

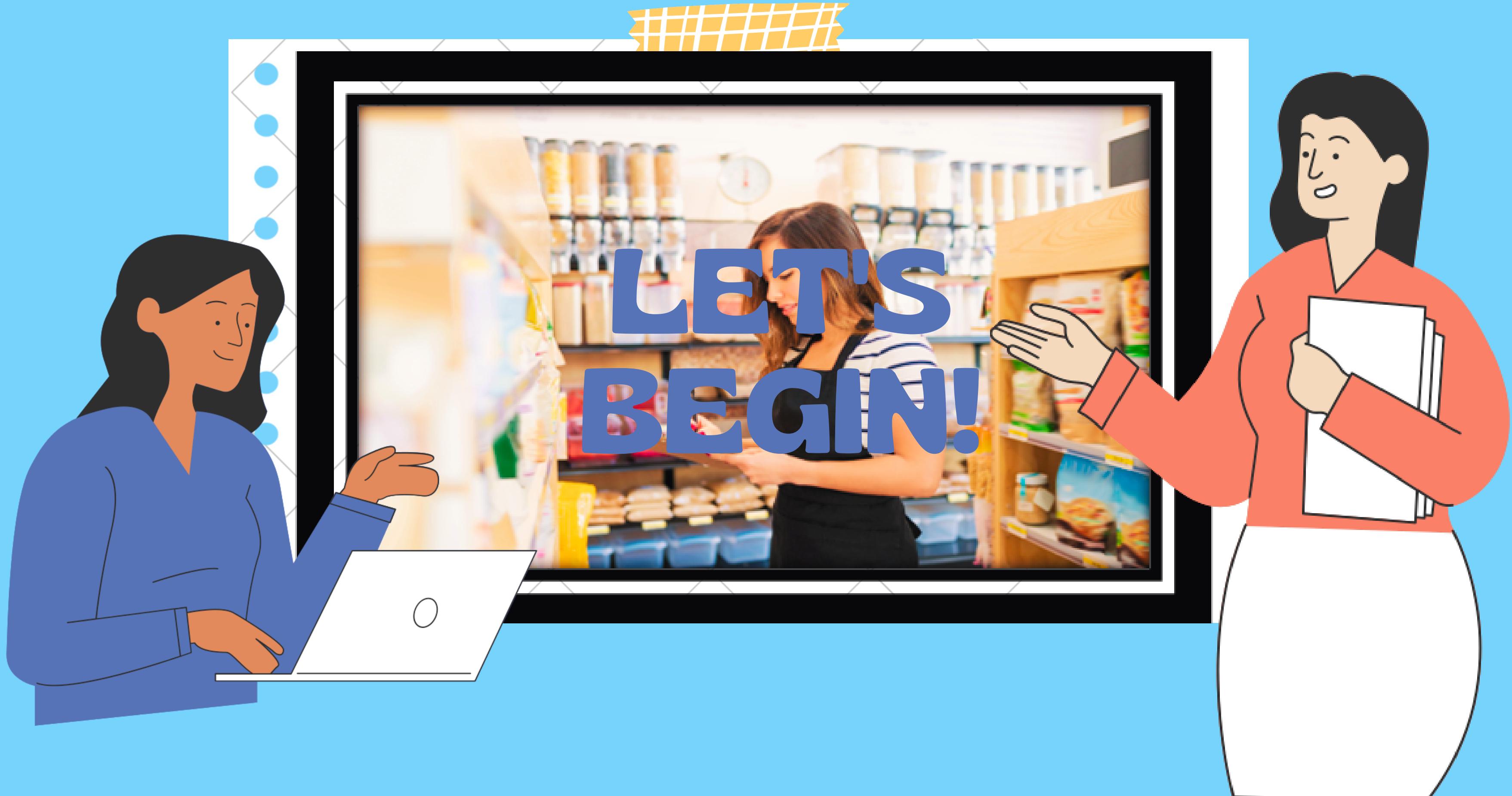


# SQL CASE STUDY CHALLENGE 3 CUSTOMER INSIGHTS

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LET'S  
BEGIN!





# TODAY'S AGENDA

- 1 Introduction to the Session
- 2 About Tools used and Dataset
- 3 Analysis using MySQL
- 4 Insights and Summary

