Learning SQL

Windowing Functions

Shwetank Singh
GritSetGrow - GSGLearn.com

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

1. WHAT IS A WINDOW FUNCTION IN SQL?

A window function performs a calculation across a set of table rows related to the current row. It is used mainly for analytical purposes and operates within a specified window of rows.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

2. HOW DO YOU DEFINE A WINDOW IN SQL?

A window is defined using the OVER clause in SQL, which specifies the partitioning and ordering of rows.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

3. WHAT ARE THE TYPES OF WINDOW FUNCTIONS SUPPORTED IN SQL SERVER?

Aggregate functions, ranking functions, statistical functions, and offset functions.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

4. WHAT IS THE DIFFERENCE BETWEEN A WINDOW FUNCTION AND AN AGGREGATE FUNCTION?

An aggregate function groups rows and returns a single result for each group, while a window function returns a result for each row within the specified window.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

5. HOW DO YOU USE THE ROW_NUMBER() FUNCTION?

ROW_NUMBER() OVER (PARTITION BY column ORDER BY column) assigns a unique sequential integer to rows within the partition of a result set.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

6. EXPLAIN THE RANK() FUNCTION.

RANK() OVER (PARTITION BY column ORDER BY column) assigns a rank to each row within the partition of a result set, with gaps in the rank values if there are ties.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

7. WHAT IS THE DIFFERENCE BETWEEN RANK() AND DENSE_RANK()?

DENSE_RANK() is similar to RANK() but does not leave gaps in the ranking values.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

8. DESCRIBE THE NTILE() FUNCTION.

NTILE(n) OVER (PARTITION BY column ORDER BY column) distributes rows into a specified number of roughly equal groups.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

9. WHAT DOES THE LAG() FUNCTION DO?

LAG(column, offset, default) OVER (PARTITION BY column ORDER BY column) provides access to a row at a specified physical offset before the current row within the partition.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

10. HOW DOES THE LEAD() FUNCTION DIFFER FROM LAG()?

LEAD(column, offset, default) OVER (PARTITION BY column ORDER BY column) provides access to a row at a specified physical offset after the current row within the partition.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

11. EXPLAIN THE USE OF FIRST_VALUE() FUNCTION.

FIRST_VALUE(column) OVER (PARTITION BY column ORDER BY column) returns the first value in an ordered set of values.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

12. WHAT IS THE LAST_VALUE() FUNCTION USED FOR?

LAST_VALUE(column) OVER (PARTITION BY column ORDER BY column) returns the last value in an ordered set of values.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

13. HOW DO YOU CALCULATE A MOVING AVERAGE USING WINDOW FUNCTIONS?

Use AVG(column) OVER (PARTITION BY column ORDER BY column ROWS BETWEEN n PRECEDING AND CURRENT ROW) to calculate a moving average.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

14. DESCRIBE THE PERCENT_RANK() FUNCTION.

PERCENT_RANK() OVER (PARTITION BY column ORDER BY column) calculates the relative rank of a row within the partition as a percentage.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

15. WHAT IS THE CUME_DIST() FUNCTION?

CUME_DIST() OVER (PARTITION BY column ORDER BY column) calculates the cumulative distribution of a value within the partition.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

16. EXPLAIN PERCENTILE_CONT() FUNCTION.

PERCENTILE_CONT(n) WITHIN GROUP (ORDER BY column) OVER (PARTITION BY column) computes a percentile based on continuous distribution.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

17. HOW DOES PERCENTILE_DISC() DIFFER FROM PERCENTILE_CONT()?

PERCENTILE_DISC(n) WITHIN GROUP (ORDER BY column) OVER (PARTITION BY column) computes a percentile based on discrete distribution.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

18. WHAT IS A FRAME IN THE CONTEXT OF WINDOW FUNCTIONS?

A frame defines a subset of rows within the partition to apply the window function, specified using ROWS or RANGE clauses.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

