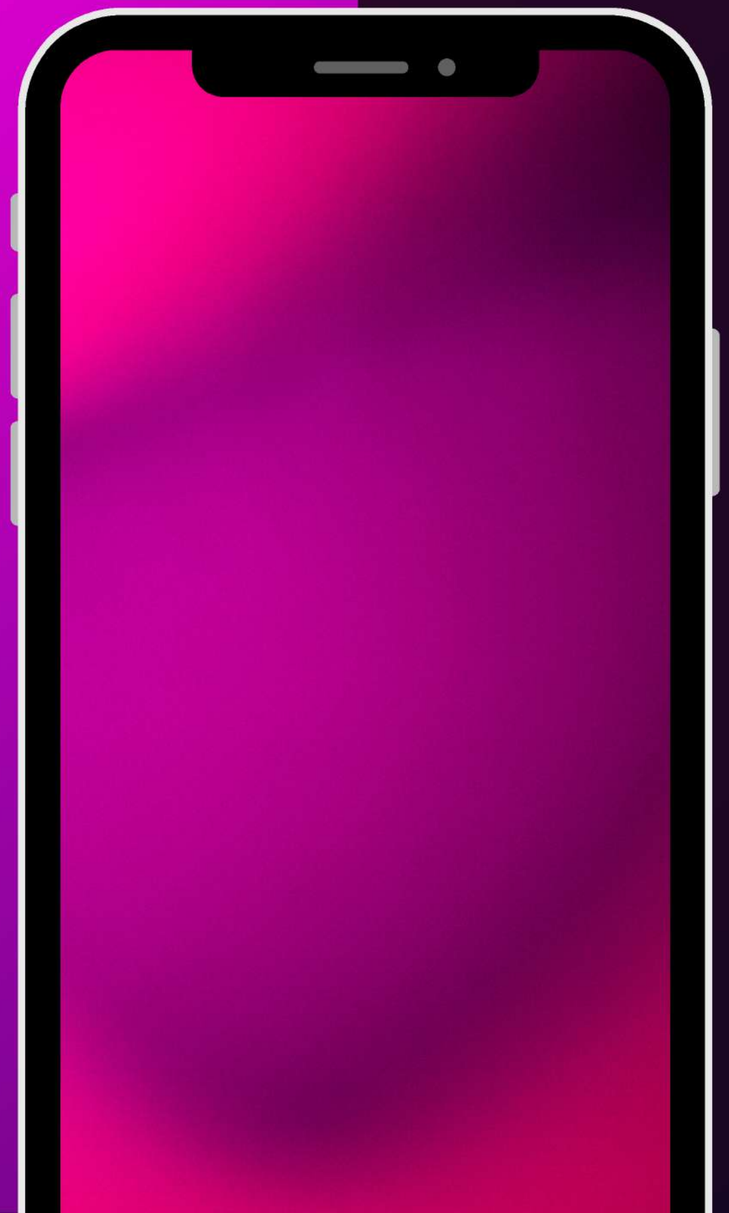
Mobile Manufacturer

by :- Mrinal Singh



INTRODUCTION

My name is Mrinal Singh and this is my SQL project in field of Data Science, in which i have
used concepts of sql like JOINS and APPEND functions to solve complex queries .

I got this data from kaggle i will provide the dataset in my github.

1 . List all the states in which we have customers who have bought cell phones from 2005 till today.

2 . What state in the US is buying the most 'Samsung' cell phones?

3 . Show the number of transactions for each model per zip code per state.

4 . Show the cheapest cellphone (Output should contain the price also)

5 . Find out the average price for each model in the top 5 manufacturers in terms of sales quantity and order by average price.

6 . List the names of the customers and the average amount spent in 2009, where the average is higher than 500

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

8 . 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.

9 . Show the manufacturers that sold cell phones in 2010 but did not in 2009.

