SQL

SQL With TDI

Week 5

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1

Which date(s) had the highest total sales and which product(s) contributed to those sales?

Query

```
WITH DATESALES AS
    (SELECT
        Order_Date,
        SUM(Sales) AS TOTALSALES
    FROM SALES
    GROUP BY Order_Date)

SELECT
    S.Order_Date,
    S.Product_ID,
    SUM(S.SALES) AS TOTALSALES
FROM SALES AS S
WHERE S.Order_Date IN (SELECT Order_Date FROM DATESALES WHERE TOTALSALES = (SELECT MAX(TOTALSALES) FROM DATESALES))
GROUP BY S.Order_Date , S.Product_ID
ORDER BY S.Order_Date;
```

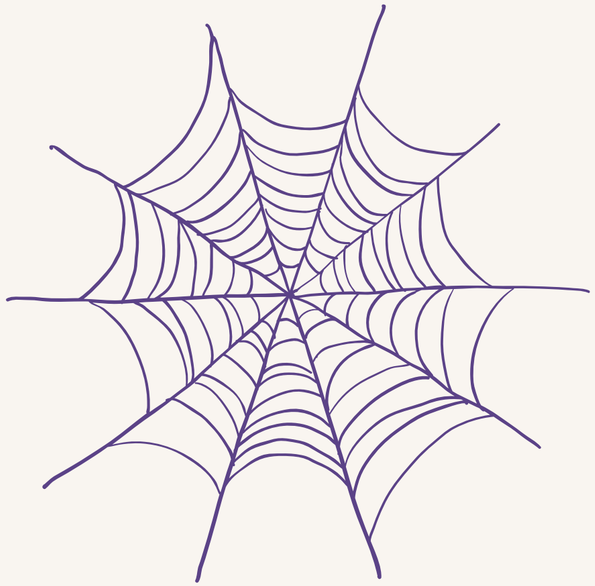
Output

Results | Messages

	Order_Date	Product_ID	TOTALSALES
1	2011-03-18	FUR-BO-10004218	1198.33
2	2011-03-18	FUR-FU-10001986	122.352
3	2011-03-18	FUR-FU-10004270	30.768
4	2011-03-18	FUR-FU-10004597	111.00
5	2011-03-18	OFF-AR-10003183	8.016
6	2011-03-18	OFF-FA-10003112	18.936
7	2011-03-18	OFF-PA-10001804	21.376
8	2011-03-18	OFF-ST-10000078	1856.19
9	2011-03-18	TEC-MA-10001148	1279.968
10	2011-03-18	TEC-MA-10002412	22638.48
11	2011-03-18	TEC-MA-10003626	821.30

2

Which product(s) had the highest average unit price among all products sold



Query

```
WITH AVG_UNIT_PRICE AS
    (SELECT Product_ID, AVG(Sales / Quantity) AS AVG_PRICE FROM SALES
    GROUP BY Product_ID)

SELECT
    Product_ID,
    Avg_Price AS Max_Avg_Price
FROM Avg_Unit_Price
WHERE Avg_Price = (SELECT MAX(Avg_Price) FROM Avg_Unit_Price);
```

Output

Results | Messages

	Product_ID	Max_Avg_Price
1	TEC-MA-10002412	3773.08

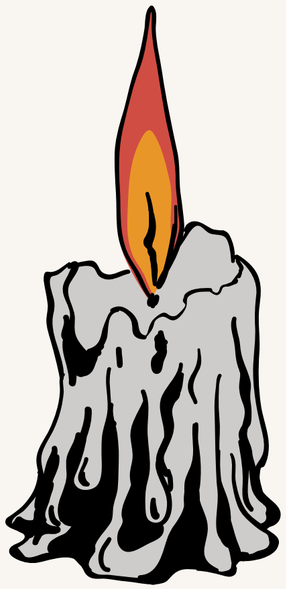
3

What were the total sales for each product on dates where the quantity sold exceeded the average quantity sold for that product?

Query

```
SELECT
    Order_Date,
    Product_ID,
    SUM(CONVERT(INT,Sales)) AS TOTALSALES
FROM SALES
WHERE CONVERT(INT,Quantity) > (SELECT AVG(CONVERT(INT,Quantity)) FROM SALES)
GROUP BY Order_Date, Product_ID
ORDER BY Order_Date;
```

Output



Results | Messages

	Order_Date	Product_ID	TOTALSALES
1	2011-01-07	FUR-CH-10004063	2574
2	2011-01-07	OFF-FA-10001883	31
3	2011-01-07	TEC-PH-10004539	756
4	2011-01-08	OFF-BI-10003708	10
5	2011-01-14	FUR-CH-10000422	546
6	2011-01-14	OFF-AR-10003514	20
7	2011-01-14	OFF-PA-10002947	37
8	2011-01-14	OFF-ST-10000025	573
9	2011-01-14	OFF-ST-10000078	1326
10	2011-01-14	TEC-AC-10003174	647
11	2011-01-15	FUR-BO-10003433	62
12	2011-01-16	TEC-AC-10003628	150
13	2011-01-17	FUR-FU-10001095	127
14	2011-01-19	OFF-AP-10000692	65
15	2011-01-20	FUR-BO-10001972	181
16	2011-01-20	OFF-BI-10003676	32

Query executed successfully.

