

SQL QUERIES AND OUTPUTS

Creating Database

t.

```
mysql> CREATE DATABASE salesdb;  
ERROR 2013 (HY000): Lost connection to MySQL server during query  
No connection. Trying to reconnect...  
Connection id:      8  
Current database: *** NONE ***  
  
Query OK, 1 row affected (0.03 sec)
```

Using db and creating table

```
mysql> USE salesdb;  
Database changed  
mysql> CREATE TABLE cleaned_sales (  
    ->     ordernumber INT,  
    ->     quantityordered INT,  
    ->     priceeach DECIMAL(10,2),  
    ->     orderlinenumber INT,  
    ->     sales DECIMAL(12,2),  
    ->     orderdate DATE,  
    ->     status VARCHAR(20),  
    ->     qtr_id INT,  
    ->     month_id INT,  
    ->     year_id INT,  
    ->     productline VARCHAR(50),  
    ->     msrp INT,  
    ->     productcode VARCHAR(50),  
    ->     customername VARCHAR(100),  
    ->     phone VARCHAR(50),  
    ->     addressline1 VARCHAR(200),  
    ->     city VARCHAR(100),  
    ->     state VARCHAR(50),  
    ->     postalcode VARCHAR(20),  
    ->     country VARCHAR(50),  
    ->     territory VARCHAR(50),  
    ->     contactlastname VARCHAR(50),  
    ->     contactfirstname VARCHAR(50),  
    ->     dealsize VARCHAR(20)  
    -> );  
Query OK, 0 rows affected (0.06 sec)
```

Loading the dataset

```
mysql> LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/clean
ed_sales_data.csv'
-> INTO TABLE cleaned_sales
-> FIELDS TERMINATED BY ','
-> ENCLOSED BY '"'
-> IGNORE 1 ROWS;
Query OK, 2823 rows affected (0.20 sec)
Records: 2823 Deleted: 0 Skipped: 0 Warnings: 0

mysql> |
```

WHERE – filter rows BEFORE GROUP BY

```
mysql> SELECT productline, SUM(sales) AS total_sales
-> FROM cleaned_sales
-> WHERE country = 'USA'
-> GROUP BY productline;
```

productline	total_sales
Motorcycles	520371.70
Classic Cars	1344638.22
Trucks and Buses	397842.42
Vintage Cars	757755.90
Planes	328432.89
Ships	209688.14
Trains	69253.56

7 rows in set (0.01 sec)

HAVING – filter groups AFTER aggregation

```
mysql> SELECT productline, SUM(sales) AS total_sales
-> FROM cleaned_sales
-> GROUP BY productline
-> HAVING SUM(sales) > 200000;
```

productline	total_sales
Motorcycles	1166388.34
Classic Cars	3919615.66
Trucks and Buses	1127789.84
Vintage Cars	1903150.84
Planes	975003.57
Ships	714437.13
Trains	226243.47

7 rows in set (0.02 sec)

Calculate Average Revenue Per User (ARPU)

```
mysql> SELECT SUM(sales) / COUNT(DISTINCT customername) AS ARPU
-> FROM cleaned_sales;
+-----+
| ARPU      |
+-----+
| 109050.313587 |
+-----+
1 row in set (0.03 sec)
```

Subquery Example (sales above average)

```
mysql> SELECT productline, SUM(sales) AS total_sales
-> FROM cleaned_sales
-> GROUP BY productline
-> HAVING SUM(sales) > (
->   SELECT AVG(line_sales)
->   FROM (
->     SELECT SUM(sales) AS line_sales
->     FROM cleaned_sales
->     GROUP BY productline
->   ) AS x
-> );
+-----+-----+
| productline | total_sales |
+-----+-----+
| Classic Cars | 3919615.66 |
| Vintage Cars | 1903150.84 |
+-----+-----+
2 rows in set (0.03 sec)
```

Create a View

```
mysql> CREATE VIEW monthly_sales AS
-> SELECT year_id, month_id, SUM(sales) AS total_sales
-> FROM cleaned_sales
-> GROUP BY year_id, month_id;
Query OK, 0 rows affected (0.01 sec)
```

