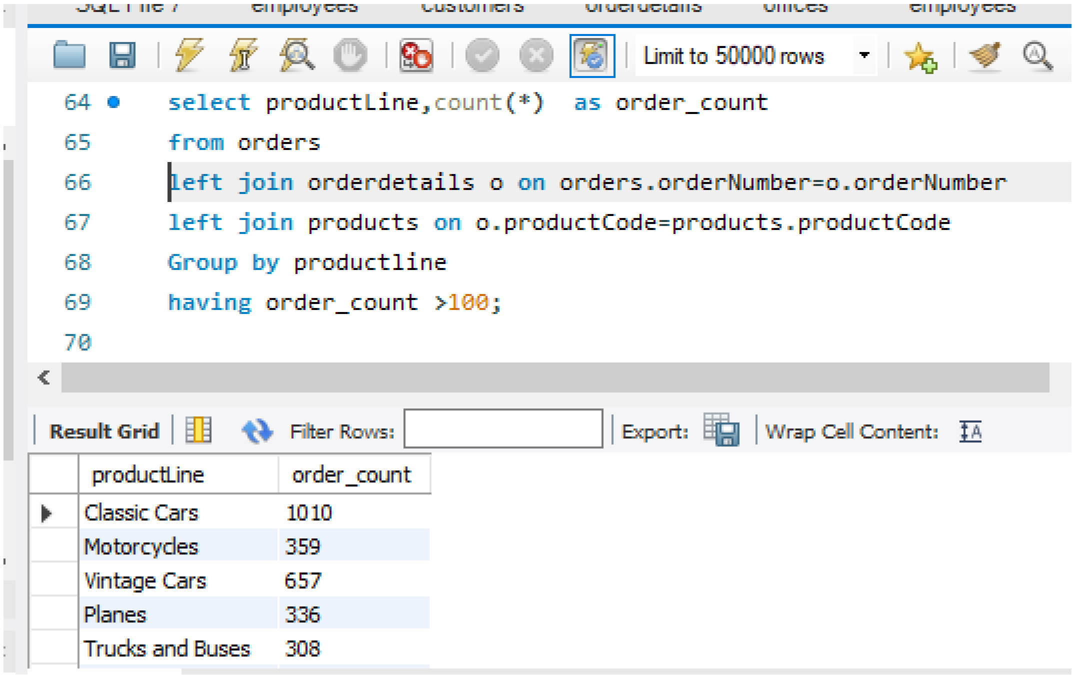
1. Order count for each productline where orders are more than 100 (Hint: Use Having)

```
select productLine,count(*)  as order_count
from orders
left join orderdetails o on orders.orderNumber=o.orderNumber
left join products on o.productCode=products.productCode
Group by productline
having order_count >100;
```

