

TEAM 4

**PRESENTING SOLUTIONS
FOR BRIEF 2
ABOUT WEATHER**

**02/11 2023
10:15**



CONTENTS

INTRODUCTION

GOAL 1

GOAL 2



GOAL 1



BRONZE LAYER (raw data table)

WEATHER / BRONZE / WEATHER_TABLE

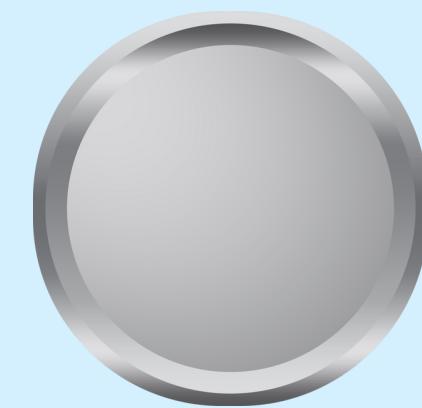
Table ACCOUNTADMIN 1 week ago 182.2K 3.1MB

Table Details Columns Data Preview Copy History

• COMPUTE_WH 100 of 182.2K Rows • Updated 2 minutes ago

	TIME	TEMPERATURE_2M_CELCIUS	RELATIVEHUMIDITY_2M_PERCENT	APPARENT_TEMPERATURE_CELCIUS	PRECIPITATION_INCHES
1	2003-01-01 00:00:00	-7.1	81	-14	
2	2003-01-01 01:00:00	-6.7	82	-13.6	
3	2003-01-01 02:00:00	-6.4	83	-13.1	
4	2003-01-01 03:00:00	-6.1	83	-12.7	
5	2003-01-01 04:00:00	-6	85	-12.4	
6	2003-01-01 05:00:00	-5.8	85	-12.1	
7	2003-01-01 06:00:00	-5.8	87	-12	
8	2003-01-01 07:00:00	-5.8	87	-11.8	
9	2003-01-01 08:00:00	-6	87	-11.9	
10	2003-01-01 09:00:00	-6.1	87	-11.8	
11	2003-01-01 10:00:00	-6	85	-11.2	
12	2003-01-01 11:00:00	-6	83	-10.8	
13	2003-01-01 12:00:00	-6.3	84	-10.7	
14	2003-01-01 13:00:00	-6.7	85	-11	

```
create or replace TABLE WEATHER.BRONZE.WEATHER_TABLE (
    TIME TIMESTAMP_NTZ(9),
    TEMPERATURE_2M_CELCIUS FLOAT,
    RELATIVEHUMIDITY_2M_PERCENT FLOAT,
    APPARENT_TEMPERATURE_CELCIUS FLOAT,
    PRECIPITATION_MM FLOAT,
    RAIN_MM FLOAT,
    SNOWFALL_CM FLOAT,
    WEATHERCODE_WMO_CODE FLOAT,
    PRESSURE_MSL_HPA FLOAT,
    SURFACE_PRESSURE_HPA FLOAT,
    CLOUDCOVER_PERCENT FLOAT,
    CLOUDCOVER_LOW_PERCENT FLOAT,
    CLOUDCOVER_MID_PERCENT FLOAT,
    CLOUDCOVER_HIGH_PERCENT FLOAT,
    WINDSPEED_10M_KMPH FLOAT,
    WINDSPEED_100M_KMPH FLOAT,
    WINDDIRECTION_10M_DEGREE FLOAT,
    WINDDIRECTION_100M_DEGREE FLOAT,
    WINDGUSTS_10M_KMPH FLOAT
);
```



SILVER LAYER (views)

WEATHER / SILVER ... Create ▾

Schema ACCOUNTADMIN 1 week ago

[Schema Details](#) [Views](#)

Your paragraph text

NAME ↑	TYPE	OWNER	CREATED	...
HOURLYRAINFALL	View	ACCOUNTADMIN	1 week ago	...
HOURLYSNOWFALL	View	ACCOUNTADMIN	1 week ago	...
HOURLYTEMPERATURE	View	ACCOUNTADMIN	1 week ago	...
HOURLYWINDSPEED	View	ACCOUNTADMIN	1 week ago	...

Search All Views C

HOURLY RAINFALL

```
CREATE OR REPLACE view WEATHER.SILVER.HOURLYRAINFALL(  
RECORDDATE,  
RECORDHOUR,  
HOURLYRAINFALL,  
CITY  
) AS  
SELECT DATE(time) AS RecordDate,  
TIME(time) AS RecordHour,  
RAIN_MM AS HourlyRainfall,  
'Stockholm' AS City  
FROM WEATHER.BRONZE.WEATHER_TABLE;
```

WEATHER / SILVER / HOURLYRAINFALL

View View ACCOUNTADMIN 1 week ago

View Details Columns Data Preview

• COMPUTE_WH Updated 3 minutes ago

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	RECORDDATE	RECORDHOUR	HOURLYRAINFALL	CITY
1	2003-01-01	00:00:00	0	Stockholm
2	2003-01-01	01:00:00	0	Stockholm
3	2003-01-01	02:00:00	0	Stockholm
4	2003-01-01	03:00:00	0	Stockholm
5	2003-01-01	04:00:00	0	Stockholm
6	2003-01-01	05:00:00	0	Stockholm
7	2003-01-01	06:00:00	0	Stockholm
8	2003-01-01	07:00:00	0	Stockholm
9	2003-01-01	08:00:00	0	Stockholm
10	2003-01-01	09:00:00	0	Stockholm
11	2003-01-01	10:00:00	0	Stockholm
12	2003-01-01	11:00:00	0	Stockholm
13	2003-01-01	12:00:00	0	Stockholm
14	2003-01-01	13:00:00	0	Stockholm
15	2003-01-01	14:00:00		

HOURLY SNOWFALL

```
CREATE OR REPLACE view WEATHER.SILVER.HOURLYSNOWFALL(  
RECORDDATE,  
RECORDHOUR,  
HOURLYSNOWFALL,  
CITY  
) AS  
SELECT DATE(time) AS RecordDate,  
TIME(time) AS RecordHour, "  
SNOWFALL_CM AS HourlySnowFall,  
'Stockholm' AS City  
FROM WEATHER.BRONZE.WEATHER_TABLE;
```

WEATHER / SILVER / HOURLYSNOWFALL

View ACCOUNTADMIN 1 week ago

[View Details](#) [Columns](#) [Data Preview](#)

COMPUTE_WH Updated just now

	RECORDDATE	RECORDHOUR	HOURLYSNOWFALL	CITY
1	2003-01-01	00:00:00	0	Stockholm
2	2003-01-01	01:00:00	0	Stockholm
3	2003-01-01	02:00:00	0	Stockholm
4	2003-01-01	03:00:00	0	Stockholm
5	2003-01-01	04:00:00	0	Stockholm
6	2003-01-01	05:00:00	0	Stockholm
7	2003-01-01	06:00:00	0	Stockholm
8	2003-01-01	07:00:00	0	Stockholm
9	2003-01-01	08:00:00	0	Stockholm
10	2003-01-01	09:00:00	0	Stockholm
11	2003-01-01	10:00:00	0	Stockholm
12	2003-01-01	11:00:00	0	Stockholm
13	2003-01-01	12:00:00	0	Stockholm
14	2003-01-01	13:00:00	0	Stockholm

HOURLY TEMPERATURE

```
CREATE OR REPLACE view WEATHER.SILVER.HOURLYTEMPERATURE(  
    RECORDDATE,  
    RECORDHOUR,  
    HOURLYTEMPERATURE,  
    CITY  
) AS  
SELECT DATE(time) AS RecordDate,  
TIME(time) AS RecordHour,  
TEMPERATURE_2M_CELSIUS AS HourlyTemperature,  
'Stockholm' AS City  
FROM WEATHER.BRONZE.WEATHER_TABLE;
```

WEATHER / SILVER / HOURLYTEMPERATURE

View ACCOUNTADMIN 1 week ago

View Details Columns Data Preview

• COMPUTE_WH Updated just now

C

	RECORDDATE	RECORDHOUR	HOURLYTEMPERATURE	CITY
1	2003-01-01	00:00:00	-7.1	Stockholm
2	2003-01-01	01:00:00	-6.7	Stockholm
3	2003-01-01	02:00:00	-6.4	Stockholm
4	2003-01-01	03:00:00	-6.1	Stockholm
5	2003-01-01	04:00:00	-6	Stockholm
6	2003-01-01	05:00:00	-5.8	Stockholm
7	2003-01-01	06:00:00	-5.8	Stockholm
8	2003-01-01	07:00:00	-5.8	Stockholm
9	2003-01-01	08:00:00	-6	Stockholm
10	2003-01-01	09:00:00	-6.1	Stockholm
11	2003-01-01	10:00:00	-6	Stockholm
12	2003-01-01	11:00:00	-6	Stockholm
13	2003-01-01	12:00:00	-6.3	Stockholm
14	2003-01-01	13:00:00	-6.7	Stockholm

