Offset Window Functions: Takeaways

Syntax

- **LEAD()** returns the value of a column or expression from a row that is offset rows after the current row in the window frame.

```
LEAD(expression, offset [, default]) OVER (
    PARTITION BY partition_expression,...
    ORDER BY sort_expression [ASC|DESC], ...
)
```

- **LAG()** returns the value of a column or expression from a row that is offset rows before the current row in the window frame.

```
LAG(expression, offset [, default]) OVER (
    PARTITION BY partition_expression,...
    ORDER BY sort_expression [ASC|DESC], ...
)
```

- **FIRST_VALUE()** returns the value of a column or expression from the first row in the window frame.

```
FIRST_VALUE(expression) OVER (
    PARTITION BY partition_expression,...
    ORDER BY sort_expression [ASC|DESC], ...
    [framing_clause])
```

- **LAST_VALUE()** returns the value of a column or expression from the last row in the window frame.

```
LAST_VALUE(expression) OVER (
    PARTITION BY partition_expression,...
    ORDER BY sort_expression [ASC|DESC],...
    [framing_clause])
```

- **NTH_VALUE()** returns the value of a column or expression in a given offset in terms of the number of rows from the first or last row in the window frame.

```
NTH_VALUE(expression, offset) OVER (
    PARTITION BY partition_expression,...
    ORDER BY sort_expression [ASC|DESC], ...
    [framing_clause])
```

Concepts

- Offset window functions retrieve values from rows before or after the current row or from the first or last row in the window frame. The syntax of these functions is similar, but the specific parameters may differ depending on the function.
- As the `ORDER BY` subclause determines the order in which the rows are processed in the window, it is crucial for the offset window functions to work correctly.

- Partitioning the data into groups with the `PARTITION BY` subclause is optional; however, it becomes essential when using offset window functions to perform calculations within the groups. It allows us to apply the same function to each group separately.

Resources

- Window Functions in PostgreSQL
- T-SQL Window Functions