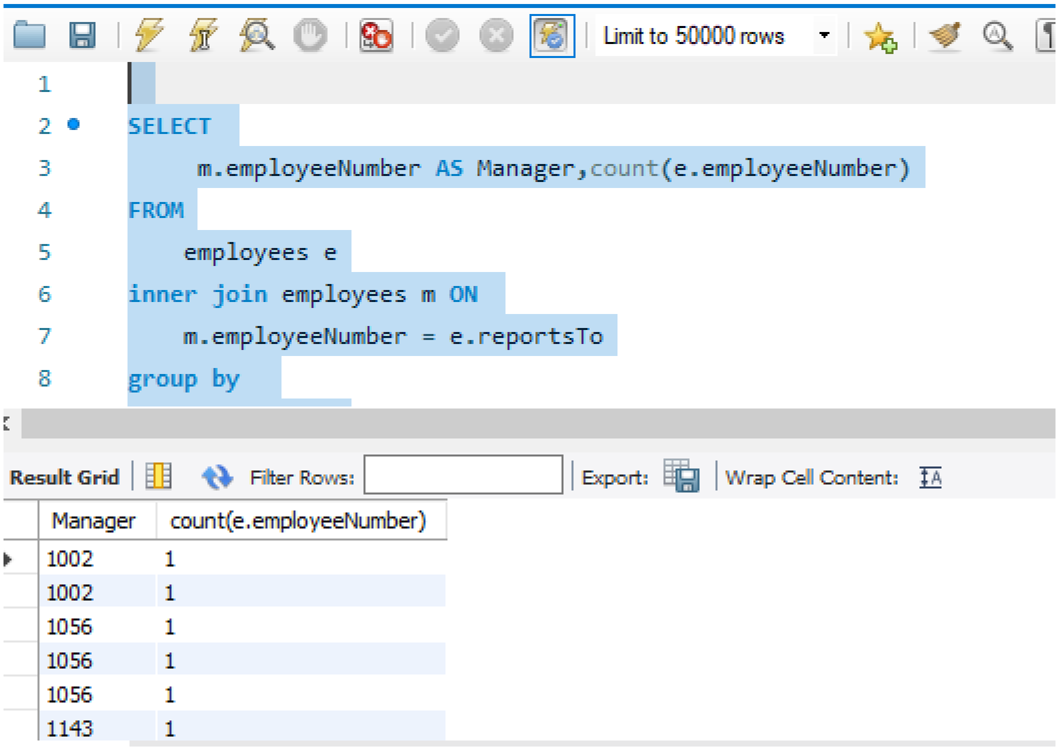


```
select productLine,count(*)  as order_count
from orders
left join orderdetails o on orders.orderNumber=o.orderNumber
left join products on o.productCode=products.productCode
Group by productline
having order_count >100;
```

productLine	order_count
Classic Cars	1010
Motorcycles	359
Vintage Cars	657
Planes	336
Trucks and Buses	308

2. Count of employees against each manager name (Hint: Use Self Join)

```
 SELECT