HOURLY WINDSPEED

```
CREATE OR REPLACE view WEATHER.SILVER.HOURLYWINDSPEED(  
    RECORDDATE,  
    RECORDHOUR,  
    HOURLYWINDSPEED10M,  
    HOURLYWINDSPEED100M,  
    CITY  
) AS  
SELECT DATE(time) AS RecordDate,  
TIME(time) AS RecordHour,  
WINDSPEED_10M_KM_PER_H AS HourlyWindSpeed10m,  
WINDSPEED_100M_KM_PER_H AS HourlyWindSpeed100m,  
'Stockholm' AS City  
FROM WEATHER.BRONZE.WEATHER_TABLE;
```

WEATHER / SILVER / HOURLYWINDSPEED

View ACCOUNTADMIN 1 week ago

View Details Columns Data Preview

• COMPUTE_WH Updated just now C

	RECORDDATE	RECORDHOUR	HOURLYWINDSPEED10M	HOURLYWINDSPEED100M	CITY
1	2003-01-01	00:00:00	25.6	38.2	Stockholm
2	2003-01-01	01:00:00	25.2	37.5	Stockholm
3	2003-01-01	02:00:00	24.1	37.5	Stockholm
4	2003-01-01	03:00:00	23.8	37.5	Stockholm
5	2003-01-01	04:00:00	22.7	37.2	Stockholm
6	2003-01-01	05:00:00	21.8	36.7	Stockholm
7	2003-01-01	06:00:00	21.2	35.9	Stockholm
8	2003-01-01	07:00:00	20.3	35.1	Stockholm
9	2003-01-01	08:00:00	19.4	33.8	Stockholm
10	2003-01-01	09:00:00	17.9	31.1	Stockholm
11	2003-01-01	10:00:00	14.5	25.3	Stockholm
12	2003-01-01	11:00:00	11.3	20	Stockholm
13	2003-01-01	12:00:00	8.9	16.2	Stockholm
14	2003-01-01	13:00:00	7.8	14.3	Stockholm



GOLD LAYER (tables)

WEATHER / GOLD ... Create ▾

Schema ACCOUNTADMIN 1 week ago

[Schema Details](#) [Tables](#)

4 Tables Search All Tables C

NAME ↑	TYPE	OWNER	ROWS	BYTES	CREATED	...
DAILYRAINFALL	Table	ACCOUNTADMIN	7.6K	24.0KB	5 days ago	...
DAILYSNOWFALL	Table	ACCOUNTADMIN	7.6K	22.0KB	5 days ago	...
DAILYTEMPERATURE	Table	ACCOUNTADMIN	7.6K	62.0KB	1 week ago	...
DAILYWINDSPEED	Table	ACCOUNTADMIN	7.6K	102.5KB	1 week ago	...

DAILY RAINFALL

```
create or replace view WEATHER_DATA_PROJECT.GOLD.DAILYRAINFALL(
    RECORDDATE,
    DAILYRAINFALL,
    CITY
) as
SELECT
    RecordDate AS Date,
    SUM(HourlyRainfall) AS DailyRainFall,
    City AS City
FROM WEATHER_DATA_PROJECT.SILVER.HOURLYRAINFALL
GROUP BY DATE, City
ORDER BY Date;
```

WEATHER / GOLD / DAILYRAINFALL

Table ACCOUNTADMIN 5 days ago 7.6K 24.0KB

Table Details Columns Data Preview Copy History

• COMPUTE_WH 100 of 7.6K Rows • Updated just now

C

	DATE	TOTALDAILYRAINFALL	CITY
1	2003-01-01	0	Stockholm
2	2003-01-02	0	Stockholm
3	2003-01-03	0	Stockholm
4	2003-01-04	0	Stockholm
5	2003-01-05	0	Stockholm
6	2003-01-06	0	Stockholm
7	2003-01-07	0	Stockholm
8	2003-01-08	0	Stockholm
9	2003-01-09	0	Stockholm
10	2003-01-10	0	Stockholm
11	2003-01-11	0	Stockholm
12	2003-01-12	0.7	Stockholm
13	2003-01-13	0.1	Stockholm
14	2003-01-14	0.2	Stockholm

DAILY SNOWFALL

```
create or replace view WEATHER_DATA_PROJECT.GOLD.DAILYSNOWFALL(
    RECORDDATE,
    DAILYSNOWFALL,
    CITY
) as
SELECT
    RecordDate AS Date,
    SUM(HourlySnowFall) AS DailySnowFall,
    City AS City
FROM WEATHER_DATA_PROJECT.SILVER.HOURLYSNOWFALL
GROUP BY Date, City
ORDER BY Date ASC;
```

WEATHER / GOLD / DAILYSNOWFALL

Table ACCOUNTADMIN 5 days ago 7.6K 22.0KB

Table Details Columns Data Preview Copy History

• COMPUTE_WH 100 of 7.6K Rows • Updated just now

C

	DATE	TOTALDAILYSNOWFALL	CITY
1	2003-01-01	0	Stockholm
2	2003-01-02	0.49	Stockholm
3	2003-01-03	0	Stockholm
4	2003-01-04	0	Stockholm
5	2003-01-05	0	Stockholm
6	2003-01-06	0.14	Stockholm
7	2003-01-07	0	Stockholm
8	2003-01-08	0	Stockholm
9	2003-01-09	0	Stockholm
10	2003-01-10	0	Stockholm
11	2003-01-11	0	Stockholm
12	2003-01-12	0	Stockholm
13	2003-01-13	0	Stockholm
14	2003-01-14	2.52	Stockholm
...

DAILY TEMPERATURE

```
create or replace view WEATHER_DATA_PROJECT.GOLD.DAILYTEMPERATURE(
    RECORDDATE,
    DAILYAVERAGETEMPERATURE,
    CITY
) as
SELECT
    RecordDate AS Date,
    AVG(HourlyTemperature) AS DailyAverageTemperature,
    'Stockholm' AS CITY
FROM WEATHER_DATA_PROJECT.SILVER.HOURLYTEMPERATURE
GROUP BY Date, City
ORDER BY Date;
```

WEATHER / GOLD / DAILYTEMPERATURE

Table ACCOUNTADMIN 1 week ago 7.6K 62.0KB

Table Details Columns Data Preview Copy History

• COMPUTE_WH 100 of 7.6K Rows • Updated just now

	DATE	AVERAGEDAILYTEMPERATURE	CITY
1	2003-01-01	-7	Stockholm
2	2003-01-02	-6.941666667	Stockholm
3	2003-01-03	-12.041666667	Stockholm
4	2003-01-04	-13.3375	Stockholm
5	2003-01-05	-14.4	Stockholm
6	2003-01-06	-13.558333333	Stockholm
7	2003-01-07	-8.441666667	Stockholm
8	2003-01-08	-4.395833333	Stockholm
9	2003-01-09	-3.104166667	Stockholm
10	2003-01-10	-9.495833333	Stockholm
11	2003-01-11	-6.375	Stockholm
12	2003-01-12	-1.8625	Stockholm
13	2003-01-13	-1.466666667	Stockholm
14	2003-01-14	1.8	Stockholm
15	2003-01-15	0.775	Stockholm

DAILY WINDSPEED

```
CREATE OR REPLACE TABLE WEATHER_DATA_PROJECT.GOLD.dailywindspeed AS
SELECT
    RecordDate AS Date,
    AVG(HourlyWindSpeed10m) AS AverageWindSpeed10m,
    AVG(HourlyWindSpeed100m) AS AverageWindSpeed100m,
    'stockholm' AS City
FROM WEATHER_DATA_PROJECT.SILVER.HOURLWINDSPEED
GROUP BY Date
ORDER BY Date;
```

