3230. Customer Purchasing Behavior Analysis Premium

SQL Schema > Pandas Schema >

Table: Transactions

+		
Column Name	Type	
transaction id	 int	
customer_id	int	
product_id	int	
transaction_date	date	
amount	decimal	
1	1	

transaction_id is the unique identifier for this table.

Each row of this table contains information about a transaction, including the customer ID, product ID, date, and amount spent.

Table: Products

Column Nama	l Tuno
Column Name 	Type
product_id	int
category	varchar
price	decimal

product_id is the unique identifier for this table.

Each row of this table contains information about a product, including its category and price.

Write a solution to analyze customer purchasing behavior. For each customer, calculate:

- The total amount spent.
- The number of transactions.
- The number of **unique** product categories purchased.
- The average amount spent.
- The **most frequently** purchased product category (if there is a tie, choose the one with the most recent transaction).
- A **loyalty score** defined as: (Number of transactions * 10) + (Total amount spent / 100).

Round total_amount, avg_transaction_amount, and loyalty_score to 2 decimal places.

Return the result table ordered by <code>loyalty_score</code> in **descending** order, then by <code>customer_id</code> in **ascending** order.

The query result format is in the following example.

Example:

Input:

Transactions table:

transaction_id	customer_id	product_id	transaction_date 	amount
1	101	1	2023-01-01	100.00
2	101	2	2023-01-15	150.00
3	102	1	2023-01-01	100.00
4	102	3	2023-01-22	200.00
5	101	3	2023-02-10	200.00

Products table:

product_i	oroduct_id category	
1	A	100.00
2	B	150.00
3	C	200.00

Output:

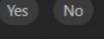
customer_id	total_amount	transaction_count	 unique_categories 	avg_transaction_amount	top_category	loyalty_score
101	450.00	3	3	150.00	С	34.50
102	300.00	2	2	150.00	C	23.00

Explanation:

- For customer 101:
- Total amount spent: 100.00 + 150.00 + 200.00 = 450.00
- Number of transactions: 3
- Unique categories: A, B, C (3 categories)
- Average transaction amount: 450.00 / 3 = 150.00
- Top category: C (Customer 101 made 1 purchase each in categories A, B, and C. Since the count is the same for all categories, we choose the most recent transaction, which is category C on 2023-02-10)
- Loyalty score: (3 * 10) + (450.00 / 100) = 34.50
- For customer 102:
- Total amount spent: 100.00 + 200.00 = 300.00
- Number of transactions: 2
- Unique categories: A, C (2 categories)
- Average transaction amount: 300.00 / 2 = 150.00
- Top category: C (Customer 102 made 1 purchase each in categories A and C. Since the count is the same for both categories, we choose the most recent transaction, which is category C on 2023-01-22)
- Loyalty score: (2 * 10) + (300.00 / 100) = 23.00

Note: The output is ordered by loyalty_score in descending order, then by customer_id in ascending order.

Seen this question in a real interview before? 1/5



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♥ Topics

Database

Discussion (3)

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