    m.employeeNumber AS Manager,count(e.employeeNumber)
FROM
    employees e
inner join employees m ON
    m.employeeNumber = e.reportsTo
group by
e.employeenumber
```

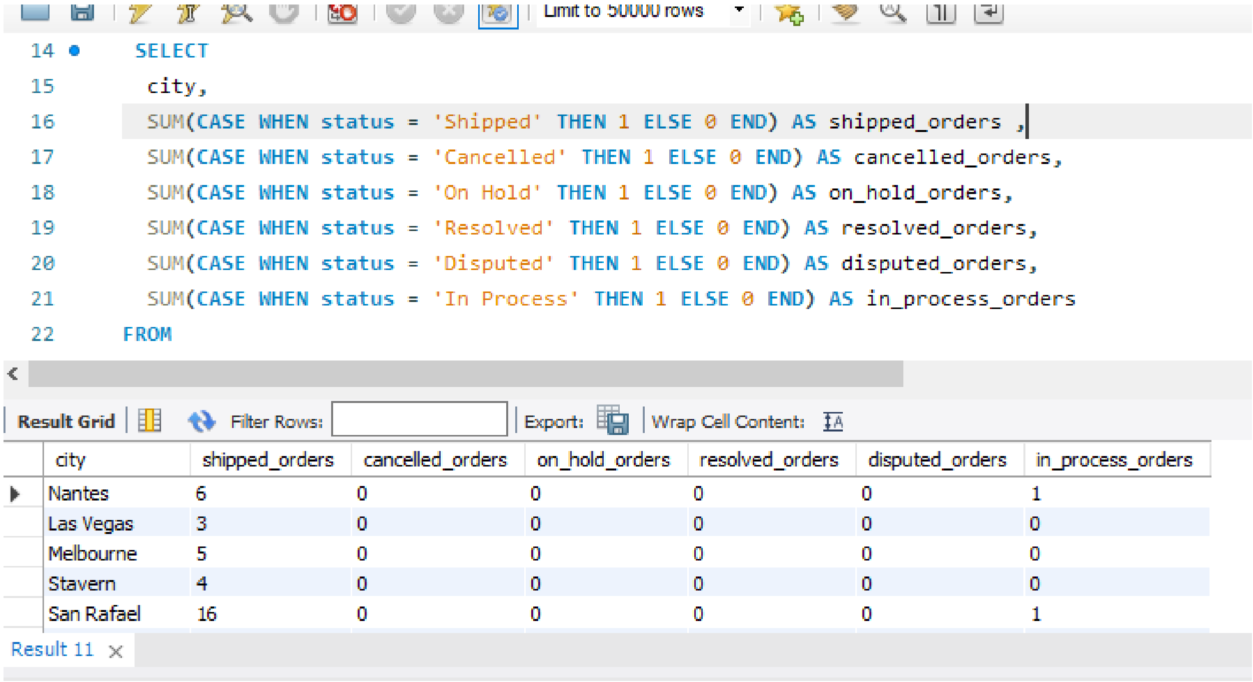


```

SELECT
    m.employeeNumber AS Manager,count(e.employeeNumber)
FROM
    employees e
inner join employees m ON
    m.employeeNumber = e.reportsTo
group by
```

```
Manager  count(e.employeeNumber)
1002     1
1002     1
1056     1
1056     1
1056     1
1143     1
```