WEATHER / GOLD / DAILYWINDSPEED

Table ACCOUNTADMIN 1 week ago 7.6K 102.5KB

Table Details Columns Data Preview Copy History

• COMPUTE_WH 100 of 7.6K Rows • Updated just now

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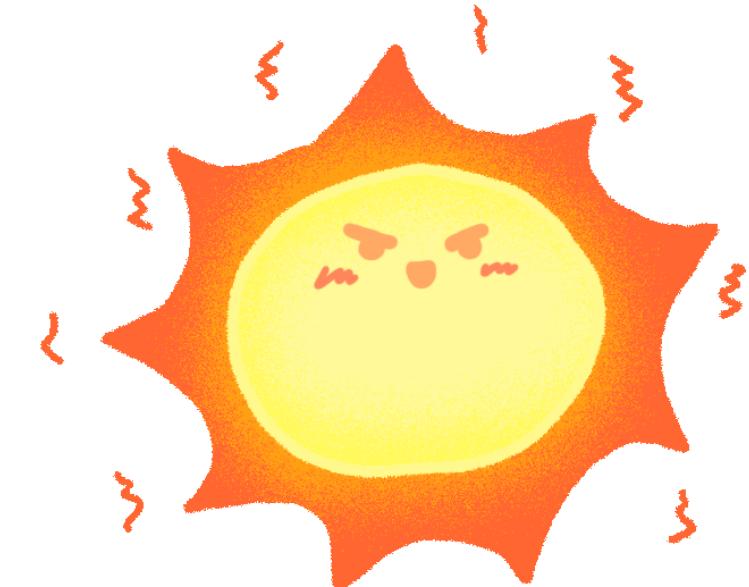
	DATE	AVERAGEDAILYWINDSPEED10M	AVERAGEDAILYWINDSPEED100M	CITY
1	2003-01-01	13.7875	23.820833333	Stockholm
2	2003-01-02	15.479166667	26.741666667	Stockholm
3	2003-01-03	12.6375	22.704166667	Stockholm
4	2003-01-04	12.154166667	21.608333333	Stockholm
5	2003-01-05	10.929166667	19.741666667	Stockholm
6	2003-01-06	10.783333333	20.391666667	Stockholm
7	2003-01-07	11.691666667	22.375	Stockholm
8	2003-01-08	14.4625	25.891666667	Stockholm
9	2003-01-09	17.870833333	30.554166667	Stockholm
10	2003-01-10	15.5625	26.720833333	Stockholm
11	2003-01-11	20.629166667	36.179166667	Stockholm
12	2003-01-12	14.729166667	27.458333333	Stockholm
13	2003-01-13	13.7875	24.816666667	Stockholm
14	2003-01-14	28.916666667	48.566666667	Stockholm
15	2003-01-15	21.8075	39.8075	Stockholm



GOAL 2

1. Which was the hottest summer month and what was the temperature each year? Manuel

	YEAR	CITY	MONTH	... MAXTEMPERATURE
1	2,003	Stockholm	August	23.079166667
2	2,004	Stockholm	August	22.6
3	2,005	Stockholm	July	24.529166667
4	2,006	Stockholm	July	23.329166667
5	2,007	Stockholm	June	20.825
6	2,008	Stockholm	July	21.9
7	2,009	Stockholm	July	22.075
8	2,010	Stockholm	July	23.875
9	2,011	Stockholm	July	21.104166667
10	2,012	Stockholm	July	20.145833333
11	2,013	Stockholm	July	20.925
12	2,014	Stockholm	August	23.920833333
13	2,015	Stockholm	July	22.025
14	2,016	Stockholm	July	21.55
15	2,017	Stockholm	June	20.633333333
16	2,018	Stockholm	July	24.566666667
17	2,019	Stockholm	July	23.645833333
18	2,020	Stockholm	August	22.666666667
19	2,021	Stockholm	July	24.433333333
20	2,022	Stockholm	July	22.9375
21	2,023	Stockholm	June	22.570833333

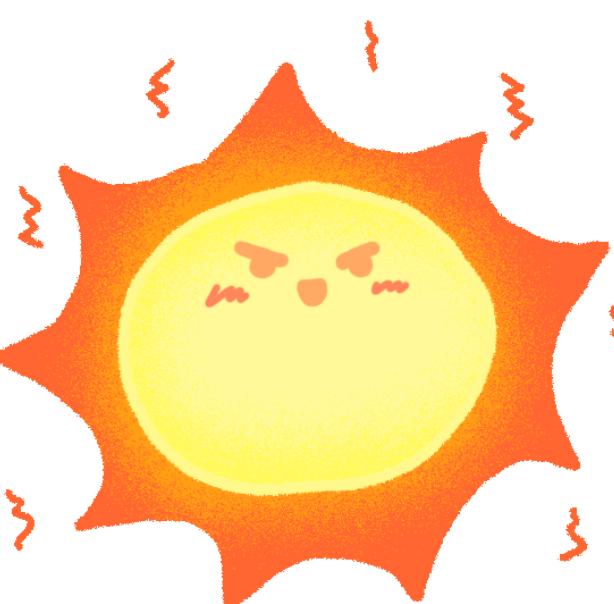
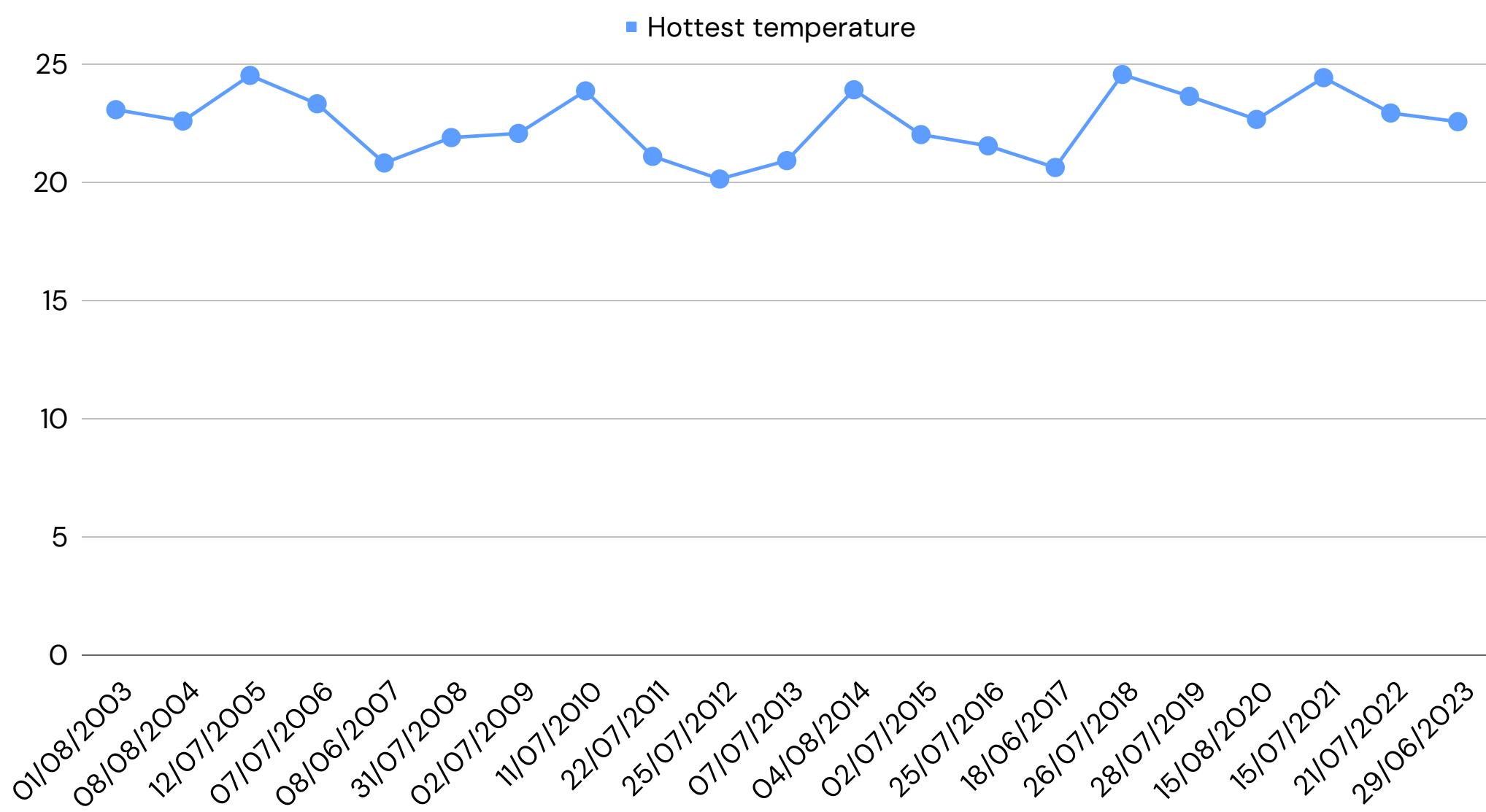


1. Which was the hottest summer month and what was the temperature each year?

Manuel

```
WITH MonthlyMaxTemperatures AS (
    SELECT
        EXTRACT(YEAR FROM Recorddate) AS Year,
        EXTRACT(MONTH FROM Recorddate) AS MonthNumber,
        City,
        MAX(Dailyaveragetemperature) AS MaxTemperature
    FROM WEATHER_PROJECT.GOLD.DAILYTEMPERATURE
    WHERE EXTRACT(MONTH FROM Recorddate) BETWEEN 5 AND 10
    GROUP BY Year, MonthNumber, City
),
MonthNames AS (
    SELECT
        1 AS MonthNumber, 'January' AS MonthName
    UNION ALL
    SELECT 2, 'February'
    UNION ALL
    SELECT 3, 'March'
    UNION ALL
    SELECT 4, 'April'
    UNION ALL
    SELECT 5, 'May'
    UNION ALL
    SELECT 6, 'June'
    UNION ALL
    SELECT 7, 'July'
    UNION ALL
    SELECT 8, 'August'
    UNION ALL
    SELECT 9, 'September'
    UNION ALL
    SELECT 10, 'October'
    UNION ALL
    SELECT 11, 'November'
    UNION ALL
    SELECT 12, 'December'
)
SELECT
    M.Year,
    M.City,
    MN.MonthName AS Month,
    M.MaxTemperature
FROM MonthlyMaxTemperatures M
JOIN MonthNames MN ON M.MonthNumber = MN.MonthNumber
QUALIFY RANK() OVER (PARTITION BY M.Year, M.City ORDER BY M.MaxTemperature DESC) = 1
ORDER BY M.Year, M.City;
```