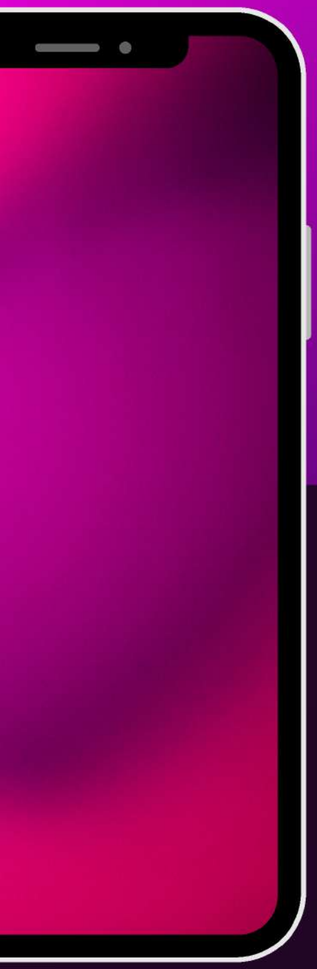
10 . Find top 100 customers and their average spend, average quantity by each year. Also find the percentage of change in their spend.

Query

```sql
select State

from DIM_LOCATION l
left join  FACT_TRANSACTIONS t on
l.IDLocation = t.IDLocation

where year(Date) between 2005 and year(GETDATE())
group by State;
```



Sol.

	State
1	Arizona
2	California
3	Delhi
4	Haryana
5	Karnataka
6	Maharashtra
7	Maryland

Query

```
select top 1 state

from DIM_LOCATION l inner join FACT_TRANSACTIONS ft on
l.IDLocation = ft.IDLocation inner join DIM_MODEL mo on
ft.IDModel = mo.IDModel inner join DIM_MANUFACTURER manu on
mo.IDManufacturer = manu.IDManufacturer

where Country in ('US') and Manufacturer_Name = 'Samsung'
group by State
order by sum(ft.Quantity) desc
```

Sol.

	state
1	Arizona

Query

```
select IDModel, l.ZipCode , l.State , count(tr.IDCustomer) [No. of trans]
from FACT_TRANSACTIONS tr inner join DIM_LOCATION l
on tr.IDLocation = l.IDLocation
group by IDModel, ZipCode, state
```

Sol.

Results | Messages

	IDModel	ZipCode	State	No. of trans
1	101	21163	Maryland	1
2	101	21648	Maryland	4
3	101	85086	Arizona	2
4	101	85117	Arizona	1
5	101	92703	California	3
6	101	94005	California	1
7	101	110004	Delhi	4
8	101	122002	Haryana	3
9	101	400006	Maharashtra	1

188 rows

Query

```
select top 1 Model_Name , mo.Unit_price
from DIM_MODEL mo inner join DIM_MANUFACTURER manu on
mo.IDManufacturer = manu.IDManufacturer
order by Unit_price asc
```

Sol.

	Model_Name	Unit_price
1	3210	14.00

Query

```
select model_name,
avg(TotalPrice) [avg total price]

from dim_model mo inner join DIM_MANUFACTURER manu
on mo.IDManufacturer = manu.IDManufacturer inner join FACT_TRANSACTIONS t on mo.IDModel = t.IDModel

where Manufacturer_Name in

(   select top 5 Manufacturer_Name

    from DIM_MANUFACTURER as manu inner join DIM_MODEL as dm
    on manu.IDManufacturer = dm.IDManufacturer inner join FACT_TRANSACTIONS tr
    on tr.IDModel = dm.IDModel

    group by Manufacturer_Name
    order by sum(Quantity) desc )

group by Model_Name
order by [avg total price] ;
```

Sol.

	model_name	avg total price
1	3210	18.50
2	3310 (3330)	31.4545
3	5230	34.0909
4	6230 (6233)	55.75
5	6010 (6020/...	58.50
6	6600	60.00
7	RAZR V3	91.3636
8	C200	151.0833
9	E250	170.6666
10	Droid Bionic	175.4444
11	E1100	178.1818
12	OnePlus X	184.2307
13	C139	185.10
14	OnePlus 2	192.6666
15	Galaxy S	198.2222
16	Galaxy Note II	219.20
17	Motorola Z	285.909
18	OnePlus 5	320.00
19	Galaxy S4	343.60
20	Galaxy S5	394.00

Query

```sql
select Customer_Name, avg(TotalPrice) avg_spent

from DIM_CUSTOMER cu inner join FACT_TRANSACTIONS tr on
cu.IDCustomer = tr.IDCustomer

where year(date) = 2009
group by Customer_Name
having avg(TotalPrice) > 500
```

Sol.