3. For each city, create individual columns of order count by each Order Status available in Database (Hint: Use CASE)

```
SELECT

  city,

  SUM(CASE WHEN status = 'Shipped' THEN 1 ELSE 0 END) AS shipped_orders ,

  SUM(CASE WHEN status = 'Cancelled' THEN 1 ELSE 0 END) AS cancelled_orders,

  SUM(CASE WHEN status = 'On Hold' THEN 1 ELSE 0 END) AS on_hold_orders,

  SUM(CASE WHEN status = 'Resolved' THEN 1 ELSE 0 END) AS resolved_orders,

  SUM(CASE WHEN status = 'Disputed' THEN 1 ELSE 0 END) AS disputed_orders,

  SUM(CASE WHEN status = 'In Process' THEN 1 ELSE 0 END) AS in_process_orders

FROM

  orders

right JOIN customers ON orders.customerNumber = customers.customerNumber

GROUP BY  city;
```

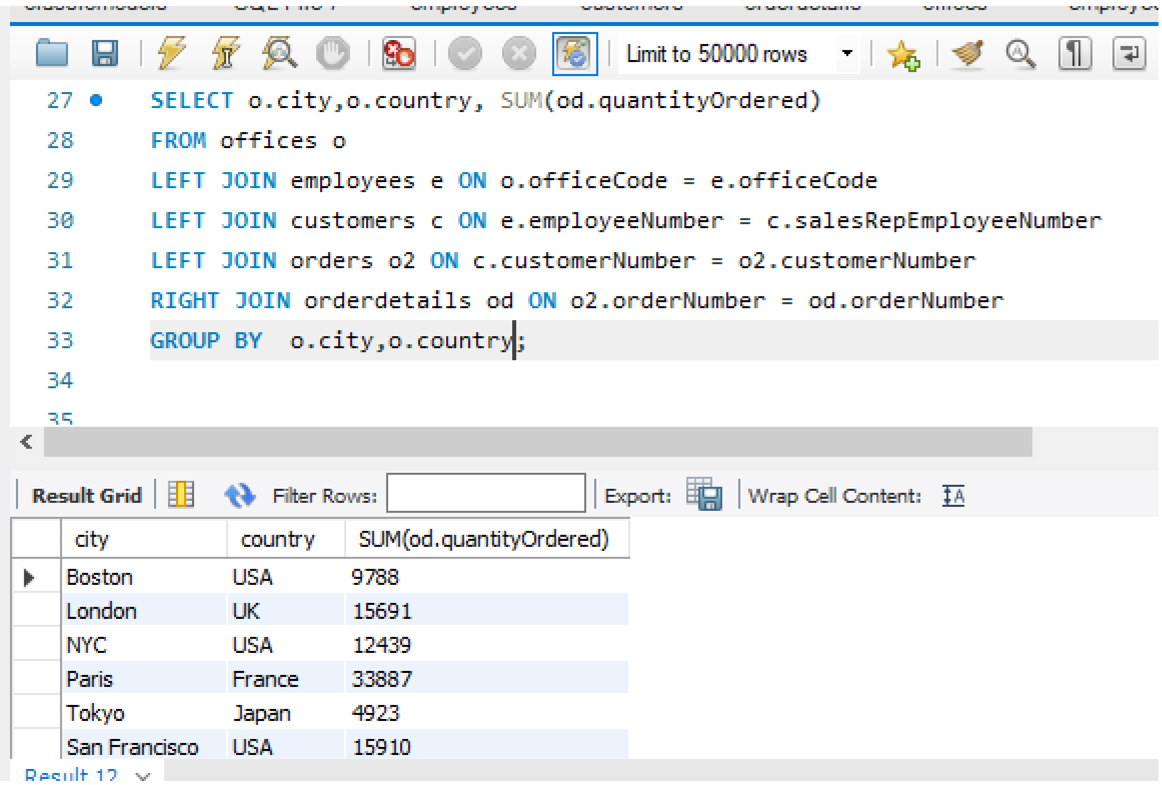


```
SELECT
  city,
  SUM(CASE WHEN status = 'Shipped' THEN 1 ELSE 0 END) AS shipped_orders ,
  SUM(CASE WHEN status = 'Cancelled' THEN 1 ELSE 0 END) AS cancelled_orders,
  SUM(CASE WHEN status = 'On Hold' THEN 1 ELSE 0 END) AS on_hold_orders,
  SUM(CASE WHEN status = 'Resolved' THEN 1 ELSE 0 END) AS resolved_orders,
  SUM(CASE WHEN status = 'Disputed' THEN 1 ELSE 0 END) AS disputed_orders,
  SUM(CASE WHEN status = 'In Process' THEN 1 ELSE 0 END) AS in_process_orders
FROM
```

city	shipped_orders	cancelled_orders	on_hold_orders	resolved_orders	disputed_orders	in_process_orders
Nantes	6	0	0	0	0	1
Las Vegas	3	0	0	0	0	0
Melbourne	5	0	0	0	0	0
Stavern	4	0	0	0	0	0
San Rafael	16	0	0	0	0	1

4. For each office total order sold (Using Multiple Joins)

```
SELECT o.city,o.country, SUM(od.quantityOrdered)

FROM offices o

LEFT JOIN employees e ON o.officeCode = e.officeCode

LEFT JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber

LEFT JOIN orders o2 ON c.customerNumber = o2.customerNumber

RIGHT JOIN orderdetails od ON o2.orderNumber = od.orderNumber

GROUP BY  o.city,o.country;
```

