

```
--SQL Advance Case Study
```

```
use [db_SQLCaseStudies]
```

```
select * from FACT_TRANSACTIONS
```

```
select * from DIM_CUSTOMER
```

```
select * from DIM_DATE
```

```
select * from DIM_LOCATION
```

```
select * from DIM_MANUFACTURER
```

```
select * from DIM_MODEL
```

```
--Q1-- List all the states in which we have customers who have bought cellphones  
from 2005 till today.
```

```
select DISTINCT(State)
```

```
from
```

```
FACT_TRANSACTIONS as FT LEFT JOIN DIM_LOCATION AS DL
```

```
ON FT.IDLocation=DL.IDLocation
```

```
LEFT JOIN DIM_DATE AS DD
```

```
ON FT.Date=DD.DATE
```

```
WHERE
```

```
YEAR>=2005
```

```
--Q2-- What states in the US is buying the most 'Samsung' cell phones?
```

```
SELECT TOP 1 Country, DL.State,Manufacturer_Name, COUNT(Quantity) AS  
Total_Buy_Quantity
```

```
FROM
```

```
FACT_TRANSACTIONS as FT LEFT JOIN DIM_LOCATION AS DL
```

```
ON FT.IDLocation=DL.IDLocation
```

```
LEFT JOIN DIM_MODEL AS DM
```

```
ON FT.IDModel=DM.IDModel
```

```
LEFT JOIN DIM_MANUFACTURER AS DMNF
```

```
ON DM.IDManufacturer=DMNF.IDManufacturer
```

```
group by Country,DL.State,Manufacturer_Name
```

```
having Country='US' and Manufacturer_Name='Samsung'
```

```
Order by Total_Buy_Quantity DESC
```

```
--Q3-- Show the number of transactions for each model per zip code per state.
```

```
SELECT DL.State, ZipCode,Model_Name,COUNT(*) AS NO_OF_TXN
```

```
FROM
```

```
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
```

```
ON FT.IDModel=DM.IDModel
```

```
LEFT JOIN DIM_LOCATION AS DL
```

```
ON FT.IDLocation=DL.IDLocation
```

```
GROUP BY DL.State, ZipCode,Model_Name
```

--Q4-- Show the cheapest cell phone

```
SELECT top 1 Model_Name,(sum(TotalPrice)/sum(Quantity)) as avg_sell_price FROM
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
group by Model_Name
order by avg_sell_price
```

--Q5-- Find out the average price for each model in the top5 manufacturers in terms of sales quantity and order by average price.

```
SELECT Manufacturer_Name,Model_Name, Round((sum(TotalPrice)/sum(Quantity)),2) as
avg_sell_price
FROM
FACT_TRANSACTIONS as FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
LEFT JOIN DIM_MANUFACTURER AS DMNF
ON DM.IDManufacturer=DMNF.IDManufacturer
group by Manufacturer_Name ,Model_Name
having Manufacturer_Name in (select manufacturer_name from ABC)
order by avg_sell_price
```

```
create view ABC as
select top 5 Manufacturer_Name,sum(Quantity)as Sales_Qty
FROM
FACT_TRANSACTIONS as FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
LEFT JOIN DIM_MANUFACTURER AS DMNF
ON DM.IDManufacturer=DMNF.IDManufacturer
group by Manufacturer_Name
order by Sales_Qty desc
```

--Q6-- List the name of customers and the average amount spent in 2009, where the average is higher than 500.

```
select Customer_Name, AVG(TotalPrice) as Average_spend_in_2009
from
(
SELECT Customer_Name,TotalPrice
from FACT_TRANSACTIONS as FT LEFT JOIN DIM_CUSTOMER AS DC
ON FT.IDCustomer=DC.IDCustomer
LEFT JOIN DIM_DATE AS DD
ON FT.Date=DD.DATE
WHERE YEAR=2009
)AS AB
```

```
group by Customer_Name
having AVG(TotalPrice)>500
```

```
--Q7-- List if there is any model that was in the top 5 in terms of quantity,
simultaneously in 2008, 2009, and 2010.
```

```
SELECT Model_Name FROM
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
group by Model_Name
having Model_Name in(select * from TopModel2008) and
Model_Name in(select * from TopModel2009) and
Model_Name in(select * from TopModel2010)
```

```
CREATE VIEW TopModel2008 as
SELECT Model_name from
(
SELECT TOP 5[YEAR],Model_Name,SUM(Quantity)as sales_in_qty FROM
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
LEFT JOIN DIM_DATE AS DD
ON FT.Date=DD.DATE
group by Model_Name,[YEAR]
having [YEAR]=2008
order by sales_in_qty desc
) as T1
```

```
CREATE VIEW TopModel2009 as
SELECT Model_name from
(
SELECT TOP 5[YEAR],Model_Name,SUM(Quantity)as sales_in_qty FROM
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
LEFT JOIN DIM_DATE AS DD
ON FT.Date=DD.DATE
group by Model_Name,[YEAR]
having [YEAR]=2009
order by sales_in_qty desc
) as T2
```

```
CREATE VIEW TopModel2010 as
SELECT Model_name from
(
SELECT TOP 5[YEAR],Model_Name,SUM(Quantity)as sales_in_qty FROM
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
LEFT JOIN DIM_DATE AS DD
```

```

ON FT.Date=DD.DATE
group by Model_Name,[YEAR]
having [YEAR]=2010
order by sales_in_qty desc
) as T3