Handle Null Values

```
mysql> SELECT COALESCE(state, 'Unknown') AS state, SUM(sales)
-> FROM cleaned_sales
-> GROUP BY state;
```

state	SUM(sales)
NY	646343.76
Unknown	5283535.71
CA	1505542.23
Victoria	265586.87
NJ	83228.19
CT	238661.28
MA	666443.72
PA	273327.27
NSW	305567.11
Queensland	59469.12
BC	149873.77
Tokyo	120562.74
NH	131685.30
Quebec	74204.79
Osaka	67605.07
Isle of Wight	78240.84
NV	82751.08

17 rows in set 1 warning (0.02 sec)

Optimizing Queries (Indexing)

```
mysql> CREATE INDEX idx_orderdate ON cleaned_sales(orderdate);
Query OK, 0 rows affected (0.11 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE INDEX idx_productline ON cleaned_sales(productline);
Query OK, 0 rows affected (0.09 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> CREATE INDEX idx_customer ON cleaned_sales(customername);
Query OK, 0 rows affected (0.10 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

Showing the tables

```
mysql> SHOW TABLES;
+-----+
| Tables_in_salesdb |
+-----+
| cleaned_sales      |
| monthly_sales      |
+-----+
2 rows in set (0.03 sec)
```

JOIN

```
mysql> SELECT DISTINCT a.customername
-> FROM cleaned_sales a
-> JOIN cleaned_sales b
-> ON a.customername = b.customername
-> AND a.ordernumber <> b.ordernumber;
+-----+
| customername |
+-----+
| Land of Toys Inc.
| Reims Collectables
| Lyon Souveniers
| Toys4GrownUps.com
| Corporate Gift Ideas Co.
| Technics Stores Inc.
| Daedalus Designs Imports
| Herkku Gifts
| Mini Wheels Co.
| Auto Canal Petit
| Australian Collectors, Co.
| Vitachrome Inc.
| Tekni Collectables Inc.
| Gift Depot Inc.
| La Rochelle Gifts
| Marta's Replicas Co.
| Toys of Finland, Co.
| Baane Mini Imports
| Diecast Classics Inc.
| Salzburg Collectables
| Souveniers And Things Co.
| FunGiftIdeas.com
| UK Collectables, Ltd.
| Euro Shopping Channel
| Volvo Model Replicas, Co
| Corrida Auto Replicas, Ltd
| Dragon Souveniers, Ltd.
| Classic Legends Inc.
```

Self Join

```
mysql> SELECT DISTINCT
->     a.customername,
->     a.productline AS product1,
->     b.productline AS product2
-> FROM cleaned_sales a
-> JOIN cleaned_sales b
-> ON a.customername = b.customername
-> AND a.productline <> b.productline;
```

customername	product1	product2
Land of Toys Inc.	Motorcycles	Classic Cars
Land of Toys Inc.	Motorcycles	Trucks and Buses
Land of Toys Inc.	Motorcycles	Ships
Land of Toys Inc.	Motorcycles	Vintage Cars
Land of Toys Inc.	Motorcycles	Trains
Land of Toys Inc.	Motorcycles	Planes
Reims Collectables	Motorcycles	Classic Cars
Reims Collectables	Motorcycles	Planes
Reims Collectables	Motorcycles	Ships
Reims Collectables	Motorcycles	Vintage Cars
Reims Collectables	Motorcycles	Trucks and Buses
Reims Collectables	Motorcycles	Trains
Lyon Souvenirs	Motorcycles	Classic Cars
Lyon Souvenirs	Motorcycles	Vintage Cars
Lyon Souvenirs	Motorcycles	Trucks and Buses
Lyon Souvenirs	Motorcycles	Trains
Toys4GrownUps.com	Motorcycles	Classic Cars
Toys4GrownUps.com	Motorcycles	Vintage Cars
Toys4GrownUps.com	Motorcycles	Planes
Corporate Gift Ideas Co.	Motorcycles	Classic Cars
Corporate Gift Ideas Co.	Motorcycles	Trucks and Buses