EXPERIMENT NO:04

AIM: Implementation of OLAP Operations: Slice, Dice, Roll up and Drill down

Theory:

What is OLAP?

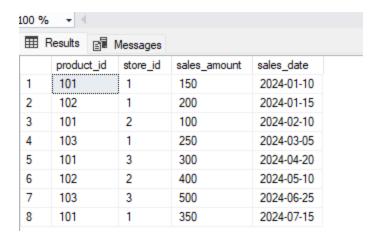
OLAP stands for **Online Analytical Processing**.

- It's a technology for fast, interactive analysis of multidimensional data.
- Used in **business intelligence (BI)** to answer complex queries quickly.
- Helps decision makers understand trends, summaries, and patterns in data.

```
/*******Create table for OLAP Operation********/
CREATE TABLE sales (
product id INT,
store id INT,
sales amount INT,
sales date DATE
INSERT INTO sales (product_id, store_id, sales_amount, sales_date) VALUES
(101, 1, 150, '2024-01-10'),
(102, 1, 200, '2024-01-15'),
(101, 2, 100, '2024-02-10'),
(103, 1, 250, '2024-03-05'),
(101, 3, 300, '2024-04-20'),
(102, 2, 400, '2024-05-10'),
(103, 3, 500, '2024-06-25'),
(101, 1, 350, '2024-07-15')
SELECT * FROM sales
(נבטופוץ ויייזקו - היייף (מאומא (מוווו (און)) אין אין הייים אומאליים באומא (מוווו (מב)) אין הייים אומא (מוווו (מב))
   /********Create table for OLAP Operation********/
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   product id INT,
   store id INT,
   sales amount INT,
   sales date DATE

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  (101, 1, 150, '2024-01-10'),
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  (101, 2, 100, '2024-02-10'),
  (103, 1, 250, '2024-03-05'),
  (101, 3, 300, '2024-04-20'),
  (102, 2, 400, '2024-05-10'),
  (103, 3, 500, '2024-06-25'),
  (101, 1, 350, '2024-07-15')
  SELECT * FROM sales
```



Slice:

/*A slice operation in OLAP allows you to filter data along a specific dimension --perform a slice operation to get 'sales' data for product id 101*/

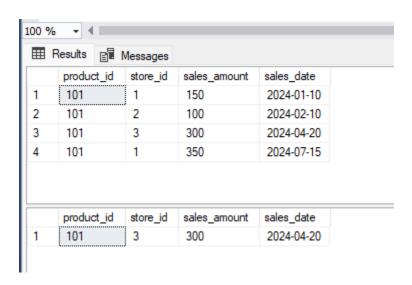
```
/******SLICE Operation*****/

SELECT * FROM sales WHERE product id = 101;

--slice operation for a specific 'time period' between '2024-04-01' and '2024-06-30'

SELECT * FROM sales WHERE product id = 101 AND sales date BETWEEN '2024-04-01'

AND '2024-06-30';
```



Drill Down Operation

/* A drill-down operation in SQL is used to move from summary data to more detailed data. Summarize total sales amount by store_id -- */

```
/*drill down*/
□ SELECT
  store_id,
 SUM(sales amount) AS total_sales
  sales
 GROUP BY
 store_id;
 -- Drill down to a more detailed level by "store_id"
□ SELECT
 store_id,
 SUM(sales_amount) AS total_sales
 FROM
 sales
 GROUP BY
 product_id,
 store id;
```

100 %	•				
⊞ R	esults		Messages		
1	1		950		
2	2		500		
3	3		800		
	store_	id	total_s	sales	
1	1		500		
2	1		200		
3	1		250		
4	2		100		
5	2		400		
6	3		300		
7	3		500		