2. Which was the hottest day in the summer months and what was the temperature each year?



	YEAR	HOTTESTDAY	HOTTESTTEMPERATURE
1	2,003	2003-08-01	23.079166667
2	2,004	2004-08-08	22.6
3	2,005	2005-07-12	24.529166667
4	2,006	2006-07-07	23.329166667
5	2,007	2007-06-08	20.825
6	2,008	2008-07-31	21.9
7	2,009	2009-07-02	22.075
8	2,010	2010-07-11	23.875
9	2,011	2011-07-22	21.104166667
10	2,012	2012-07-25	20.145833333
11	2,013	2013-07-07	20.925
12	2,014	2014-08-04	23.920833333
13	2,015	2015-07-02	22.025
14	2,016	2016-07-25	21.55
15	2,017	2017-06-18	20.633333333
16	2,018	2018-07-26	24.566666667
17	2,019	2019-07-28	23.645833333
18	2,020	2020-08-15	22.666666667
19	2,021	2021-07-15	24.433333333
20	2,022	2022-07-21	22.9375
21	2,023	2023-06-29	22.570833333

2. Which was the hottest day in the summer months and what was the temperature each year?

Megha

```
WITH SummerData AS (
    SELECT
        EXTRACT(YEAR FROM date) AS year,
        EXTRACT(MONTH FROM date) AS month,
        date,
        averagedailytemperature
    FROM
        weather.gold.dailytemperature
    WHERE
        EXTRACT(MONTH FROM date) IN (6, 7, 8) -- Filter for summer months
)
SELECT
    year,
    date AS hottest_day,
    averagedailytemperature AS hottest_temperature
FROM
(
    SELECT
        year, date, averagedailytemperatuue, ROW_NUMBER()
    OVER(PARTITION BY year ORDER BY averagedailytemperature DESC) AS rn
    FROM
        SummerData
) ranked
WHERE
    rn = 1;
```