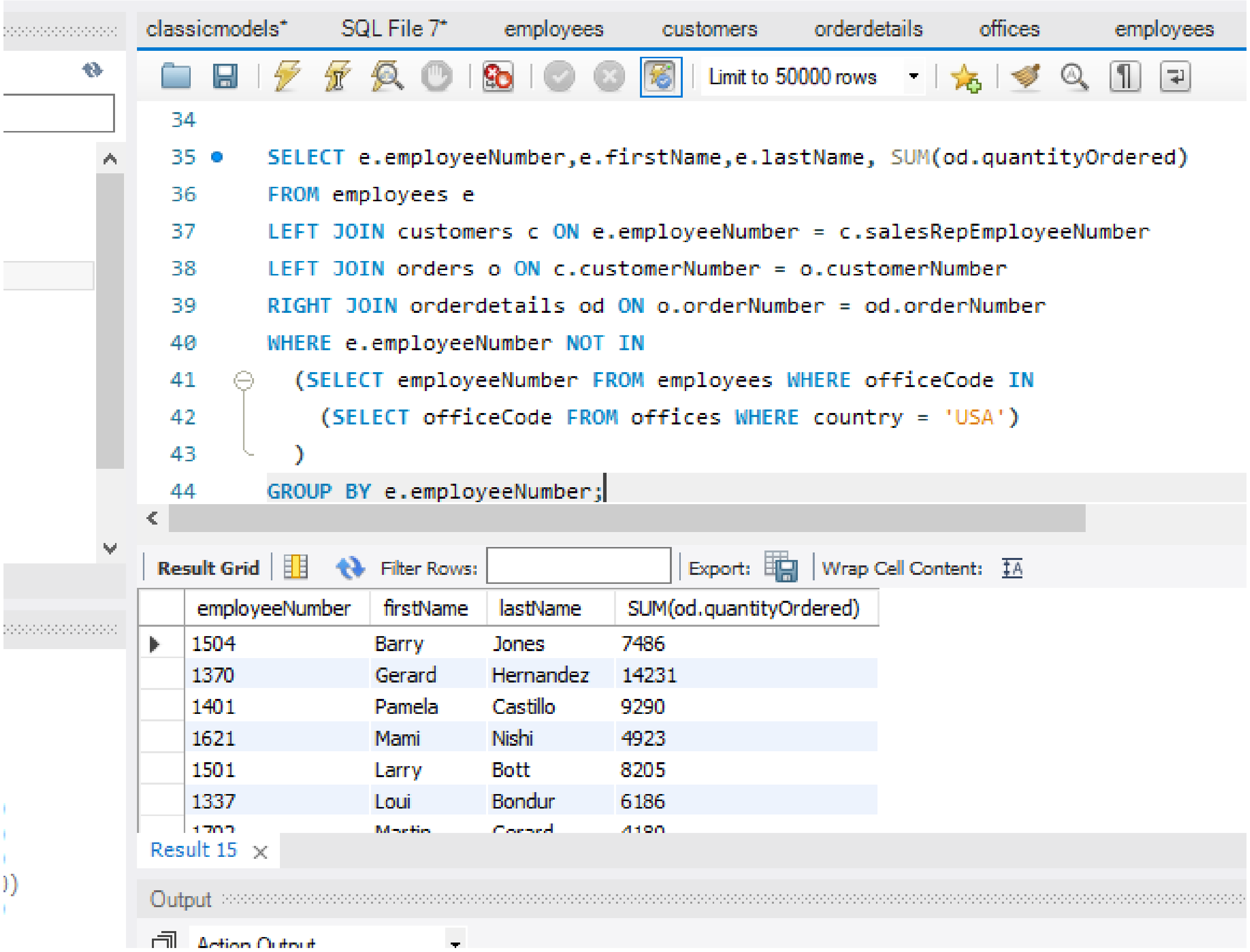


```
SELECT o.city,o.country, SUM(od.quantityOrdered)
FROM offices o
LEFT JOIN employees e ON o.officeCode = e.officeCode
LEFT JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
LEFT JOIN orders o2 ON c.customerNumber = o2.customerNumber
RIGHT JOIN orderdetails od ON o2.orderNumber = od.orderNumber
GROUP BY  o.city,o.country;
```

city	country	SUM(od.quantityOrdered)
Boston	USA	9788
London	UK	15691
NYC	USA	12439
Paris	France	33887
Tokyo	Japan	4923
San Francisco	USA	15910

5. For each Employee total order sold (Exclude those Employees which are in USA) (Use Sub-Query in Where)

```
SELECT e.employeeNumber,e.firstName,e.lastName, SUM(od.quantityOrdered)

FROM employees e

LEFT JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber

LEFT JOIN orders o ON c.customerNumber = o.customerNumber

RIGHT JOIN orderdetails od ON o.orderNumber = od.orderNumber

WHERE e.employeeNumber NOT IN

  (SELECT employeeNumber FROM employees WHERE officeCode IN

    (SELECT officeCode FROM offices WHERE country = 'USA')

  )

GROUP BY e.employeeNumber;
```

