

EXERCISE 4: SQL JOINS

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Date: 9/8/2024

Create three tables: salesman, customer and orders.

SALESMAN(SALESMAN_ID, NAME, CITY, COMMISSION)

CUSTOMER(CUSTOMER_ID, CUST_NAME, CITY, GRADE, SALESMAN_ID)

ORDERS(ORDER_NO, ORDER_AMT, ORDER_DATE, CUST_ID, SALESMAN_ID)

-- Create SALESMAN table

```
CREATE TABLE SALESMAN_1017 (  
    SALESMAN_ID CHAR(2) PRIMARY KEY,  
    NAME VARCHAR2(15) NOT NULL,  
    CITY VARCHAR2(15),  
    COMMISSION NUMBER  
);
```

-- Create CUSTOMER table

```
CREATE TABLE CUSTOMER_1017 (  
    CUSTOMER_ID CHAR(2) PRIMARY KEY,  
    CUST_NAME VARCHAR2(15) NOT NULL,  
    CITY VARCHAR2(15),  
    GRADE NUMBER,  
    SALESMAN_ID CHAR(2),  
    FOREIGN KEY (SALESMAN_ID) REFERENCES SALESMAN_1017(SALESMAN_ID)  
);
```

-- Create ORDERS table

```
CREATE TABLE ORDERS_1017 (  
    ORDER_NO CHAR(2) PRIMARY KEY,  
    ORDER_AMT NUMBER,  
    ORDER_DATE DATE,  
    CUST_ID CHAR(2),  
    SALESMAN_ID CHAR(2),  
    FOREIGN KEY (CUST_ID) REFERENCES CUSTOMER_1017(CUSTOMER_ID),  
    FOREIGN KEY (SALESMAN_ID) REFERENCES SALESMAN_1017(SALESMAN_ID)  
);
```

INSERT ALL

INTO SALESMAN_1017 VALUES ('S1', 'Suraj', 'Pune', 15)

INTO SALESMAN_1017 VALUES ('S2', 'Swapnil', 'Mumbai', 12)

INTO SALESMAN_1017 VALUES ('S3', 'Sachin', 'Delhi', 20)

```

    INTO SALESMAN_1017 VALUES ('S4', 'Sameer', 'Kolkata', 8)
    INTO SALESMAN_1017 VALUES ('S5', 'Shivraj', 'Surat ', 10)
Select * from dual;

```

INSERT ALL

```

    INTO CUSTOMER_1017 VALUES ('C1', 'Chirag', 'Banglore', 100, 'S1')
    INTO CUSTOMER_1017 VALUES ('C2', 'Chetan', 'Chennai', 500, NULL)
    INTO CUSTOMER_1017 VALUES ('C3', 'Charan', 'Pune', 200, 'S3')
    INTO CUSTOMER_1017 VALUES ('C4', 'Chris', 'Lucknow', 700, 'S4')
    INTO CUSTOMER_1017 VALUES ('C5', 'Charlie', 'Goa', 600, 'S5')

```

Select * from dual;

INSERT ALL

```

    INTO ORDERS_1017 VALUES ('O1', 850, TO_DATE('2024-08-07', 'YYYY-MM-DD'), 'C5',
'S5')
    INTO ORDERS_1017 VALUES ('O2', 3200, TO_DATE('2024-04-02', 'YYYY-MM-DD'), 'C1',
'S1')
    INTO ORDERS_1017 VALUES ('O3', 560, TO_DATE('2023-10-03', 'YYYY-MM-DD'), 'C4',
'S4')
    INTO ORDERS_1017 VALUES ('O4', 4020, TO_DATE('2024-01-06', 'YYYY-MM-DD'), 'C3',
'S3')
    INTO ORDERS_1017 VALUES ('O5', 1680, TO_DATE('2024-06-05', 'YYYY-MM-DD'), 'C2',
NULL)

```

Select * from dual;

SALESMAN_ID	NAME	CITY	COMMISION
S1	SURAJ	PUNE	15
S2	SWAPNIL	MUMBAI	12
S3	SACHIN	DELHI	20
S4	SAMEER	KOLKATA	8
S5	SHIVRAJ	SURAT	10

CUSTOMER_ID	CUST_NAME	CITY	GRADE	SALESMAN_ID
C1	CHIRAG	BANGLORE	100	S1
C2	CHETAN	CHENNAI	500	NULL
C3	CHARAN	PUNE	200	S3
C4	CHRIS	LUCKNOW	700	S4
C5	CHARLIE	GOA	600	S5

ORDER_NO	ORDER_AMT	ORDER_DATE	CUST_ID	SALESMAN_ID
01	850	7-8-2024	C5	S5
02	3200	2-4-2024	C1	S1
03	560	3-10-2023	C4	S4
04	4020	6-1-2024	C3	S3
05	1680	5-6-2024	C2	Null

Write SQL statement to

1. Prepare a list with salesman name, customer name and their cities for the salesmen and customer who belongs to the same city.

```

SELECT
    s.NAME AS SALESMAN_NAME,
    c.CUST_NAME AS CUSTOMER_NAME,
    s.CITY
FROM
    SALESMAN_1017 s
JOIN
    CUSTOMER_1017 c
ON
    s.CITY = c.CITY;