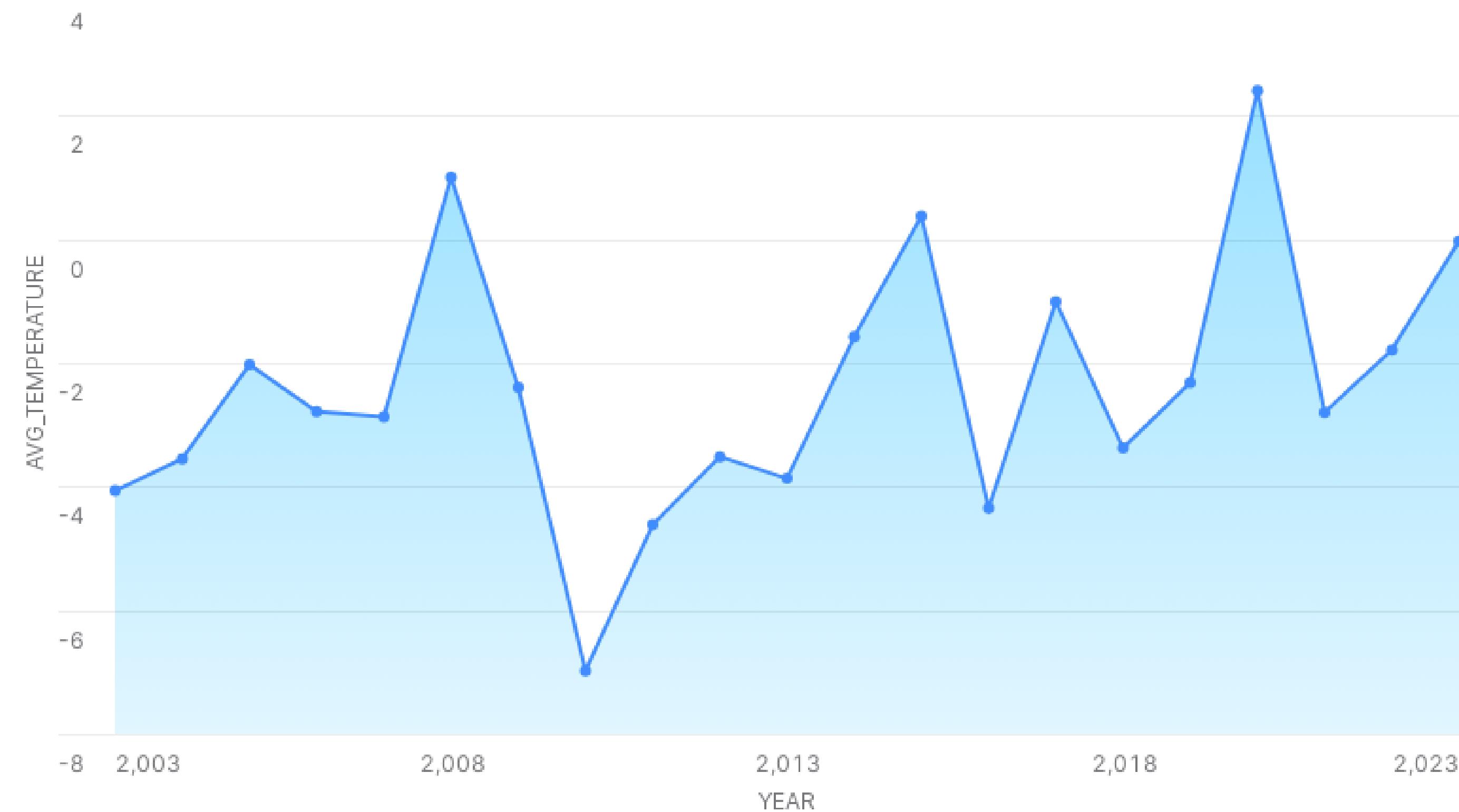


Common Table Expression

3. Which was the coldest winter month and what was the temperature each year?



Coldest winter months/year



3. Which was the coldest winter month and what was the temperature each year?

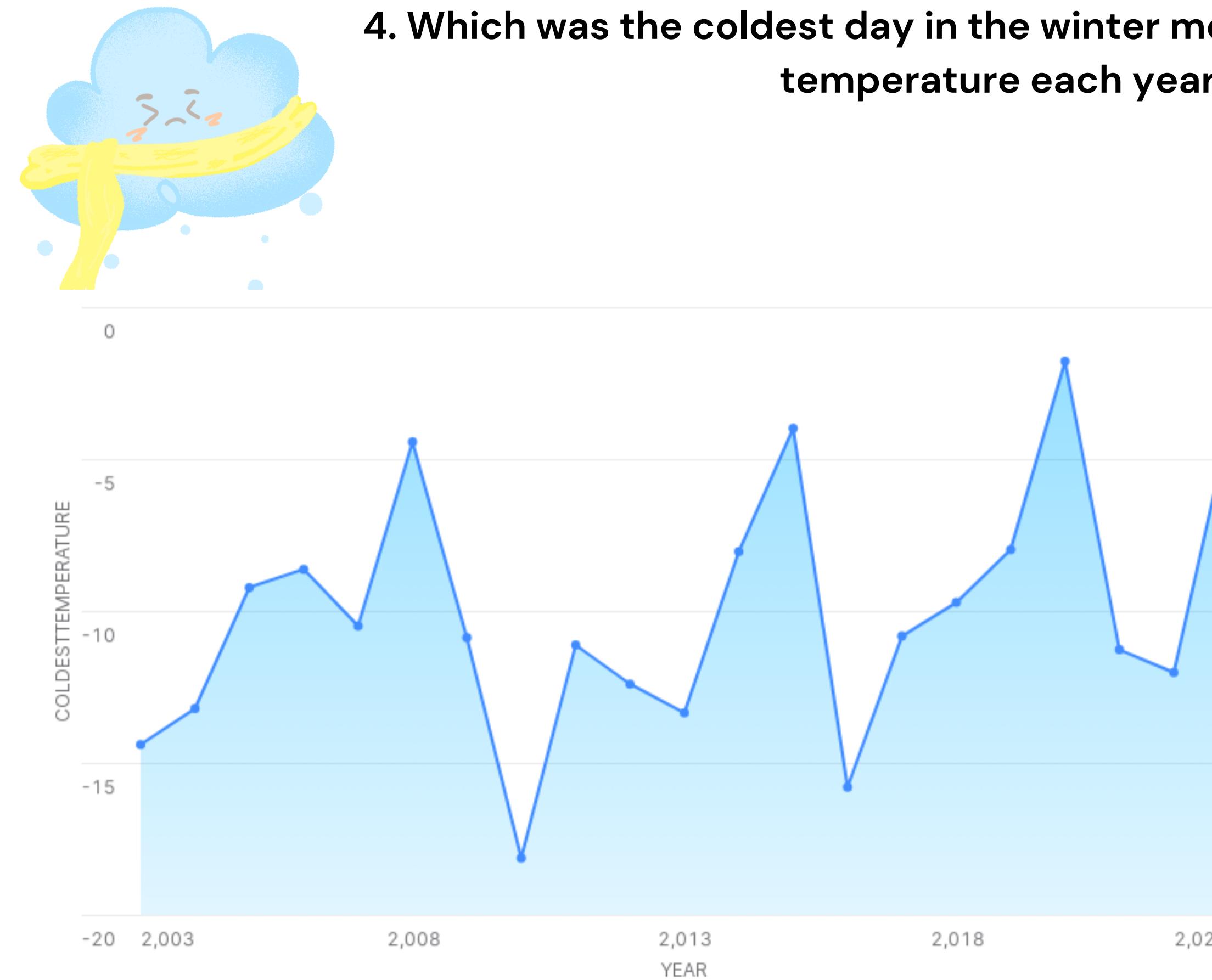
Hanna

```
WITH MonthlyAverages AS (
  SELECT
    EXTRACT(YEAR FROM month_num) AS Year,
    EXTRACT(MONTH FROM month_num) AS Month,
    avg_temperature,
    RANK() OVER (PARTITION BY EXTRACT(YEAR FROM month_num)
      ORDER BY avg_temperature) AS rank
  FROM (
    SELECT DATE_TRUNC('MONTH', recorddate) AS month_num,
      ROUND(AVG(dailyaveragetemperature), 2) AS avg_temperature
    FROM dailytemperature
    GROUP BY 1
  ) AS subquery
  WHERE EXTRACT(MONTH FROM month_num) IN (9, 10, 11, 12, 1, 2)
)
```

```
SELECT
CASE
WHEN Month = 9 THEN 'September'
WHEN Month = 10 THEN 'October'
WHEN Month = 11 THEN 'November'
WHEN Month = 12 THEN 'December'
WHEN Month = 1 THEN 'January'
WHEN Month = 2 THEN 'February'
END AS month_name,
Year,
avg_temperature
FROM MonthlyAverages
WHERE rank = 1;
```

4. Which was the coldest day in the winter months and what was the temperature each year?

Mir



YEAR	MONTH	COLDESTDAY	COLDESTTEMPERATURE
2,003	1	5	-14
2,003	2	7	-12
2,003	9	28	7
2,003	10	23	-2
2,003	11	24	-1
2,003	12	23	-9
2,004	1	22	-13
2,004	2	11	-10
2,004	9	29	10
2,004	10	28	4

4. Which was the coldest day in the winter months and what was the temperature each year?

Mir

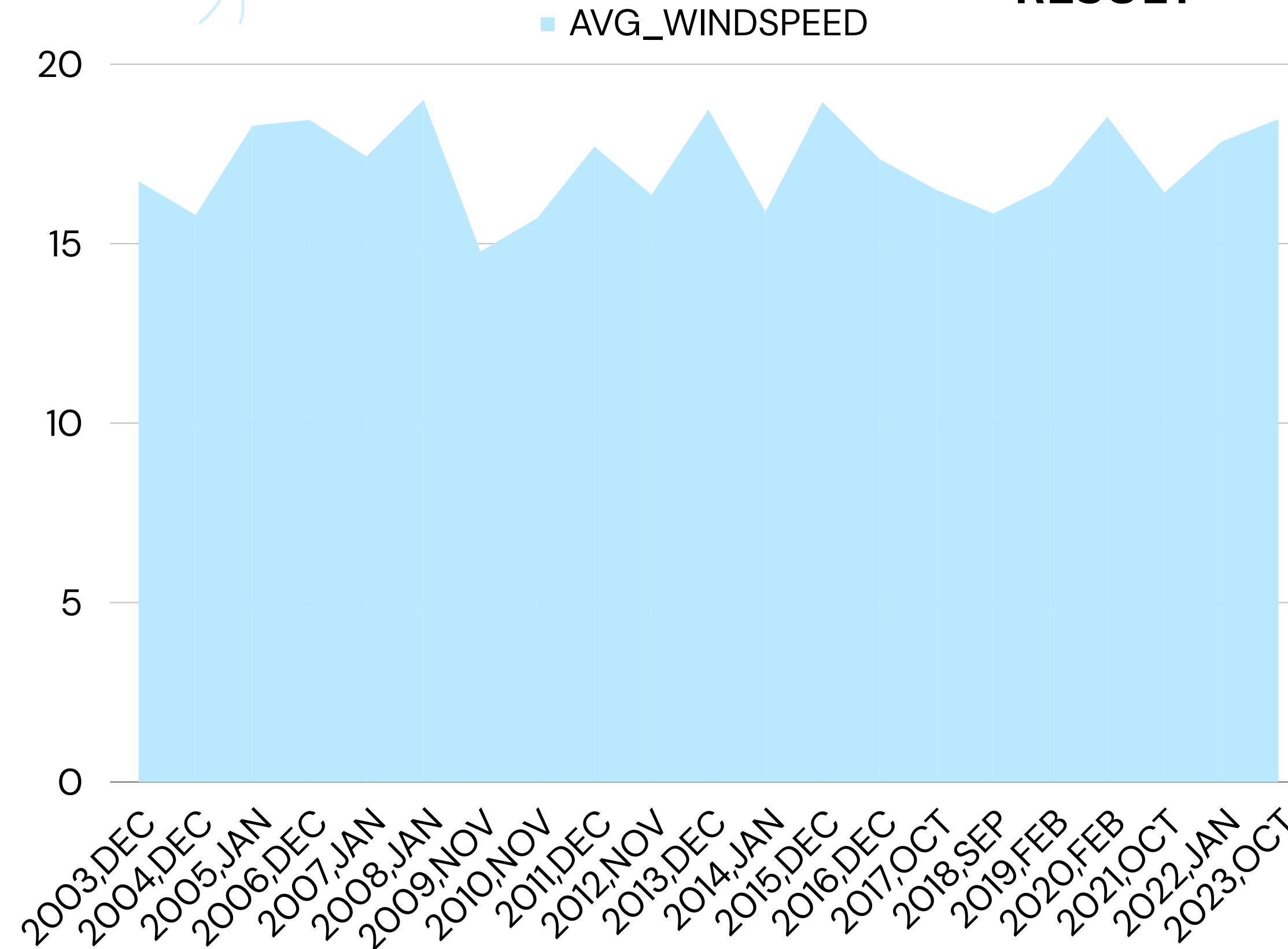
```
WITH WinterColdestDays AS (
    SELECT
        EXTRACT(YEAR FROM RecordDate) AS Year,
        EXTRACT(MONTH FROM RecordDate) AS Month,
        EXTRACT(DAY FROM RecordDate) AS Day,
        DailyAverageTemperature AS ColdestTemperature,
        RANK() OVER (PARTITION BY Year, Month ORDER BY DailyAverageTemperature) AS Rank
    FROM DAILYTEMPERATURE
    WHERE EXTRACT(MONTH FROM RecordDate) IN (9, 10, 11, 12, 1, 2) -- Filter for winter months
)
SELECT
    Year,
    MIN(Month) AS Month, -- Select the month of the coldest day
    MIN(Day) AS ColdestDay,
    MIN(ColdestTemperature) AS ColdestTemperature
FROM WinterColdestDays
WHERE Rank = 1
GROUP BY Year, MONTH
ORDER BY Year, MONTH;
```



5. Which was the windiest month each year and what was the average windspeed?

Mariam

RESULT



Results

Chart

	W_YEAR	W_MONTH	...	AVG_WINDSPEED	WINDIEST_RANK
1	2,008	January		18.96	1
2	2,015	December		18.9	1
3	2,013	December		18.69	1
4	2,020	February		18.49	1
5	2,023	October		18.42	1
6	2,006	December		18.4	1
7	2,005	January		18.24	1
8	2,022	January		17.79	1
9	2,011	December		17.66	1
10	2,007	January		17.38	1
11	2,016	December		17.31	1
12	2,003	December		16.69	1
13	2,019	February		16.58	1
14	2,017	October		16.45	1
15	2,021	October		16.27	1