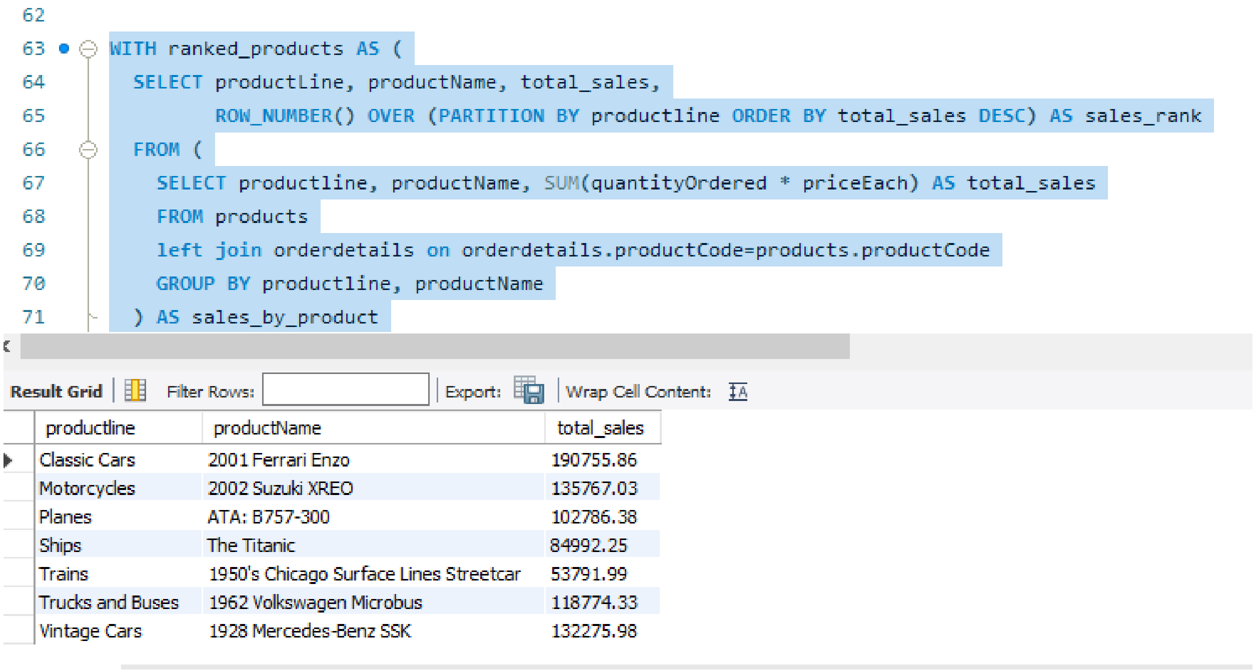


```
SELECT e.employeeNumber,e.firstName,e.lastName, SUM(od.quantityOrdered)
FROM employees e
LEFT JOIN customers c ON e.employeeNumber = c.salesRepEmployeeNumber
LEFT JOIN orders o ON c.customerNumber = o.customerNumber
RIGHT JOIN orderdetails od ON o.orderNumber = od.orderNumber
WHERE e.employeeNumber NOT IN
  (SELECT employeeNumber FROM employees WHERE officeCode IN
    (SELECT officeCode FROM offices WHERE country = 'USA')
  )
GROUP BY e.employeeNumber;
```

employeeNumber	firstName	lastName	SUM(od.quantityOrdered)
1504	Barry	Jones	7486
1370	Gerard	Hernandez	14231
1401	Pamela	Castillo	9290
1621	Mami	Nishi	4923
1501	Larry	Bott	8205
1337	Loui	Bondur	6186
1702	Martin	Gerard	4180

