Stock Portfolio Performance Tracker (SQL Project)

https://github.com/Rohitk45k

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Tools Used: MySQL, GitHub

Problem Statement

- Analyze stock transactions to understand:
- - User investment patterns
- - Stock performance
- - Data inconsistencies
- - Buy vs Sell behavior

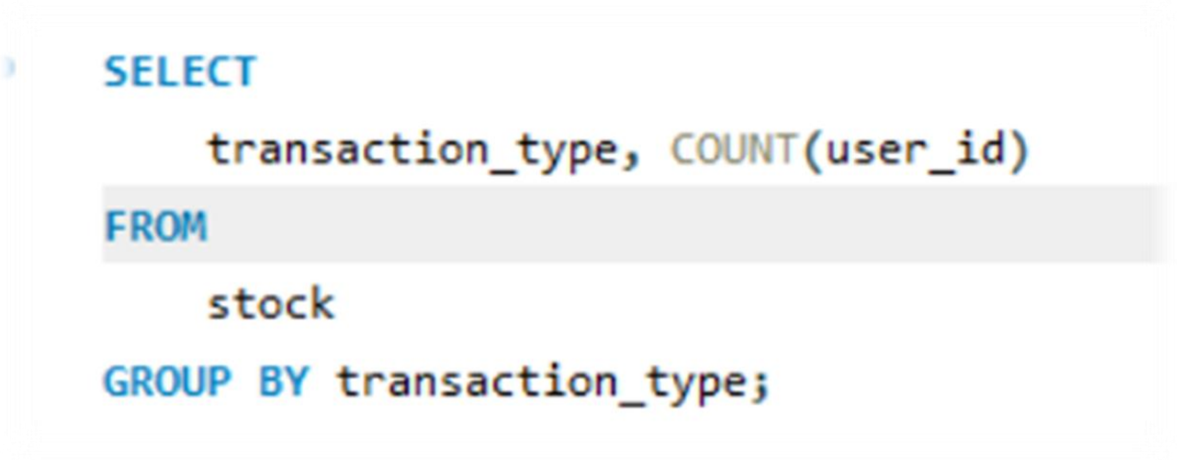
Dataset Overview

- - Rows: 4,000+
- - Fields:
- • transaction_id
- • user_id
- • stock_symbol
- • transaction_type (Buy/Sell)
- • quantity
- • price_per_share
- • transaction_date

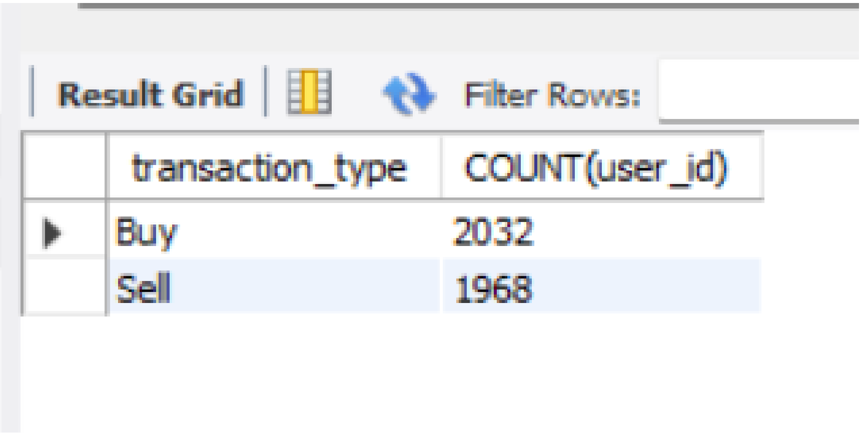
Project Objectives

- 1. Total investment by user
- 2. Most traded stock
- 3. Highest average sell price
- 4. Users who only buy
- 5. Monthly transaction trends
- 6. Users trading in >5 stocks
- 7. Stocks only sold (data issue)

Total number of Buy and Sell transactions per use

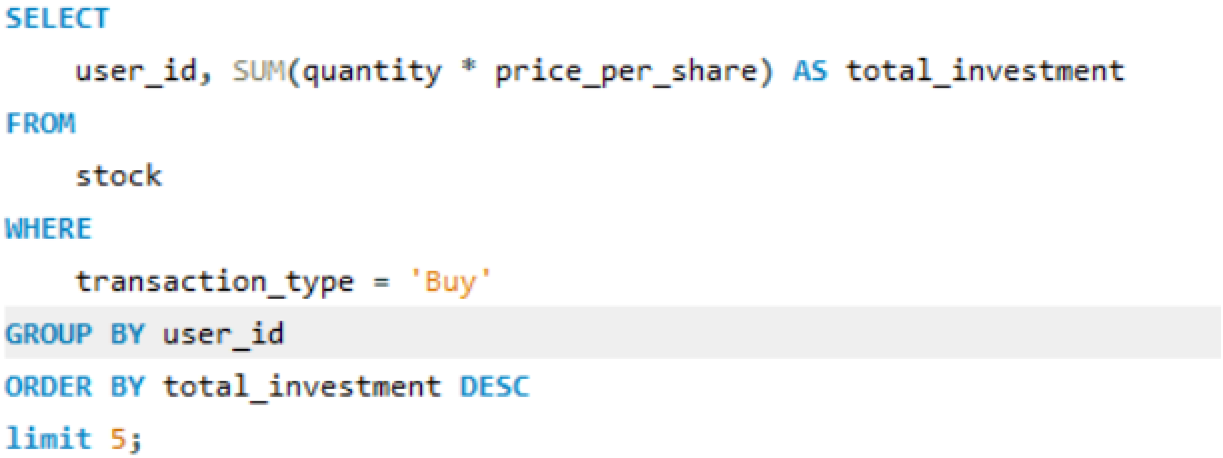


```
SELECT
    transaction_type, COUNT(user_id)
FROM
    stock
GROUP BY transaction_type;
```

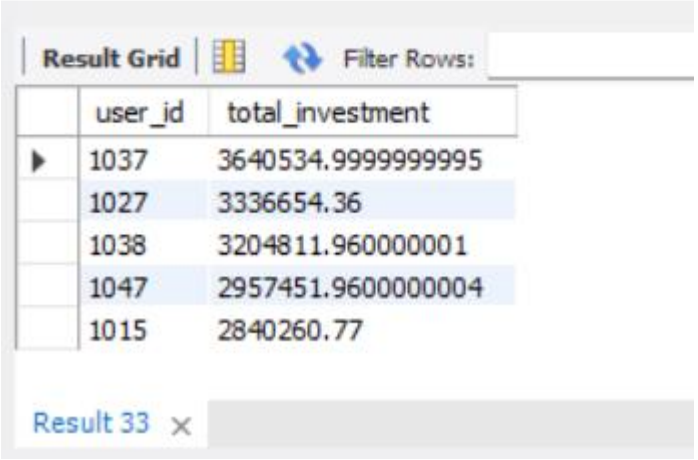


transaction_type	COUNT(user_id)
Buy	2032
Sell	1968

What is the total investment amount (Buy) for each user?