5. Which was the windiest month each year and what was the average windspeed?

Mariam

```
WITH WIND_DATA AS (
    SELECT
        DATE_PART('YEAR', DAILY_WINDSPEED.RECORD_DATE) AS W_YEAR,
        DATE_PART('MONTH', DAILY_WINDSPEED.RECORD_DATE) AS W_MONTH,
        ROUND(AVG(DAILY_AVG_WINDSPEED), 2) AS AVG_WINDSPEED
    FROM DAILY_WINDSPEED
    GROUP BY W_YEAR, W_MONTH
    ORDER BY W_YEAR, W_MONTH)

SELECT
    W_YEAR,
    CASE
        WHEN W_Month = 1 THEN 'January'
        WHEN W_Month = 2 THEN 'February'
        WHEN W_Month = 3 THEN 'March'
        WHEN W_Month = 4 THEN 'April'
        WHEN W_Month = 5 THEN 'May'
        WHEN W_Month = 6 THEN 'June'
        WHEN W_Month = 7 THEN 'July'
        WHEN W_Month = 8 THEN 'August'
        WHEN W_Month = 9 THEN 'September'
        WHEN W_Month = 10 THEN 'October'
        WHEN W_Month = 11 THEN 'November'
        WHEN W_Month = 12 THEN 'December'
        ELSE 'Unknown'
    END AS W_Month,
    AVG_WINDSPEED,
    RANK() OVER(PARTITION BY W_YEAR ORDER BY AVG_WINDSPEED DESC) AS WINDIEST_RANK
FROM WIND_DATA
QUALIFY WINDIEST_RANK = 1
ORDER BY AVG_WINDSPEED DESC;
```

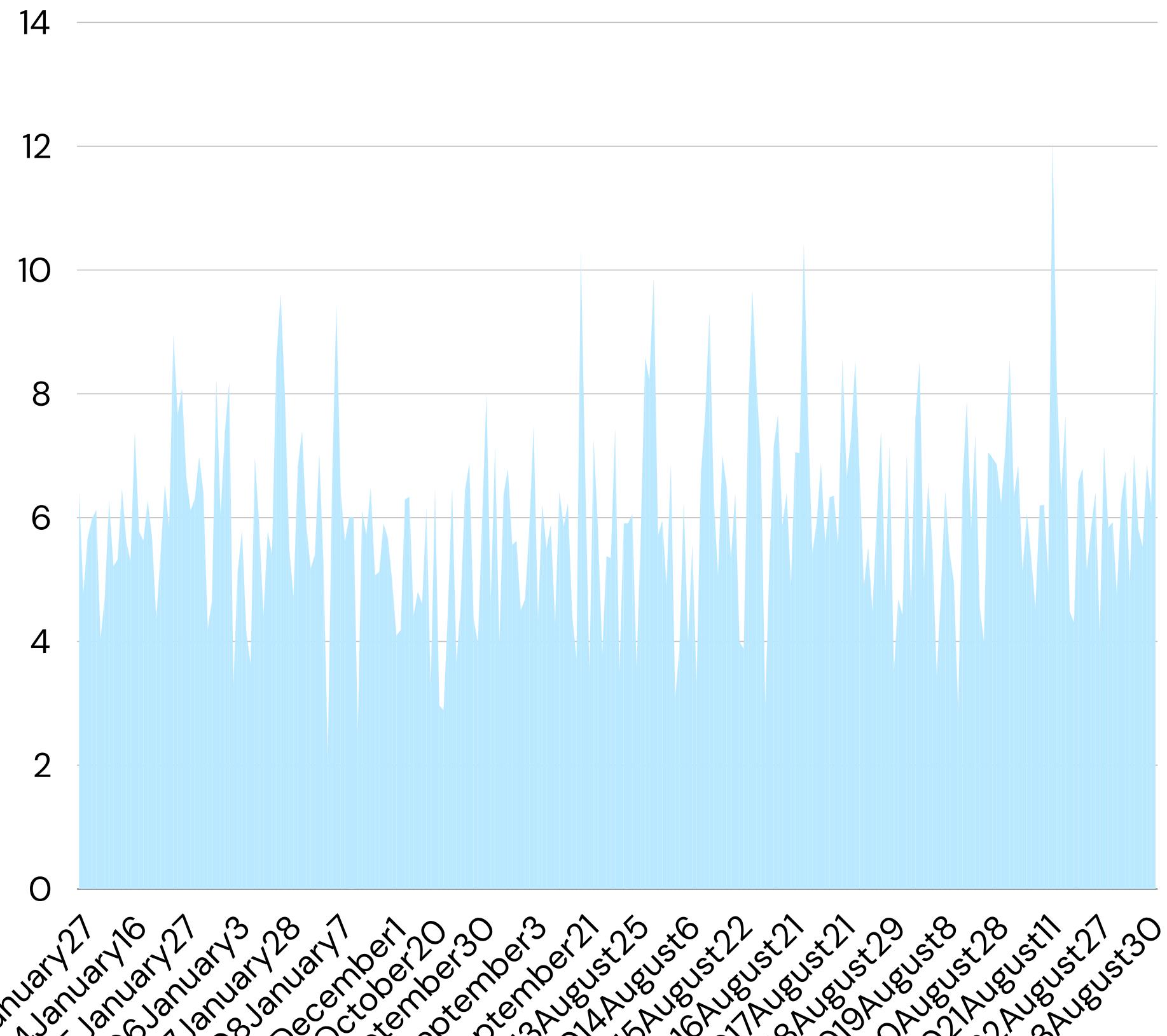


6. Which was the windiest day and what was its average wind speed, calculate for each year?

Mariam

RESULT

■ AVG_WINDSPEED



ACCOUNTADMIN No W...

Results Chart

	W_YEAR	W_MONTH	W_DAY	...	AVG_WINDSPEED
1	2,021	October	19		12.06
2	2,016	December	3		10.39
3	2,012	September	21		10.28
4	2,023	October	9		9.89
5	2,014	January	23		9.83
6	2,015	December	14		9.64
7	2,006	December	25		9.59
8	2,008	January	7		9.4
9	2,015	February	4		9.28
10	2,004	November	29		8.93
11	2,013	November	22		8.56
12	2,017	September	16		8.54
13	2,006	November	8		8.53
14	2,020	December	14		8.53

6. Which was the windiest day and what was its average wind speed, calculate for each year?

Mariam

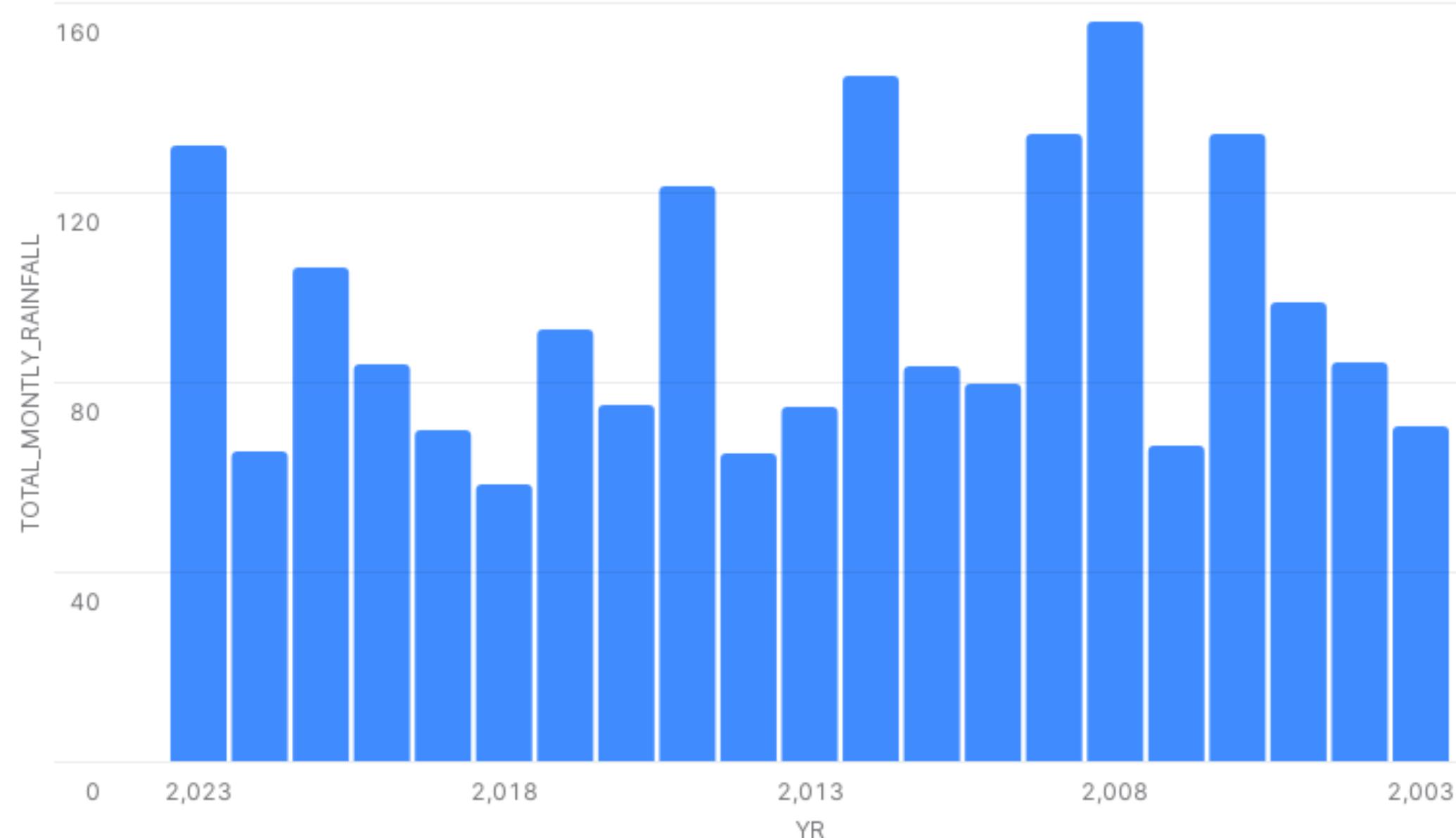
```
WITH WIND_DATA AS (
    SELECT
        DATE_PART('YEAR', DAILY_WINDSPEED.RECORD_DATE) AS W_YEAR,
        DATE_PART('MONTH', DAILY_WINDSPEED.RECORD_DATE) AS W_MONTH,
        DATE_PART('DAY', DAILY_WINDSPEED.RECORD_DATE) AS W_DAY,
        ROUND(AVG(DAILY_AVG_WINDSPEED), 2) AS AVG_WINDSPEED
    FROM DAILY_WINDSPEED
    GROUP BY W_YEAR, W_MONTH, W_DAY
    ORDER BY W_YEAR, W_MONTH, W_DAY)
SELECT W_YEAR,
CASE
    WHEN W_Month = 1 THEN 'January'
    WHEN W_Month = 2 THEN 'February'
    WHEN W_Month = 3 THEN 'March'
    WHEN W_Month = 4 THEN 'April'
    WHEN W_Month = 5 THEN 'May'
    WHEN W_Month = 6 THEN 'June'
    WHEN W_Month = 7 THEN 'July'
    WHEN W_Month = 8 THEN 'August'
    WHEN W_Month = 9 THEN 'September'
    WHEN W_Month = 10 THEN 'October'
    WHEN W_Month = 11 THEN 'November'
    WHEN W_Month = 12 THEN 'December'
    ELSE 'Unknown'
END AS W_Month,
W_DAY,
AVG_WINDSPEED
FROM WIND_DATA
QUALIFY RANKED_WINDIEST_DAY=1
ORDER BY AVG_WINDSPEED DESC;
```