4

What were the top 3 dates with the highest total sales, and which product(s) contributed to those sales on each date?

Query

```
WITH DATESALES AS
    (SELECT
        TOP (3) Order_Date,
        SUM(Sales) AS TOTALSALES
    FROM SALES
    GROUP BY Order_Date
    ORDER BY TOTALSALES DESC)

SELECT S.Order_Date, S.Product_ID , SUM (Sales) AS TOTALSALES FROM SALES AS S
WHERE S.Order_Date IN (SELECT Order_Date FROM DATESALES)
GROUP BY S.Order_Date, S.Product_ID
ORDER BY S.Order_Date;
```

Output

Results | Messages

	Order_Date	Product_ID	TOTALSALES
1	2011-03-18	FUR-BO-10004218	1198.33
2	2011-03-18	FUR-FU-10001986	122.352
3	2011-03-18	FUR-FU-10004270	30.768
4	2011-03-18	FUR-FU-10004597	111.00
5	2011-03-18	OFF-AR-10003183	8.016
6	2011-03-18	OFF-FA-10003112	18.936
7	2011-03-18	OFF-PA-10001804	21.376
8	2011-03-18	OFF-ST-10000078	1856.19
9	2011-03-18	TEC-MA-10001148	1279.968
10	2011-03-18	TEC-MA-10002412	22638.48
11	2011-03-18	TEC-MA-10003626	821.30
12	2013-10-03	OFF-AP-10004532	61.44
13	2013-10-03	OFF-AR-10001958	33.96
14	2013-10-03	OFF-BI-10002429	54.792
15	2013-10-03	OFF-BI-10003712	34.37
16	2013-10-03	OFF-BI-10004600	735.98

Query executed successfully.

5

What percentage of the total sales on April 15th 2013, did each product contribute?

Query

```
SELECT Product_ID, (SUM(Sales)/ (SELECT
        SUM(CONVERT(INT,Sales)) AS TOTALSALES
        FROM SALES
        WHERE CONVERT(DATE,Order_Date) = '4/15/2013')) AS "% OF TOTAL SALES"
FROM SALES
WHERE CONVERT(DATE,Order_Date) = '4/15/2013'
GROUP BY Product_ID;
```

Output

Results | Messages

	Product_ID	% OF TOTAL SALES
1	FUR-CH-10004086	0.6363
2	FUR-CH-10004886	0.2616
3	OFF-BI-10002414	0.017
4	OFF-ST-10001228	0.0292
5	OFF-ST-10001558	0.0553

6

On which date(s) did Technology products total sales exceed the combined total sales of all other product CATEGORIES?

Query

```
WITH
    Technology_products AS
    (SELECT Order_Date,SUM(Sales) AS TOTALSALES FROM SALES WHERE Category = 'Technology' GROUP BY Order_Date),
    NON_Technology AS
    (SELECT Order_Date,SUM(Sales) AS TOTALSALES FROM SALES WHERE Category <> 'Technology' GROUP BY Order_Date)
SELECT
    Technology_products.Order_Date,
    Technology_products.TOTALSALES AS TechnologySales,
    NON_Technology.TOTALSALES AS NonTechnologySales
FROM Technology_products JOIN NON_Technology
    ON Technology_products.Order_Date = NON_Technology.Order_Date
WHERE
    Technology_products.TOTALSALES > NON_Technology.TOTALSALES
ORDER BY Technology_products.Order_Date;
```

