Experiment No. 2.3

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1. **Aim/Overview of the practical:**

   Questions on Joins in SQL

2. Code for practical:

In SQL, joins are used to combine rows from two or more tables based on a related column between them. Joins allow you to retrieve data from multiple tables, and they are a fundamental concept in relational databases. There are several types of joins, but the most common ones include INNER JOIN, LEFT JOIN (or LEFT OUTER JOIN), RIGHT JOIN (or RIGHT OUTER JOIN), and FULL JOIN (or FULL OUTER JOIN). Here's a brief definition and syntax for each of these join types:

Customers

id	first_name	last_name	age	country
1	John	Doe	31	USA
2	Robert	Luna	22	USA
3	David	Robinson	22	UK
4	John	Reinhardt	25	UK
5	Betty	Doe	28	UAE

Orders

order_id	item	amount	customer_id
1	Keyboard	400	4
2	Mouse	300	4
3	Monitor	12000	3
4	Keyboard	400	1
5	Mousepad	250	2

INNER JOIN:

Definition: Retrieves rows from both tables that have matching values in the specified columns, excluding rows with no matching values.

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Syntax:

SELECT columns FROM table1 INNER JOIN table2 ON table1.column = table2.column;

Example:

Select id, first_name, age from Customers

INNER JOIN Orders ON Customers.id = Orders.customer_id;

Output

id	first_name	age
4	John	25
4	John	25
3	David	22
1	John	31
2	Robert	22

LEFT JOIN (or LEFT OUTER JOIN):

Definition: Retrieves all rows from the left table and the matching rows from the right table. If there are no matches, NULL values are returned for the columns from the right table.

Syntax:

SELECT columns FROM table1 LEFT JOIN table2 ON table1.column = table2.column;

Example:

Select id, first_name, age from Customers

LEFT JOIN Orders ON Customers.id = Orders.customer_id;

Output

id	first_name	age
1	John	31
2	Robert	22
3	David	22
4	John	25
4	John	25
5	Betty	28

RIGHT JOIN (or RIGHT OUTER JOIN):

Definition: Retrieves all rows from the right table and the matching rows from the left table. If there are no matches, NULL values are returned for the columns from the left table.

Syntax:

SELECT columns FROM table1 RIGHT JOIN table2 ON table1.column = table2.column;

Example:

Select id, first_name, age from Customers

Right JOIN Orders ON Customers.id = Orders.customer_id;

Output

id
1
2
3
4
5

FULL JOIN (or FULL OUTER JOIN):

Definition: Retrieves all rows when there is a match in either the left or the right table. NULL values are returned for columns that don't have matches.

Syntax:

SELECT columns FROM table1 FULL JOIN table2 ON table1.column = table2.column;

Example:

Select id, first_name, age from Customers

FULL JOIN Orders ON Customers.id = Orders.customer_id;

Output

id	first_name	age	order_id	item	amount
1	John	31	1	Keyboard	400
1	John	31	2	Mouse	300
1	John	31	3	Monitor	12000
1	John	31	4	Keyboard	400
1	John	31	5	Mousepad	250
2	Robert	22	1	Keyboard	400
2	Robert	22	2	Mouse	300
2	Robert	22	3	Monitor	12000

************************************** **THE END** **************************************