```
-- changing the datatype of transaction_date to DATE
ALTER TABLE coffee
MODIFY COLUMN transaction_date DATE;

-- Get the table details
EXEC sp_help 'coffee';

-- Changing the datatype of transaction_time to TIME
ALTER TABLE coffee
ALTER COLUMN transaction_time TIME;

-- SQL queries with respect to business requiements
SELECT ROUND(SUM(unit_price*transaction_qty),2) AS total_sales_current
FROM coffee
WHERE month(transaction_date) = 6;
```

total_sales_current
166485.88

-- Change in sales and also Month over Month Change Current month is June, Previous month is May

```
WITH cte AS (SELECT month(transaction_date) AS month,
     ROUND(SUM(unit_price*transaction_qty),2) AS total_sales
FROM coffee
WHERE month(transaction_date) IN (5,6)
GROUP BY MONTH(transaction_date))
SELECT *
FROM(SELECT month,total_sales,total_sales-
      LAG(total_sales) OVER(ORDER BY month) AS change_in_sales,
      ROUND((total_sales-LAG(total_sales) OVER(ORDER BY month))*100.0/LAG(total_sales)
OVER(ORDER BY month),2) AS mom_perc_change
FROM cte)a
WHERE change_in_sales IS NOT NULL;
```

month	total_sales	change_in_sales	mom_perc_change
6	166485.88	9758.12	6.23

-- Change in sales and also Month over Month Change

```
WITH cte AS (SELECT month(transaction_date) AS month,
     ROUND(SUM(unit_price*transaction_qty),2) AS total_sales
FROM coffee
WHERE month(transaction_date) IN (5,6)
GROUP BY MONTH(transaction_date))
```

```
SELECT *
FROM(SELECT month,total_sales,LAG(total_sales) OVER(ORDER BY month) AS
prev_month_sales,total_sales-
      LAG(total_sales) OVER(ORDER BY month) AS change_in_sales,
      CONCAT(CAST(ROUND((total_sales-LAG(total_sales) OVER(ORDER BY
month))*100.0/LAG(total_sales) OVER(ORDER BY month),2) AS VARCHAR),'%') AS
mom_perc_change
FROM cte)a
WHERE change_in_sales IS NOT NULL;
```

month	total_sales	prev_month_sales	change_in_sales	mom_perc_change
6	166485.88	156727.76	9758.12	6.23%

-- Total Orders Analysis

```
SELECT COUNT(*) AS total_orders
FROM coffee
WHERE MONTH(transaction_date) = 6;
```

total_orders
35352

-- change in orders and Month over month change in orders

```
SELECT *
FROM(SELECT month,
        total_orders,
        LAG(total_orders) OVER(ORDER BY month) AS prev_orders,
        total_orders - LAG(total_orders) OVER(ORDER BY month) AS change_in_orders,
         ROUND((total_orders - LAG(total_orders) OVER(ORDER BY
month))*100.0/LAG(total_orders) OVER(ORDER BY month),2) AS mom_perc_change
FROM(SELECT MONTH(transaction_date) AS month,
        COUNT(*) AS total_orders
FROM coffee
WHERE MONTH(transaction_date) IN (5,6)
GROUP BY MONTH(transaction_date))a)b
WHERE prev_orders IS NOT NULL;
```

month	total_orders	prev_orders	change_in_orders	mom_perc_change
6	35352	33527	1825	5.440000000000

-- Total quantity analysis

```
SELECT SUM(transaction_qty) AS total_quantity
FROM coffee
```

```
WHERE MONTH(transaction_date) = 6;
```

total_quantity
50942

-- Change in quantity sold and month over month change in quantity sold

```
SELECT *
FROM(SELECT month,total_quantity_sold,
    total_quantity_sold-LAG(total_quantity_sold) OVER(ORDER BY month) AS
quantity_change,
    ROUND((total_quantity_sold-LAG(total_quantity_sold) OVER(ORDER BY
month))*100.0/LAG(total_quantity_sold) OVER(ORDER BY month),2) AS mom_perc_change
FROM(SELECT MONTH(transaction_date) AS month,
     SUM(transaction_qty) AS total_quantity_sold
FROM coffee
WHERE MONTH(transaction_date) IN (5,6)
GROUP BY MONTH(transaction_date))a)b
WHERE quantity_change IS NOT NULL;
```

month	total_quantity_sold	quantity_change	mom_perc_change
6	50942	2709	5.620000000000