6. 2nd highest selling product for each Productline. (Use Window Function & CTE Approach)

```
WITH ranked_products AS (
 SELECT productLine, productName, total_sales,
     ROW_NUMBER() OVER (PARTITION BY productline ORDER BY total_sales DESC) AS sales_rank
 FROM (
  SELECT productline, productName, SUM(quantityOrdered * priceEach) AS total_sales
  FROM products
  left join orderdetails on orderdetails.productCode=products.productCode
  GROUP BY productline, productName
 ) AS sales_by_product
)
SELECT productline, productName, total_sales
FROM ranked_products
WHERE sales_rank = 2;
```



```
WITH ranked_products AS (
  SELECT productLine, productName, total_sales,
         ROW_NUMBER() OVER (PARTITION BY productline ORDER BY total_sales DESC) AS sales_rank
  FROM (
    SELECT productline, productName, SUM(quantityOrdered * priceEach) AS total_sales
    FROM products
    left join orderdetails on orderdetails.productCode=products.productCode
    GROUP BY productline, productName
  ) AS sales_by_product
```

productline	productName	total_sales
Classic Cars	2001 Ferrari Enzo	190755.86
Motorcycles	2002 Suzuki XREO	135767.03
Planes	ATA: B757-300	102786.38
Ships	The Titanic	84992.25
Trains	1950's Chicago Surface Lines Streetcar	53791.99
Trucks and Buses	1962 Volkswagen Microbus	118774.33
Vintage Cars	1928 Mercedes-Benz SSK	132275.98

1. Creating a View (5 Marks):

Create a view “complaints_last_3_months_sum” of Number of Complaints received against the following attributes in last three months use “date_received” column, use the Original Table & Data you have from Airflow Assignment Dump:

1. state
2. product
3. issue
4. sub_product
5. sub_issue

```
CREATE VIEW complaints_last_3_months_sum AS
SELECT
  state,
  product,
  issue,
  sub_product,
  sub_issue,
  COUNT(*) AS num_complaints
FROM complaints
WHERE date_received >= DATE_SUB(CURRENT_DATE, INTERVAL 3 MONTH)
GROUP BY state, product, issue, sub_product, sub_issue;
```

2. Creating a Procedure (10 Marks):

Create a procedure that intakes a Date Parameter and uses it to migrate data from Original table to another table for all the Complaints received in Last 3 Months use “date_received” column to replicate data into another table. Name the table as “complaints_last_3_months”

For Example if the Parameter Date is 28-Feb-2023 then the Data pulled from one table to the another must be between 01-DEC-22 to 28-FEB-23

Table to Migrate from: use the Original Table & Data you have from Airflow Assignment Dump

Table to Migrate to: “complaints_last_3_months”

```
DELIMITER $$

CREATE PROCEDURE migrate_complaints_last_3_months (p_date DATE)

BEGIN

  INSERT INTO complaints_last_3_months

  SELECT *

  FROM complaints

  WHERE date_received >= DATE_SUB(LAST_DAY(DATE_SUB(p_date, INTERVAL 3 MONTH)),
INTERVAL 3 MONTH)

    AND date_received <= p_date;

END$$

DELIMITER ;
```

3. Creating a Trigger (5 Marks):

Create a trigger that updates “complaints_last_3_months” table with new record whenever the data is inserted in original financial consumer complaints table based on same criteria of Complaints received in Last 3 Months use “date_received” column. (Hint: On Insert Trigger will be used)

```
 DELIMITER $$

CREATE TRIGGER insert_complaints_trigger
```

```
AFTER INSERT ON complaindb.complaints
FOR EACH ROW
BEGIN
  INSERT INTO complaints_last_3_months (complaint_id, date_received, complaints)
  SELECT id, date_received, complaints
  FROM original_complaints_table
  WHERE date_received >= DATE_SUB(SYSDATE(), INTERVAL '3' MONTH);
END$$
DELIMITER ;
```