SELECT o.orderNumber, o.orderDate, o.status
FROM orders o
WHERE o.shippedDate IS NULL
ORDER BY o.orderDate;
```



Result Grid | Filter Rows: | Edit:

orderNumber	orderDate	status
10167	2003-10-23	Cancelled
10248	2004-05-07	Cancelled
10260	2004-06-16	Cancelled
10262	2004-06-24	Cancelled
10334	2004-11-19	On Hold

Description : Displays orders where the shipped Date is `NULL`.

-- 5 Categorize customers by credit limit: High, Medium, Low

```sql
SELECT c.customerNumber, c.customerName, c.creditLimit,
       CASE
           WHEN c.creditLimit >= 100000 THEN 'High'
           WHEN c.creditLimit BETWEEN 50000 AND 99999 THEN 'Medium'
           ELSE 'Low'
       END AS creditCategory
FROM customers c
ORDER BY creditCategory DESC, c.creditLimit DESC;
```

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

customerNumber	customerName	creditLimit	creditCategory
334	Suominen Souveniers	98800.00	Medium
166	Handji Gifts& Co	97900.00	Medium
167	Herkku Gifts	96800.00	Medium
186	Toys of Finland, Co.	96500.00	Medium
455	Super Scale Inc.	95400.00	Medium

Result 12

Description : Uses a CASE statement to categorize customers as 'High' (<= 100000$), 'Medium' ($50000 - 99999$), or 'Low' based on their credit limit

Part 7: Business Insights

1 Which country generates the most revenue?

```sql
-- 1 Which country generates the most revenue?
SELECT c.country,
      SUM(od.quantityOrdered * od.priceEach) AS totalRevenue
FROM customers c
JOIN orders o ON c.customerNumber = o.customerNumber
JOIN orderdetails od ON o.orderNumber = od.orderNumber
GROUP BY c.country
ORDER BY totalRevenue DESC
LIMIT 1;

-- 2 Who are the top 5 sales representatives by payments?
```

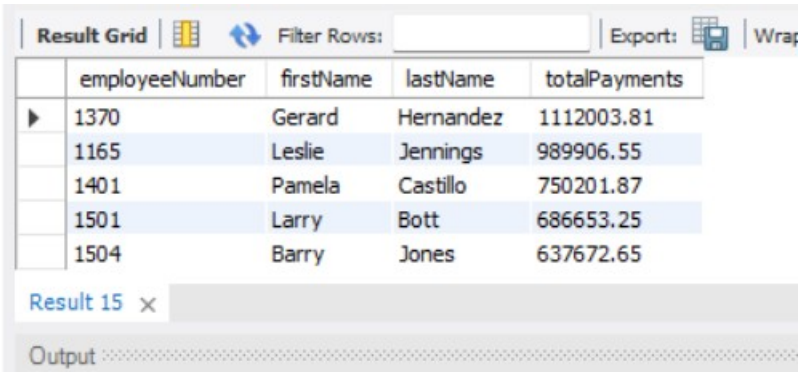
Result Grid | Filter Rows:

country	totalRevenue
USA	3273280.05

Description : Identifies the country that generates the highest total revenue (USA at $3,273,280.05).

-- 2 Who are the top 5 sales representatives by payments?

```
SELECT e.employeeNumber, e.firstName, e.lastName,
       SUM(p.amount) AS totalPayments
FROM employees e
JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
JOIN payments p ON c.customerNumber = p.customerNumber
GROUP BY e.employeeNumber, e.firstName, e.lastName
ORDER BY totalPayments DESC
LIMIT 5;
```



Description : Lists the top 5 sales representatives ranked by the total amount of payments from their customers.

3 Which month has the highest number of orders?

```sql
SELECT MONTH(o.orderDate) AS orderMonth,
       COUNT(o.orderNumber) AS totalOrders
FROM orders o
GROUP BY MONTH(o.orderDate)
ORDER BY totalOrders DESC
LIMIT 1;
```

Result Grid | Filter Rows:

orderMonth	totalOrders
11	63

Description : Determines the month with the highest number of total orders (Month 11).

4 What is the average order size (quantity of products per order)?

```sql
-- 4 What is the average order size (quantity of products per order)?
SELECT AVG(orderSize) AS avgOrderSize
FROM (
    SELECT o.orderNumber, SUM(od.quantityOrdered) AS orderSize
    FROM orders o
    JOIN orderdetails od ON o.orderNumber = od.orderNumber
    GROUP BY o.orderNumber
) AS orderSummary;
```

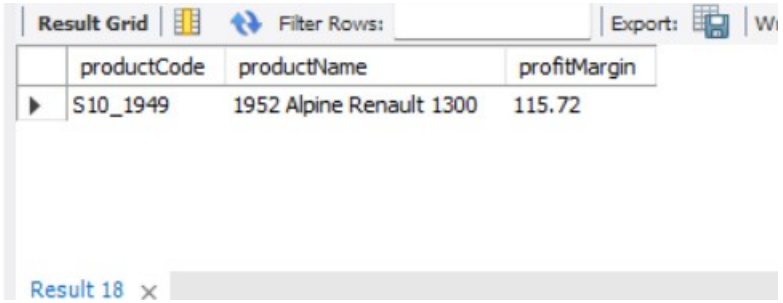
Result Grid | Filter Rows:

avgOrderSize
323.6687

Description : Calculates the average quantity of products per order, which is approximately 323.67.

5 Which product has the highest profit margin (MSRP – buy Price)

```
SELECT productCode, productName,
       (MSRP - buyPrice) AS profitMargin
FROM products
ORDER BY profitMargin DESC
LIMIT 1;
```



Description : Finds the product with the highest profit margin (MSRP – buy Price): 1952 Alpine Renault 1300 with a margin of $115.72.