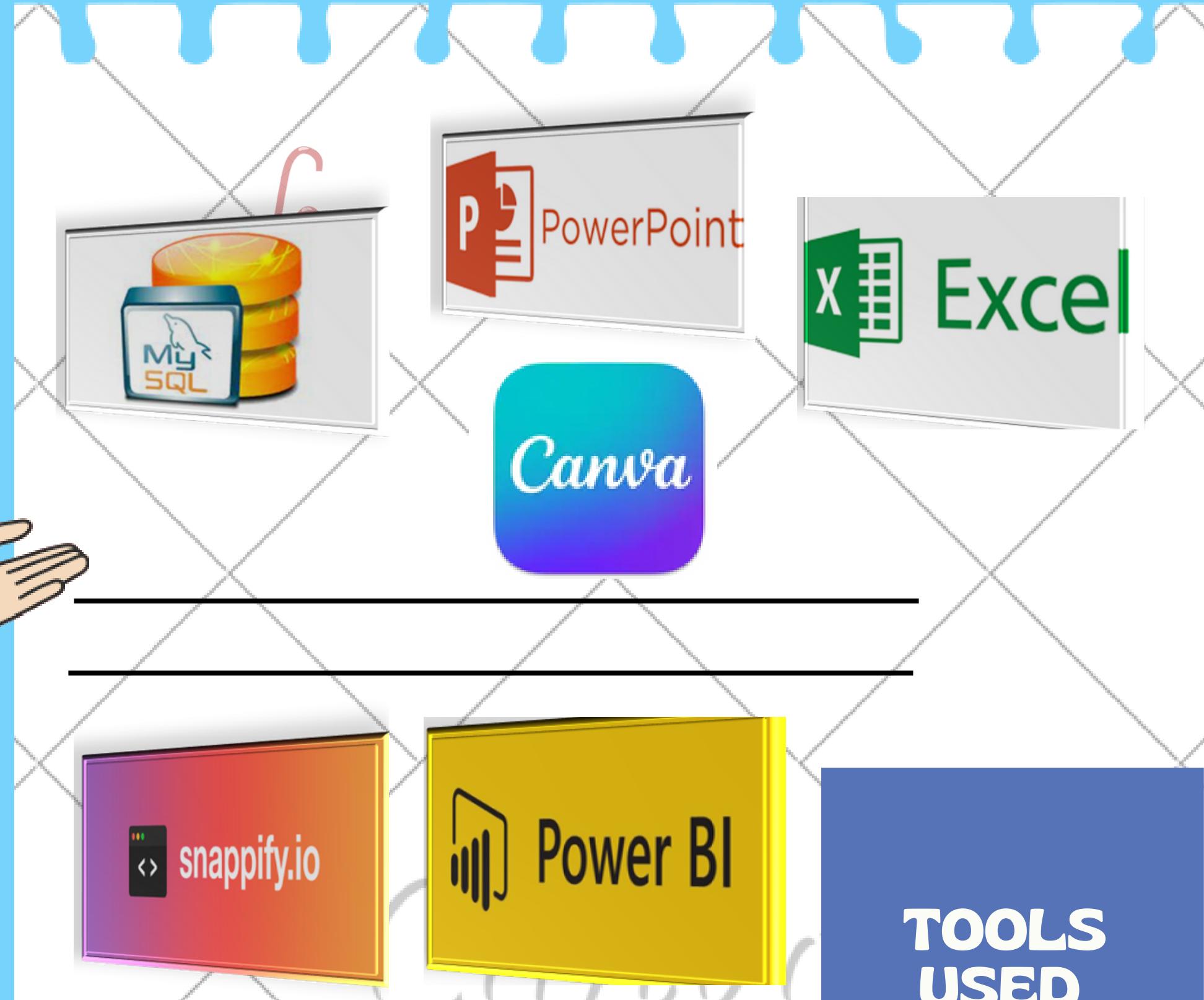
# INTRODUCTION

You are a Customer Insights Analyst for  
'The General Store'

Can you analyze the following tables to  
find out crucial information about your  
customers to provide to your marketing  
team?

Canvas





**TOOLS  
USED**

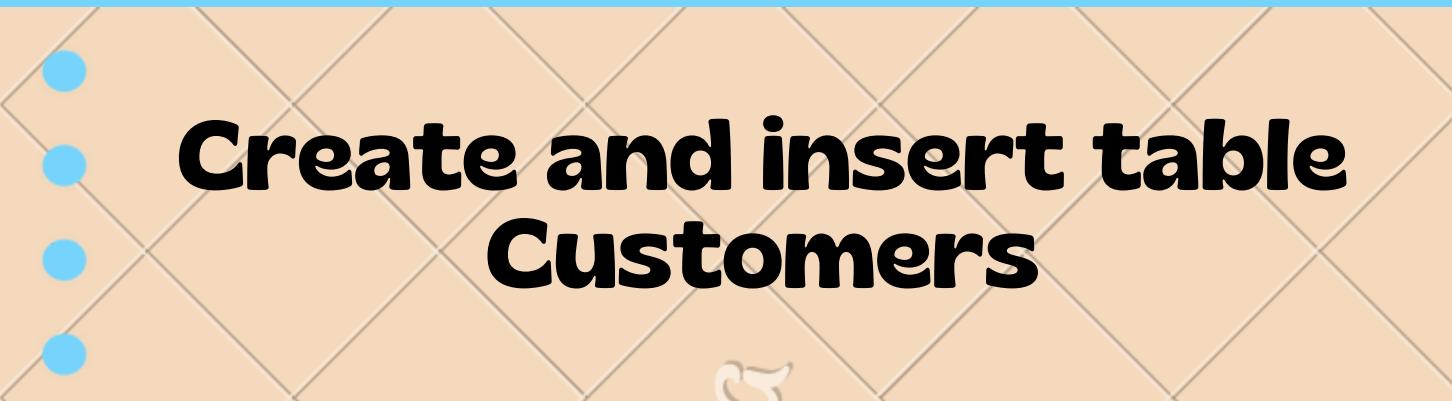


### Create and Insert Table Country

```
--CREATE TABLE country (
country_id INT PRIMARY KEY,
country_name VARCHAR(50),
head_office VARCHAR(50)
);

INSERT INTO country (country_id, country_name, head_office)
VALUES (1, 'UK', 'London'),
(2, 'USA', 'New York'),
(3, 'China', 'Beijing');
```





