

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/cleaned_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 Souveniers | Motorcycles | Classic Cars |
| Lyon Souveniers | Motorcycles | Vintage Cars |
| Lyon Souveniers | Motorcycles | Trucks and Buses |
| Lyon Souveniers | 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 |

```