Report of queries:

```sql
6    -- Get the first 5 trading hours with price and volume
7 •  SELECT
8        d.datetime,
9        p.open,
10       p.high,
11       p.low,
12       p.close,
13       v.volume
14   FROM
15       price_ohlc p
16   JOIN
17       datetime_dimension d ON p.datetime = d.datetime
18   JOIN
19       volume_metrics v ON p.datetime = v.datetime
20   ORDER BY
21       d.datetime ASC
22   LIMIT 5;
```

datetime	open	high	low	close	volume
2023-05-16 13:30:00	165.6499938964844	167.5599975585938	164.3500061035156	167.47000122207031	28269977
2023-05-16 14:30:00	167.4499969482422	169.4199981689453	167.1600036621094	168.5800018310547	18020917
2023-05-16 15:30:00	168.5648956298828	169.5184020996094	167.9199981689453	168.4299926757812	11617670
2023-05-16 16:30:00	168.4219970703125	168.9700012207031	167.8549957275391	168.31689453125	9570871
2023-05-16 17:30:00	168.3200988769531	168.8600006103516	166.7599945068359	166.9998931884766	10569064

```sql
25    -- Find top 10 highest trading volume hours with RSI > 70 (overbought)
26 •  SELECT
27        d.datetime,
28        d.day_name,
29        p.close,
30        v.volume,
31        o.rsi
32    FROM
33        price_ohlc p
34    JOIN
35        datetime_dimension d ON p.datetime = d.datetime
36    JOIN
37        volume_metrics v ON p.datetime = v.datetime
38    JOIN
39        oscillators o ON p.datetime = o.datetime
40    WHERE
41        o.rsi > 70
42    ORDER BY
43        v.volume DESC
44    LIMIT 10;
```

datetime	day_name	close	volume	rsi
2024-11-06 14:30:00	Wednesday	281.2179870605469	77672528	85.79296458789858
2024-04-29 13:30:00	Monday	185.6100006103516	75090478	77.13274257616438
2024-04-24 13:30:00	Wednesday	164.5829925537109	73656909	88.00571601198853
2024-07-02 13:30:00	Tuesday	229.4400024414062	73622009	82.71984959420509
2024-10-24 13:30:00	Thursday	248.9400024414062	73391487	86.79758695216239
2024-07-03 13:30:00	Wednesday	244.5599975585938	71003540	88.06980684264549
2024-11-11 14:30:00	Monday	344.9258117675781	70028742	84.64523637566406
2023-06-09 13:30:00	Friday	250.6437072753906	66855890	79.99363817948235
2024-10-25 13:30:00	Friday	267.4700012207031	58550919	94.61341040388575
2023-07-03 13:30:00	Monday	281.6561889648438	58094907	86.86811550161121

```sql
48    -- Calculate average daily trading volume and price range
49 •  SELECT
50        DATE(d.datetime) AS trading_date,
51        d.day_name,
52        COUNT(*) AS hours_traded,
53        AVG(v.volume) AS avg_hourly_volume,
54        MAX(p.high) - MIN(p.low) AS daily_price_range,
55        AVG(o.rsi) AS avg_rsi
56    FROM
57        price_ohlc p
58    JOIN
59        datetime_dimension d ON p.datetime = d.datetime
60    JOIN
61        volume_metrics v ON p.datetime = v.datetime
62    JOIN
63        oscillators o ON p.datetime = o.datetime
64    GROUP BY
65        trading_date, d.day_name
66    ORDER BY
67        trading_date DESC
68    LIMIT 5;
```

trading_date	day_name	hours_traded	avg_hourly_volume	daily_price_range	avg_rsi
2025-04-01	Tuesday	7	19700366.1429	18.200012207031193	55.76460646382956
2025-03-31	Monday	7	17910707.8571	17.199890136718807	28.52202979988611
2025-03-28	Friday	7	16591155.1429	15.52001953125	42.63574725984175
2025-03-27	Thursday	7	21846551.4286	20.018402099609432	49.105801004448054
2025-03-26	Wednesday	7	19793234.5714	18.389984130859375	47.78753712099019