-- Calendar Heat Map

```
SELECT transaction_date,
    COUNT(*) AS total_orders,
    SUM(transaction_qty) AS total_quantity,
    ROUND(SUM(unit_price*transaction_qty),2) AS total_sales
FROM coffee
WHERE MONTH(transaction_date) = 6
GROUP BY transaction_date
ORDER BY transaction_date;
```

transaction_date	total_orders	total_quantity	total_sales
2023-06-01	1150	1676	5227
2023-06-02	1143	1642	5056.5
2023-06-03	1160	1654	5166.65
2023-06-04	1114	1619	4985.15
2023-06-05	1110	1577	4911.15
2023-06-06	1041	1494	4598.9
2023-06-07	1083	1536	4883.1
2023-06-08	1269	1788	6151.59
2023-06-09	1224	1682	5867.16
2023-06-10	1210	1708	5626.75
2023-06-11	1208	1703	5418.61
2023-06-12	1162	1674	5328.7
2023-06-13	1281	1938	6189.36
2023-06-14	1194	1608	5836.52
2023-06-15	1237	1728	5806.24
2023-06-16	1331	1824	6011.43
2023-06-17	1099	1552	6117.6
2023-06-18	1290	1780	6026.09
2023-06-19	1343	1858	6403.91
2023-06-20	1202	1644	5494.66
2023-06-21	1153	1695	5808.38
2023-06-22	1147	1770	5615.1
2023-06-23	1167	1795	5781.86
2023-06-24	1214	1846	5906.1
2023-06-25	1174	1802	5754.85
2023-06-26	1195	1837	5875.9
2023-06-27	1277	1962	5975.65
2023-06-28	1070	1531	4728.9
2023-06-29	1009	1429	4450.75
2023-06-30	1095	1590	5481.32

-- statistics for 18th May 2025

```
SELECT ROUND(SUM(transaction_qty*unit_price),2) AS total_sales,
      SUM(transaction_qty) AS total_quantity,
      COUNT(*) AS total_orders
FROM coffee
WHERE transaction_date = '2023-05-18';
```

total_sales	total_quantity	total_orders
5583.47	1659	1192

-- Sales analysis on Weekends and Weekdays

```
SELECT weekday, ROUND(SUM(transaction_qty*unit_price),2) AS total_sales
FROM(SELECT *,DATENAME(WEEKDAY,transaction_date) AS weekday
FROM coffee)a
GROUP BY weekday
ORDER BY total_sales DESC;
```

weekday	total_sales
Monday	101677.28
Friday	101373
Thursday	100767.78
Wednesday	100313.54
Tuesday	99455.94
Sunday	98330.31
Saturday	96894.48

-- Sales analysis on Weekends and Weekdays

```
WITH cte AS (
SELECT weekday, ROUND(SUM(transaction_qty*unit_price),2) AS total_sales
FROM(SELECT *,DATENAME(WEEKDAY,transaction_date) AS weekday
FROM coffee)a
GROUP BY weekday)
SELECT weekday_indicator, SUM(total_sales) AS total_sales
FROM(SELECT *,CASE WHEN weekday IN ('Saturday','Sunday') THEN 'weekday' ELSE
'weekend' END AS weekday_indicator
FROM cte)a
GROUP BY weekday_indicator;
```

weekday_indicator	total_sales
weekday	195224.79
weekend	503587.54

```
SELECT weekday_indicator, ROUND(SUM(sales),2) AS total_sales
FROM(SELECT CASE WHEN DATEPART(weekday,transaction_date) IN (1,7) THEN 'weekend'
ELSE 'weekday' END AS weekday_indicator, transaction_qty*unit_price AS sales
FROM coffee)a
GROUP BY weekday_indicator;
```