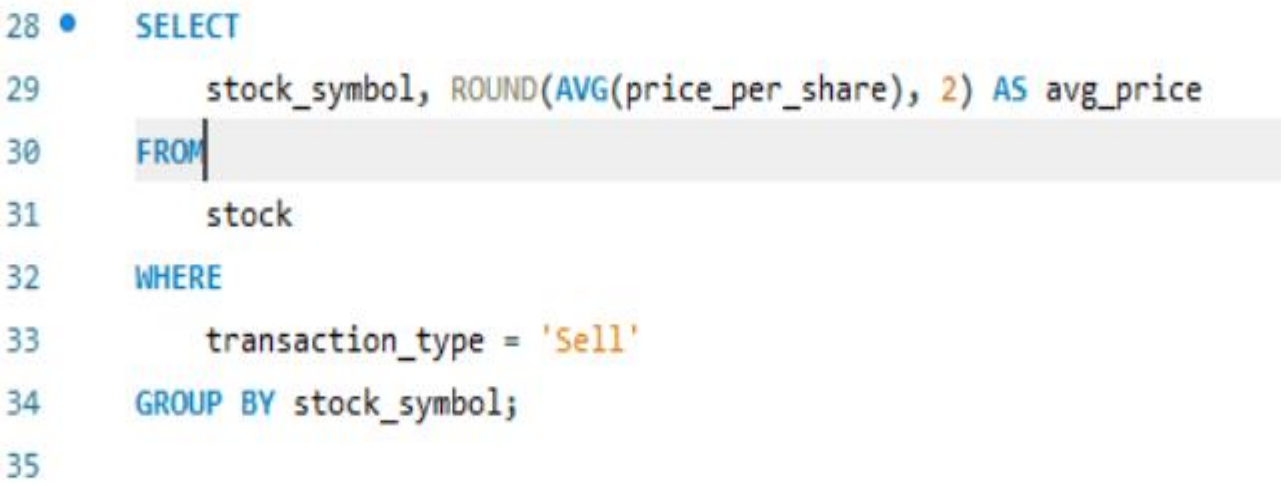


```
SELECT
    user_id, SUM(quantity * price_per_share) AS total_investment
FROM
    stock
WHERE
    transaction_type = 'Buy'
GROUP BY user_id
ORDER BY total_investment DESC
limit 5;
```

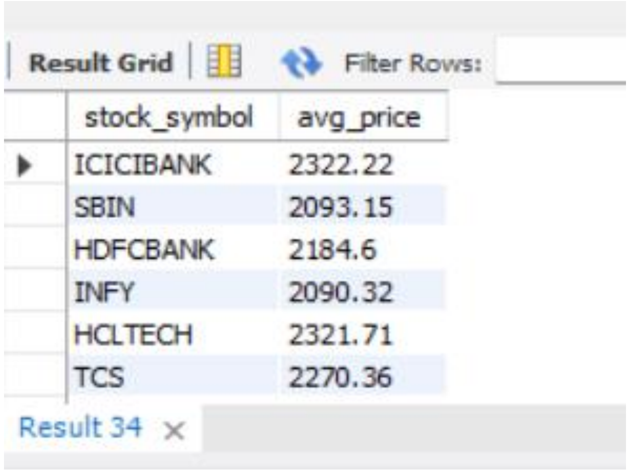


user_id	total_investment
1037	3640534.9999999995
1027	3336654.36
1038	3204811.960000001
1047	2957451.9600000004
1015	2840260.77

What is the average price per share for each stock when bought?

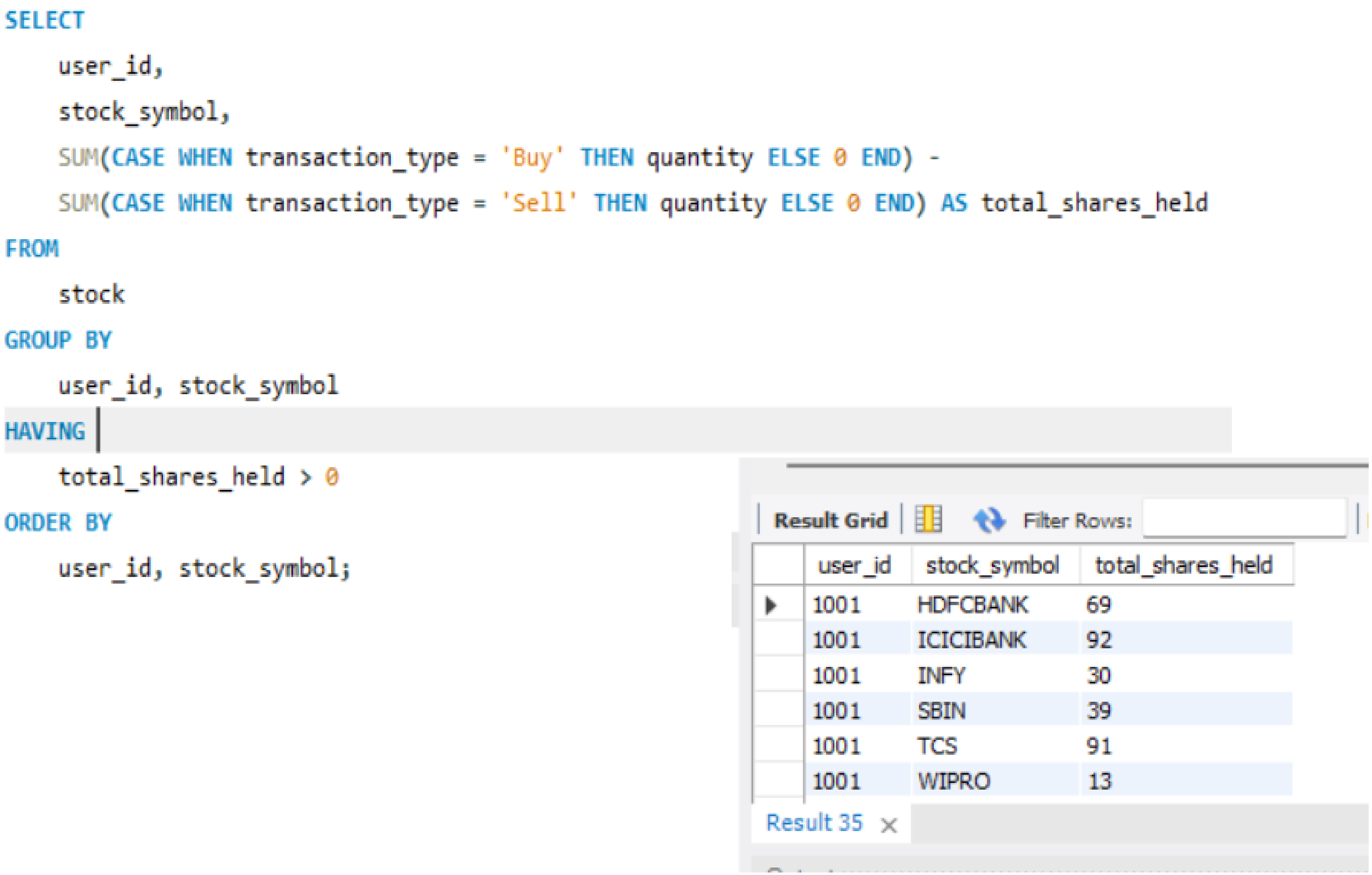


```sql
SELECT
    stock_symbol, ROUND(AVG(price_per_share), 2) AS avg_price
FROM
    stock
WHERE
    transaction_type = 'Sell'
GROUP BY stock_symbol;
```



stock_symbol	avg_price
ICICIBANK	2322.22
SBIN	2093.15
HDFCBANK	2184.6
INFY	2090.32
HCLTECH	2321.71
TCS	2270.36

