# SQL

## CASE
## PROBLEMS

# PART: 3

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# Creating Table

```sql
-- Creating Schema
create schema market_star_schema;

-- create table
use market_star_schema;
```

# Creating Customer Table

```sql
CREATE TABLE `cust_dimen` (
  `Cust_id` varchar(12) NOT NULL,
  `Customer_Name` varchar(25) DEFAULT NULL,
  `City` varchar(12) DEFAULT NULL,
  `State` varchar(12) DEFAULT NULL,
  `Customer_Segment` varchar(25) DEFAULT NULL,
  PRIMARY KEY (`Cust_id`)
);
```

# Creating Shipping Table

```sql
CREATE TABLE `shipping_dimen` (
  `Ship_id` varchar(12) NOT NULL,
  `Order_Number` int(11) NOT NULL,
  `Ship_Mode` varchar(25) DEFAULT NULL,
  `Ship_Date` date DEFAULT NULL,
  PRIMARY KEY (`Ship_id`)
);
```

# Creating Orders Table

```sql
CREATE TABLE `orders_dimen` (
  `Ord_id` varchar(12) NOT NULL,
  `Order_Number` int(11) NOT NULL,
  `Order_Date` date DEFAULT NULL,
  `Order_Priority` varchar(25) DEFAULT NULL,
  PRIMARY KEY (`Ord_id`),
  KEY `Order_Number_index` (`Order_Number`)
);
```

# Creating Market fact table

```sql
CREATE TABLE `market_fact_full` (
  `Market_fact_id` int(11) NOT NULL,
  `Ord_id` varchar(12) DEFAULT NULL,
  `Prod_id` varchar(12) DEFAULT NULL,
  `Ship_id` varchar(12) DEFAULT NULL,
  `Cust_id` varchar(12) DEFAULT NULL,
  `Sales` decimal(65,30) DEFAULT NULL,
  `Discount` decimal(12,2) DEFAULT NULL,
  `Order_Quantity` int(11) NOT NULL,
  `Profit` decimal(12,2) DEFAULT NULL,
  `Shipping_Cost` decimal(12,2) DEFAULT NULL,
  `Product_Base_Margin` decimal(12,2) DEFAULT NULL,
  PRIMARY KEY (`Market_fact_id`),
  KEY `Order_Quantity_index` (`Order_Quantity`),
  KEY `Ship_Id_idx` (`Ship_id`),
  CONSTRAINT `Cust_Id` FOREIGN KEY (`Cust_id`)
REFERENCES `cust_dimen` (`Cust_id`)
);
```

# Inserting records.

```sql
INSERT INTO `cust_dimen` VALUES
('Cust_1','MUHAMMED
MACINTYRE','Kolkata','West Bengal','SMALL
BUSINESS'),...

INSERT INTO `market_fact_full` VALUES
(1,'Ord_5446','Prod_16','SHP_7609',
'Cust_1818',136.810, 0.01, 23, -30.51, 3.60,
0.56) ,...

INSERT INTO `orders_dimen` VALUES
('Ord_1',3,'2010-10-13','LOW'),...
```

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# Problem:1

Print the customer names in proper case.

```sql
select concat(upper(substring(lower(
substring_index(customer_name,' ', 1)), 1,
1)),
substring(substring_index(lower(
customer_name),' ', 1), 2, 100), ' ',

upper(substring(lower(substring_index(
customer_name,' ', -1)), 1, 1)),
substring(substring_index(lower(
customer_name),' ', -1), 2, 100))
as title_case from cust_dimen;
```

# Problem:1

Print the customer names in proper case.

| | title_case |
|---|---|
| ▶ | Muhammed Macintyre |
| | Claudia Miner |
| | Charlotte Melton |
| | Jane Waco |
| | Sandra Flanagan |
| | Steve Nguyen |
| | Herbert Flentye |
| | Sandra Flanagan |

# Problem: 2

Print the product names in the following format: Category_Subcategory.

```
select concat(product_category, '_',
product_sub_category) from prod_dimen;
```

| | concat(product_category, '_', product_sub_category) |
|---|---|
| ▶ | OFFICE SUPPLIES_STORAGE & ORGANIZATION |
| | FURNITURE_BOOKCASES |
| | FURNITURE_TABLES |
| | OFFICE SUPPLIES_LABELS |
| | OFFICE SUPPLIES_PENS & ART SUPPLIES |
| | TECHNOLOGY_COPIERS AND FAX |
| | FURNITURE_CHAIRS & CHAIRMATS |