Output

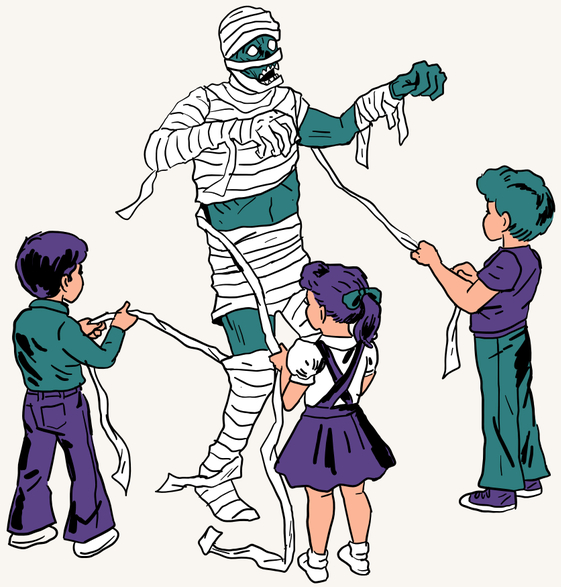
Results | Messages

	Order_Date	TechnologySales	NonTechnologySales
1	2011-01-10	31.20	9.344
2	2011-02-03	180.96	30.686
3	2011-02-07	306.56	23.952
4	2011-02-08	115.36	64.96
5	2011-02-21	62.31	33.28
6	2011-03-02	151.20	51.184
7	2011-03-05	479.97	225.592
8	2011-03-11	620.93	297.384
9	2011-03-18	24739.748	3366.968
10	2011-03-19	494.216	96.546
11	2011-03-21	3499.93	609.886
12	2011-03-23	604.752	340.312
13	2011-03-26	95.084	50.046
14	2011-04-02	1049.93	408.628
15	2011-04-03	222.29	11.16
16	2011-04-07	830.92	190.25

Query executed successfully.

7

What were the cumulative total sales for each product over the entire period covered by the dataset, ordered by date?



Query

```
WITH T_SALES AS
    (SELECT Order_Date ,Product_ID ,ROUND(CONVERT(INT,SUM(Sales)),0) AS DALYTOTALSALES FROM SALES GROUP BY Order_Date,Product_ID)

SELECT
    Order_Date,
    Product_ID,
    DALYTOTALSALES,
    SUM(DALYTOTALSALES) OVER() AS TOTALSALES,
    (SUM(DALYTOTALSALES) OVER() - DALYTOTALSALES) AS "DIFFERENCE"
FROM T_SALES
ORDER BY Order_Date;
```

Output

Results | Messages

	Order_Date	Product_ID	DALYTOTALSALES	TOTALSALES	DIFFERENCE
1	2011-01-04	OFF-PA-10000174	16	2297356	2297340
2	2011-01-05	OFF-BI-10004094	4	2297356	2297352
3	2011-01-05	OFF-LA-10003223	12	2297356	2297344
4	2011-01-05	OFF-ST-10002743	273	2297356	2297083
5	2011-01-06	OFF-AR-10003478	20	2297356	2297336
6	2011-01-07	FUR-CH-10004063	2574	2297356	2294782
7	2011-01-07	OFF-AR-10001662	5	2297356	2297351
8	2011-01-07	OFF-AR-10002399	13	2297356	2297343
9	2011-01-07	OFF-BI-10004632	610	2297356	2296746
10	2011-01-07	OFF-FA-10001883	31	2297356	2297325
11	2011-01-07	OFF-PA-10000955	7	2297356	2297349
12	2011-01-07	OFF-PA-10002005	19	2297356	2297337
13	2011-01-07	TEC-PH-10004539	756	2297356	2296600
14	2011-01-07	TEC-PH-10004977	392	2297356	2296964
15	2011-01-08	FUR-FU-10004864	77	2297356	2297279
16	2011-01-08	OFF-BI-10003708	10	2297356	2297346

Query executed successfully.

8

Which product(s) had the highest total sales over any consecutive 3 day period?

Query

```
WITH DailySales AS
    (SELECT
        Order_Date,
        Product_ID,
        SUM(Sales) AS Daily_Total_Sales
    FROM SALES
    GROUP BY Order_Date, Product_ID),
ThreeDaySales AS
    (SELECT
        DS1.Product_ID,
        DS1.Order_Date AS Start_Date,
        DS1.Daily_Total_Sales
            + COALESCE(DS2.Daily_Total_Sales, 0)
            + COALESCE(DS3.Daily_Total_Sales, 0) AS Three_Day_Total_Sales
    FROM DailySales DS1
    LEFT JOIN DailySales DS2 ON DS1.Product_ID = DS2.Product_ID
                            AND DS2.Order_Date = DATEADD(DAY, 1, DS1.Order_Date)
    LEFT JOIN DailySales DS3 ON DS1.Product_ID = DS3.Product_ID
                            AND DS3.Order_Date = DATEADD(DAY, 2, DS1.Order_Date))
            --SELF JOINS
SELECT
    Product_ID,
    Start_Date,
    Three_Day_Total_Sales
FROM ThreeDaySales
WHERE Three_Day_Total_Sales = (SELECT MAX(Three_Day_Total_Sales) FROM ThreeDaySales);
```

Output

Results | Messages

	Product_ID	Start_Date	Three_Day_Total_Sales
1	TEC-MA-10002412	2011-03-18	22638.48

Query executed successfully.

The End