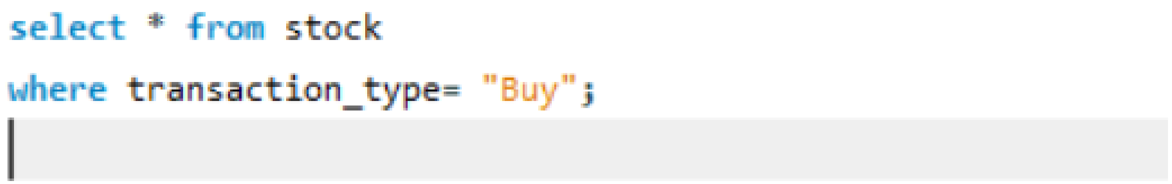
What is the total quantity of shares held by each user for each stock (Buys - Sells)?



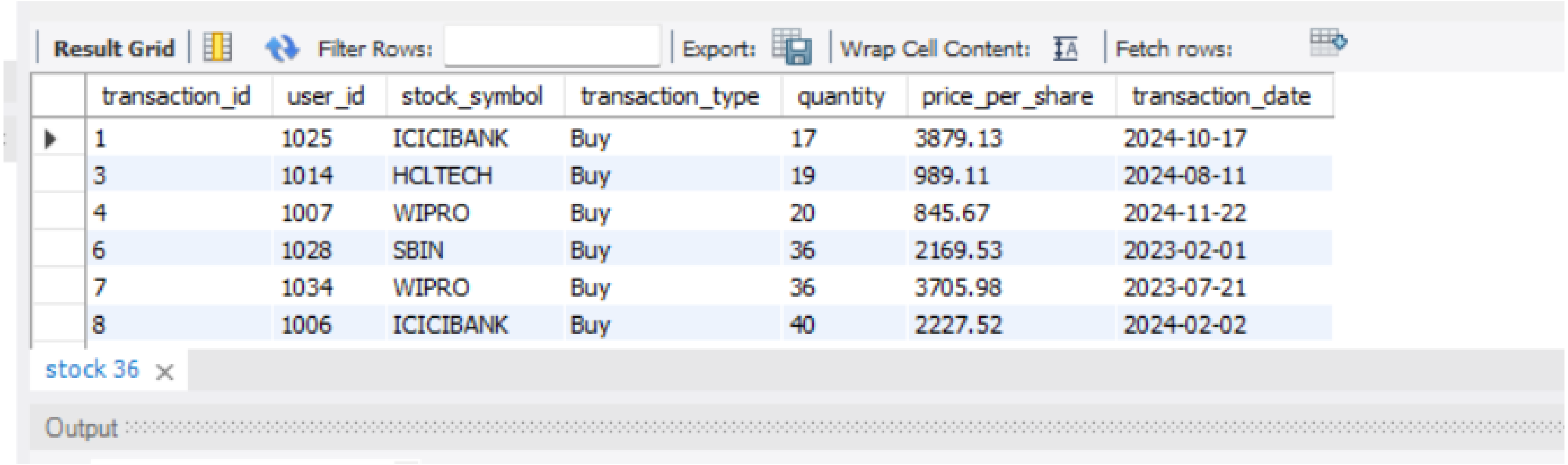
```
SELECT
    user_id,
    stock_symbol,
    SUM(CASE WHEN transaction_type = 'Buy' THEN quantity ELSE 0 END) -
    SUM(CASE WHEN transaction_type = 'Sell' THEN quantity ELSE 0 END) AS total_shares_held
FROM
    stock
GROUP BY
    user_id, stock_symbol
HAVING
    total_shares_held > 0
ORDER BY
    user_id, stock_symbol;
```

	user_id	stock_symbol	total_shares_held
▶	1001	HDFCBANK	69
	1001	ICICIBANK	92
	1001	INFY	30
	1001	SBIN	39
	1001	TCS	91
	1001	WIPRO	13

List all users who have only Buy transactions and no Sell transactions

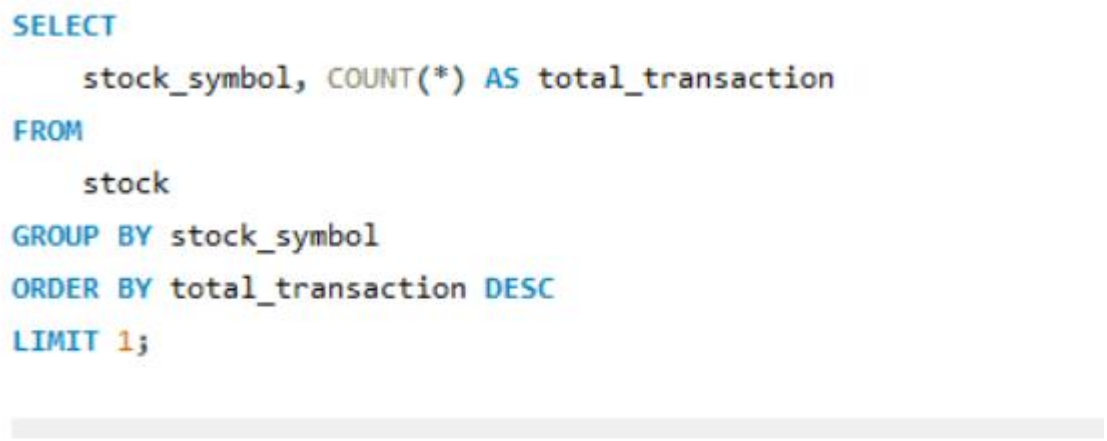


```
select * from stock
where transaction_type= "Buy";
```

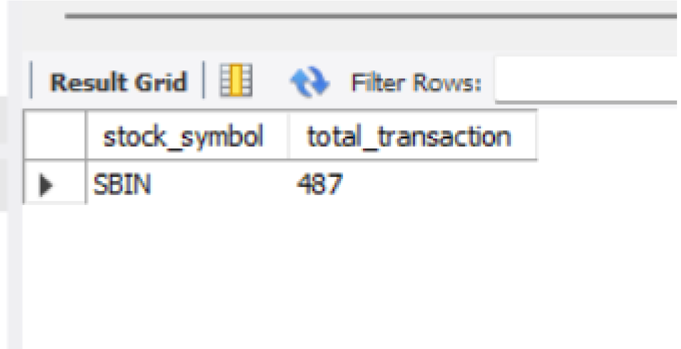


transaction_id	user_id	stock_symbol	transaction_type	quantity	price_per_share	transaction_date
1	1025	ICICIBANK	Buy	17	3879.13	2024-10-17
3	1014	HCLTECH	Buy	19	989.11	2024-08-11
4	1007	WIPRO	Buy	20	845.67	2024-11-22
6	1028	SBIN	Buy	36	2169.53	2023-02-01
7	1034	WIPRO	Buy	36	3705.98	2023-07-21
8	1006	ICICIBANK	Buy	40	2227.52	2024-02-02

What is the most traded stock by number of transactions?