# Problem:3

replace all the spaces with underscore.

```sql
select replace(concat(product_category,
'_', product_sub_category),' ' , '_') from
prod_dimen;
```

| | replace(concat(product_category,'_', product_sub_category),' ' , '_') |
|---|---|
| ▶ | OFFICE_SUPPLIES_STORAGE_&_ORGANIZATION |
| | FURNITURE_BOOKCASES |
| | FURNITURE_TABLES |
| | OFFICE_SUPPLIES_LABELS |
| | OFFICE_SUPPLIES_PENS_&_ART_SUPPLIES |
| | TECHNOLOGY_COPIERS_AND_FAX |
| | FURNITURE_CHAIRS_&_CHAIRMATS |

# Problem: 4

In which month were the most orders shipped?

```sql
select count(ship_id) as
count_id, month(ship_date) as
months
 from shipping_dimen group by
month(ship_date) order by
count(ship_id) desc ;
```

# Problem: 4

In which month were the most orders shipped?

| | count_id | months |
|---|---|---|
| ▶ | 685 | 8 |
| | 682 | 5 |
| | 672 | 12 |
| | 657 | 7 |
| | 654 | 9 |
| | 639 | 3 |
| | 638 | 11 |
| | 628 | 10 |

# Problem: 5

In which month (by month name) were the most orders shipped?

```sql
select count(ship_id) as
count_id, monthname(ship_date) as
months
from shipping_dimen group by
monthname(ship_date) order by
count(ship_id) desc ;
```

# Problem: 5

In which month (by month name) were the most orders shipped?

| | count_id | months |
|---|---|---|
| ▶ | 685 | August |
| | 682 | May |
| | 672 | December |
| | 657 | July |
| | 654 | September |
| | 639 | March |
| | 638 | November |
| | 628 | October |

# Problem: 6

Which month and year combination saw the most number of critical orders?

```
select count(ord_id),
month(order_date), year(order_date)
from orders_dimen where
Order_Priority = "Critical"
group by year(order_date),
month(order_date) order by
count(ord_id) desc limit 1;
```

| count(ord_id) | month(order_date) | year(order_date) |
|---|---|---|
| ▶ 33 | 1 | 2009 |

# Problem: 7

Find the most commonly used mode of shipment in 2011.

```sql
select count(ship_mode), ship_mode from
shipping_dimen
where year(ship_date) = '2011' group by
ship_mode ;
```

| count(ship_mode) | ship_mode |
|---|---|
| ▶ 1319 | REGULAR AIR |
| 252 | DELIVERY TRUCK |
| 271 | EXPRESS AIR |

# Problem: 8

Print the order number of the most valuable order by sales.

```sql
select max(round(sales)), ord_id from market_fact_full group by ord_id order by max(sales) desc;
```

| ord_id | max(round(sales)) |
|--------|-------------------|
| Ord_5446 | 4702 |
| Ord_5485 | 4233 |
| Ord_4743 | 4072 |
| Ord_4725 | 3410 |
| Ord_2207 | 3364 |
| Ord_5456 | 2338 |
| Ord_1925 | 466 |
| Ord_2978 | 305 |

# Problem: 9

Print the name of the most frequent customer.

```sql
select customer_name, cust_id from
cust_dimen
where cust_id =
(select cust_id from market_fact_full
group by cust_id
order by count(cust_id)
desc limit 1);
```

| customer_name | cust_id |
|---|---|
| ▶ AARON BERGMAN | Cust_1818 |

# Problem: 10

Print the three most common products.

```sql
select prod_id, Product_Category,
Product_Sub_Category from
prod_dimen where prod_id in (select
prod_id from market_fact_full GROUP By
prod_id order by count(Prod_id) desc)
limit 3;
```

| prod_id | Product_Category | Product_Sub_Category |
|---------|------------------|----------------------|
| Prod_10 | FURNITURE | BOOKCASES |
| Prod_11 | FURNITURE | TABLES |
| Prod_12 | OFFICE SUPPLIES | LABELS |

# Problem: 11

Create a view to display the sales amounts, number of orders, profits made and shipping costs of all orders.

```sql
create view ord_detail as select
ord_id, round(sales), order_quantity,
profit, shipping_cost from
market_fact_full;
```

| | ord_id | round(sales) | order_quantity | profit | shipping_cost |
|---|--------|--------------|----------------|---------|---------------|
| ▶ | Ord_5446 | 137 | 23 | -30.51 | 3.60 |
| | Ord_5406 | 42 | 13 | 4.56 | 0.93 |
| | Ord_5446 | 4702 | 26 | 1148.90 | 2.50 |
| | Ord_5456 | 2338 | 43 | 729.34 | 14.30 |
| | Ord_5485 | 4233 | 35 | 1219.87 | 26.30 |
| | Ord_5446 | 164 | 23 | -47.64 | 6.15 |