7. Which month had the most rainfall each year?

Jasmin

Question 07 - gold - rain



	YR	MONTH_NAME	TOTAL_MONTHLY_RAINFALL
1	2,003	June	70.6
2	2,004	July	84.2
3	2,005	July	96.6
4	2,006	August	132.3
5	2,007	September	66.7
6	2,008	August	155.8
7	2,009	July	132.1
8	2,010	August	79.5
9	2,011	August	83.2
10	2,012	June	144.4
11	2,013	June	74.5
12	2,014	August	64.7
13	2,015	July	121.1
14	2,016	June	75.3
15	2,017	October	91
16	2,018	August	58.4
17	2,019	November	69.8
18	2,020	July	83.7
19	2,021	August	104
20	2,022	June	65.2
21	2,023	August	129.7

```
WITH CTEMonthlyRainfallRanked AS ( --common table expression (CTE)
    SELECT
        YEAR(date) AS yr
        ,MONTH(date) AS mo
        ,SUM(sumdailyrainfall) AS total_montly_rainfall
        ,RANK() OVER (PARTITION BY yr ORDER BY total_montly_rainfall DESC) AS rank_window_func
    FROM dailyrainfall
    GROUP BY yr, mo
)
SELECT --main query
    yr
    ,CASE --It uses a CASE statement to map the numeric month values to month names.
        WHEN mo = 1 THEN 'January'
        WHEN mo = 2 THEN 'February'
        WHEN mo = 3 THEN 'March'
        WHEN mo = 4 THEN 'April'
        WHEN mo = 5 THEN 'May'
        WHEN mo = 6 THEN 'June'
        WHEN mo = 7 THEN 'July'
        WHEN mo = 8 THEN 'August'
        WHEN mo = 9 THEN 'September'
        WHEN mo = 10 THEN 'October'
        WHEN mo = 11 THEN 'November'
        WHEN mo = 12 THEN 'December'
        ELSE 'Unknown'
    END AS month_name
    ,total_montly_rainfall
FROM CTEMonthlyRainfallRanked
WHERE rank_window_func = 1;
```

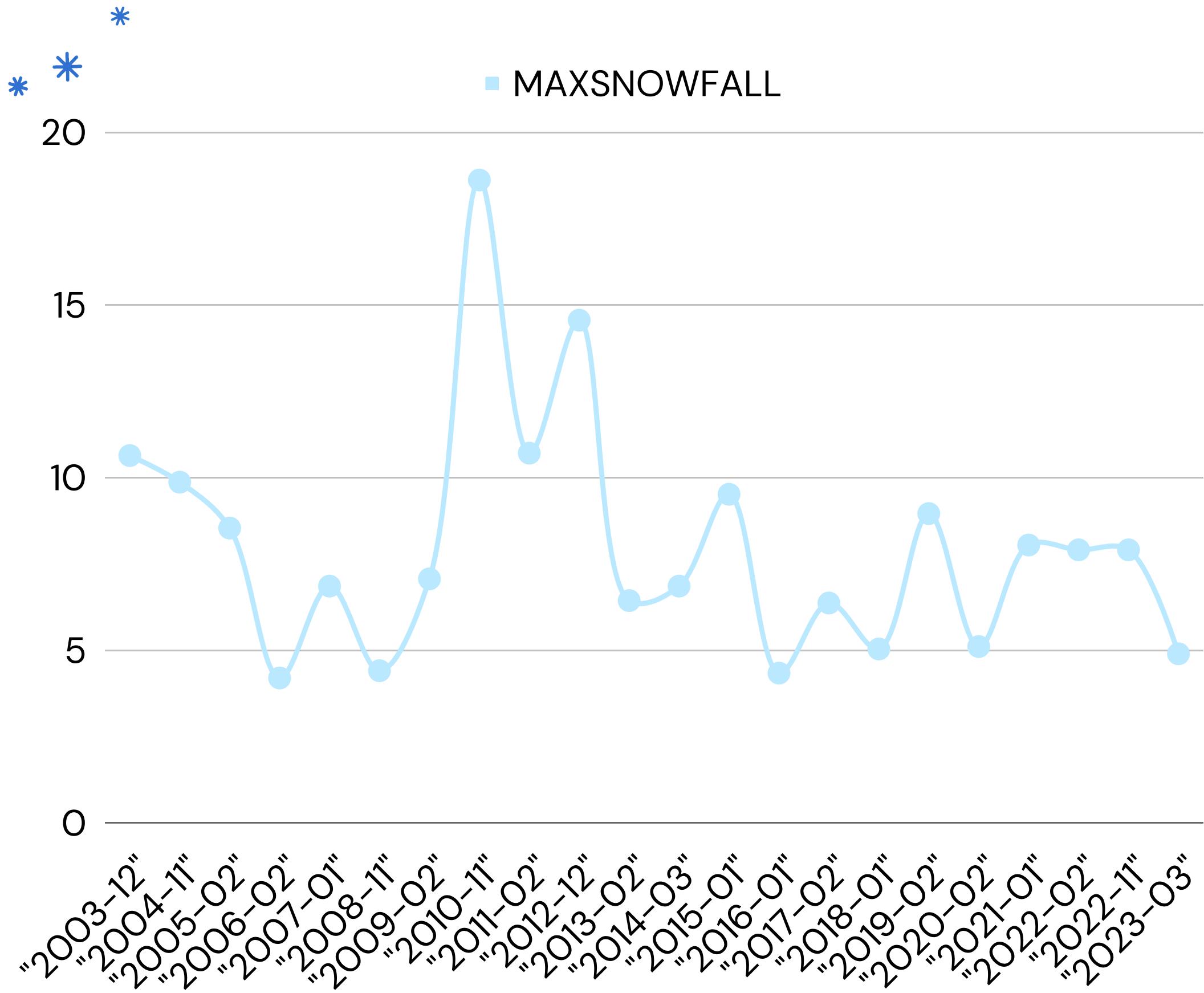
7. Which month had the most rainfall each year?

