Use Covid19\_Analysis;

/\*\* Month with % values\*\*/

with proper\_data as

(

Select state,state\_short,month\_name,year\_name,month\_number,state\_total\_population,SUM(confirmed) as confirmed, SUM(recovered) as recovered, SUM(deceased) as deceased, SUM(tested) as tested, SUM(vaccinated\_1) as vaccinated\_1, SUM(vaccinated\_2) as vaccinated\_2 from (select d.state,d.state\_short,s.state\_total\_population,isnull(d.total\_confirmed - LAG(d.total\_confirmed) over(Partition By d.state\_short order by d.state\_short,date),MIN(d.total\_confirmed) over(Partition by d.state\_short)) as confirmed,

isnull(d.total\_recovered - LAG(d.total\_recovered) over(Partition By d.state\_short order by d.state\_short,date),MIN(d.total\_recovered) over(Partition by d.state\_short)) as recovered,

isnull(d.total\_deceased - LAG(d.total\_deceased) over(Partition By d.state\_short order by d.state\_short,date),MIN(d.total\_deceased) over(Partition by d.state\_short)) as deceased,

isnull(d.total\_tested - LAG(d.total\_tested) over(Partition By d.state\_short order by d.state\_short,date),MIN(d.total\_tested) over(Partition by d.state\_short)) as tested,

isnull(d.total\_vaccinated\_1 - LAG(d.total\_vaccinated\_1) over(Partition By d.state\_short order by d.state\_short,date),MIN(d.total\_vaccinated\_1) over(Partition by d.state\_short)) as vaccinated\_1,

isnull(d.total\_vaccinated\_2 - LAG(d.total\_vaccinated\_2) over(Partition By d.state\_short order by d.state\_short,date),MIN(d.total\_vaccinated\_2) over(Partition by d.state\_short)) as vaccinated\_2,

DATENAME(Month,d.date) as month\_name,Month(d.date) as month\_number,DATENAME(YEAR,d.date) as year\_name from date\_total\_df d join states\_total\_df s on s.state\_short=d.state\_short) s

Group By state,state\_short,month\_number,month\_name,year\_name,state\_total\_population),

cte as

(

Select \*,Round((Cast([state\_total\_confirmed] as float)/Cast([state\_total\_population] as float)),4)\*100 as [Population\_Effected\_%],

Round((Cast([state\_total\_recovered] as float)/Cast([state\_total\_confirmed] as float)),4)\*100 as [Recovery\_%],

Round((Cast([state\_total\_deceased] as float)/Cast([state\_total\_confirmed] as float)),4)\*100 as [Death\_%],

Round((Cast([state\_total\_vaccinated\_1] as float)/Cast([state\_total\_population] as float)),4)\*100 as [Vaccinated1\_%],

Round((Cast([state\_total\_vaccinated\_2] as float)/Cast([state\_total\_population] as float)),4)\*100 as [ Vaccinated2\_%] from (select s.state as state\_name,s.state\_short,s.state\_total\_population,t.total\_confirmed as state\_total\_confirmed,s.state\_total\_deceased,s.state\_total\_recovered,s.state\_total\_tested

,s.state\_total\_vaccinated\_1,s.state\_total\_vaccinated\_2 from (Select \*,ROW\_NUMBER() over(Partition by state Order by total\_confirmed desc) as row from date\_total\_df) t join states\_total\_df s

ON t.state\_short = s.state\_short

where row = 1) c )

Select pd.state,pd.state\_short,pd.state\_total\_population,pd.month\_name,pd.year\_name,pd.confirmed,pd.deceased,pd.tested,pd.recovered,pd.vaccinated\_1,pd.vaccinated\_2,

ct.[Population\_Effected\_%],ct.[Recovery\_%],ct.[Death\_%],ct.[Vaccinated1\_%],ct.[ Vaccinated2\_%]

from proper\_data pd join cte ct on pd.state\_short = ct.state\_short

Order by pd.state\_short,pd.year\_name,pd.month\_number;

