Cognizant_Logo_Brand_Blue_CMYK_300



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Assignment Document:

<Redshift Window Functions>

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### Hands-On Exercises

Hands-On Exercise 1: <Working with SUM Window function >

Estimated Completion Time: xx Minutes

(xx Marks)

Objective: To calculate cumulative sum of a column in the table

Complete the following assignment:

1. Guided Exercise 1

Hands-On Exercise 2: <Working with Rank Window function >

Estimated Completion Time: xx Minutes

(xx Marks)

Objective: To give the rank for each product which has highest sales amount.

Complete the following assignment:

1. Guided Exercise 2

Hands-On Exercise 3: <Working with Row\_number Window function >

Estimated Completion Time: xx Minutes

(xx Marks)

Objective: To give the rank for each product which has highest sales amount.

Complete the following assignment:

1. Guided Exercise 3

### Guided Assignments

Guided Exercise 1: < Create a table “Sales\_daily” in database “ProjectXTables” and calculate the cumulative sum of daily sales.

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| Problem Statement: |
| Create a permanent table “sales\_daily” in database “ProjectXTables” with below specifications.   1. Product\_id is an integer. 2. Sales\_date as date data type. 3. Daily\_sales\_amt as integer data type.   Insert below records :   |  |  |  | | --- | --- | --- | | product\_id | Sales\_date | Daily\_sales\_amt | | 1001 | 01-02-2013 | 3000 | | 1002 | 01-02-2013 | 4000 | | 1001 | 02-02-2013 | 6000 | | 1003 | 03-02-2013 | 5000 |     Calculate the cumulative sum on daily\_sales\_amt and use sales\_date as sort key. |

Estimated Completion Time: 10 Minutes

(xx Marks)

Objective: To learn SUM Window function for cumulative sum.

Concept: In Redshift, business users will calculate/perform various operations to compare the sales amounts. Sum Window function is useful function to evaluate the cumulative sum.

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| Solution |
| Step 1: Open SQL Interface.  Step 2: Logon to Redshift server with credentials.  Step 3 : To create a table in a particular database, set your default database with the below statement.  Database ProjectXtables;  Step 4 :  CREATE TABLE ProjectXTables .Sales\_daily  (Product\_id INT,  Sales\_date date,  Daily\_sales\_amt integer,  ) distkey (Product\_id );  Step 5 :  Insert the below the records.  Insert into Sales\_daily (1001,cast(’01-02-2013’ as date format ‘dd-mm-yyyy’) ,3000); Insert into Sales\_daily (1002,cast(’01-02-2013’ as date format ‘dd-mm-yyyy’) ,4000);  Insert into Sales\_daily (1001,cast(’02-02-2013’ as date format ‘dd-mm-yyyy’) ,6000);  Insert into Sales\_daily (1003,cast(’03-02-2013’ as date format ‘dd-mm-yyyy’) ,5000);  Step 6:Run the below query to calculate the cumulative sum on daily\_sales\_amt:  Select product\_id,sales\_date,  Daily\_sales\_amt,  sum (Daily\_sales\_amt) Over (order by sales\_date rows unbounded preceding) as csum  From ProjectXTables. Sales\_daily  Order by 1,2,3; |

Summary of this exercise:

You have just learnt:

* Usage of Sum Window function.

Guided Exercise 2: < Generate ranks for the products which has highest sales in table “Sales\_window” in database “ProjectXTables” with the help of Rank Window function.

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| Problem Statement: |
| Generate ranks for the products which has highest sales in table “Sales\_window” in database “ProjectXTables” with the help of Rank Window function. |

Estimated Completion Time: 10 Minutes

(xx Marks)

Objective: To learn Rank window function .

Concept: In Redshift, business users will calculate/perform various operations to compare the sales amounts. Rank is the ANSI standard fuction to evaluate ranking for each sales row.

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| Solution |
| Step 1: Open SQL Interface.  Step 2: Logon to Redshift server with credentials.  Step 3 : To create a table in a particular database, set your default database with the below statement.  Database ProjectXtables;  Step 4:Run the below query to assign ranks based on the highest sales amount:  Select product\_id,sales\_date,Daily\_sales\_amt,  Rank() over (order by Daily\_sales\_amt desc) as Ranking  From ProjectXTables. Sales\_daily; |

Summary of this exercise:

You have just learnt:

Usage of Rank Window function.

Guided Exercise 3: < Generate ranks for the products which has highest sales in table “Sales\_window” in database “ProjectXTables” with the help of Row\_number Window function.

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| Problem Statement: |
| Generate ranks for the products which has highest sales in table “Sales\_window” in database “ProjectXTables” with the help of Row\_number Window function. |

Estimated Completion Time: 10 Minutes

(xx Marks)

Objective: To learn Row\_number window function .

Concept: In Redshift, business users will calculate/perform various operations to compare the sales amounts. Row\_number is the ANSI standard fuction to evaluate ranking for each sales row.

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| Solution |
| Step 1: Open SQL Interface.  Step 2: Logon to Redshift server with credentials.  Step 3 : To create a table in a particular database, set your default database with the below statement.  Database ProjectXtables;  Step 4:Run the below query to assign ranks based on the highest sales amount:  Select product\_id,sales\_date,Daily\_sales\_amt,  Row\_number() over (order by Daily\_sales\_amt desc) as Ranking  From ProjectXTables. Sales\_daily; |

Summary of this exercise:

You have just learnt:

Usage of Row\_number Window function.

### Case Study Assignments

Case Study: <Calculate the moving average of 5 days with SUM() function and also assign the ranks for each sale amount (top sales will get the rank 1 and lowest sales amount will get the last rank>

Estimated Completion Time: xx Minutes

(xx Marks)

Objective: To manipulate the data with the help of views and stored procedures.

Case: Create the below table with given specifications.

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| Problem Statement |
| Database name is : ProjectXtables  Table name is : emp\_loc  Calculate the moving sum of daily\_sales\_amt of 5 consecutive days (use sales\_date as sort key). And also assign ranks to each sales records based on sales amount. |

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| Solution: |
| Step 1: Open SQL Assistant.  Step 2: Logon to Redshift server with credentials.  Step 3 : To set the default database , run the below query:  Database ProjectXtables;  Step 4:Run the below query to calculate the moving sum on daily\_sales\_amt and ranks for each sales amount:  Select product\_id,sales\_date,Daily\_sales\_amt,  SUM(daily\_sales\_amt) over (order by sales\_date ROWS 5 PRECEDING) as msum\_5days,  Row\_number() over (order by Daily\_sales\_amt desc) as Ranking  PRECEDING) as cumulative\_sum  From ProjectXTables. Sales\_daily; |

Evaluation Rubrics

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| --- | --- |
| Parameters | Weightage |
| 1. Completeness | X |
| 1. Accuracy | X |
| 1. Clarity of understanding | X |
| 1. Presentation | X |
| Total |  |

Summary of this Case Study:

You have just learnt:

* Usage of window functions SUM() and Row\_number()