### Create and Insert Table Customers

```
CREATE TABLE customers (
customer_id INT PRIMARY KEY,
first_shop DATE,
age INT,
rewards VARCHAR(50),
can_email VARCHAR(50)
);

INSERT INTO customers (customer_id, first_shop, age, rewards, can_email)
VALUES (1, '2022-03-20', 23, 'yes', 'no'),
(2, '2022-03-25', 26, 'no', 'no'),
(3, '2022-04-06', 32, 'no', 'no'),
(4, '2022-04-13', 25, 'yes', 'yes'),
(5, '2022-04-22', 49, 'yes', 'yes'),
(6, '2022-06-18', 28, 'yes', 'no'),
(7, '2022-06-30', 36, 'no', 'no'),
(8, '2022-07-04', 37, 'yes', 'yes');
```

snappify





### Create and Insert Table Orders

```
CREATE TABLE orders (
    order_id INT PRIMARY KEY,
    customer_id INT,
    date_shop DATE,
    sales_channel VARCHAR(50),
    country_id INT,
    FOREIGN KEY (customer_id) REFERENCES customers(customer_id),
    FOREIGN KEY (country_id) REFERENCES country(country_id)
);

INSERT INTO orders (order_id, customer_id, date_shop, sales_channel, country_id)
VALUES (1, 1, '2023-01-16', 'retail', 1),
       (2, 4, '2023-01-20', 'retail', 1),
       (3, 2, '2023-01-25', 'retail', 2),
       (4, 3, '2023-01-25', 'online', 1),
       (5, 1, '2023-01-28', 'retail', 3),
       (6, 5, '2023-02-02', 'online', 1),
       (7, 6, '2023-02-05', 'retail', 1),
       (8, 3, '2023-02-11', 'online', 3);
```

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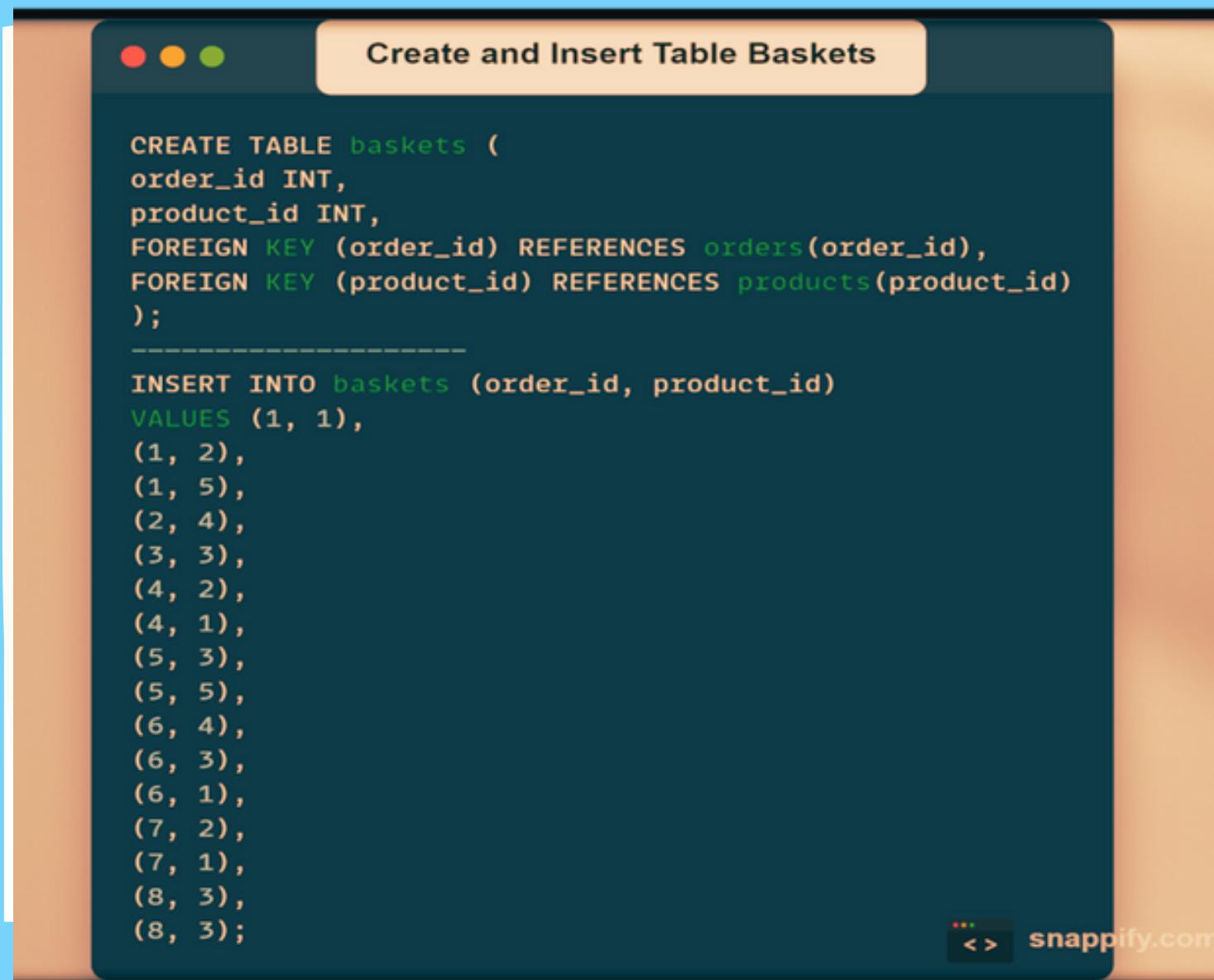




```
CREATE TABLE products (
product_id INT PRIMARY KEY,
category VARCHAR(50),
price NUMERIC(5,2)
);

INSERT INTO products (product_id, category, price)
VALUES (1, 'food', 5.99),
(2, 'sports', 12.49),
(3, 'vitamins', 6.99),
(4, 'food', 0.89),
(5, 'vitamins', 15.99);
```



