
--SQL Advance Case Study

--Q1--BEGIN

```
select distinct State from FACT_TRANSACTIONS as t1
join DIM_LOCATION as t2 on t1.IDLocation=t2.IDLocation
where year(t1.Date)>=2005
```

--Q1--END

--Q2--BEGIN

```
select top 1 State, sum(Quantity) as QTY from FACT_TRANSACTIONS t1
join DIM_LOCATION t2 on t1.IDLocation=t2.IDLocation
join DIM_MODEL t3 on t1.IDModel=t3.IDModel
join DIM_MANUFACTURER t4 on t3.IDManufacturer=t4.IDManufacturer
where Manufacturer_Name='Samsung' and Country='US'
group by State
order by sum(Quantity) desc
```

--Q2--END

--Q3--BEGIN

```
select State, ZipCode, Model_Name,Manufacturer_Name,
count(Quantity) [Number of Transactions] from FACT_TRANSACTIONS t1
join DIM_LOCATION t2 on t1.IDLocation=t2.IDLocation
join DIM_MODEL t3 on t1.IDModel=t3.IDModel
join DIM_MANUFACTURER t4 on t3.IDManufacturer=t4.IDManufacturer
group by State, ZipCode,Manufacturer_Name, Model_Name
```

--Q3--END

--Q4--BEGIN

```
select top 1 IDModel, Model_Name, Manufacturer_Name,Unit_price from DIM_MODEL as t1
join DIM_MANUFACTURER t4 on t1.IDManufacturer=t4.IDManufacturer
order by t1.Unit_price
```

--Q4--END

--Q5--BEGIN

```
select t1.[IDModel],Manufacturer_Name,sum(Quantity) [Quantity sold],avg([TotalPrice])
[avg price] from FACT_TRANSACTIONS as t1
join DIM_model t2 on t1.IDModel=t2.IDModel
join DIM_MANUFACTURER t3 on t2.IDManufacturer=t3.IDManufacturer
where Manufacturer_Name in (select top 5 Manufacturer_Name from FACT_TRANSACTIONS as
t1
join DIM_MODEL as t2 on t1.IDModel=t2.IDModel
join DIM_MANUFACTURER as t3 on
t3.IDManufacturer=t2.IDManufacturer
group by Manufacturer_Name
order by sum(Quantity) desc)
group by Manufacturer_Name, t1.[IDModel]
```

```
order by [avg price] desc
```

```
--Q5--END
```

```
--Q6--BEGIN
```

```
select t1.IDCustomer,t2.Customer_Name, avg ([TotalPrice]) as average from
```

```
    FACT_TRANSACTIONS as t1
```

```
join [dbo].[DIM_CUSTOMER] as t2 on t1.IDCustomer=t2.IDCustomer
```

```
where year(date)=2009
```

```
group by t1.IDCustomer,t2.Customer_Name
```

```
having (sum(totalprice)/count(quantity)) > 500
```

```
order by average desc
```

```
--Q6--END
```

```
--Q7--BEGIN
```

```
select * from (select top 5 IDModel from FACT_TRANSACTIONS
```

```
where year(date)='2008'
```

```
group by IDModel
```

```
order by sum(quantity) desc) as X
```

```
intersect
```

```
select * from (select top 5 IDModel from FACT_TRANSACTIONS
```

```
where year(date)='2009'
```

```
group by IDModel
```

```
order by sum(quantity) desc) as Y
```

```
intersect
```

```
select * from (select top 5 IDModel from FACT_TRANSACTIONS
```

```
where year(date)='2010'
```

```
group by IDModel
```

```
order by sum(quantity) desc) as Z
```

```
--Q7--END
```

```
--Q8--BEGIN
```

```
select top 1* from
```

```
    (select top 1* from
```

```
        (select top 2 Manufacturer_Name, sum(totalprice) as sales from
```

```
            FACT_TRANSACTIONS t1
```

```
        left join DIM_MODEL t2 on t1.IDModel=t2.IDModel
```

```
        left join DIM_MANUFACTURER t3 on t2.IDManufacturer=t3.IDManufacturer
```

```
        where year(date)='2009'
```

```
        group by Manufacturer_Name
```

```
        order by sum(totalprice) desc) as x
```

```
    order by sales) xx
```

```
union
```

```
select top 1* from
```

```
    (select top 1* from
```

```
        (select top 2 Manufacturer_Name, sum(totalprice) as sales from
```

```
            FACT_TRANSACTIONS t1
```

```
        left join DIM_MODEL t2 on t1.IDModel=t2.IDModel
```

```

        left join DIM_MANUFACTURER t3 on t2.IDManufacturer=t3.IDManufacturer
        where year(date)='2010'
        group by Manufacturer_Name
        order by sum(totalprice) desc) as y
    order by sales) yy

```

```
--Q8--END
```

```
--Q9--BEGIN
```

```

select Manufacturer_Name, sum(totalprice) as sales from FACT_TRANSACTIONS t1
    left join DIM_MODEL t2 on t1.IDModel=t2.IDModel
    left join DIM_MANUFACTURER t3 on t2.IDManufacturer=t3.IDManufacturer
    where year(date)='2010' and Manufacturer_Name not in (select
        Manufacturer_Name from FACT_TRANSACTIONS t1
        left join DIM_MODEL t2 on t1.IDModel=t2.IDModel
        left join DIM_MANUFACTURER t3 on t2.IDManufacturer=t3.IDManufacturer
        where year(date)='2009'
        group by Manufacturer_Name
    )
    group by Manufacturer_Name
    order by sum(totalprice) desc

```

```
--Q9--END
```

```
--Q10--BEGIN
```

```

select *, ((avg_price-lag_price)/lag_price) as percentage_change from(
    select *, lag(avg_price,1) over (partition by IDCustomer order by year) as
        lag_price from(
            Select IDCustomer,year([Date]) as year, avg(TotalPrice) as avg_price, sum
                (Quantity)
            as total from [dbo].[FACT_TRANSACTIONS]
            where IDCustomer in (Select top 10 IDCustomer from [dbo].[FACT_TRANSACTIONS]
                group by IDCustomer
                order by sum(TotalPrice) desc)
            group by IDCustomer, year([Date])) as X)
as Y

```

```
--Q10--END
```