19. HOW DO YOU USE THE ROWS BETWEEN CLAUSE?

ROWS BETWEEN n PRECEDING AND m FOLLOWING specifies a frame of rows relative to the current row for the window function.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

20. WHAT IS THE RANGE CLAUSE USED FOR IN WINDOW FUNCTIONS?

The RANGE clause defines a frame of rows based on the value range of the rows, not their physical positions.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

21. HOW CAN YOU EMULATE IGNORE NULLS IN SQL SERVER?

Use subqueries or conditional aggregation to ignore nulls in window functions since SQL Server does not directly support IGNORE NULLS.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

22. EXPLAIN THE CONCEPT OF WINDOWING IN SQL.

Windowing allows calculations across a set of table rows related to the current row using window functions.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

23. WHAT ARE THE BENEFITS OF USING WINDOW FUNCTIONS?

Window functions simplify complex queries, improve readability, and often provide better performance for analytical queries.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

24. CAN WINDOW FUNCTIONS BE USED IN THE WHERE CLAUSE?

No, window functions cannot be used in the WHERE clause directly. They are used in the SELECT or ORDER BY clauses.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

25. HOW DO WINDOW FUNCTIONS IMPROVE PERFORMANCE?

Window functions can perform calculations without requiring additional joins or subqueries, reducing the complexity and execution time.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

26. WHAT IS THE DIFFERENCE BETWEEN PARTITION BY AND ORDER BY IN WINDOW FUNCTIONS?

PARTITION BY divides the result set into partitions, and ORDER BY specifies the order of rows within each partition.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

27. HOW DO YOU CALCULATE RUNNING TOTALS USING WINDOW FUNCTIONS?

Use SUM(column) OVER (PARTITION BY column ORDER BY column ROWS UNBOUNDED PRECEDING) for running totals.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

28. DESCRIBE THE USE OF COUNT() AS A WINDOW FUNCTION.

COUNT(column) OVER (PARTITION BY column ORDER BY column) counts the number of rows within the window frame.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

29. HOW CAN YOU USE WINDOW FUNCTIONS TO IDENTIFY GAPS AND ISLANDS IN DATA?

Use LAG() and LEAD() functions to compare current and previous/next row values to identify gaps and islands.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

30. WHAT ARE HYPOTHETICAL SET FUNCTIONS?

Hypothetical set functions, like PERCENTILE_CONT and PERCENTILE_DISC, compute percentiles and other statistical measures based on hypothetical distributions.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

31. EXPLAIN THE STRING_AGG() FUNCTION.

STRING_AGG(column, delimiter) WITHIN GROUP (ORDER BY column) OVER (PARTITION BY column) concatenates values into a single string within each partition.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

32. HOW DOES GROUP BY DIFFER FROM PARTITION BY IN WINDOW FUNCTIONS?

GROUP BY aggregates rows into groups and reduces the result set, while PARTITION BY defines partitions for window functions without reducing the result set.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

33. WHAT IS THE SIGNIFICANCE OF ROWS UNBOUNDED PRECEDING?

ROWS UNBOUNDED PRECEDING specifies the frame from the first row in the partition to the current row.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

34. HOW DO YOU REMOVE DUPLICATES USING WINDOW FUNCTIONS?

Use ROW_NUMBER() OVER (PARTITION BY column ORDER BY column) to assign unique numbers and then filter by the row number to remove duplicates.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

35. CAN WINDOW FUNCTIONS BE NESTED?

No, window functions cannot be nested within each other in the same query.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

36. HOW DO YOU CALCULATE A MOVING SUM USING WINDOW FUNCTIONS?

Use SUM(column) OVER (PARTITION BY column ORDER BY column ROWS BETWEEN n PRECEDING AND CURRENT ROW) to calculate a moving sum.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

37. EXPLAIN THE CONCEPT OF FRAMING IN WINDOW FUNCTIONS.

Framing specifies the subset of rows within a partition for the window function, defined by ROWS or RANGE clauses.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

38. HOW DO YOU USE THE OVER CLAUSE WITH PARTITION BY AND ORDER BY?

OVER (PARTITION BY column ORDER BY column) defines the window frame by partitioning and ordering the rows.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

