(Online Sales Data Analysis using SQL (MySQL Workbench))

Dataset Overview

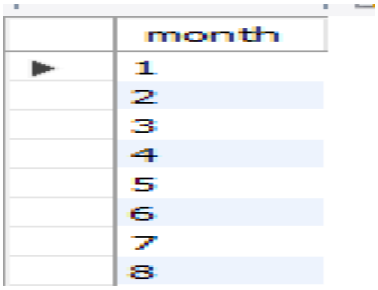
The dataset used in this analysis contains transaction records from an online sales platform. Key columns include Transaction_ID, Date, Product_Category, Product_Name, Units_Sold, Unit_Price, Total_Revenue, Region, and Payment_Method.

a.To retrieve the month part from each transaction date to enable monthly-based aggregation and analysis.

code:

```
SELECT DISTINCT
   EXTRACT(MONTH FROM STR_TO_DATE(`Date`, '%d-%m-%Y')) AS month
FROM
   online_sales_data;
```

output:



	month
▶	1
	2
	3
	4
	5
	6
	7
	8

b. To calculate the total revenue generated in each month.

code:

```
 SELECT
   EXTRACT(MONTH FROM STR_TO_DATE(`Date`, '%d-%m-%Y')) AS month,
   SUM(CAST(`Total_Revenue` AS DECIMAL(10, 2))) AS monthly_revenue
FROM   online_sales_data
GROUP BY
   month
ORDER BY
   month;
```

output:

month	monthly_revenue
1	14548.32
2	10803.37
3	12849.24
4	12451.69
5	8455.49
6	7384.55
7	6797.08
8	7278.11

c. To count how many unique transactions were made in each month.

code:

```
SELECT
   EXTRACT(MONTH FROM STR_TO_DATE(`Date`, '%d-%m-%Y')) AS month,
   COUNT(DISTINCT `Transaction_ID`) AS transaction_count
FROM   online_sales_data
GROUP BY
   month
ORDER BY
   month;
```

output:

month	transaction_count
1	31
2	29
3	31
4	30
5	31
6	30
7	31
8	27

d. To analyze which regions contribute the most revenue.

code:

```
USE db;
SELECT
   `Region`,
```

```
    SUM(CAST(REPLACE(`Total_Revenue`, ',', '.') AS DECIMAL(10,2))) AS region_revenue
FROM    online_sales_data
GROUP BY
    `Region`
ORDER BY
    region_revenue DESC;
```

output:

Region	region_revenue
North America	36844.34
Asia	22455.45
Europe	21268.06

e. To identify the product with the highest number of units sold.

code:

```
SELECT
    `Product_Category`,
    SUM(`Units_Sold`) AS total_units_sold
FROM
    online_sales_data
GROUP BY
    `Product_Category`
ORDER BY
    total_units_sold DESC;
```

output:

Product_Category	total_units_sold
Clothing	145
Books	114
Sports	88
Electronics	66
Home Appliances	59
Beauty Products	46

f. To analyze which product categories contribute most to revenue each month.

code:

```
SELECT
   MONTH(STR_TO_DATE(`Date`, '%d-%m-%Y')) AS month,
   `Product_Category`,
   SUM(CAST(`Total_Revenue` AS DECIMAL(10,2))) AS revenue
FROM
   online_sales_data
GROUP BY
   MONTH(STR_TO_DATE(`Date`, '%d-%m-%Y')), `Product_Category`
ORDER BY
   month, revenue DESC;
```

output:

month	Product_Category	revenue
1	Electronics	7999.90
1	Home Appliances	2169.94
1	Clothing	1789.84
1	Sports	1579.83
1	Beauty Products	699.95
1	Books	308.86
2	Sports	2993.87
2	Electronics	2899.88
2	Home Appliances	2869.92
2	Clothing	1284.81
2	Books	422.91
2	Beauty Products	331.98
3	Home Appliances	5059.91
3	Electronics	4499.90
3	Sports	1609.84
3	Clothing	1009.76
3	Beauty Products	417.00
3	Books	252.83
4	Electronics	6709.91
4	Sports	2559.80
4	Home Appliances	1989.85
4	Clothing	769.80
4	Books	220.85
4	Beauty Products	201.48
5	Electronics	4198.96
5	Home Appliances	1989.82
5	Sports	1159.66
5	Clothing	829.88
5	Books	149.87
5	Beauty Products	127.30