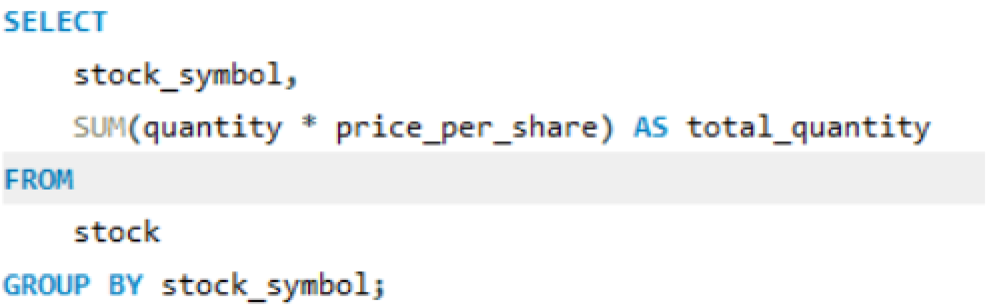


```
SELECT
    stock_symbol, COUNT(*) AS total_transaction
FROM
    stock
GROUP BY stock_symbol
ORDER BY total_transaction DESC
LIMIT 1;
```

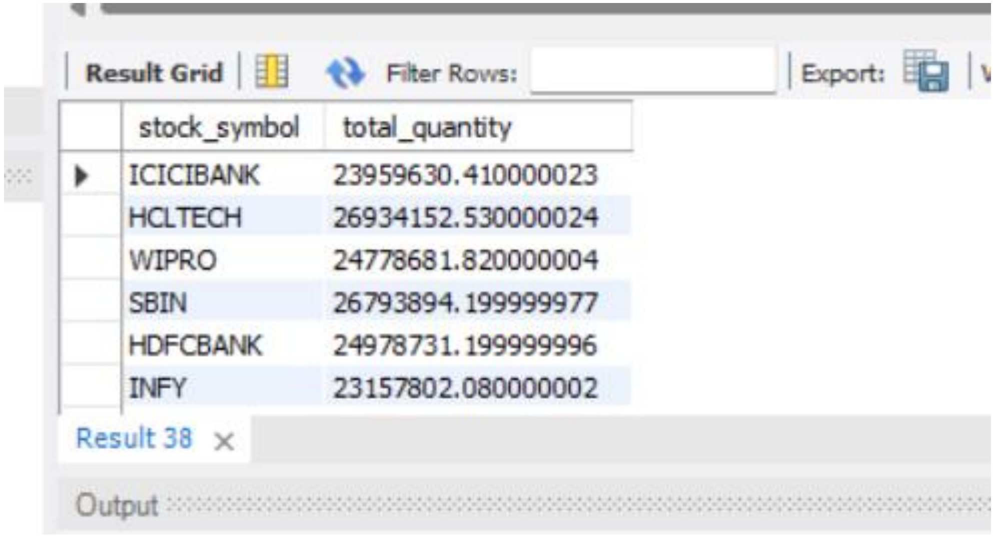


stock_symbol	total_transaction
SBIN	487

What is the total quantity sold for each stock?

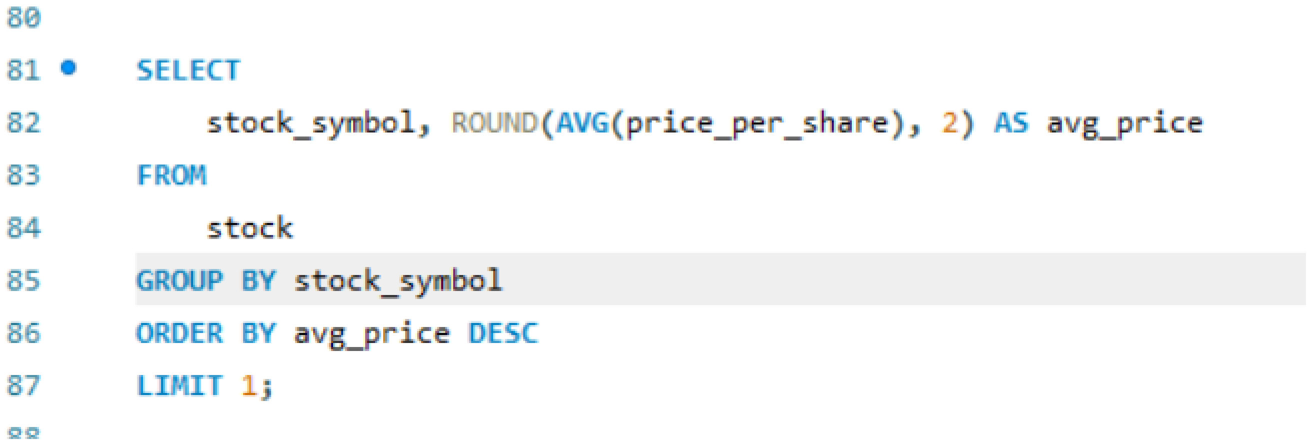


```
SELECT
    stock_symbol,
    SUM(quantity * price_per_share) AS total_quantity
FROM
    stock
GROUP BY stock_symbol;
```



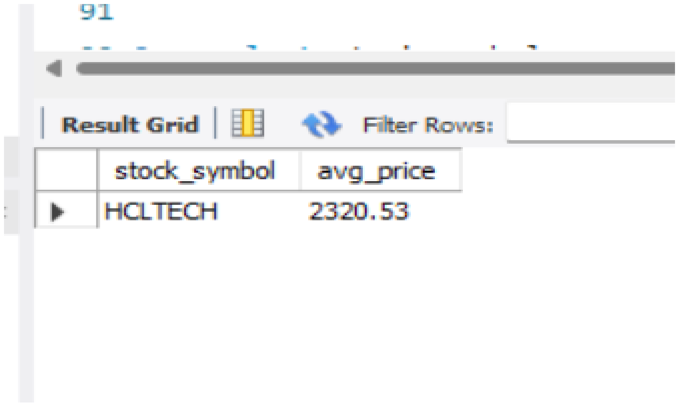
stock_symbol	total_quantity
ICICIBANK	23959630.410000023
HCLTECH	26934152.530000024
WIPRO	24778681.820000004
SBIN	26793894.199999977
HDFCBANK	24978731.199999996
INFY	23157802.080000002

Which stock has the highest average sell price?



