

## TASK\_3\_SQL\_QUERIES

### 1) Check & Replace 'NULLS' or empty gender values with 'NA':

#### a) Check for null or empty gender values:

```
SELECT
  Name,
  CASE
    WHEN Gender IS NULL OR Gender = " THEN 'Not Specified'
    ELSE Gender
  END AS GenderOutput
FROM customer_transaction
LIMIT 10;
```

#### b) Replace null and empty gender values with 'NA':

```
UPDATE customer_transaction
SET gender = 'NA'
WHERE gender IS NULL OR gender= ";
```

### 2) Basic Queries:

#### a) List all the customers names who made transactions above 1500, sorted by amount (highest first):

```
SELECT Name, Transaction_Amount
FROM customer_transaction
WHERE Transaction_Amount > 1500
ORDER BY Transaction_Amount DESC;
```

#### b) Show total transaction amount done by each gender:

```
SELECT Gender, SUM(Transaction_Amount) AS Total_Spent
FROM customer_transaction
GROUP BY Gender;
```

### 3) Subqueries:

#### a) Find the customers who spent more than the average transaction amount:

```
SELECT Name, Transaction_Amount
FROM customer_transaction
WHERE Transaction_Amount > (
  SELECT AVG(Transaction_Amount) FROM customer_transaction
);
```

**4) Aggregate Functions:**

**a) Show Average, Sum, Minimum, Maximum transaction amount:**

```
SELECT
    AVG(Transaction_Amount) AS Avg_Amount,
    MAX(Transaction_Amount) AS Max_Amount,
    MIN(Transaction_Amount) AS Min_Amount
FROM customer_transaction;
```

**5) Create Views:**

**a) Create a view of customers whose transactions are greater than 2000:**

```
CREATE VIEW high_value_customers AS
SELECT Name, Transaction_Amount
FROM customer_transaction
WHERE Transaction_Amount > 2000;
```

**b) Now, select from that view:**

```
SELECT * FROM high_value_customers;
```

**6) Indexing (for optimization):**

**a) Create an index on Customer\_ID to speed up lookups and joins:**

```
CREATE INDEX index_customer_id ON customer_transaction(Customer_ID);
```

**b) Create an index on Gender for filtering:**

```
CREATE INDEX index_gender ON customer_transaction(Gender);
```