

Using simple query

```
SELECT id FROM Weather as w WHERE temperature > (SELECT temperature FROM Weather WHERE DATEDIFF(w.recordDate, recordDate) = 1);
```

For every row in the main query (**Weather AS w**), the database engine runs the **subquery**. The subquery calculates the **temperature** for a specific date where **DATEDIFF** equals 1. This leads to a repeated evaluation of the subquery for every row in the main table.

Using self join

```
SELECT w1.id FROM Weather as w1 join Weather as w2 ON DATEDIFF(w1.recordDate, w2.recordDate) = 1 WHERE w1.temperature > w2.temperature;
```

Join Visualization

The query performs a **self-join** on the **Weather** table:

- **w1** and **w2** are aliases for the same table.
- The condition **DATEDIFF(w1.recordDate, w2.recordDate) = 1** ensures that we compare consecutive dates.

Relationship Illustration:

w1.id	w1.recordDate	w1.temperature	w2.id	w2.recordDate	w2.temperature
2	2024-06-02	32	1	2024-06-01	30
3	2024-06-03	29	2	2024-06-02	32
4	2024-06-04	31	3	2024-06-03	29

- The table **Weather** is **joined with itself** once, based on the condition that the dates are 1 day apart.
- The database engine evaluates this join **once** and compares rows directly, avoiding repeated computations.
- Rows are filtered based on the condition **w1.temperature > w2.temperature**.