```
SELECT * FROM supermarket_sales.supermarket_sales;
-- Sales Analysis

-- 1. What is the total revenue generated by each branch?
SELECT Branch, sum(Total) as revenue
FROM supermarket_sales
GROUP BY Branch;

-- 2. Which city has the highest total sales?
SELECT City, SUM(Total) AS total_sales
FROM supermarket_sales
GROUP BY City
ORDER BY total_sales DESC
LIMIT 1;

-- 3. Identify the most popular product line based on the total sales amount?
SELECT Product_line, SUM(Total) AS popular_product_line
FROM supermarket_sales
GROUP BY Product_line
ORDER BY popular_product_line DESC
LIMIT 1;

-- 4. What is the average gross income per transaction for each branch?
SELECT Branch, AVG(gross_income) AS avg_gross_income
FROM supermarket_sales
GROUP BY Branch
ORDER BY Branch;

-- 5. Calculate the total quantity of products sold in each product line?
SELECT Product_line, SUM(Quantity) AS total_quantity
```

```
FROM supermarket_sales
GROUP BY Product_line;

-- Customer Insights

-- 6. What is the gender distribution of customers for each branch?
SELECT Branch, Gender, COUNT(Gender) AS Total_count
FROM supermarket_sales
GROUP BY Branch, Gender
ORDER BY Branch;

-- 7. Determine the average rating given by "Member" vs. "Normal" customers.
SELECT Customer_type, AVG(Rating) AS avg_rating
FROM supermarket_sales
GROUP BY Customer_type;

-- 8. Find the city with the highest number of "Normal" customers.
SELECT City, Customer_type, COUNT(Customer_type) AS customer
FROM supermarket_sales
WHERE Customer_type = 'Normal'
GROUP BY City, Customer_type
ORDER BY customer DESC;

-- 9. Identify the top three payment methods used by customers.
SELECT Payment, COUNT(Payment) AS usage_count
FROM supermarket_sales
GROUP BY Payment
ORDER BY usage_count DESC
LIMIT 3;

-- 10. What is the average purchase amount for male and female customers?
```

```
SELECT Gender, AVG(Total) AS avg_purchase_amount
FROM supermarket_sales
GROUP BY Gender;

-- Time-Based Trends

-- 11. Which month had the highest sales revenue?
SELECT
   DATE_FORMAT(STR_TO_DATE(Date, '%m/%d/%Y'), '%M') AS month_name,
   SUM(Total) AS monthly_sales
FROM supermarket_sales
GROUP BY month_name
ORDER BY monthly_sales DESC
LIMIT 1;

-- 12. Find the peak sales hour for each branch.
SELECT Branch, Time, Peak_sales
FROM (
   SELECT Branch, Time, SUM(Total) AS Peak_sales,
        ROW_NUMBER() OVER (PARTITION BY Branch ORDER BY SUM(Total) DESC) AS rn
   FROM supermarket_sales
   GROUP BY Branch, Time
) AS Ranked
WHERE rn = 1;

-- 13. Calculate the total revenue for weekends vs. weekday
SELECT
   CASE
      WHEN DAYOFWEEK(STR_TO_DATE(Date, '%m/%d/%Y')) IN (1, 7) THEN 'Weekend'
      ELSE 'Weekday'
   END AS Day_Type,
```

```
    SUM(Total) AS total_revenue
FROM supermarket_sales
GROUP BY Day_Type;
```

**-- 14. Determine the branch with the highest revenue on weekends.**

```
SELECT
    Branch,
    SUM(Total) AS weekend_revenue
FROM supermarket_sales
WHERE DAYOFWEEK(STR_TO_DATE(Date, '%m/%d/%Y')) IN (1, 7) -- 1 for Sunday, 7 for Saturday
GROUP BY Branch
ORDER BY weekend_revenue DESC
LIMIT 1;
```

**-- 15. What are the top three most profitable days based on gross income?**

```
SELECT Date, SUM(gross_income) AS total_gross_income
FROM supermarket_sales
GROUP BY Date
ORDER BY total_gross_income DESC
LIMIT 3;
```

-- Product Performance

**-- 16. Which product line has the highest average rating?**

```
SELECT
    Product_line,
    AVG(Rating) AS avg_rating
FROM supermarket_sales
GROUP BY Product_line
ORDER BY avg_rating DESC
LIMIT 1;
```

**-- 17. Find the most frequently purchased product line by "Normal" customers.**

```
SELECT
   Product_line,
   COUNT(*) AS purchase_count
FROM supermarket_sales
WHERE Customer_type = 'Normal'
GROUP BY Product_line
ORDER BY purchase_count DESC
LIMIT 1;
```

**-- 18. Calculate the total revenue generated by each product line in each city.**

```
SELECT
   City,
   Product_line,
   SUM(Total) AS total_revenue
FROM supermarket_sales
GROUP BY City, Product_line
ORDER BY City, total_revenue DESC;
```

**-- 19. Determine the product line with the highest unit price on average.**

```
SELECT
   Product_line,
   AVG(Unit_price) AS avg_unit_price
FROM supermarket_sales
GROUP BY Product_line
ORDER BY avg_unit_price DESC
LIMIT 1;
```

**-- 20. What is the correlation between quantity sold and total revenue for each branch?**

```
SELECT
```

```
    Branch,
    SUM(Quantity) AS total_quantity,
    SUM(Total) AS total_revenue,
    SUM(Quantity * Total) AS sum_quantity_total,
    SUM(Quantity * Quantity) AS sum_quantity_squared,
    COUNT(*) AS n
FROM supermarket_sales
GROUP BY Branch;
```