/\*\* Month And Year \*\*/

with proper\_data as

(select state\_short,date,isnull(total\_confirmed - LAG(total\_confirmed) over(Partition By state\_short order by state\_short,date),MIN(total\_confirmed) over(Partition by state\_short)) as confirmed,

isnull(total\_recovered - LAG(total\_recovered) over(Partition By state\_short order by state\_short,date),MIN(total\_recovered) over(Partition by state\_short)) as recovered,

isnull(total\_deceased - LAG(total\_deceased) over(Partition By state\_short order by state\_short,date),MIN(total\_deceased) over(Partition by state\_short)) as deceased,

isnull(total\_tested - LAG(total\_tested) over(Partition By state\_short order by state\_short,date),MIN(total\_tested) over(Partition by state\_short)) as tested,

isnull(total\_vaccinated\_1 - LAG(total\_vaccinated\_1) over(Partition By state\_short order by state\_short,date),MIN(total\_vaccinated\_1) over(Partition by state\_short)) as vaccinated\_1,

isnull(total\_vaccinated\_2 - LAG(total\_vaccinated\_2) over(Partition By state\_short order by state\_short,date),MIN(total\_vaccinated\_2) over(Partition by state\_short)) as vaccinated\_2,

DATENAME(Month,date) as month\_name,Month(date) as month\_number,DATENAME(YEAR,date) as year\_name from date\_total\_df)

Select month\_name,year\_name,month\_number,SUM(confirmed)as confirmed ,SUM(recovered) as recovered, SUM(deceased) as deceased, SUM(tested) as tested, SUM(vaccinated\_1) as vaccinated\_1, SUM(vaccinated\_2) as vaccinated\_2 from proper\_data

Group By month\_number,month\_name,year\_name

Order by year\_name,month\_number;

/\*\* Joining confirmed with state\_total \*\*/

with timeseries as

(Select \*,ROW\_NUMBER() over(Partition by state Order by total\_confirmed desc) as row from date\_total\_df)

select s.state as state\_name,s.state\_short,s.state\_total\_population,t.total\_confirmed as state\_total\_confirmed,s.state\_total\_deceased,s.state\_total\_recovered,s.state\_total\_tested

,s.state\_total\_vaccinated\_1,s.state\_total\_vaccinated\_2 from timeseries t join states\_total\_df s

ON t.state\_short = s.state\_short

where row = 1;

Select \* From TimeSeries\_Data;

--- Creating Year Column

Alter Table TimeSeries\_Data Add Year int;

Update TimeSeries\_Data Set Year= Year(Date);

---Creating MonthNumber column

Alter Table TimeSeries\_Data Add MonthNumber int;

Update TimeSeries\_Data Set MonthNumber= Month(Date);

---Creating Month Column

Alter Table TimeSeries\_Data Add Month varchar(50);

Update TimeSeries\_Data Set Month= Case

When Month(Date)=1 then 'January'

When Month(Date)=2 then 'February'

When Month(Date)=3 then 'March'

When Month(Date)=4 then 'April'

When Month(Date)=5 then 'May'

When Month(Date)=6 then 'June'

When Month(Date)=7 then 'July'

When Month(Date)=8 then 'August'

When Month(Date)=9 then 'September'

When Month(Date)=10 then 'October'

When Month(Date)=11 then 'November'

When Month(Date)=12 then 'December'

End;

Select Date, DATEPART(WEEK, Date) - DATEPART(WEEK, DATEADD(MM, DATEDIFF(MM,0,Date), 0))+ 1 From TimeSeries\_Data;

---Creating WeekNumber Column

Alter Table TimeSeries\_Data Add WeekNumber varchar(50);

Update TimeSeries\_Data Set WeekNumber= DATEPART(WEEK, Date) - DATEPART(WEEK, DATEADD(MM, DATEDIFF(MM,0,Date), 0))+ 1;

---Creating Month\_WeekNumber Column

Alter Table TimeSeries\_Data Drop Column Month\_WeekNumber,

Alter Table TimeSeries\_Data Add Month\_WeekNumber varchar(50);

Update TimeSeries\_Data Set Month\_WeekNumber = concat(Month,'-','Week ',WeekNumber);

Select \* From TimeSeries\_Data;

---Segregating the cummulative data for each date

Select \* into TimeSeries\_Data2 From

(Select State,Date,isnull(Confirmed - LAG(Confirmed) over(Partition By State order by State,date),MIN(Confirmed) over(Partition by State)) as Confirmed,

isnull(Recovered - LAG(Recovered) over(Partition By State order by State,date),MIN(Recovered) over(Partition by State)) as Recovered,

isnull(Deceased - LAG(Deceased) over(Partition By State order by State,date),MIN(Deceased) over(Partition by State)) as Death,

isnull(Tested - LAG(Tested) over(Partition By State order by State,date),MIN(Tested) over(Partition by State)) as Tested,