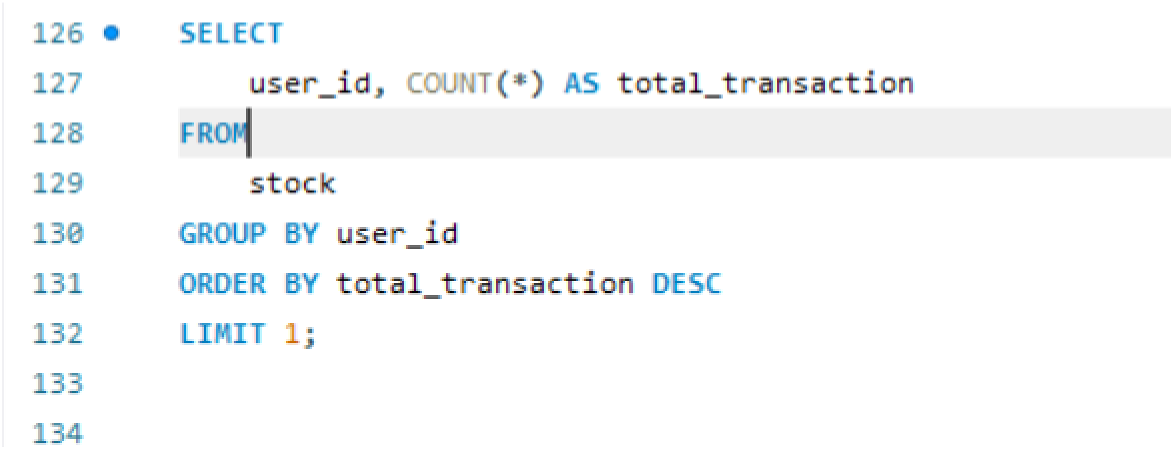
```sql

SELECT
    stock_symbol, ROUND(AVG(price_per_share), 2) AS avg_price
FROM
    stock
GROUP BY stock_symbol
ORDER BY avg_price DESC
LIMIT 1;
```

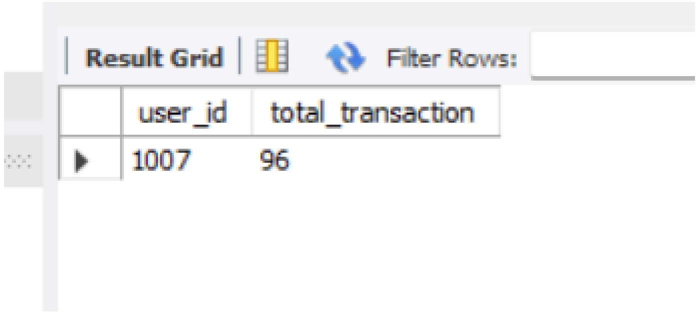


stock_symbol	avg_price
HCLTECH	2320.53

Which user has made the highest number of transactions?

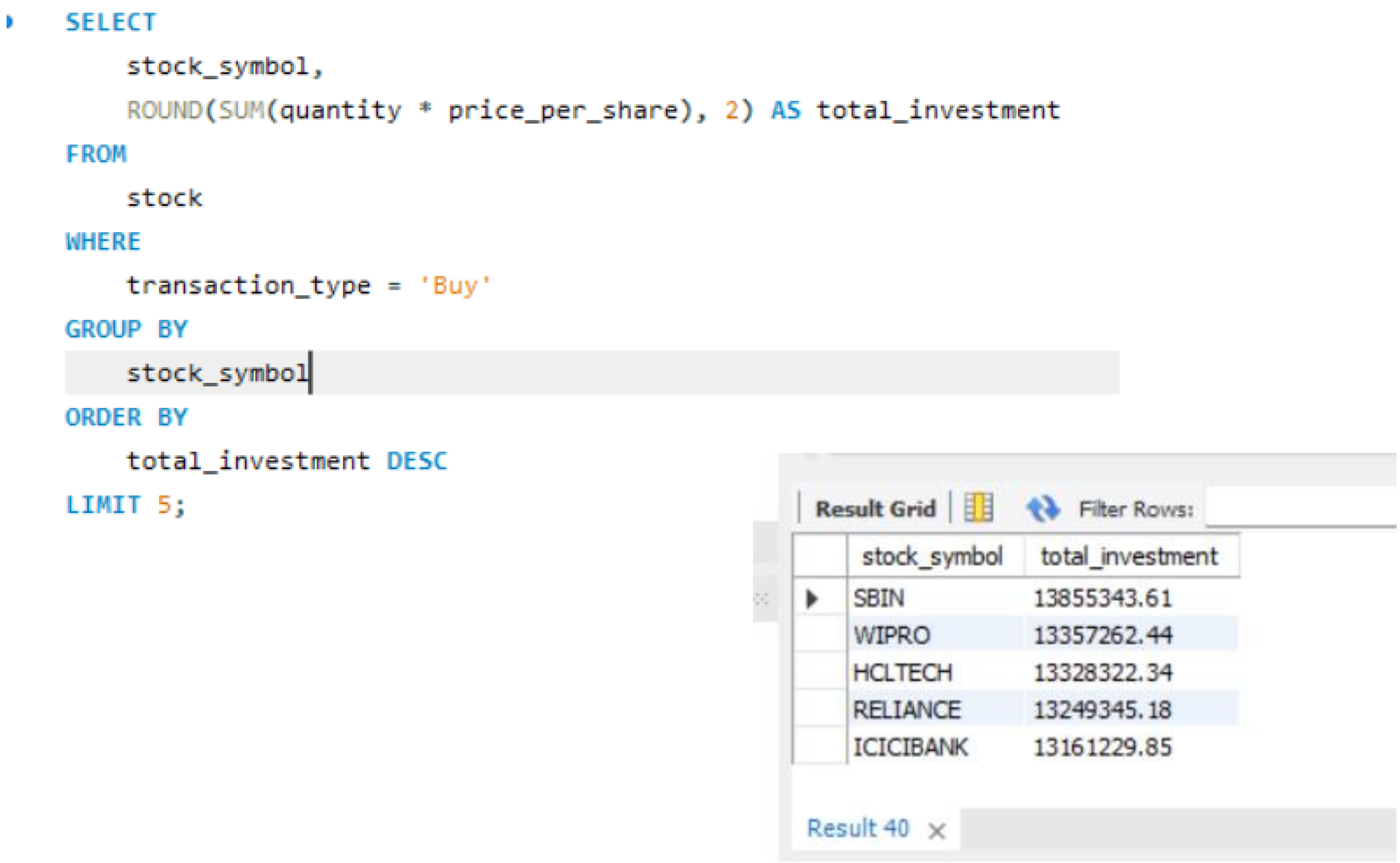


```
SELECT
    user_id, COUNT(*) AS total_transaction
FROM
    stock
GROUP BY user_id
ORDER BY total_transaction DESC
LIMIT 1;
```



user_id	total_transaction
1007	96

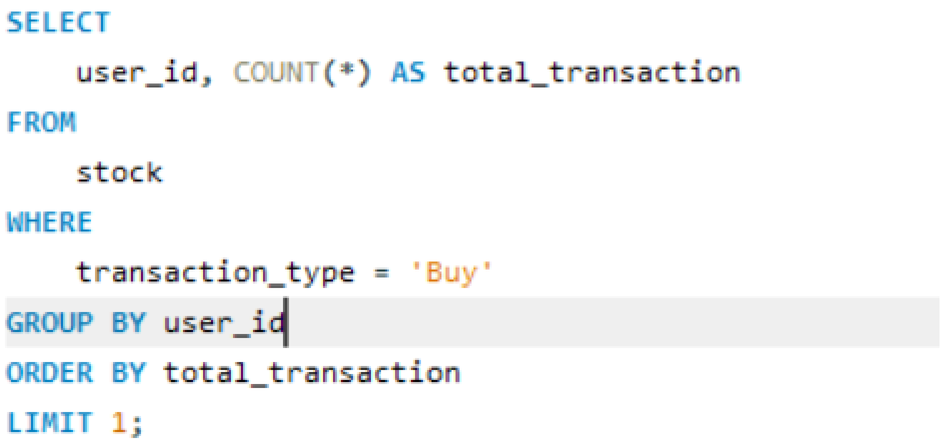
Find the top 5 stocks with the highest total investment value.4