39. WHAT IS THE PURPOSE OF NTILE() IN WINDOW FUNCTIONS?

NTILE() divides the result set into a specified number of approximately equal groups.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

40. HOW DO WINDOW FUNCTIONS HANDLE TIES IN RANKING?

Functions like RANK() leave gaps for ties, while DENSE_RANK() does not leave gaps.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

41. DESCRIBE HOW TO CALCULATE THE MEDIAN USING WINDOW FUNCTIONS.

Use PERCENTILE_CONT(0.5) WITHIN GROUP (ORDER BY column) OVER (PARTITION BY column) to calculate the median.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

42. WHAT ARE THE LIMITATIONS OF WINDOW FUNCTIONS IN SQL SERVER?

Limitations include the inability to use window functions in WHERE, HAVING, and GROUP BY clauses, and lack of support for some standard features like IGNORE NULLS.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

43. HOW DO YOU HANDLE NULL VALUES IN WINDOW FUNCTIONS?

Use conditional expressions or subqueries to handle NULL values, as window functions do not directly support IGNORE NULLS.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

44. WHAT IS THE WINDOW CLAUSE USED FOR?

The WINDOW clause allows you to reuse window definitions within the same query, improving readability and maintainability.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

45. HOW DO YOU IMPLEMENT PAGING USING WINDOW FUNCTIONS?

Use ROW_NUMBER() OVER (ORDER BY column) to assign row numbers and then filter by the desired page range.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

46. WHAT ARE STATISTICAL WINDOW FUNCTIONS?

Statistical window functions include PERCENTILE_CONT, PERCENTILE_DISC, PERCENT_RANK, and CUME_DIST, used for statistical calculations.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

47. EXPLAIN THE CONCEPT OF ROW PATTERN RECOGNITION IN SQL.

Row pattern recognition allows the detection of patterns within sequences of rows, a feature not yet fully supported in SQL Server.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

48. HOW CAN WINDOW FUNCTIONS BE OPTIMIZED IN SQL SERVER?

Optimization techniques include indexing, parallelism improvements, and batch-mode processing for better performance.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

49. DESCRIBE THE USE OF FIRST_VALUE AND LAST_VALUE IN WINDOW FUNCTIONS.

FIRST_VALUE and LAST_VALUE return the first and last values in the window frame, respectively, based on the specified ordering.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

50. HOW DO YOU PERFORM CONDITIONAL AGGREGATION USING WINDOW FUNCTIONS?

Use CASE expressions within aggregate functions to perform conditional aggregation, e.g., SUM(CASE WHEN condition THEN column ELSE 0 END) OVER (PARTITION BY column).

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

51. HOW DO YOU CALCULATE A CUMULATIVE SUM USING WINDOW FUNCTIONS?

Example:

```
SELECT orderid, val, SUM(val)
OVER (ORDER BY orderid) AS
cumulative_sum
FROM Sales.OrderValues;
```

This query calculates the cumulative sum of the val column ordered by orderid.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

52. EXPLAIN THE ROW_NUMBER() FUNCTION WITH AN EXAMPLE.

Example:

```
SELECT orderid, val, ROW_NUMBER()
OVER (ORDER BY val DESC) AS
row_num
FROM Sales.OrderValues;
```

This query assigns a unique sequential integer to rows ordered by val in descending order.