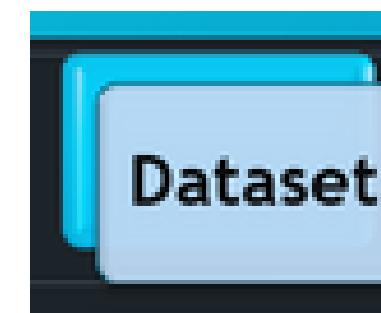


```
CREATE TABLE baskets (
order_id INT,
product_id INT,
FOREIGN KEY (order_id) REFERENCES orders(order_id),
FOREIGN KEY (product_id) REFERENCES products(product_id)
);

INSERT INTO baskets (order_id, product_id)
VALUES (1, 1),
(1, 2),
(1, 5),
(2, 4),
(3, 3),
(4, 2),
(4, 1),
(5, 3),
(5, 5),
(6, 4),
(6, 3),
(6, 1),
(7, 2),
(7, 1),
(8, 3),
(8, 3);
```

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**Table**
**1**
**customers**

customer_id	first_shop	age	rewards	can_email
1	2022-03-20	23	yes	no
2	2022-03-25	26	no	no
3	2022-04-06	32	no	no
4	2022-04-13	25	yes	yes
5	2022-04-22	49	yes	yes
6	2022-06-18	28	yes	no
7	2022-06-30	36	no	no
8	2022-07-04	37	yes	yes

**orders**

order_id	customer_id	date_shop	sales_channel	country_id
1	1	2023-01-16	retail	1
2	4	2023-01-20	retail	1
3	2	2023-01-25	retail	2
4	3	2023-01-25	online	1
5	1	2023-01-28	retail	3
6	5	2023-02-02	online	1
7	6	2023-02-05	retail	1
8	3	2023-02-11	online	3

**Table**
**2**
**baskets**

order_id	product_id
1	1
1	2
1	5
2	4
3	3
4	2
4	1
5	3
5	5
6	4
6	3
6	1
7	2
7	1
8	3
8	3

**products**

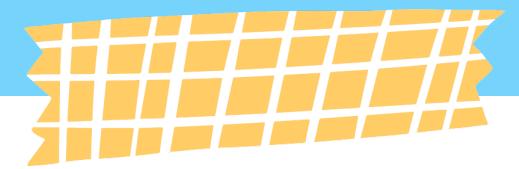
product_id	category	price
1	food	5.99
2	sports	12.49
3	vitamins	6.99
4	food	0.89
5	vitamins	15.99