weekday_indicator	total_sales
weekday	503587.54
weekend	195224.79

```
SELECT weekday_indicator, ROUND(SUM(sales),2) AS total_sales
FROM(SELECT CASE WHEN DATEPART(weekday,transaction_date) IN (1,7) THEN 'weekend'
ELSE 'weekday' END AS weekday_indicator, transaction_qty*unit_price AS sales
FROM coffee
WHERE MONTH(transaction_date) = 6)a
GROUP BY weekday_indicator;
```

weekday_indicator	total_sales
weekday	121484.08
weekend	45001.8

```
-- Sales analysis by store location
SELECT store_location,
      cONCAT(ROUND(SUM(unit_price*transaction_qty)/1000,2),'K')  AS total_sales
FROM Coffee
WHERE MONTH(transaction_date) = 6
GROUP BY store_location
ORDER BY total_sales DESC;
```

store_location	total_sales
Hell's Kitchen	56.96K
Astoria	55.08K
Lower Manhattan	54.45K

-- Daily sales analysis with average line

```
WITH cte1 AS (
SELECT transaction_date,
      CONCAT(ROUND(SUM(unit_price*transaction_qty)/1000,2),'K') AS total_sales
FROM Coffee
WHERE MONTH(transaction_date) = 6
GROUP BY transaction_date),
cte2 AS (
SELECT CONCAT(ROUND(AVG(total_sales)/1000,2),'K') AS average_sales
FROM(SELECT transaction_date,
           SUM(unit_price*transaction_qty) AS total_sales
FROM Coffee
WHERE MONTH(transaction_date) = 6
GROUP BY transaction_date)a)
SELECT transaction_date,total_sales,average_sales,
     CASE WHEN total_sales>average_sales THEN 'Above Average'
          WHEN total_sales<average_sales THEN 'Below Average'
          ELSE 'Average' END AS sales_status
FROM cte1 c1
CROSS JOIN cte2 c2
ORDER BY c1.transaction_date;
```

transaction_date	total_sales	average_sales	sales_status
2023-06-01	5.23K	5.55K	Below Average
2023-06-02	5.06K	5.55K	Below Average
2023-06-03	5.17K	5.55K	Below Average
2023-06-04	4.99K	5.55K	Below Average
2023-06-05	4.91K	5.55K	Below Average
2023-06-06	4.6K	5.55K	Below Average
2023-06-07	4.88K	5.55K	Below Average
2023-06-08	6.15K	5.55K	Above Average
2023-06-09	5.87K	5.55K	Above Average
2023-06-10	5.63K	5.55K	Above Average
2023-06-11	5.42K	5.55K	Below Average
2023-06-12	5.33K	5.55K	Below Average
2023-06-13	6.19K	5.55K	Above Average
2023-06-14	5.84K	5.55K	Above Average
2023-06-15	5.81K	5.55K	Above Average
2023-06-16	6.01K	5.55K	Above Average
2023-06-17	6.12K	5.55K	Above Average
2023-06-18	6.03K	5.55K	Above Average
2023-06-19	6.4K	5.55K	Above Average
2023-06-20	5.49K	5.55K	Below Average
2023-06-21	5.81K	5.55K	Above Average
2023-06-22	5.62K	5.55K	Above Average
2023-06-23	5.78K	5.55K	Above Average
2023-06-24	5.91K	5.55K	Above Average
2023-06-25	5.75K	5.55K	Above Average
2023-06-26	5.88K	5.55K	Above Average
2023-06-27	5.98K	5.55K	Above Average
2023-06-28	4.73K	5.55K	Below Average
2023-06-29	4.45K	5.55K	Below Average
2023-06-30	5.48K	5.55K	Below Average