	Customer_Name	avg_spent
1	Celeste Korando	613.00
2	Danica Bruschke	760.00
3	Laurel Reitler	1528.00
4	Lettie Isenhower	870.00
5	Moon Parlato	823.50
6	Shawna Palaspas	569.00

Query

```
select *
from

    (select top 5 Model_Name

    from FACT_TRANSACTIONS t inner join DIM_MODEL mo
    on t.IDModel = mo.IDModel

    where year(Date) = 2008
    group by Model_Name
    order by sum(Quantity) desc) sub1

intersect

select *
from

    (select top 5 Model_Name

    from FACT_TRANSACTIONS t inner join DIM_MODEL mo
    on t.IDModel = mo.IDModel

    where year(Date) = 2009
    group by Model_Name
    order by sum(Quantity) desc) sub2

intersect

select *
from

    (select top 5 Model_Name

    from FACT_TRANSACTIONS t inner join DIM_MODEL mo
    on t.IDModel = mo.IDModel

    where year(Date) = 2010
    group by Model_Name
    order by sum(Quantity) desc) sub3
```

Sol.

	Model_Name
1	Droid Bionic

Query

```sql
with top_2
as (
    select IDManufacturer [id] ,
    year(date) [years],
    sum(TotalPrice) [tot],
    rank() over(partition by year(date) order by sum(TotalPrice) desc) [ranks]

    from DIM_MODEL m inner join FACT_TRANSACTIONS t
    on m.IDModel = t.IDModel

    where year(Date) in (2009 , 2010)
    group by IDManufacturer, year(date)
)

select id , years , tot
from top_2
where ranks = 2
```

Sol.

	id	years	tot
1	12	2009	3357.00
2	11	2010	3242.00

Query

```sql
select Manufacturer_Name

from DIM_MANUFACTURER manu inner join DIM_MODEL m
on manu.IDManufacturer = m.IDManufacturer inner join FACT_TRANSACTIONS t
on m.IDModel = t.IDModel

where year(Date) = 2010

except

select Manufacturer_Name

from DIM_MANUFACTURER manu inner join DIM_MODEL m
on manu.IDManufacturer = m.IDManufacturer inner join FACT_TRANSACTIONS t
on m.IDModel = t.IDModel

where year(Date) = 2009
```

Sol.

	Manufacturer_Name
1	HTC

Query

```sql
with top_10
as (
    select top 10 c.IDCustomer [id]

    from DIM_CUSTOMER c inner join FACT_TRANSACTIONS t
    on c.IDCustomer = t.IDCustomer
    group by c.IDCustomer
    order by sum(TotalPrice) desc
    ) ,

    avg_spend_and_quan
    as (
        select c.IDCustomer [ids] , year(Date) [Years] , avg(TotalPrice) [Total_Price] , avg(Quantity) [Total_quan]
        from DIM_CUSTOMER c inner join FACT_TRANSACTIONS t
        on c.IDCustomer = t.IDCustomer
        where c.IDCustomer in (select * from top_10)
        group by c.IDCustomer , year(Date)
    ) ,

    avg_distribution
    as (
        select ids , years, Total_Price , Total_quan , lag(Total_Price , 1) over(partition by ids order by years) [last_price]
        from avg_spend_and_quan
    )

    select ids , years, Total_Price , Total_quan , (Total_Price - last_price) / last_price * 100 [avg_diff]
    from avg_distribution
```

Sol.

	ids	years	Total_Price	Total_quan	avg_diff
1	10003	2005	319.00	1	NULL
2	10003	2006	474.00	1	48.58
3	10003	2007	1106.00	2	133.33
4	10003	2008	322.00	1	-70.88
5	10003	2009	442.00	1	37.26
6	10003	2010	435.00	1	-1.58
7	10006	2003	667.00	1	NULL
8	10006	2004	256.50	1	-61.54
9	10006	2009	823.50	2	221.05
10	10006	2010	226.50	1	-72.49
11	10007	2003	410.00	1	NULL
12	10007	2005	149.00	1	-63.65
13	10007	2006	226.00	1	51.67
14	10007	2007	288.00	1	27.43

53 rows

THANK YOU
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This was my report on the dataset
MOBILE MANUFACTURER.