**Table**
**3**
**country**

country_id	country_name	head_office
1	UK	London
2	USA	New York
3	China	Beijing

**Table**
**5**


# QUESTIONS



QUESTION

1

**What are the names of all the countries in the country table?**

QUESTION

2

**What is the total number of customers in the customers table?**

QUESTION

3

**What is the average age of customers who can receive marketing emails (can\_email is set to 'yes')?**

QUESTION

4

**How many orders were made by customers aged 30 or older?**

QUESTION

5

**What is the total revenue generated by each product category?**

# QUESTIONS



QUESTION

6

**What is the average price of products in the 'food' category?**

QUESTION

7

**How many orders were made in each sales channel (sales\_channel column) in the orders table?**

QUESTION

8

**What is the date of the latest order made by a customer who can receive marketing emails?**

QUESTION

9

**What is the date of the latest order made by a customer who can receive marketing emails?**

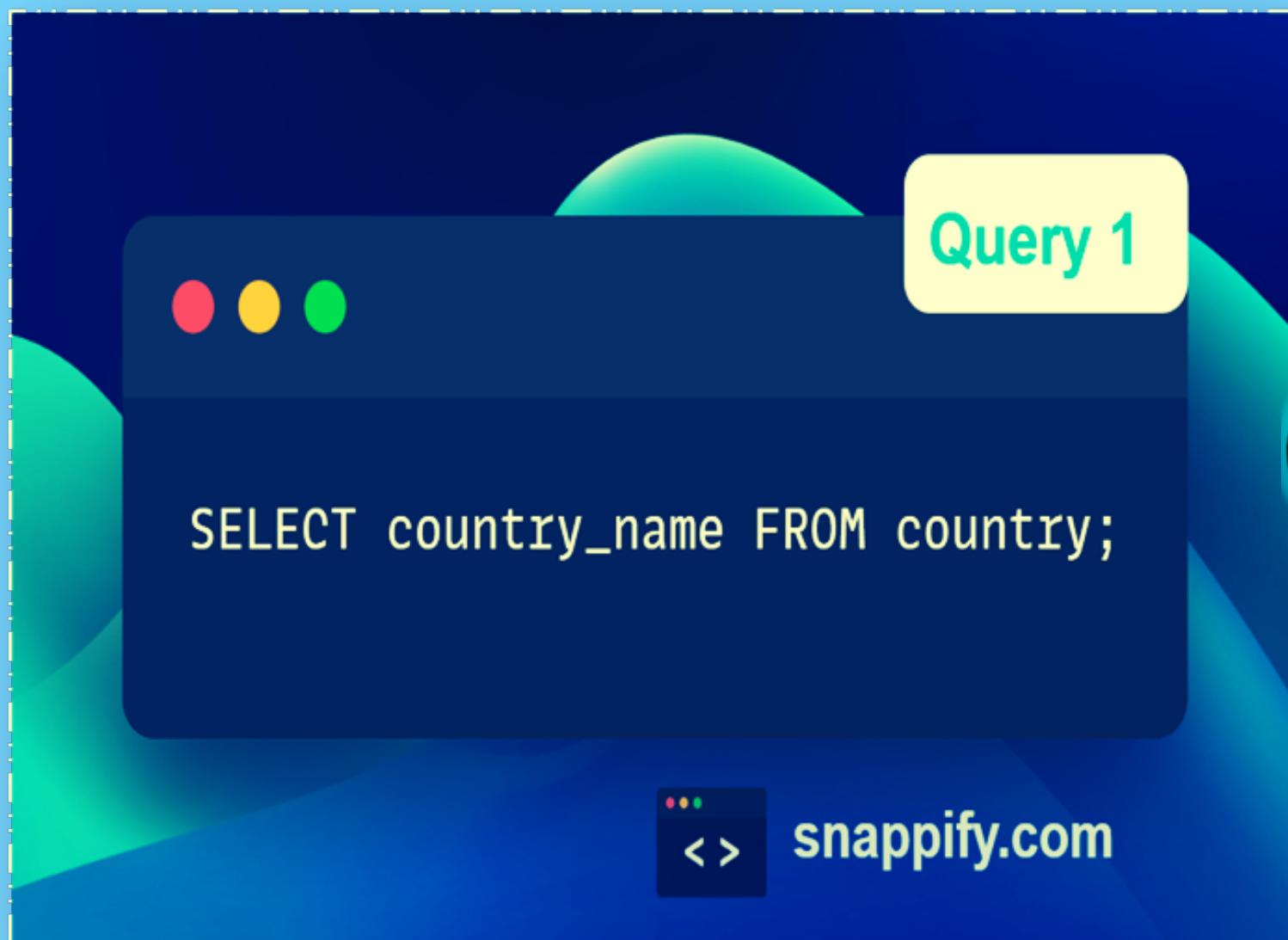
QUESTION

10

**What is the average age of customers who made orders in the 'vitamins' product category?**

Question  
1

**What are the names of all the countries in the country table?**



Query 1

```
SELECT country_name FROM country;
```

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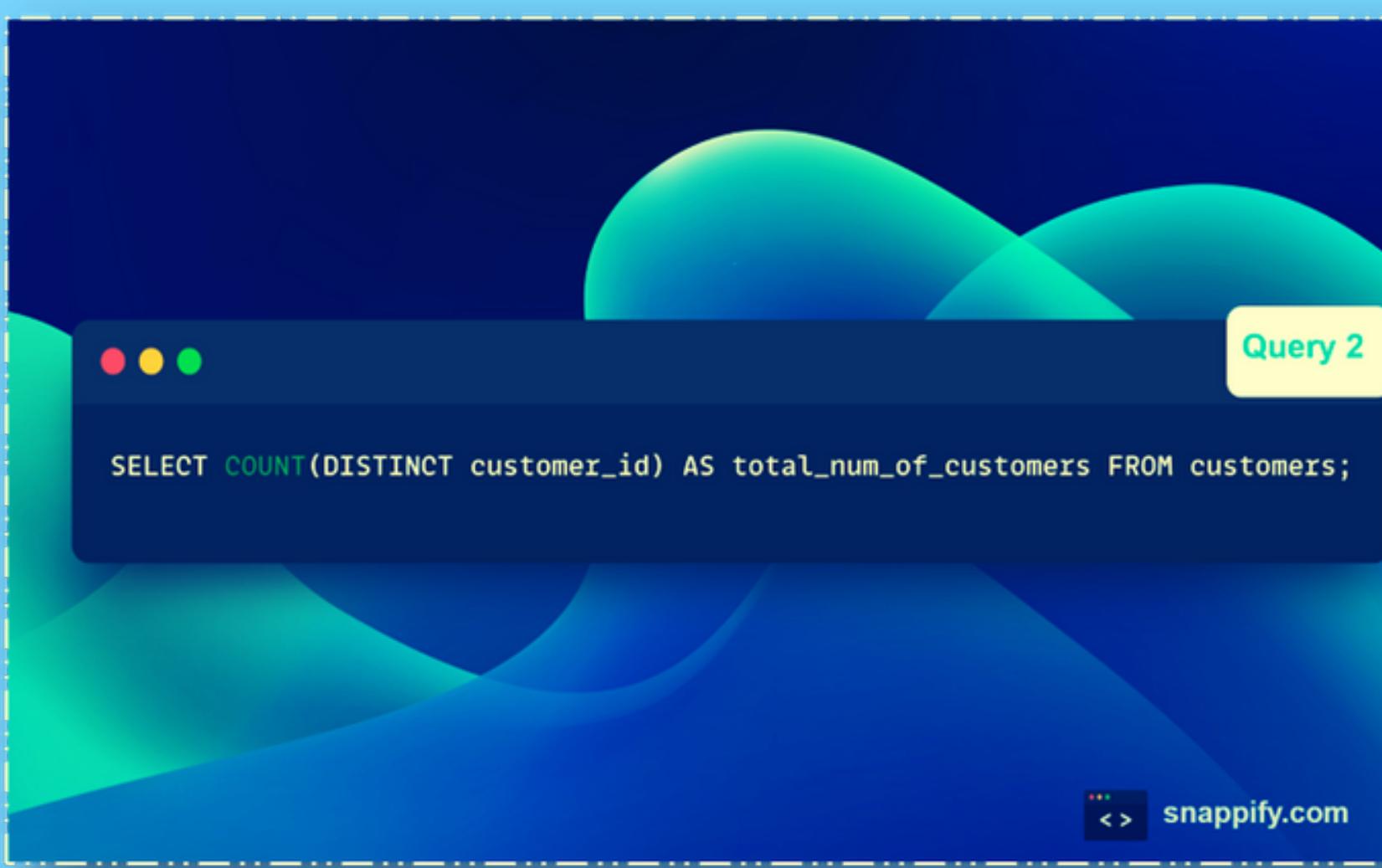