-- Top 10 products by Sales

```
SELECT TOP 10 product_detail,
CONCAT(ROUND(SUM(unit_price*transaction_qty)/1000,2),'K') AS total_sales
FROM Coffee
WHERE MONTH(transaction_date) = 6
GROUP BY product_detail
ORDER BY total_sales DESC;
```

product_detail	total_sales
Sustainably Grown Organic Lg	5.03K
Dark chocolate Lg	4.98K
Latte Rg	4.62K
Morning Sunrise Chai Lg	4.28K
Cappuccino Lg	4.21K
Latte	4.09K
Jamaican Coffee River Lg	3.93K
Cappuccino	3.78K
Sustainably Grown Organic ...	3.78K
Ethiopia Lg	3.66K

-- Top 10 products by sales in coffee product_category

```
SELECT TOP 10 product_type,
      ROUND(SUM(unit_price*transaction_qty),2) AS total_sales
FROM coffee
WHERE MONTH(transaction_date) = 6 AND product_category = 'Coffee'
GROUP BY product_type
ORDER BY SUM(unit_price*transaction_qty) DESC;
```

product_type	total_sales
Barista Espresso	21860
Gourmet brewed coffee	17142
Premium brewed coffee	9241.5
Organic brewed coffee	8775
Drip coffee	7770.5

-- Sales analysis by days and hours

```
SELECT DATENAME(weekday, transaction_date) AS dayname,
      ROUND(SUM(unit_price*transaction_qty),2) AS total_sales
FROM Coffee
WHERE MONTH(transaction_date) = 6
GROUP BY DATENAME(weekday,transaction_date)
ORDER BY total_sales DESC;
```

dayname	total_sales
Friday	28198.27
Thursday	27250.68
Saturday	22817.1
Monday	22519.66
Tuesday	22258.57
Sunday	22184.7
Wednesday	21256.9

```
-- Sales analysis by hour
SELECT DATEPART(HOUR,transaction_time) AS hour_of_day,
     CONCAT(ROUND(SUM(unit_price*transaction_qty)/1000,2),'K') AS total_sales
FROM Coffee
GROUP BY DATEPART(HOUR,transaction_time)
ORDER BY hour_of_day;
```

hour_of_day	total_sales
6	21.9K
7	63.53K
8	82.7K
9	85.17K
10	88.67K
11	46.32K
12	40.19K
13	40.37K
14	41.3K
15	41.73K
16	41.12K
17	40.13K
18	34.29K
19	28.45K
20	2.94K

-- metrics for Monday's of the month of May at Hour 8

```
SELECT ROUND(SUM(unit_price*transaction_qty),2) AS total_sales,
      SUM(transaction_qty) AS total_quantity,
      COUNT(*) AS total_orders
FROM Coffee
WHERE MONTH(transaction_date) = 5 -- May
AND DATEPART(weekday,transaction_date) = 2 -- Monday
AND DATEPART(HOUR,transaction_time) = 8; -- Hour No 8
```

total_sales	total_quantity	total_orders
2697.03	819	572

–hourly sales for the month of May

```
SELECT
      DATEPART(HOUR, transaction_time) AS hour_of_day,
      ROUND(SUM(unit_price*transaction_qty),2) AS total_sales
FROM coffee
WHERE MONTH(transaction_date) = 5
```

```
GROUP BY DATEPART(HOUR,transaction_time)
ORDER BY DATEPART(HOUR,transaction_time);
```

hour_of_day	total_sales
6	4912.93
7	14350.68
8	18822.31
9	19145.27
10	19639.13
11	10312.16
12	8869.79
13	9379.21
14	9057.66
15	9525.15
16	9154.31
17	8966.85
18	7679.91
19	6256.47
20	655.93

```
– Sales by day of the week
SELECT day_name,total_sales
FROM(SELECT DATENAME(weekday,transaction_date) AS day_name,
      DATEPART(weekday,transaction_date) AS day_name_no,
      ROUND(SUM(unit_price*transaction_qty),2) AS total_sales
FROM coffee
GROUP BY DATENAME(weekday,transaction_date),DATEPART(weekday,transaction_date))a
ORDER BY day_name_no;
```

day_name	total_sales
Monday	101677.28
Tuesday	99455.94
Wednesday	100313.54
Thursday	100767.78
Friday	101373
Saturday	96894.48
Sunday	98330.31