```

SALESMAN_NAME	CUSTOMER_NAME	CITY
Suraj	Charan	Pune

2. Make a list with order no, purchase amount, customer name and their cities for those orders which order amount between 500 and 2000.

```

SELECT
    o.ORDER_NO,
    o.ORDER_AMT,
    c.CUST_NAME,
    c.CITY
FROM
    ORDERS_1017 o
INNER JOIN
    CUSTOMER_1017 c
ON
    o.CUST_ID = c.CUSTOMER_ID
WHERE
    o.ORDER_AMT BETWEEN 500 AND 2000;

```

OR	ORDER_AMT	CUST_NAME	CITY
----	-----	-----	-----
01	850	Charlie	Goa
03	560	Chris	Lucknow
05	1680	Chetan	Chennai

3. Know which salesman is working for which customer.

```

SELECT
    s.NAME AS SALESMAN_NAME,
    c.CUST_NAME AS CUSTOMER_NAME
FROM
    SALESMAN_1017 s
LEFT JOIN
    CUSTOMER_1017 c
ON
    s.SALESMAN_ID = c.SALESMAN_ID;

```

SALESMAN_NAME	CUSTOMER_NAME
-----	-----
Suraj	Chirag
Swapnil	
Sachin	Charan
Sameer	Chris
Shivraj	Charlie

4. Find the list of customers who appointed a salesman for their jobs who gets a commission from the company is more than 12%.

```

SELECT
    c.CUST_NAME,
    c.CITY,
    s.NAME AS SALESMAN_NAME,
    s.COMMISSION
FROM
    CUSTOMER_1017 c
INNER JOIN
    SALESMAN_1017 s

```

```

ON
  c.SALESMAN_ID = s.SALESMAN_ID
WHERE
  s.COMMISSION > 12;

```

CUST_NAME	CITY	SALESMAN_NAME	COMMISSION
Chirag	Banglore	Suraj	15
Charan	Pune	Sachin	20

5. Find the list of customers who appointed a salesman for their jobs who does not live in the same city where their customer lives, and gets a commission is above 12%

```

SELECT
  c.CUST_NAME,
  c.CITY AS CUSTOMER_CITY,
  s.NAME AS SALESMAN_NAME,
  s.CITY AS SALESMAN_CITY,
  s.COMMISSION
FROM
  CUSTOMER_1017 c
INNER JOIN
  SALESMAN_1017 s
ON
  c.SALESMAN_ID = s.SALESMAN_ID
WHERE
  s.COMMISSION > 12
  AND c.CITY <> s.CITY;

```

CUST_NAME	CUSTOMER_CITY	SALESMAN_NAME	SALESMAN_CITY	COMMISSION
Chirag	Banglore	Suraj	Pune	15
Charan	Pune	Sachin	Delhi	20

6. Find the details of an order i.e. order number, order date, amount of order, which customer gives the order and which salesman works for that customer and how much commission he gets for an order.

```

SELECT
  o.ORDER_NO,
  o.ORDER_DATE,
  o.ORDER_AMT,
  c.CUST_NAME,
  s.NAME AS SALESMAN_NAME,

```

```

        s.COMMISSION
FROM
    ORDERS_1017 o
JOIN
    CUSTOMER_1017 c
ON
    o.CUST_ID = c.CUSTOMER_ID
JOIN
    SALESMAN_1017 s
ON
    c.SALESMAN_ID = s.SALESMAN_ID;

```

OR	ORDER_DAT	ORDER_AMT	CUST_NAME	SALESMAN_NAME	COMMISSION
01	07-AUG-24	850	Charlie	Shivraj	10
02	02-APR-24	3200	Chirag	Suraj	15
03	03-OCT-23	560	Chris	Sameer	8
04	06-JAN-24	4020	Charan	Sachin	20

7. Make a join on the tables: salesman, customer and orders in such a form that the same column of each table will appear once and only the relational rows will come.

```

SELECT
    s.SALESMAN_ID,
    s.NAME AS SALESMAN_NAME,
    s.CITY AS SALESMAN_CITY,
    s.COMMISSION,
    c.CUSTOMER_ID,
    c.CUST_NAME,
    c.CITY AS CUSTOMER_CITY,
    c.GRADE,
    o.ORDER_NO,
    o.ORDER_AMT,
    o.ORDER_DATE
FROM
    SALESMAN_1017 s
INNER JOIN
    CUSTOMER_1017 c
ON
    s.SALESMAN_ID = c.SALESMAN_ID
INNER JOIN
    ORDERS_1017 o
ON
    c.CUSTOMER_ID = o.CUST_ID
    AND s.SALESMAN_ID = o.SALESMAN_ID;