country_name
UK
USA
China



Question  
2

**What is the total number of customers in the customers table?**



Query 2

```
SELECT COUNT(DISTINCT customer_id) AS total_num_of_customers FROM customers;
```

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Output



8

Total\_num\_of\_Customers

	total_num_of_customers
▶	8

nra

Question  
3

What is the average age of customers who can receive marketing emails (can\_email is set to 'yes')?

```
SELECT ROUND(AVG(age), 0) AS Average_age
FROM customers
WHERE can_email = 'yes';
```

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Output



37  
Average\_age

	average_age
▶	37

inva

Question  
4

How many orders were made by customers aged 30 or older?

```
SELECT ROUND(AVG(age), 0) AS Average_age
FROM customers
WHERE can_email = 'yes';
```

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Output



3

**Total\_orders**

total_orders
3

Question  
5

What is the total revenue generated by each product category?

Query 5

```
SELECT p.product_id, p.category,
       COUNT(b.order_id) AS total_orders,
       COUNT(b.order_id)*p.price AS Total_revenue
  FROM products p
 JOIN baskets b
    ON p.product_id = b.product_id
 GROUP BY p.product_id, p.category
```

Result Grid | Filter Rows:  Export

	product_id	category	total_orders	Total_revenue
▶	1	food	4	23.96
	2	sports	3	37.47
	3	vitamins	5	34.95
	4	food	2	1.78
	5	vitamins	2	31.98

Output



Question  
6

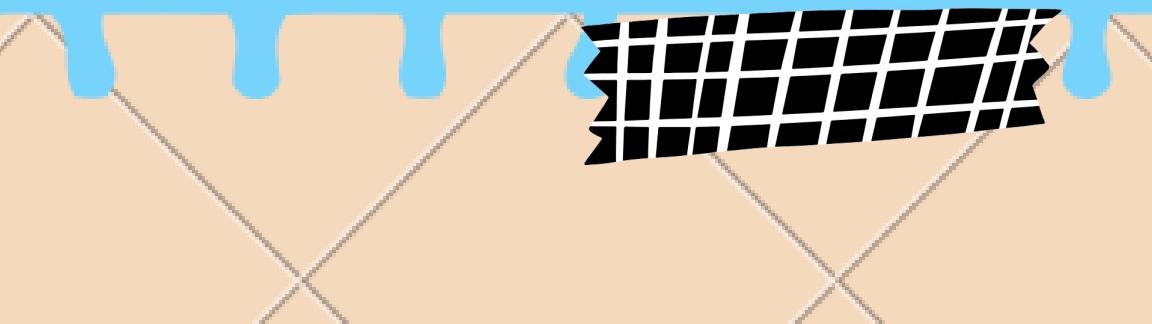
**What is the average price of products in the 'food' category?**

Query 6

```
SELECT
    p.product_id,
    ROUND(AVG(p.price), 2) AS Avg_food_price,
    p.category
FROM products p
INNER JOIN baskets b ON p.product_id = b.product_id
WHERE p.category = 'food'
GROUP BY p.product_id, p.category;
```

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Output



A hand-drawn style arrow points from the SQL query on the left towards the MySQL database interface on the right.

**Result Grid**

	product_id	Avg_food_price	category
▶	1	5.99	food
	4	0.89	food

Filter Rows:

Question  
7

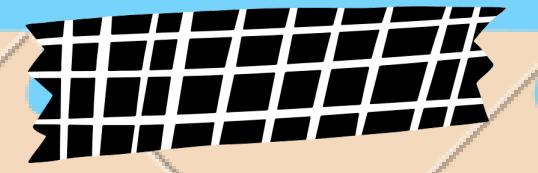
How many orders were made in each sales channel (`sales_channel` column) in the `orders` table?

Query 7

```
SELECT sales_channel, COUNT(*) AS total_orders
FROM orders
GROUP BY sales_channel;
```

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Output



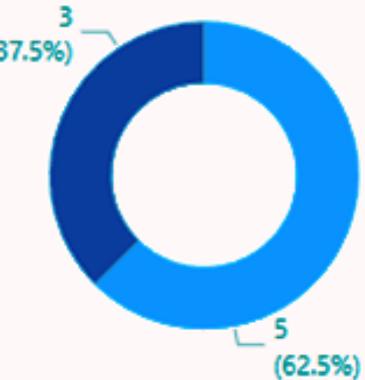
...

sales_channel	total_orders
online	3
retail	5
Total	8

Result View | ⚡ | Filter Rows: [ ]

	sales_channel	total_orders
▶	retail	5
▶	online	3

Total\_orders by sales\_channel



sales\_cha...  
● retail  
● online

Question  
8

What is the date of the latest order made by a customer who can receive marketing emails?