DATA ENGINEERING – SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

53. HOW DO YOU USE LAG() TO FIND THE PREVIOUS ROW'S VALUE?

Example:

```
SELECT orderid, val, LAG(val, 1) OVER
(ORDER BY orderid) AS prev_val
FROM Sales.OrderValues;
```

This query returns the previous row's val value for each row.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

54. PROVIDE AN EXAMPLE OF USING LEAD() TO FIND THE NEXT ROW'S VALUE.

Example:

```
SELECT orderid, val, LEAD(val, 1) OVER
(ORDER BY orderid) AS next_val
FROM Sales.OrderValues;
```

This query returns the next row's val value for each row.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

55. HOW DO YOU CALCULATE A MOVING AVERAGE USING WINDOW FUNCTIONS?

Example:

```
SELECT orderid, val,
AVG(val) OVER (ORDER BY orderid
ROWS BETWEEN 2 PRECEDING AND
CURRENT ROW) AS moving_avg
FROM Sales.OrderValues;
```

This query calculates a moving average over the current and two preceding rows.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

56. EXPLAIN HOW TO RANK ROWS USING RANK().

Example:

```
SELECT orderid, val,
RANK() OVER (ORDER BY val DESC)
AS rnk
FROM Sales.OrderValues;
```

This query ranks rows based on val in descending order.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

57. HOW DO YOU USE DENSE_RANK() TO RANK ROWS WITHOUT GAPS?

Example:

```
SELECT orderid, val, DENSE_RANK()
OVER (ORDER BY val DESC) AS
dense_rnk
FROM Sales.OrderValues;
```

This query ranks rows based on val in descending order without gaps in the rank values.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

58. DESCRIBE THE NTILE() FUNCTION WITH AN EXAMPLE.

Example:

```
SELECT orderid, val, NTILE(4) OVER
(ORDER BY val) AS quartile
FROM Sales.OrderValues;
```

This query divides the result set into four approximately equal groups.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

59. HOW DO YOU USE FIRST_VALUE() TO GET THE FIRST VALUE IN A WINDOW?

Example:

```
SELECT orderid, val, FIRST_VALUE(val)
OVER (ORDER BY orderid) AS first_val
FROM Sales.OrderValues;
```

This query returns the first val value based on orderid ordering.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

60. PROVIDE AN EXAMPLE OF USING LAST_VALUE() TO GET THE LAST VALUE IN A WINDOW.

Example:

```
SELECT orderid, val, LAST_VALUE(val)
OVER (ORDER BY orderid ROWS
BETWEEN UNBOUNDED PRECEDING AND
UNBOUNDED FOLLOWING) AS last_val
FROM Sales.OrderValues;
```

This query returns the last val value based on orderid ordering.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

61. HOW DO YOU CALCULATE THE DIFFERENCE BETWEEN CURRENT AND PREVIOUS ROW VALUES USING LAG()?

Example:

```
SELECT orderid, val,
val - LAG(val, 1) OVER (ORDER BY
orderid) AS diff
FROM Sales.OrderValues;
```

This query calculates the difference between the current and previous row's val.

DATA ENGINEERING – SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

62. EXPLAIN THE USE OF PERCENT_RANK() WITH AN EXAMPLE.

Example:

```
SELECT orderid, val,
PERCENT_RANK() OVER (ORDER BY
val) AS percent_rank
FROM Sales.OrderValues;
```

This query calculates the relative rank of each row as a percentage of the total rows.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

63. HOW DO YOU CALCULATE THE CUMULATIVE DISTRIBUTION USING CUME_DIST()?

Example:

```
SELECT orderid, val,
CUME_DIST() OVER (ORDER BY val) AS
cumulative_dist
FROM Sales.OrderValues;
```

This query calculates the cumulative distribution of each row's val.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

64. PROVIDE AN EXAMPLE OF USING PERCENTILE_CONT() TO CALCULATE A PERCENTILE.

Example:

```
SELECT orderid, val,
PERCENTILE_CONT(0.5) WITHIN GROUP
(ORDER BY val) OVER () AS median
FROM Sales.OrderValues;
```

This query calculates the median val.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

65. EXPLAIN HOW TO USE PERCENTILE_DISC() TO CALCULATE A PERCENTILE.

Example:

```
SELECT orderid, val,
PERCENTILE_DISC(0.5) WITHIN
GROUP (ORDER BY val) OVER () AS
median
FROM Sales.OrderValues;
```

This query calculates the median val based on discrete distribution.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