Jasmin



8. Which month had the most snowfall each year?

Mir



YEARMONTH	MAXSNOWFALL
1 "2010-11"	18.62
2 "2012-12"	14.56
3 "2011-02"	10.71
4 "2003-12"	10.64
5 "2004-11"	9.87
6 "2015-01"	9.52
7 "2019-02"	8.96
8 "2005-02"	8.54
9 "2021-01"	8.05
10 "2022-02"	7.91
11 "2022-11"	7.91

8. Which month had the most snowfall each year?

Mir

```
WITH MaxSnowfallPerYear AS (
    SELECT
        EXTRACT(YEAR FROM RecordDate) AS Year,
        EXTRACT(MONTH FROM RecordDate) AS Month,
        MAX(DAILYSNOWFALL) AS MaxSnowfall,
        TO_VARIANT(CAST(EXTRACT(YEAR FROM RecordDate) AS STRING) ||
                    ' - ' || LPAD(CAST(EXTRACT(MONTH FROM RecordDate) AS STRING), 2, '0')) AS YearMonth
    FROM DAILYSNOWFALL
    GROUP BY Year, Month
)
SELECT
    YearMonth,
    MaxSnowfall
FROM MaxSnowfallPerYear
QUALIFY RANK() OVER (PARTITION BY Year ORDER BY MaxSnowfall DESC) = 1
ORDER BY MAXSNOWFALL DESC;
```



9. Which date marked the start of spring each year?

Hanna

	YEAR	...	SPRING_START
1	2,023		2023-02-15
2	2,022		2022-02-19
3	2,021		2021-02-26
4	2,020		2020-02-22
5	2,019		2019-02-20
6	2,018		2018-04-11
7	2,017		2017-03-19
8	2,016		2016-03-10
9	2,015		2015-02-24
10	2,014		2014-02-15
11	2,013		2013-04-18
12	2,012		2012-03-16
13	2,011		2011-04-08

9. Which date marked the start of spring each year?

Hanna

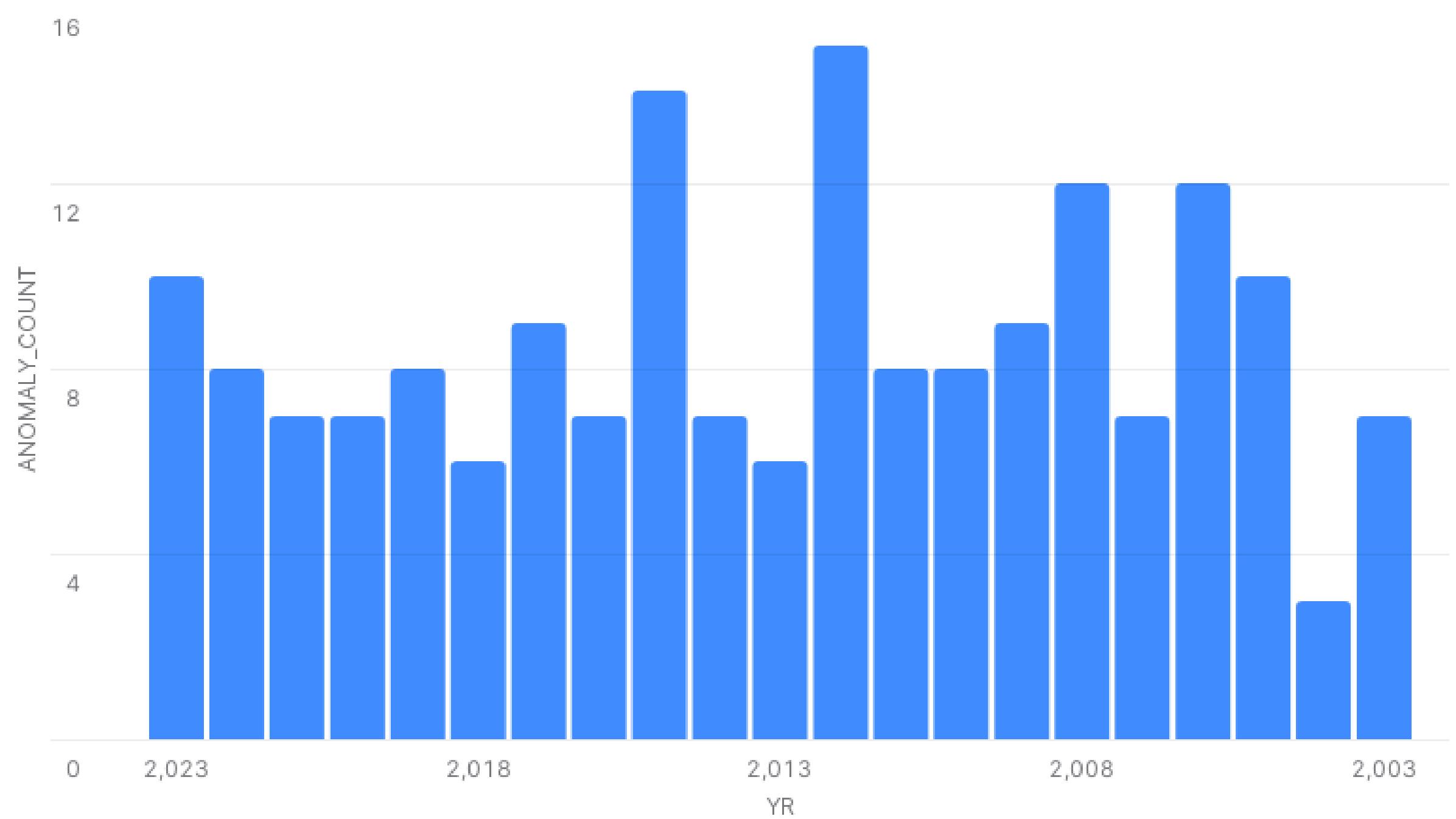
```
WITH TemperatureData AS (
    SELECT
        recorddate,
        EXTRACT(YEAR FROM recorddate) AS Year,
        dailyaveragetemperature,
        LAG(dailyaveragetemperature, 1) OVER (PARTITION BY EXTRACT(YEAR FROM recorddate) ORDER BY
recorddate) AS prev_temperature,
        LAG(dailyaveragetemperature, 2) OVER (PARTITION BY EXTRACT(YEAR FROM recorddate) ORDER BY
recorddate) AS prev2_temperature,
        LAG(dailyaveragetemperature, 3) OVER (PARTITION BY EXTRACT(YEAR FROM recorddate) ORDER BY
recorddate) AS prev3_temperature,
        LAG(dailyaveragetemperature, 4) OVER (PARTITION BY EXTRACT(YEAR FROM recorddate) ORDER BY
recorddate) AS prev4_temperature,
        LAG(dailyaveragetemperature, 5) OVER (PARTITION BY EXTRACT(YEAR FROM recorddate) ORDER BY
recorddate) AS prev5_temperature,
        LAG(dailyaveragetemperature, 6) OVER (PARTITION BY EXTRACT(YEAR FROM recorddate) ORDER BY
recorddate) AS prev6_temperature,
        LAG(dailyaveragetemperature, 7) OVER (PARTITION BY EXTRACT(YEAR FROM recorddate) ORDER BY
recorddate) AS prev7_temperature
    FROM dailytemperature
)
SELECT
    Year,
    MIN(recorddate) AS spring_start
FROM TemperatureData
WHERE prev_temperature > 0.0
    AND prev2_temperature > 0.0
    AND prev3_temperature > 0.0
    AND prev4_temperature > 0.0
    AND prev5_temperature > 0.0
    AND prev6_temperature > 0.0
    AND prev7_temperature > 0.0
    AND recorddate >= DATEFROMPARTS(Year, 2, 15)
    AND recorddate <= DATEFROMPARTS(Year, 7, 31)
GROUP BY Year
ORDER BY year desc;
```



10. Which year saw the most weather anomalies?

Jasmin

Question 10 - gold - rain,snow,temp,wind



	YR	ANOMALY_COUNT
1	2,012	15
2	2,015	14
3	2,006	12
4	2,008	12
5	2,023	10
6	2,005	10
7	2,009	9
8	2,017	9
9	2,010	8
10	2,011	8
11	2,022	8
12	2,019	8
13	2,007	7
14	2,003	7
15	2,014	7
16	2,016	7
17	2,020	7
18	2,021	7
19	2,013	6
20	2,018	6
21	2,004	3

10. Which year saw the most weather anomalies?

Jasmin

```
SELECT
    YEAR(rain.date) AS yr
    ,COUNT(*) AS anomaly_count
FROM dailyrainfall AS rain
INNER JOIN dailysnowfall AS snow ON rain.date = snow.date
INNER JOIN dailytemperature AS temp ON rain.date = temp.date
INNER JOIN dailywindspeed AS wind ON rain.date = wind.date
WHERE --an anomaly will be considered as detected if one of the following criteria is fulfilled
    rain.sumdailyrainfall > 10 --mm
    OR snow.sumdailysnowfall > 30 --cm
    OR temp.averagedailytemperature >= 28 --degree Celsius
    OR wind.averagedailywindspeed > 60 --km/h
GROUP BY yr
ORDER BY anomaly_count DESC;
```

A photograph of a large pine tree with many branches and green needles. The background is a dark, overcast sky with heavy clouds. In the foreground, there are some dark, leafy plants.

THANK YOU