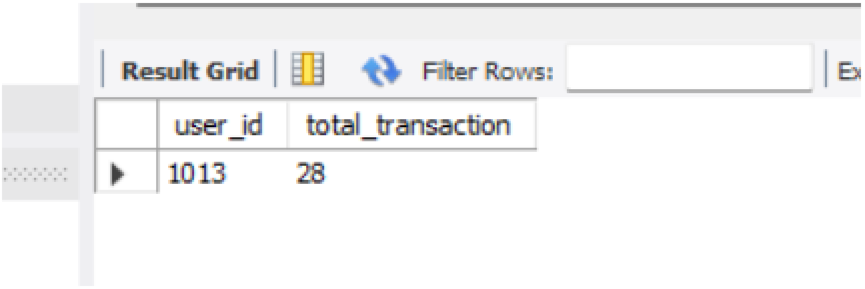
```
SELECT
    stock_symbol,
    ROUND(SUM(quantity * price_per_share), 2) AS total_investment
FROM
    stock
WHERE
    transaction_type = 'Buy'
GROUP BY
    stock_symbol
ORDER BY
    total_investment DESC
LIMIT 5;
```

stock_symbol	total_investment
SBIN	13855343.61
WIPRO	13357262.44
HCLTECH	13328322.34
RELIANCE	13249345.18
ICICIBANK	13161229.85

Which user has invested the most overall (in Buy transactions)?

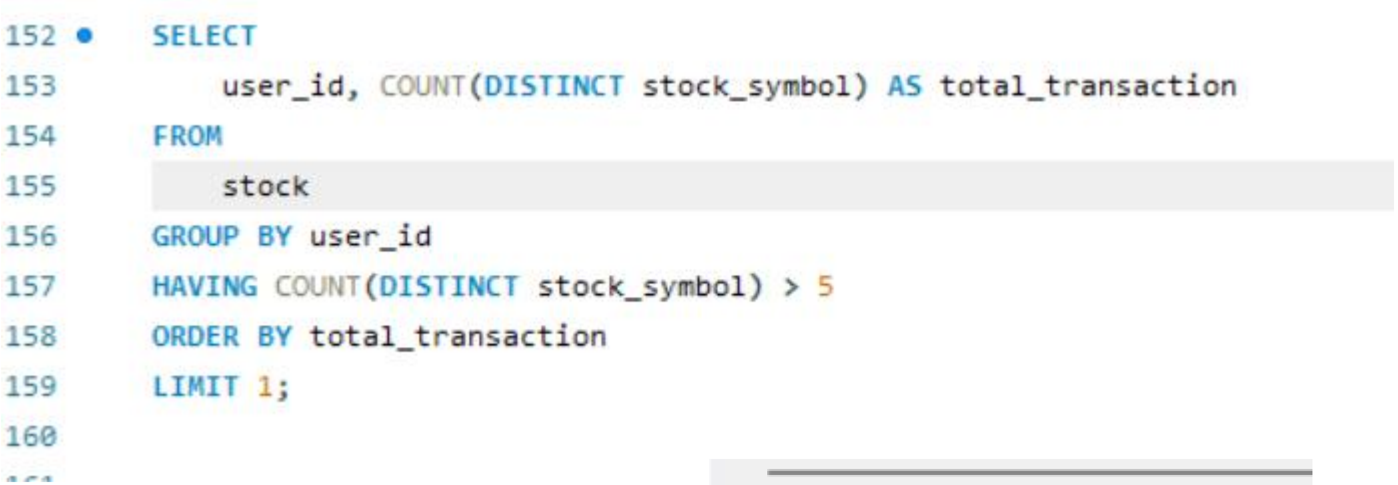
- 

```
SELECT
    user_id, COUNT(*) AS total_transaction
FROM
    stock
WHERE
    transaction_type = 'Buy'
GROUP BY user_id
ORDER BY total_transaction
LIMIT 1;
```

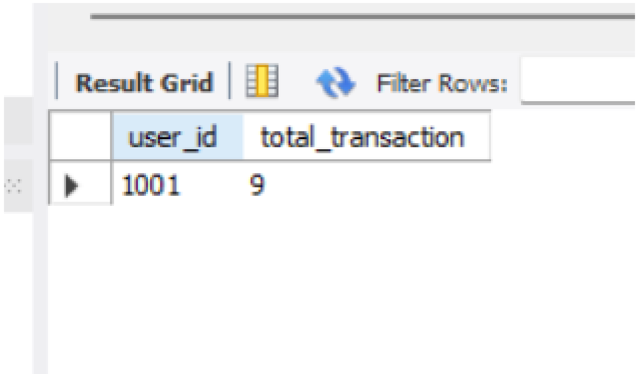


user_id	total_transaction
1013	28

Which users have traded in more than 5 different stocks?