```

SA	SALESMAN_NAME	SALESMAN_CITY	COMMISSION	CU	CUST_NAME	CUSTOMER_CITY	GRADE	OR	ORDER_AMT	ORDER_DAT
S5	Shivraj	Surat	10	C5	Charlie	Goa	600	01	850	07-AUG-24
S1	Suraj	Pune	15	C1	Chirag	Banglore	100	02	3200	02-APR-24
S4	Sameer	Kolkata	8	C4	Chris	Lucknow	700	03	560	03-OCT-23
S3	Sachin	Delhi	20	C3	Charan	Pune	200	04	4020	06-JAN-24

8. Make a list in ascending order for the customer who works either through a salesman or by own.

```

SELECT
    c.CUSTOMER_ID,
    c.CUST_NAME,
    c.CITY,
    s.NAME AS SALESMAN_NAME
FROM
    CUSTOMER_1017 c
LEFT JOIN
    SALESMAN_1017 s
ON
    c.SALESMAN_ID = s.SALESMAN_ID
ORDER BY
    c.CUSTOMER_ID ASC;

```

CU	CUST_NAME	CITY	SALESMAN_NAME
C1	Chirag	Banglore	Suraj
C2	Chetan	Chennai	
C3	Charan	Pune	Sachin
C4	Chris	Lucknow	Sameer
C5	Charlie	Goa	Shivraj

9. Make a list in ascending order for the customer who holds a grade less than 300 and works either through a salesman or by own.

```

SELECT
    c.CUSTOMER_ID,
    c.CUST_NAME,
    c.CITY,
    s.NAME AS SALESMAN_NAME
FROM
    CUSTOMER_1017 c
LEFT JOIN
    SALESMAN_1017 s
ON
    c.SALESMAN_ID = s.SALESMAN_ID

```

```

WHERE
    c.GRADE < 300
ORDER BY
    c.CUSTOMER_ID ASC;

```

CU	CUST_NAME	CITY	SALESMAN_NAME
C1	Chirag	Banglore	Suraj
C3	Charan	Pune	Sachin

10. Make a list in ascending order for the salesmen who work either for one or more customer or not yet join under any of the customers.

```

SELECT
    s.SALESMAN_ID,
    s.NAME AS SALESMAN_NAME,
    c.CUST_NAME
FROM
    SALESMAN_1017 s
LEFT JOIN
    CUSTOMER_1017 c
ON
    s.SALESMAN_ID = c.SALESMAN_ID
ORDER BY
    s.NAME ASC;

```

SA	SALESMAN_NAME	CUST_NAME
S3	Sachin	Charan
S4	Sameer	Chris
S5	Shivraj	Charlie
S1	Suraj	Chirag
S2	Swapnil	

11. Make a list for the salesmen who work either for one or more customer or not yet join under any of the customers who placed either one or more orders or no order to their Supplier.

```

SELECT
    s.SALESMAN_ID,
    s.NAME AS SALESMAN_NAME,

```



```

        c.CUST_NAME,
        o.ORDER_NO
FROM
    SALESMAN_1017 s
LEFT JOIN
    CUSTOMER_1017 c
ON
    s.SALESMAN_ID = c.SALESMAN_ID
LEFT JOIN
    ORDERS_1017 o
ON
    c.CUSTOMER_ID = o.CUST_ID
    AND s.SALESMAN_ID = o.SALESMAN_ID
ORDER BY
    s.NAME ASC;

```

SA	SALESMAN_NAME	CUST_NAME	OR
--	-----	-----	--
S3	Sachin	Charan	04
S4	Sameer	Chris	03
S5	Shivraj	Charlie	01
S1	Suraj	Chirag	02
S2	Swapnil		

12. Make a Cartesian product between salesman and customer i.e. each salesman will appear for all customers and vice versa.

```

SELECT
    s.SALESMAN_ID,
    s.NAME AS SALESMAN_NAME,
    c.CUSTOMER_ID,
    c.CUST_NAME
FROM
    SALESMAN_1017 s
CROSS JOIN
    CUSTOMER_1017 c;

```

SA	SALESMAN_NAME	CU	CUST_NAME
--	-----	--	-----
S1	Suraj	C1	Chirag
S1	Suraj	C2	Chetan
S1	Suraj	C3	Charan
S1	Suraj	C4	Chris
S1	Suraj	C5	Charlie
S2	Swapnil	C1	Chirag
S2	Swapnil	C2	Chetan
S2	Swapnil	C3	Charan
S2	Swapnil	C4	Chris
S2	Swapnil	C5	Charlie
S3	Sachin	C1	Chirag

SA	SALESMAN_NAME	CU	CUST_NAME
--	-----	--	-----
S3	Sachin	C2	Chetan
S3	Sachin	C3	Charan
S3	Sachin	C4	Chris
S3	Sachin	C5	Charlie
S4	Sameer	C1	Chirag
S4	Sameer	C2	Chetan
S4	Sameer	C3	Charan
S4	Sameer	C4	Chris
S4	Sameer	C5	Charlie
S5	Shivraj	C1	Chirag
S5	Shivraj	C2	Chetan

SA	SALESMAN_NAME	CU	CUST_NAME
--	-----	--	-----
S5	Shivraj	C3	Charan
S5	Shivraj	C4	Chris
S5	Shivraj	C5	Charlie

25 rows selected.