Query 8

```
SELECT
  (SELECT MAX(date_shop) FROM orders
  WHERE customer_id IN (SELECT customer_id FROM customers WHERE can_email = 'yes'))
  AS latest_order_date,can_email
  FROM customers
  WHERE can_email = 'yes'
  LIMIT 1;
```

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Output



	latest_order_date	can_email
1	02-02-2023	yes
2	2023-02-02	yes

Question  
9

**What is the name of the country with the highest number of orders?**

```
SELECT
    c.country_name, COUNT(o.order_id) AS Number_of_orders
FROM country c JOIN orders o
ON c.country_id = o.country_id
GROUP BY c.country_name
ORDER BY Number_of_orders DESC
LIMIT 1;
```

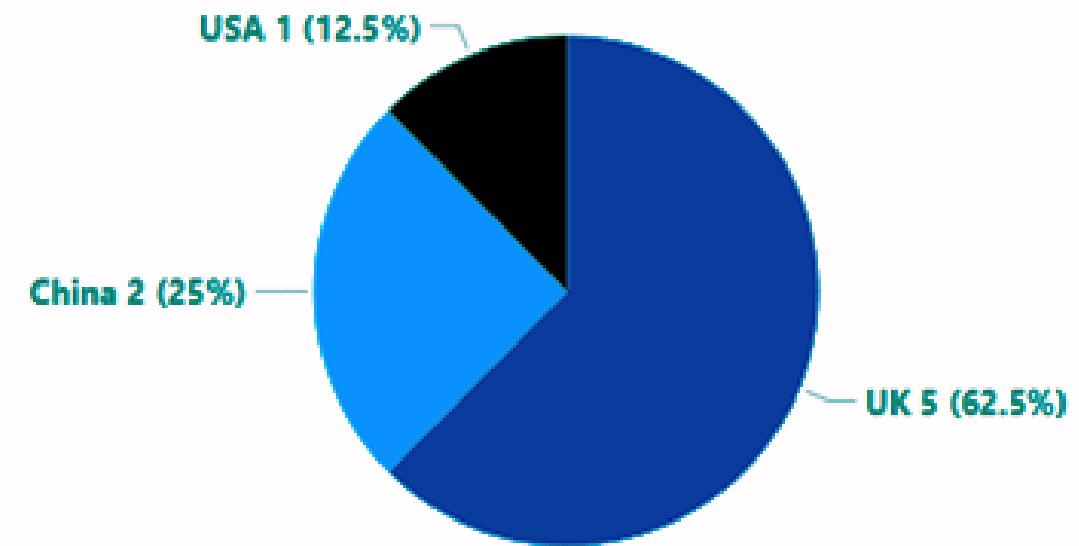
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Output