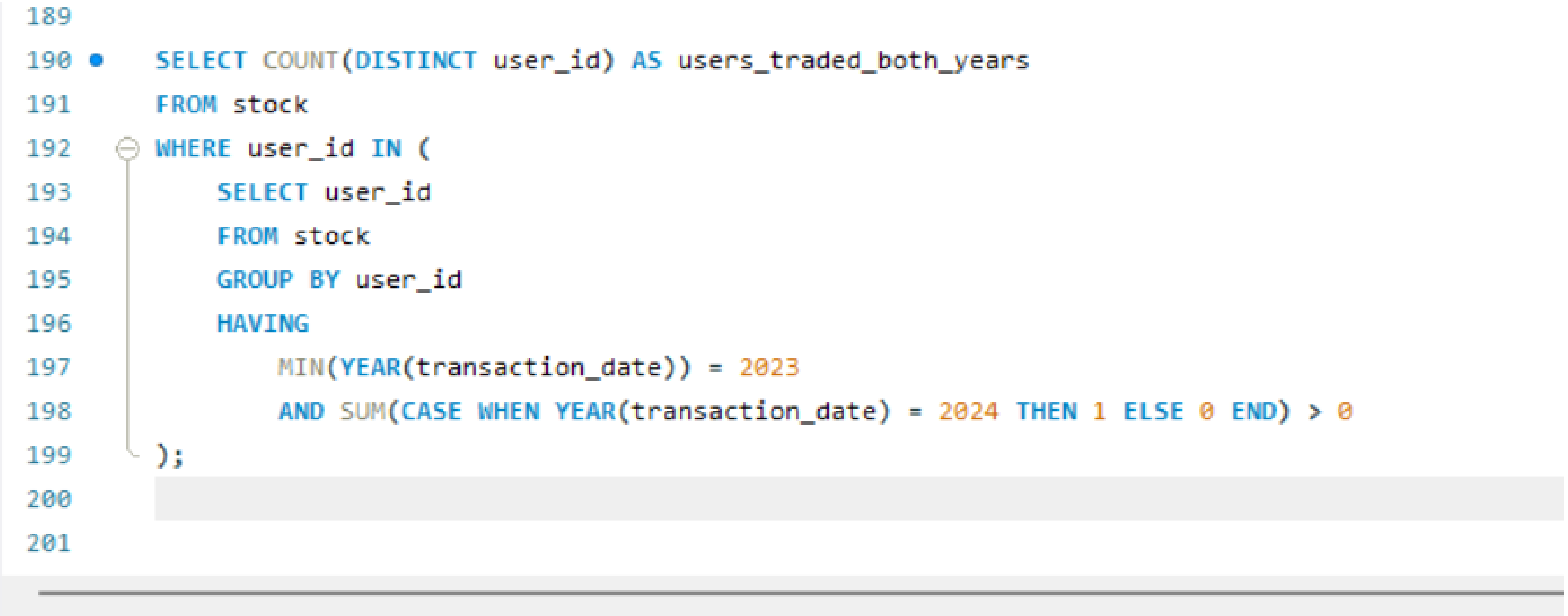


```sql
SELECT
    user_id, COUNT(DISTINCT stock_symbol) AS total_transaction
FROM
    stock
GROUP BY user_id
HAVING COUNT(DISTINCT stock_symbol) > 5
ORDER BY total_transaction
LIMIT 1;
```

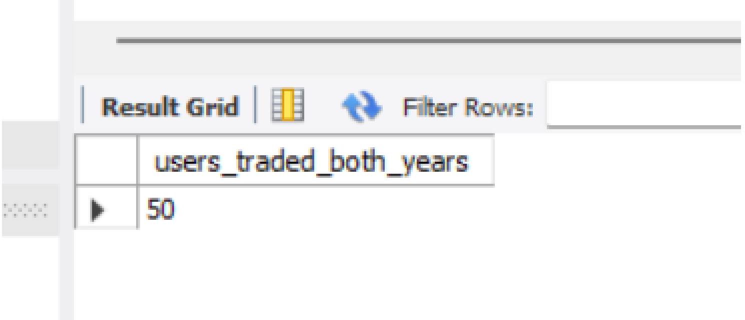


user_id	total_transaction
1001	9

How many users started trading in 2023 and continued in 2024?

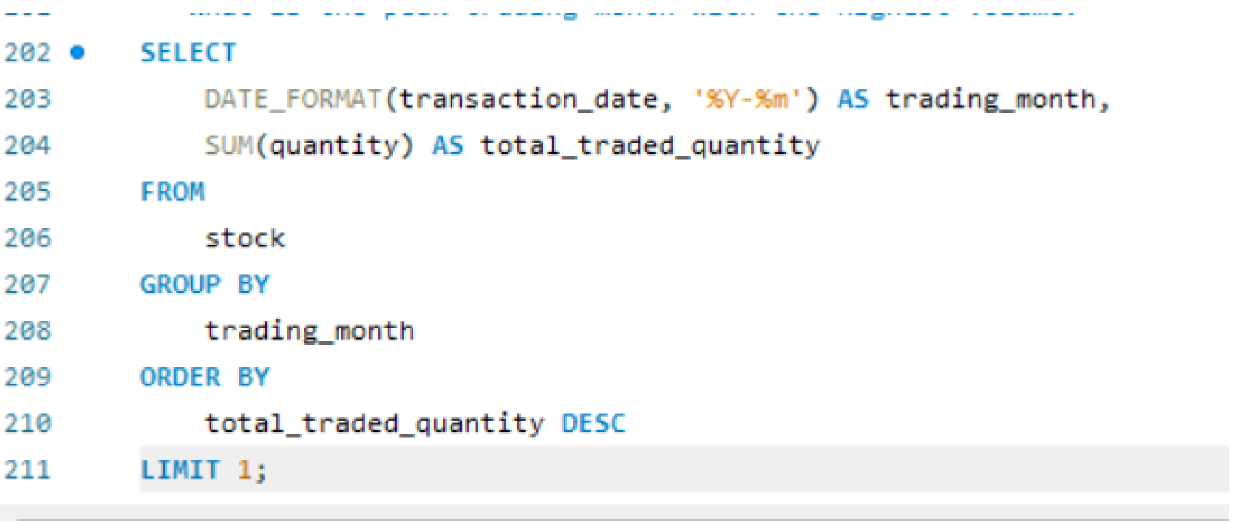


```sql
SELECT COUNT(DISTINCT user_id) AS users_traded_both_years
FROM stock
WHERE user_id IN (
    SELECT user_id
    FROM stock
    GROUP BY user_id
    HAVING
        MIN(YEAR(transaction_date)) = 2023
        AND SUM(CASE WHEN YEAR(transaction_date) = 2024 THEN 1 ELSE 0 END) > 0
);
```

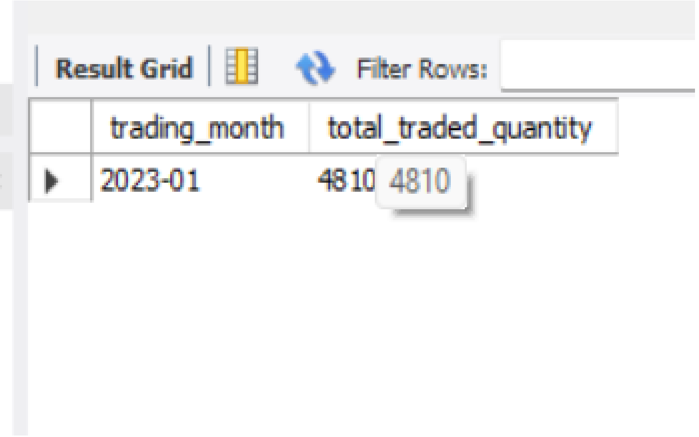


users_traded_both_years
50

What is the **peak trading month** with the highest volume?