Result 4 ×

```sql
73  SELECT
74      d.datetime,
75      p.close,
76      o.bollinger_upper,
77      o.bollinger_lower,
78      v.volume,
79      CASE
80          WHEN p.close > o.bollinger_upper THEN 'Upper Breakout'
81          WHEN p.close < o.bollinger_lower THEN 'Lower Breakout'
82          ELSE 'Within Bands'
83      END AS bollinger_status
84  FROM
85      price_ohlc p
86  JOIN
87      datetime_dimension d ON p.datetime = d.datetime
88  JOIN
89      oscillators o ON p.datetime = o.datetime
90  JOIN
91      volume_metrics v ON p.datetime = v.datetime
92  WHERE
93      (p.close > o.bollinger_upper OR p.close < o.bollinger_lower)
94      AND v.volume > (SELECT AVG(volume) FROM volume_metrics)
95  ORDER BY
96      v.volume DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

datetime	close	bollinger_upper	bollinger_lower	volume	bollinger_status
2024-11-06 14:30:00	281.2179870605469	266.6747742313225	233.9630751949471	77672528	Upper Breakout
2024-04-29 13:30:00	185.6100006103516	178.598395092828	155.5901714965275	75090478	Upper Breakout
2024-04-24 13:30:00	164.5829925537109	155.9511047875403	135.4412124121667	73656909	Upper Breakout
2024-07-02 13:30:00	229.4400024414062	221.2269362396734	185.9508637481195	73622009	Upper Breakout
2024-10-24 13:30:00	248.9400024414062	232.9766512059601	202.9091596460907	73391487	Upper Breakout
2024-07-03 13:30:00	244.5599975585938	244.5279100856724	186.1510129489955	71003540	Upper Breakout

Result 5 ×   Read Only

```sql
101  -- Compare morning vs afternoon trading sessions
102  SELECT
103      CASE
104          WHEN HOUR(d.datetime) BETWEEN 9 AND 12 THEN 'Morning (9AM-12PM)'
105          WHEN HOUR(d.datetime) BETWEEN 13 AND 16 THEN 'Afternoon (1PM-4PM)'
106          ELSE 'Other Hours'
107      END AS session,
108      COUNT(*) AS observations,
109      AVG(p.close - p.open) AS avg_price_change,
110      AVG(v.volume) AS avg_volume,
111      AVG(o.rsi) AS avg_rsi
112  FROM
113      price_ohlc p
114  JOIN
115      datetime_dimension d ON p.datetime = d.datetime
116  JOIN
117      volume_metrics v ON p.datetime = v.datetime
118  JOIN
119      oscillators o ON p.datetime = o.datetime
120  WHERE
121      d.is_weekend = FALSE
122  GROUP BY
123      session
124  ORDER BY
125      avg_volume DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

session	observations	avg_price_change	avg_volume	avg_rsi
Afternoon (1PM-4PM)	1713	-0.017344468668475777	18839745.8004	50.649911270136066
Other Hours	1564	-0.027031266780764847	9410698.9802	50.03903194379238

Result 6 ×   Read Only

```sql
129        -- Find golden crosses (50MA crossing above 200MA)
130    ⊖  WITH ma_data AS (
131           SELECT
132               d.datetime,
133               m.sma_50,
134               m.sma_200,
135               LAG(m.sma_50) OVER (ORDER BY d.datetime) AS prev_sma_50,
136               LAG(m.sma_200) OVER (ORDER BY d.datetime) AS prev_sma_200
137           FROM
138               moving_averages m
139           JOIN
140               datetime_dimension d ON m.datetime = d.datetime
141       )
142       SELECT
143           datetime,
144           sma_50,
145           sma_200,
146           'Golden Cross' AS signal_type
147       FROM
148           ma_data
149       WHERE
150           prev_sma_50 < prev_sma_200 AND sma_50 > sma_200;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

datetime	sma_50	sma_200	signal_type
2023-05-19 15:30:00	170.6542840576172	170.4941276550293	Golden Cross
2023-09-05 13:30:00	245.943362121582	245.9139122009277	Golden Cross
2023-10-11 16:30:00	257.3438330078125	257.2807870483398	Golden Cross
2023-11-17 17:30:00	226.8158148193359	226.7790027618408	Golden Cross
2024-02-26 18:30:00	195.3611560058594	195.0285019683838	Golden Cross
2024-05-01 16:30:00	168.7158892822266	168.1269087219238	Golden Cross
2024-06-14 14:30:00	176.700237121582	176.5853807067871	Golden Cross
2024-08-27 17:30:00	217.7453262329101	217.7342997741699	Golden Cross
2024-09-05 15:30:00	212.8137750244141	212.6336323547363	Golden Cross

Result 7   Read Only