**Supply Chain Analysis**

Creating Database and Table

create database supply\_chain;

use supply\_chain;

create table supply\_chain

(

Product\_type VARCHAR(50),

SKU VARCHAR(50),

Price DECIMAL(10, 2),

available\_quantity INT,

sold\_quantity INT,

revenue\_generated DECIMAL(15, 2),

Gender enum("non-binary","Male","Female"),

Stock\_level INT,

fulfillment\_lead\_time INT,

Order\_quantitie INT,

Shipping\_time INT,

Shipping\_carrier VARCHAR(50),

Shipping\_cost DECIMAL(15, 2),

Supplier\_name VARCHAR(100),

Location VARCHAR(100),

Supplier\_Lead\_time INT,

Production\_volume INT,

Manufacturing\_lead\_time INT,

Manufacturing\_cost DECIMAL(15, 2),

Inspection\_result VARCHAR(50),

Transportation\_mode VARCHAR(50),

Routes VARCHAR(50),

Cost DECIMAL(15, 2)

);

## Q1. Find the total revenue of the products

select product\_type , sum(revenue\_generated) as total\_revenue

from supply\_chain

group by product\_type

order by total\_revenue desc;

## Q2. Calculate the average fulfillment lead time for each supplier.

select supplier\_name, avg(fulfillment\_lead\_time) as Avg\_fulfillment\_time

from supply\_chain

group by supplier\_name;

## Q3. Identify the top 5 product's code that stock levels below 50 units

select sku,stock\_level

from supply\_chain

where stock\_level < 50

order by stock\_level desc limit 5;

## Q4. Determine the total manufacturing cost by supplier.

select supplier\_name , sum(Manufacturing\_cost) as total\_manufacturing\_cost

from supply\_chain

group by supplier\_name

order by total\_manufacturing\_cost;

## Q5. Find the top suppliers based on the quantity of products supplied.

select supplier\_name ,sum(Order\_quantitie)as total\_product\_supplied

from supply\_chain

group by supplier\_name

order by total\_product\_supplied desc limit 1 ;

## Q6. Calculate the average shipping cost for each transportation mode.

select Transportation\_mode , round(avg(Shipping\_cost),2) as avg\_shipping\_cost

from supply\_chain

group by Transportation\_mode

order by avg\_shipping\_cost desc;

## Q7. Identify the products with the highest sales volume.

select product\_type, sum(revenue\_generated) as total\_revenue

from supply\_chain

group by product\_type

order by total\_revenue desc;

## Q8. List suppliers name who located in 'Mumbai' and his total revenue greate than 30,000.

select supplier\_name , sum(revenue\_generated) as total\_revenue

from supply\_chain

where location= "mumbai"

group by supplier\_name

having sum(revenue\_generated) > 30000;

## Q9. Identify top 5 product with a fulfillment lead time exceeding 27 days.

select sku ,Supplier\_Lead\_time

from supply\_chain

where Supplier\_Lead\_time > 27

order by Supplier\_Lead\_time desc limit 5;

## Q10. List all the transportation modes used for shipping the most products in descendeing order.

select Transportation\_mode, sum(sold\_quantity) as total\_quantity\_shipped

from supply\_chain

group by Transportation\_mode

order by total\_quantity\_shipped desc;

## Q11. count the supplier inspection where result is fail

select supplier\_name ,

count(Inspection\_result)

from supply\_chain

where Inspection\_result = "fail"

group by supplier\_name

order by count(Inspection\_result);

## Q12. Find the suppliers with the highest variance in lead times.

select supplier\_name , max(Supplier\_Lead\_time) as max\_lead\_time,

min(Supplier\_Lead\_time) as min\_lead\_time,

max(Supplier\_Lead\_time)-min(Supplier\_Lead\_time) as lead\_time\_varience

from supply\_chain

group by supplier\_name

order by lead\_time\_varience;

## Q13. Identify the most cost effective routes for transporting products.

select routes , avg(cost) as avg\_cost

from supply\_chain

group by routes

order by avg\_cost;