```

--Q8-- Show the manufacturer with the 2nd top sales in the year of 2009 and the manufacturer with the 2nd top sales in the year of 2010.

```

SELECT Manufacturer_Name AS Manf_with_2nd_top_sales, YEAR from (select * from
    RANKING_2009) as T1 WHERE rank_by_sales=2
UNION
SELECT Manufacturer_Name AS Manf_with_2nd_top_sales, YEAR from (select * from
    RANKING_2010) as T1 WHERE rank_by_sales=2

```

```

CREATE VIEW RANKING_2009 AS
SELECT RANK() over(order by (SUM(TotalPrice)) desc) AS rank_by_sales ,YEAR,
    Manufacturer_Name, SUM(TotalPrice)as total_sales from
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
LEFT JOIN DIM_DATE AS DD
ON FT.Date=DD.DATE
left join DIM_MANUFACTURER AS DMFC
on DM.IDManufacturer=DMFC.IDManufacturer
GROUP BY Manufacturer_Name, YEAR
HAVING YEAR=2009

```

```

CREATE VIEW RANKING_2010 AS
SELECT RANK() over(order by (SUM(TotalPrice)) desc) AS rank_by_sales ,YEAR,
    Manufacturer_Name, SUM(TotalPrice)as total_sales from
FACT_TRANSACTIONS AS FT LEFT JOIN DIM_MODEL AS DM
ON FT.IDModel=DM.IDModel
LEFT JOIN DIM_DATE AS DD
ON FT.Date=DD.DATE
left join DIM_MANUFACTURER AS DMFC
on DM.IDManufacturer=DMFC.IDManufacturer
GROUP BY Manufacturer_Name, YEAR
HAVING YEAR=2010

```

--Q9-- Show the manufacturers that sold cellphones in 2010 but did not in 2009.

```

SELECT Manufacturer_Name from (select * from RANKING_2010) as T1
EXCEPT
SELECT Manufacturer_Name from (select * from RANKING_2009) as T2

```

--Q10-- Find top 100 customers and their average spend, average quantity by each year. Also find the percentage of change in their spend. ↗

```
SELECT *,
CASE WHEN LAG(AVG_SPEND,1) OVER (PARTITION BY CUSTOMER_NAME ORDER BY YEAR) IS NULL
THEN NULL ELSE
CONCAT(((AVG_SPEND-LAG(AVG_SPEND,1) OVER (PARTITION BY CUSTOMER_NAME ORDER BY
YEAR)))/(LAG(AVG_SPEND,1) OVER (PARTITION BY CUSTOMER_NAME ORDER BY YEAR)))
*100, '%') END AS PERCENT_CHANGE
FROM view1
```

```
create view view1 as
SELECT Customer_Name, YEAR,AVG(TotalPrice) AS AVG_SPEND,AVG(Quantity) AS AVG_QTY
FROM
FACT_TRANSACTIONS AS FT INNER JOIN DIM_CUSTOMER AS DC
ON FT.IDCustomer=DC.IDCustomer
LEFT JOIN DIM_DATE AS DD
ON FT.Date=DD.DATE
group by Customer_Name,YEAR
HAVING Customer_Name IN(SELECT * FROM TOP10_CUSTOMERS)
```

```
CREATE VIEW TOP10_CUSTOMERS AS
SELECT TOP 10 Customer_Name
FROM
FACT_TRANSACTIONS AS FT INNER JOIN DIM_CUSTOMER AS DC
ON FT.IDCustomer=DC.IDCustomer
LEFT JOIN DIM_DATE AS DD
ON FT.Date=DD.DATE
group by Customer_Name
ORDER BY SUM(TotalPrice) DESC
```

```
===== ↗
=====
```