SQL Analysis

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# 1.
# Calculate the % of closed loans of brokerage vs non-brokerage

Select Month(close_date) as month ,Year(close_date) as year,
CONCAT(100*sum(case when loan_status = 'Funded' and deal_id !='' then 1 else 0 end)/sum(case when
loan_status = 'Funded' then 1 else 0 end),'%') brokerage_closed_percentage,
CONCAT(100*sum(case when loan_status = 'Funded' and deal_id ='' then 1 else 0 end)/sum(case when
loan_status = 'Funded' then 1 else 0 end),'%') non_brokerage_closed_percentage
From Mortgage
Group by month(close_date),year(close_date)
Order by year,month;
```

month	year	brokerage_closed_percenta...	non_brokerage_closed_percenta...
1	2020	100.0000%	0.0000%
2	2020	33.3333%	66.6667%
3	2020	84.6154%	15.3846%
4	2020	87.5000%	12.5000%
5	2020	85.7143%	14.2857%
6	2020	100.0000%	0.0000%
7	2020	77.7778%	22.2222%
8	2020	60.0000%	40.0000%
9	2020	100.0000%	0.0000%
10	2020	87.5000%	12.5000%
11	2020	62.5000%	37.5000%
12	2020	28.5714%	71.4286%

```
# 2.
# Calculate the conversion rates of brokerage and non-brokerage closed loans.

Select Month(close_date) as month,Year(close_date) as year,
CONCAT(100*sum(case when loan_status = 'Funded' and deal_id !='' then 1 else 0 end)/sum(case when
deal_id !='' then 1 else 0 end),'%') brokerage_conversion_rate,

CONCAT(100*sum(case when loan_status = 'Funded' and deal_id ='' then 1 else 0 end)/sum(case when
deal_id ='' then 1 else 0 end),'%') non_brokerage_conversion_rate
From Mortgage
Group by Month(close_date),Year(close_date) Order by year,month;
```

month	year	brokerage_conversion_r...	non_brokerage_conversion_ra...
1	2020	12.1212%	0.0000%
2	2020	6.8966%	36.3636%
3	2020	32.3529%	28.5714%
4	2020	25.0000%	9.0909%
5	2020	20.6897%	14.2857%
6	2020	13.5135%	0.0000%
7	2020	15.5556%	22.2222%
8	2020	17.6471%	36.3636%
9	2020	11.1111%	0.0000%
10	2020	18.9189%	14.2857%
11	2020	15.6250%	33.3333%
12	2020	5.8824%	50.0000%

```
# 3.
# Calculate the % of business received from mortgages where the market is active.

select t.Year,
case
  when t.month = '1' then 'January'
   when t.month = '2' then 'February'
   when t.month = '3' then 'March'
   when t.month = '4' then 'April'
   when t.month = '5' then 'May'
   when t.month = '6' then 'June'
   when t.month = '7' then 'July'
   when t.month = '8' then 'August'
   when t.month = '9' then 'September'
   when t.month = '10' then 'October'
   when t.month = '11' then 'November'
   when t.month = '12' then 'December'
end as Month, t.Rate_of_business
from (
Select Month(b.close_date) as month, Year(b.close_date) as Year,
CONCAT(100*sum(case when b.lender = 'Rocket Mortgage' then 1 else 0 end)/sum(case when (b.lender)
!='' then 1 else 0 end),'%') Rate_of_business
From Brokerage b
INNER JOIN Market m ON b.state_abbr = m.state_code
Group by month(b.close_date),year(b.close_date)
Order by year, month) t;
```

Year	Month	Rate_of_business
2020	January	3.0000%
2020	February	5.4545%
2020	March	3.2258%
2020	April	2.0619%
2020	May	4.7170%
2020	June	4.6729%
2020	July	4.6296%
2020	August	2.8846%
2020	September	0.0000%
2020	October	3.1915%
2020	November	2.9703%
2020	December	4.0000%

```
# 4.
# Identify the top financing type with the highest closed loans rate by each state.

With cte as
(Select state_abbr, financing_type,
CONCAT(ROUND((100*sum(case When deal_status = 'Closed' Then 1 Else 0 end)/count(*)),2),"%") as
Closed_loan,
Rank() Over
(Partition By state_abbr Order By
sum(case when deal_status = 'Closed' then 1 else 0 end)/count(*) desc)
as r
From brokerage
Group by state_abbr, financing_type )

Select cte.state_abbr as State, cte.financing_type as Finance_Type, cte.Closed_loan
From cte
Where r = 1
Order by state_abbr Asc;
```

State	Finance_Type	Closed_loan
AK	VA	26.92%
AL	Conventional	22.22%
AR	VA	22.22%
AZ	Conventional	27.59%
CA	Jumbo	28.57%
CO	Cash	25.00%
CT	Jumbo	41.18%
DC	Cash	28.57%
DE	VA	28.57%
FL	Conventional	36.67%
GA	Conventional	26.92%
HI	Cash	35.71%
IA	Conventional	27.78%
ID	Cash	22.73%
IL	Conventional	29.03%
IN	Cash	20.00%
IN	VA	20.00%

#5.
Find the **Month** over **Month** variance **for** Brokerage conversion rates **in** the **year of** 2020.

```
With cte as (
Select Month(close_date) as month, Year(close_date) as year,
CONCAT(100*sum(case when loan_status = 'Funded' and deal_id !='' then 1 else 0 end)/
sum(case when deal_id !='' then 1 else 0 end),'%') brokerage_conversion_rate,
CONCAT(100*sum(case when loan_status = 'Funded' and deal_id ='' then 1 else 0 end)/
sum(case when deal_id ='' then 1 else 0 end),'%') non_brokerage_conversion_rate
from Mortgage
Group by Month(close_date),Year(close_date)
Order by year,month)
Select
(case when c2.month = '1' then 'January'
   when c2.month = '2' then 'February'
    when c2.month = '3' then 'March'
    when c2.month = '4' then 'April'
    when c2.month = '5' then 'May'
    when c2.month = '6' then 'June'
    when c2.month = '7' then 'July'
    when c2.month = '8' then 'August'
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    when c2.month = '9' then 'September'
    when c2.month = '10' then 'October'
    when c2.month = '11' then 'November'
    when c2.month = '12' then 'December'
    end) as Month,
CONCAT(ROUND(c2.brokerage_conversion_rate - c1.brokerage_conversion_rate , 2), "%") as
Month_Over_Month_Variance
From cte c1
JOIN cte c2 ON c1.month = c2.month - 1
Where c1.year = 2020 and c2.year = 2020;
```

Month	Month_Over_Month_Variance
February	-5.22%
March	25.46%
April	-7.35%
May	-4.31%
June	-7.18%
July	2.04%
August	2.09%
September	-6.54%
October	7.81%
November	-3.29%
December	-9.74%