66. HOW DO YOU CALCULATE A RUNNING TOTAL USING WINDOW FUNCTIONS?

Example:

```
SELECT orderid, val, SUM(val) OVER
(ORDER BY orderid ROWS BETWEEN
UNBOUNDED PRECEDING AND CURRENT
ROW) AS running_total
FROM Sales.OrderValues;
```

This query calculates a running total of val.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

67. DESCRIBE THE USE OF THE RANGE CLAUSE WITH AN EXAMPLE.

Example:

```
SELECT orderid, val, SUM(val) OVER
(ORDER BY orderid RANGE BETWEEN
INTERVAL '1' DAY PRECEDING AND
CURRENT ROW) AS range_sum
FROM Sales.OrderValues;
```

This query calculates the sum of val for rows within the specified range of days.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

68. HOW DO YOU IMPLEMENT A SLIDING WINDOW CALCULATION?

Example:

```
SELECT orderid, val, AVG(val) OVER
(ORDER BY orderid ROWS BETWEEN 2
PRECEDING AND 2 FOLLOWING) AS
sliding_avg
FROM Sales.OrderValues;
```

This query calculates a sliding average over a window of five rows centered on the current row.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

69. PROVIDE AN EXAMPLE OF USING LAG() AND LEAD() TOGETHER.

Example:

```
SELECT orderid, val, LAG(val, 1) OVER
(ORDER BY orderid) AS prev_val,
LEAD(val, 1) OVER (ORDER BY orderid)
AS next_val FROM Sales.OrderValues;
```

This query returns the previous and next val values for each row.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

70. EXPLAIN HOW TO PARTITION DATA USING WINDOW FUNCTIONS.

Example:

```
SELECT orderid, customerid, val,
SUM(val) OVER (PARTITION BY
customerid ORDER BY orderid) AS
customer_total
FROM Sales.OrderValues;
```

This query calculates the running total of val for each customerid.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

71. HOW DO YOU USE WINDOW FUNCTIONS TO CALCULATE THE PERCENTAGE OF A TOTAL?

Example:

```
SELECT orderid, val, val * 100.0 /
SUM(val) OVER () AS
percent_of_total
FROM Sales.OrderValues;
```

This query calculates the percentage of each val of the total sum of val.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

72. PROVIDE AN EXAMPLE OF USING NTILE() TO CREATE DECILES.

Example:

```
SELECT orderid, val, NTILE(10) OVER
(ORDER BY val) AS decile
FROM Sales.OrderValues;
```

This query divides the result set into ten approximately equal groups (deciles).

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

73. HOW DO YOU USE WINDOW FUNCTIONS TO FIND THE TOP N ROWS PER GROUP?

Example:

```
WITH RankedOrders
AS (SELECT orderid, customerid, val,
ROW_NUMBER() OVER (PARTITION BY
customerid ORDER BY val DESC) AS rank
FROM Sales.OrderValues)
SELECT * FROM RankedOrders
WHERE rank <= 3;
```

This query returns the top 3 orders by value for each customer.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

74. EXPLAIN HOW TO USE WINDOW FUNCTIONS FOR DATA DE-DUPLICATION.

Example:

```
WITH CTE AS
(SELECT orderid, val,
ROW_NUMBER() OVER (PARTITION BY
val ORDER BY orderid) AS rn
FROM Sales.OrderValues)
DELETE FROM CTE WHERE rn > 1;
```

This query deletes duplicate rows based on the val column.

DATA ENGINEERING - SQL WINDOW FUNCTIONS

Shwetank Singh
GritSetGrow - GSGLearn.com

like & follow

75. HOW DO YOU PERFORM CUMULATIVE AGGREGATION USING WINDOW FUNCTIONS?

Example:

```
SELECT orderid, val, SUM(val) OVER
(ORDER BY orderid ROWS BETWEEN
UNBOUNDED PRECEDING AND CURRENT
ROW) AS cumulative_sum
FROM Sales.OrderValues;
```

This query calculates the cumulative sum of val for all preceding rows including the current row.

DATA ENGINEERING - SQL WINDOW FUNCTIONS