# Problem:12

Query it to return all orders which have a profit of greater than 1000.

```
select ord_id, profit from ord_detail
where profit > 1000 ;
```

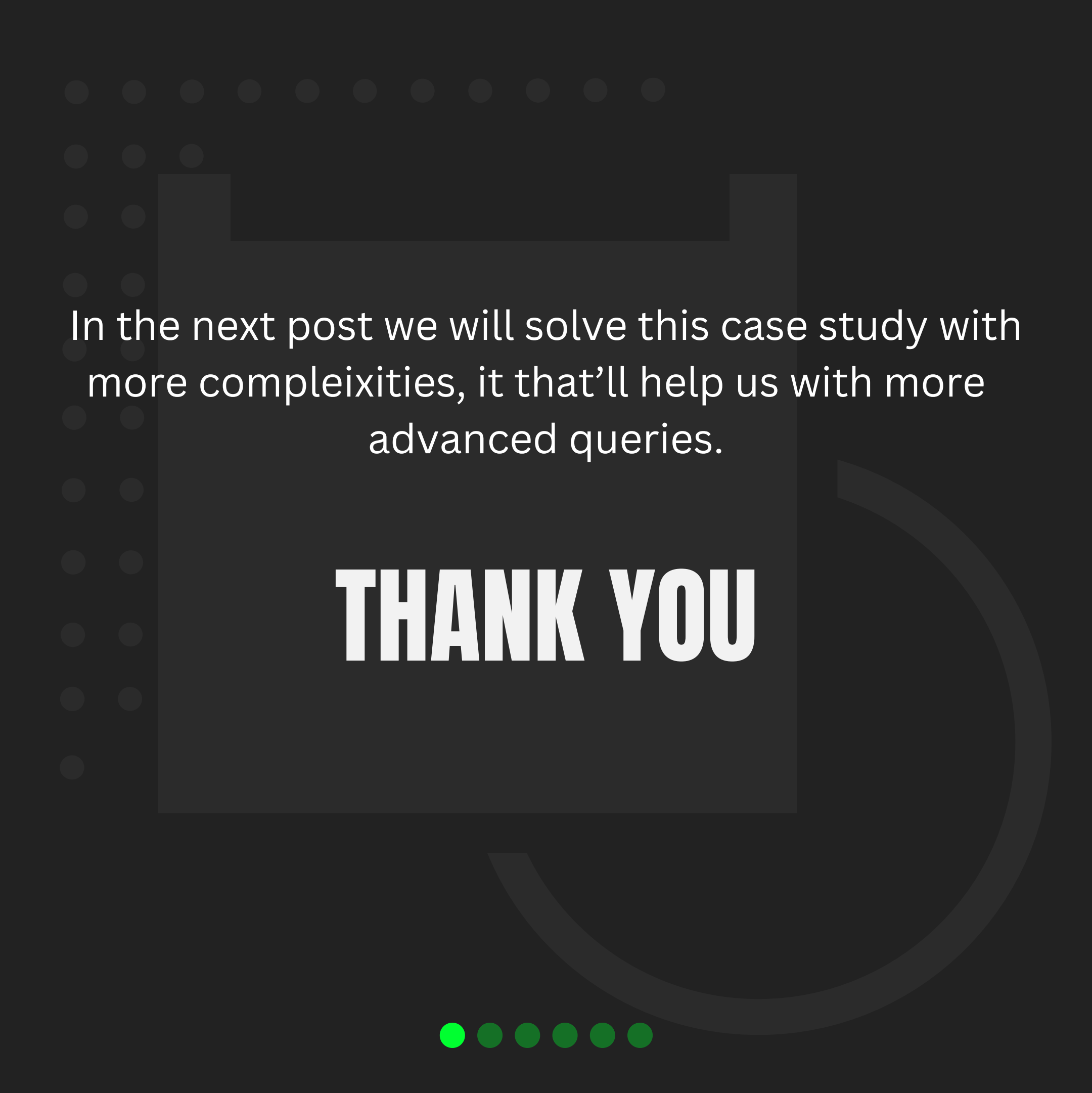| | ord_id | profit |
|---|---|---|
| ▶ | Ord_5446 | 1148.90 |
| | Ord_5485 | 1219.87 |
| | Ord_4725 | 1137.91 |
| | Ord_4743 | 1675.98 |

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# Problem:13

Which year generated the highest profit?

```sql
select year(order_date) from
orders_dimen where
ord_id in (select ord_id from
market_fact_full group by ord_id order
by sum(profit) desc) limit 1;
```

| | year(order_date) |
|---|---|
| ▶ | 2011 |

In the next post we will solve this case study with more compleixities, it that'll help us with more advanced queries.

# THANK YOU