Year,MonthNumber,Month,WeekNumber,Month\_WeekNumber from TimeSeries\_Data) S;

Select \* From TimeSeries\_Data2

Order By State,Date;

---Aggregating the data according to WeekNumber

Select Year,MonthNumber,Month\_WeekNumber,Sum(Confirmed) As Confirmed,Sum(Recovered) As Recovered,Sum(Death) As Deaths,Sum(Tested) As Tested

From TimeSeries\_Data2

Group By Year,MonthNumber,Month\_WeekNumber

Order By Year,MonthNumber,Month\_WeekNumber;

---Aggregating the data according to month(extra)

Select Year,MonthNumber,Month,Sum(Confirmed) As Confirmed,Sum(Recovered) As Recovered,Sum(Death) As Deaths,Sum(Tested) As Tested

From TimeSeries\_Data2

Group By Year,MonthNumber,Month

Order By Year,MonthNumber;

Select \* from DistrictWise\_Data;

---Creating the Testing Ratio Table

Alter Table DistrictWise\_Data Add [TestingRatio(tr)] float;

Update DistrictWise\_Data Set [TestingRatio(tr)] = Round((Cast([Tested] as float)/Cast([Population] as float)),2);

---Creating the Category Table

Alter Table DistrictWise\_Data Add Category varchar(50);

Update DistrictWise\_Data Set Category = Case

When [TestingRatio(tr)] between 0.0 and 0.1 then 'Category A'

When [TestingRatio(tr)] between 0.11 and 0.3 then 'Category B'

When [TestingRatio(tr)] between 0.31 and 0.5 then 'Category C'

When [TestingRatio(tr)] between 0.51 and 0.75 then 'Category D'

When [TestingRatio(tr)] between 0.76 and 0.1 then 'Category E'

Else null

end;

Select \* from DistrictWise\_Data;

---Grouping by Category

Select Category, Avg(Population) as Avg\_Population, Avg(Confirmed) As Avg\_Confirmed,Avg(Recovered) As Avg\_Recovered,Avg(Deceased) As Avg\_Deaths,Avg(Tested) As Avg\_Tested, Round(Avg([TestingRatio(tr)]),2) as Avg\_TestingRatio

From DistrictWise\_Data

Where Category is not null

Group By Category

Order By Category;

---Creating the Category Table

Select \* into Category\_table From

(Select Category, Avg(Population) as Avg\_Population, Avg(Confirmed) As Avg\_Confirmed,Avg(Recovered) As Avg\_Recovered,Avg(Deceased) As Avg\_Deaths,Avg(Tested) As Avg\_Tested, Round(Avg([TestingRatio(tr)]),2) as Avg\_TestingRatio

From DistrictWise\_Data

Where Category is not null

Group By Category) s;

Select \* from Category\_table;

Select \*, Round(Cast(Avg\_Deaths as float)/Cast(Avg\_Confirmed as float)\*100,2) as [Death %] from Category\_table;

select state, sum(population) as Population,sum(confirmed) as Confirmed,sum(deceased) as Deceased,sum(recovered) as Recovered,sum(tested) as Tested,sum(vaccinated1) as Vaccinated1,

sum(vaccinated2) as Vaccinated2 from delta7\_district\_cleaned group by state

--correlation with doeses and deceased

select state,sum(deceased) as Deceased,sum(vaccinated1 + vaccinated2) as 'Dual Doses' from delta7\_district\_cleaned group by state

--correlation between confirmed cases and deceased cases

select state,sum(confirmed) as Confirmed , sum(deceased) as Deceased from delta7\_district\_cleaned group by state

--correlation between vaccinted 1 and deceased

select state,sum(vaccinated1) as Vaccinated,sum(deceased) as deceased from delta7\_district\_cleaned group by state

select state,sum(tested) as Tested,sum(confirmed) as Confirmed from delta7\_district\_cleaned group by state

select state,sum(confirmed) as Confirmed,sum(recovered) as Recovered from delta7\_district\_cleaned group by state

-- delta 7 wrt vaccination

select state, sum(confirmed) as Confirmed, sum(vaccinated1 + Vaccinated2) as Fully\_Vaccinated from delta7\_district\_cleaned group by state

select state, sum(confirmed) as Confirmed, sum(Vaccinated1) as Vaccinated from delta7\_district\_cleaned group by state

select state, sum(confirmed) as Confirmed, sum(Vaccinated2) as Vaccinated from delta7\_district\_cleaned group by state