Date

Count of order\_id by country\_name



	country_name	Number_of_orders
▶	UK	5

5

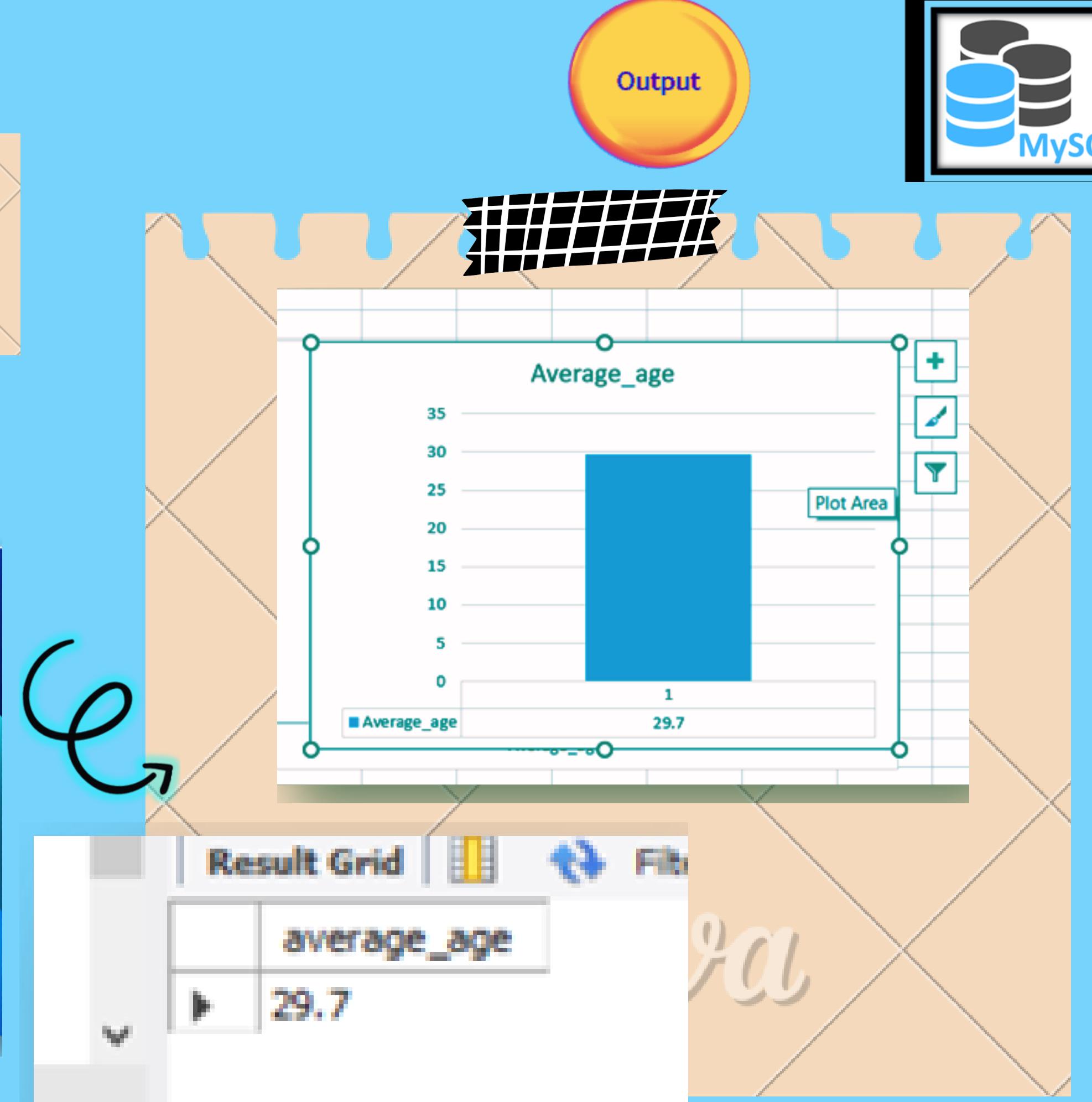
Question  
10

**What is the average age of customers who made orders in the 'vitamins' product category?**

Query 10

```
SELECT ROUND(AVG(c.age), 1) AS average_age
FROM customers c
JOIN orders o ON c.customer_id = o.customer_id
JOIN baskets b ON o.order_id = b.order_id
JOIN products p ON b.product_id = p.product_id
WHERE p.category = 'vitamins';
```

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# INSIGHTS



1

The names of all the countries in the country table are: UK, USA, China. Understanding the distribution of customers across different countries can help in targeting specific regions for marketing campaigns or identifying potential expansion opportunities.

2

The total number of customers in the customers table is 8. Knowing the total number of customers helps in resource allocation, customer segmentation, and evaluating marketing strategies. It provides insights into the customer base size and helps monitor business growth and customer retention efforts.

3

Average age of customers who can receive marketing emails: [average\_age] years is 37. Tailoring marketing messages and offers to the average age of customers who can receive marketing emails enhances marketing effectiveness and increases customer engagement.

4

Orders made by customers aged 30 or older: [total\_orders] is 3. Customers aged 30 or older demonstrate purchasing power, warranting focused marketing efforts and personalized product recommendations for this segment.

5

Analyzing total revenue by product category provides valuable insights for businesses. 'Food' generated \$23.96 from 4 orders, 'sports' contributed \$37.47 from 3 orders, and 'vitamins' accounted for \$34.95 from 5 orders. This information helps businesses identify profitable categories, allocate resources efficiently, and optimize pricing and inventory strategies. Data-driven decisions based on revenue analysis can drive profitability and business growth.

# INSIGHTS



- 6 The average price of products in the 'food' category is \$5.99 for product ID 1 and \$0.89 for product ID 4. Analyzing the average price of 'food' products helps businesses set competitive prices aligned with customer expectations, driving attractiveness and profitability.
- 7 Analyzing order numbers in each sales channel reveals their distribution and popularity. Retail channel with 5 orders signifies its significance, while the online channel with 3 orders highlights its growing importance. This information aids resource allocation and targeted strategies based on customer preferences, enhancing customer acquisition, retention, and overall sales performance.
- 8 The latest order date made by a customer who can receive marketing emails is '2023-02-02'. Latest order date helps businesses identify active customers and enables them to target marketing campaigns to engage and retain these customers effectively. This information ensures that marketing efforts are focused on the most recent customer activities, maximizing their impact and driving better results.
- 9 The country with the highest number of orders is the UK, with 5 orders. The UK has the highest number of orders suggests a strong customer base and market potential. Businesses can leverage this information to focus on targeted marketing and expansion strategies in the UK, optimizing customer acquisition and retention efforts for enhanced growth and profitability.
- 10 Customers who bought 'vitamins' have an average age of 29.7 years. This information provides businesses with valuable insights into the age group that is most interested in purchasing vitamins, allowing them to develop targeted marketing strategies and product offerings to cater to this demographic.

# SUMMARY



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This customer insights case study highlights the importance of using SQL to extract valuable information for marketing strategies and improving customer experiences. By analyzing customer data, businesses can understand customer behavior, preferences, and demographics. They can target marketing efforts, allocate resources effectively, and tailor messages to specific customer segments.

Analyzing order numbers, revenue by product category, and average prices helps optimize sales channels and pricing strategies. Identifying the latest order date and high-performing countries allows businesses to target active customers and focus on key markets. Leveraging SQL in customer analysis enables data-driven decision-making, enhances customer engagement, and drives business growth in a competitive market.



# THANK YOU!

 STEEL DATA



Have a  
great day  
ahead.

