Q1. Write a code to check NULL values.

```
select * from [master].[dbo].[Corona Virus Dataset]
where
Province is null
or [Country Region] is null
or Latitude is null
or Longitude is null
or Date is null
or Confirmed is null
or Deaths is null
or Recovered is null;
```

Q3. check total number of rows.

```
SELECT COUNT(*)
FROM [master].[dbo].[Corona Virus Dataset];
```

Q4. Check what is start_date and end_date.

```
SELECT MIN(TRY_CONVERT(date,Date,103)) AS StartDate
MAX(TRY_CONVERT(date,Date,103)) AS EndDate
FROM [master].[dbo].[Corona Virus Dataset];
```

Q5. Number of month present in dataset.

```
SELECT COUNT(DISTINCT CONCAT(YEAR(TRY_CONVERT(date,Date,105)),
'-',
MONTH(TRY_CONVERT(date,Date,105)))) as NumberOfMonths From [Corona
Virus Dataset];
```

Q6. Find monthly average for confirmed, deaths, recovered.

```
SELECT
 YEAR([Date]) AS Year,
MONTH([Date]) AS Month,
AVG(TRY_CONVERT(FLOAT, Confirmed)) AS AvgConfirmed,
AVG(TRY_CONVERT(FLOAT, Deaths)) AS AvgDeaths,
AVG(TRY_CONVERT(FLOAT, Recovered)) AS AvgRecovered
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY YEAR([Date]), MONTH([Date])
ORDER BY Year, Month;
```

Q7. Find most frequent value for confirmed, deaths, recovered each month.

```
WITH MonthlyCounts AS (
SELECT
YEAR([Date]) AS Year,
MONTH([Date]) AS Month,
Confirmed,
Deaths,
Recovered,
ROW_NUMBER() OVER (PARTITION BY YEAR([Date]), MONTH([Date])
ORDER BY COUNT(*) DESC) AS rn
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY YEAR([Date]), MONTH([Date]), Confirmed, Deaths, Recovered)
SELECT
Year,
Month,
MAX(CASE WHEN rn = 1 THEN Confirmed END) AS MostFrequentConfirmed,
MAX(CASE WHEN rn = 1 THEN Deaths END) AS MostFrequentDeaths,
MAX(CASE WHEN rn = 1 THEN Recovered END) AS MostFrequentRecovered
```

```
FROM MonthlyCounts
GROUP BY Year, Month
ORDER BY Year, Month;
```

Q8. Find minimum values for confirmed, deaths, recovered per year .

```
SELECT
YEAR([Date]) AS Year,
MIN(Confirmed) AS MinConfirmed,
MIN(Deaths) AS MinDeaths,
MIN(Recovered) AS MinRecovered
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY YEAR([Date])
ORDER BY Year;
```

Q9. Find maximum values of confirmed, deaths, recovered per year .

```
SELECT
YEAR([Date]) AS Year,
MAX(Confirmed) AS MaxConfirmed,
MAX(Deaths) AS MaxDeaths,
MAX(Recovered) AS MaxRecovered
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY YEAR([Date])
ORDER BY Year;
```

Q10. The total number of case of confirmed, deaths, recovered each month .

```
SELECT
 YEAR([Date]) AS Year,
MONTH([Date]) AS Month,
SUM(TRY_CONVERT(INT, Confirmed)) AS TotalConfirmed,
SUM(TRY_CONVERT(INT, Deaths)) AS TotalDeaths,
SUM(TRY_CONVERT(INT, Recovered)) AS TotalRecovered
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY YEAR([Date]), MONTH([Date])
ORDER BY Year, Month;
```

Q11. Check how corona virus spread out with respect to confirmed case .

```
WITH CTE AS (
SELECT CONVERT(FLOAT, Confirmed) AS ConfirmedFloat
FROM [master].[dbo].[Corona Virus Dataset])
SELECT
COUNT(*) AS TotalConfirmedCases,
AVG(ConfirmedFloat) AS AverageConfirmedCases,
SUM(ConfirmedFloat * ConfirmedFloat) / COUNT(*) - AVG(ConfirmedFloat) *
AVG(ConfirmedFloat) AS VarianceConfirmedCases,
STDEV(ConfirmedFloat) AS StdDevConfirmedCases
FROM CTE;
```

Q12. Check how corona virus spread out with respect to death case per month .

```
WITH NumericDeaths AS (
Select [Date],
CONVERT(FLOAT, Deaths) AS NumericDeaths
FROM [master].[dbo].[Corona Virus Dataset]
WHERE ISNUMERIC(Deaths) = 1)
SELECT
YEAR([Date]) AS Year,
MONTH([Date]) AS Month,
COUNT(*) AS TotalDeathCases,
 AVG(NumericDeaths) AS AverageDeathCases,
 SUM(NumericDeaths * NumericDeaths) / COUNT(*) - AVG(NumericDeaths) *
AVG(NumericDeaths) AS VarianceDeathCases,
STDEV(NumericDeaths) AS StdDevDeathCases
FROM NumericDeaths
GROUP BY YEAR([Date]), MONTH([Date])
ORDER BY Year, Month;
```

Q13. Check how corona virus spread out with respect to recovered case.

```
SELECT
COUNT(*) AS TotalRecoveredCases,
 AVG(CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT)) AS AverageRecoveredCases,
 (SUM(CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT) * CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT)) / COUNT(*)) - (AVG(CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT)) * AVG(CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT))) AS VarianceRecoveredCases,
SQRT((SUM(CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT) * CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT)) / COUNT(*)) - (AVG(CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT)) * AVG(CAST(TRY_CONVERT(FLOAT, Recovered) AS FLOAT)))) AS StdDevRecoveredCases
FROM [master].[dbo].[Corona Virus Dataset];
```

Q14. Find Country having highest number of the Confirmed case .

```
SELECT TOP 1 [Country Region] AS Country, MAX(Confirmed) AS MaxConfirmedCases
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY [Country Region]
ORDER BY MaxConfirmedCases DESC;
```

Q15. Find Country having lowest number of the death case .

```
SELECT TOP 1 [Country Region] AS Country, MIN(Deaths) AS MinDeathCases
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY [Country Region]
ORDER BY MinDeathCases ASC;
```

Q16. Find top 5 countries having highest recovered case.

```
SELECT TOP 5 [Country Region] AS Country, SUM(TRY_CONVERT(INT,
Recovered)) AS TotalRecoveredCases
FROM [master].[dbo].[Corona Virus Dataset]
GROUP BY [Country Region]
ORDER BY TotalRecoveredCases DESC;
```