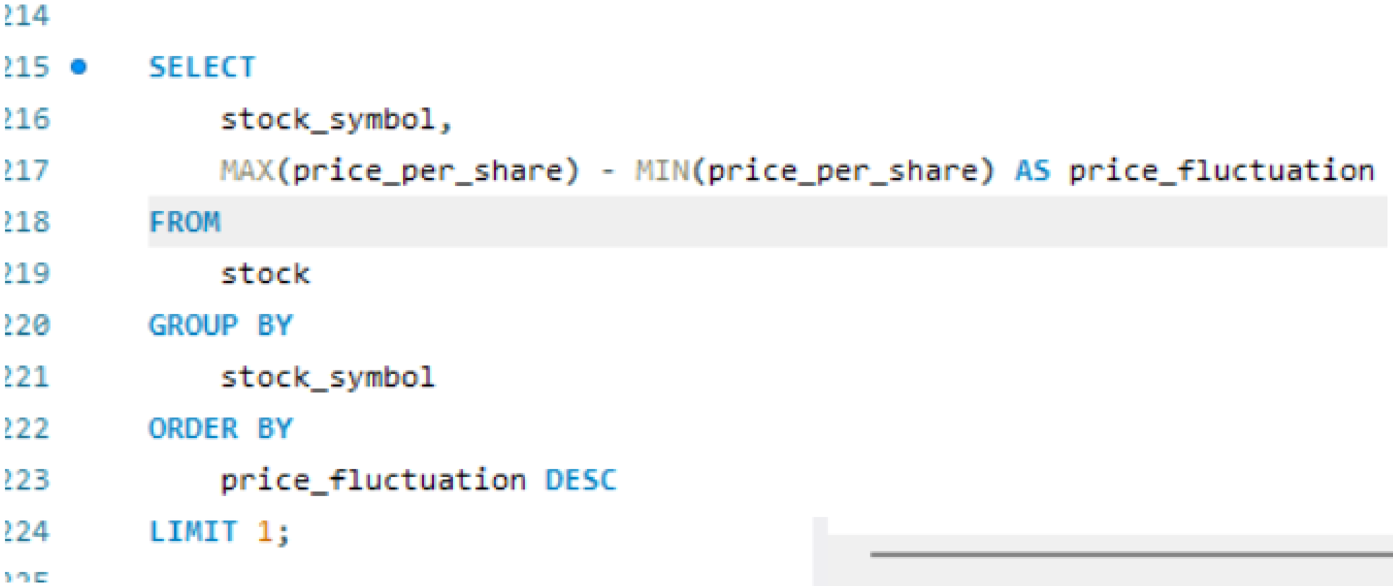


```sql
-- What is the peak trading month with the highest volume?
SELECT
    DATE_FORMAT(transaction_date, '%Y-%m') AS trading_month,
    SUM(quantity) AS total_traded_quantity
FROM
    stock
GROUP BY
    trading_month
ORDER BY
    total_traded_quantity DESC
LIMIT 1;
```

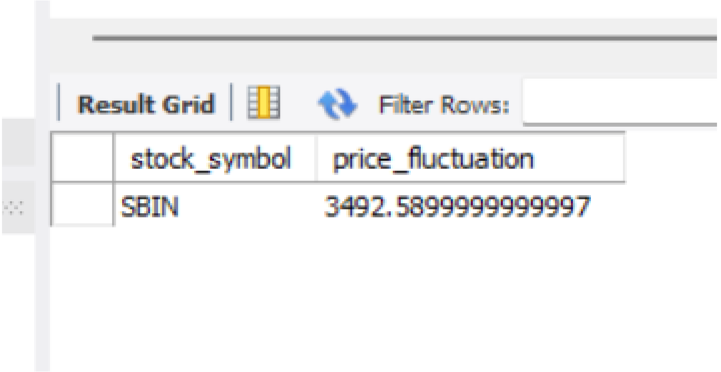


trading_month	total_traded_quantity
2023-01	4810

Which stock had the largest price fluctuation (max - min price) in the dataset?

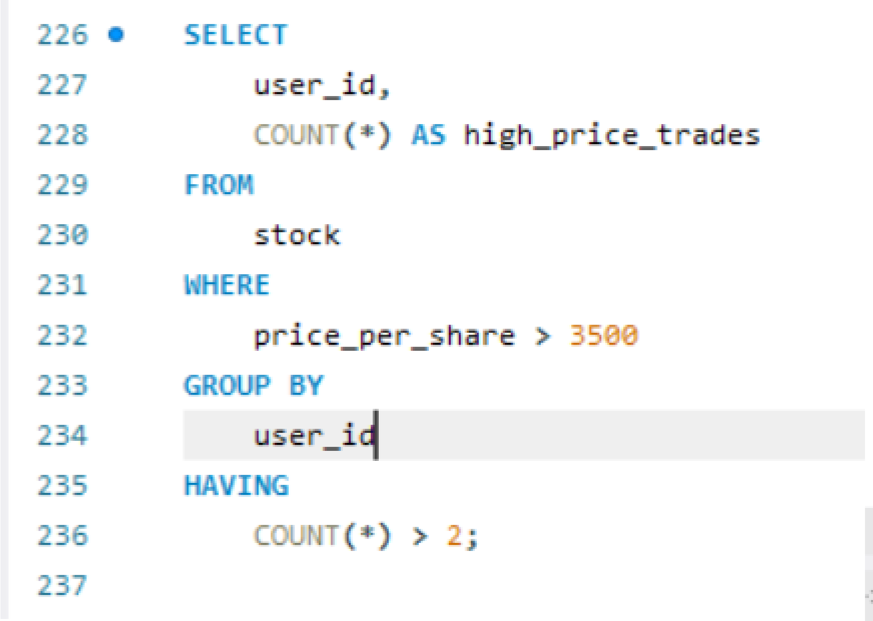


```
SELECT
    stock_symbol,
    MAX(price_per_share) - MIN(price_per_share) AS price_fluctuation
FROM
    stock
GROUP BY
    stock_symbol
ORDER BY
    price_fluctuation DESC
LIMIT 1;
```

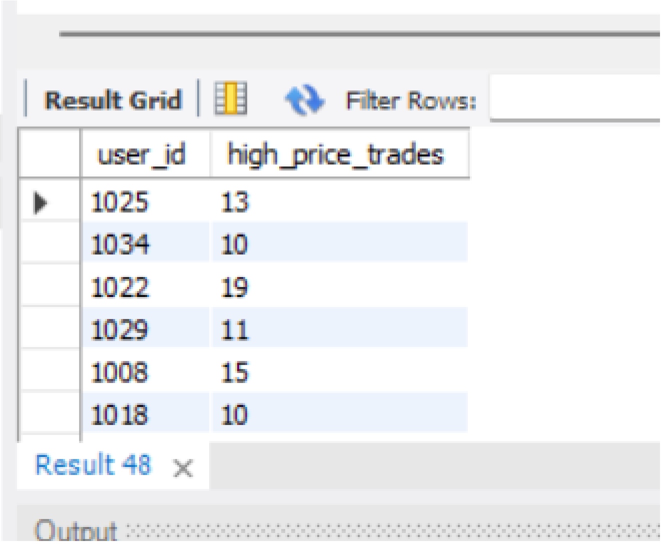


stock_symbol	price_fluctuation
SBIN	3492.5899999999997

List all users who traded stocks with a price above ₹3500 more than twice.



```
SELECT
    user_id,
    COUNT(*) AS high_price_trades
FROM
    stock
WHERE
    price_per_share > 3500
GROUP BY
    user_id
HAVING
    COUNT(*) > 2;
```



user_id	high_price_trades
1025	13
1034	10
1022	19
1029	11
1008	15
1018	10