COVID-19 Data Problems

1. Death Percentage Locally and Globally

Objective: To determine the death percentage both locally (by country) and globally.

Query:

```
SELECT
    [Country Region] AS Country,
    (SUM(cast(Deaths as int)) * 100.0 /
SUM(cast(Confirmed as int))) AS local_death_percentage
FROM  covid_global
GROUP BY [Country Region]
```

O/P:-

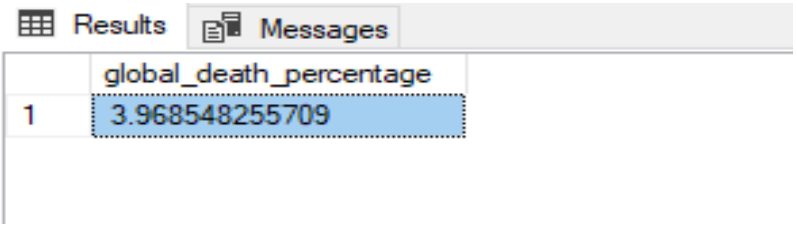
Results | Messages

	Country	local_death_percentage
1	Afghanistan	3.499434685492
2	Albania	2.950819672131
3	Algeria	4.157580524076
4	Andorra	5.733186328555
5	Angola	4.315789473684
6	Antigua and Barbuda	3.488372093023
7	Argentina	1.827184976346
8	Armenia	1.901577962021
9	Australia	1.091289289681
10	Austria	3.468236209748
11	Azerbaijan	1.389345069959

Query:Global

```
SELECT
    (SUM(cast(Deaths as int)) * 100.0 /
SUM(cast(Confirmed as int))) AS global_death_percentage
FROM covid_global
```

O/P:-



Results | Messages

	global_death_percentage
1	3.968548255709

2. Infected Population Percentage Locally and Globally

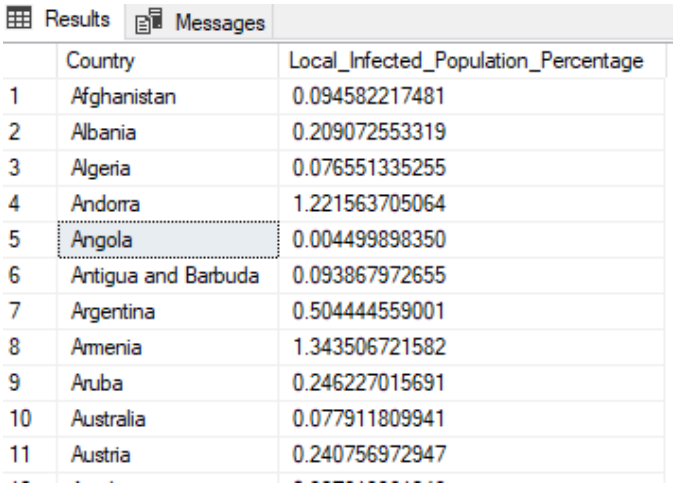
Objective:

To calculate the percentage of the population infected both locally and globally.

Query:

```
SELECT
    Country_Region AS Country,
    (SUM(TotalCases) * 100.0 / SUM(Population)) AS
Local_Infected_Population_Percentage
FROM worldometer_data
GROUP BY Country_Region
```

O/P:



Results | Messages

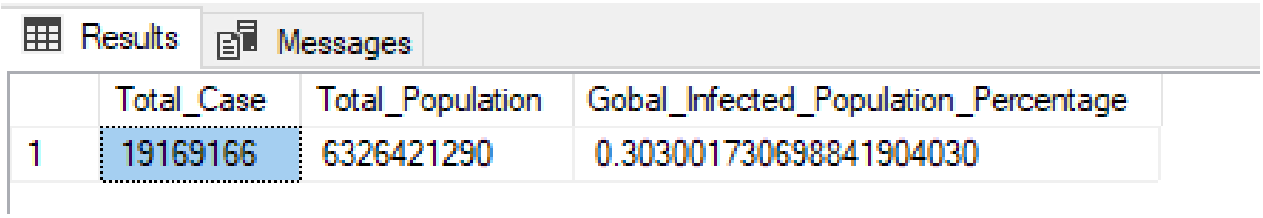
	Country	Local_Infected_Population_Percentage
1	Afghanistan	0.094582217481
2	Albania	0.209072553319
3	Algeria	0.076551335255
4	Andorra	1.221563705064
5	Angola	0.004499898350
6	Antigua and Barbuda	0.093867972655
7	Argentina	0.504444559001
8	Armenia	1.343506721582
9	Aruba	0.246227015691
10	Australia	0.077911809941
11	Austria	0.240756972947

Query:

```
SELECT
      SUM(TotalCases) AS Total_Case,
      SUM(cast(Population AS BIGINT)) AS Total_Population,
    (SUM(TotalCases) * 100.0 / SUM(cast(Population AS
BIGINT))) AS Gobal_Infected_Population_Percentage
```

```
FROM worldometer_data
```

O/P:



	Total_Case	Total_Population	Gobal_Infected_Population_Percentage
1	19169166	6326421290	0.303001730698841904030

3. Countries with the Highest Infection Rates

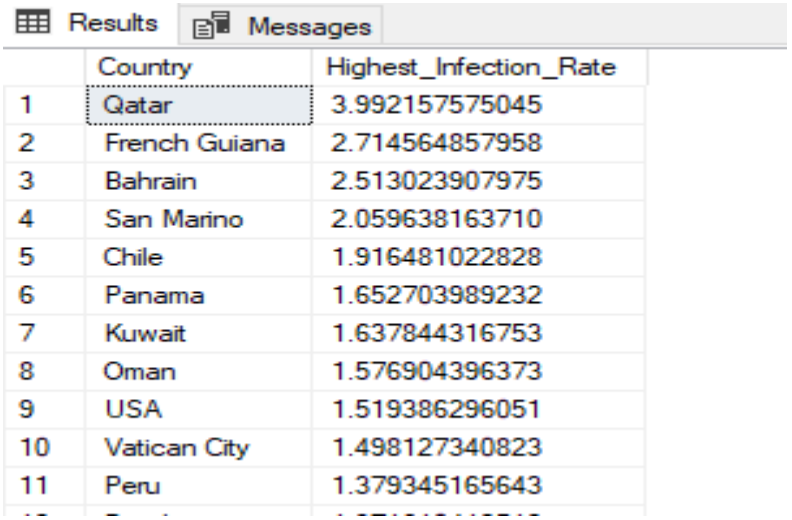
Objective:

To identify the countries with the highest infection rates.

Query:

```
SELECT
    Country_Region AS Country,
    (SUM(TotalCases) * 100.0 / SUM(Population)) AS
Highest_Infection_Rate
FROM worldometer_data
GROUP BY Country_Region
ORDER BY Highest_Infection_Rate DESC;
```

O/P:



	Country	Highest_Infection_Rate
1	Qatar	3.992157575045
2	French Guiana	2.714564857958
3	Bahrain	2.513023907975
4	San Marino	2.059638163710
5	Chile	1.916481022828
6	Panama	1.652703989232
7	Kuwait	1.637844316753
8	Oman	1.576904396373
9	USA	1.519386296051
10	Vatican City	1.498127340823
11	Peru	1.379345165643

4. Countries and Continents with the Highest Death Counts

Objective:

To find out which countries and continents have the highest death counts.

Query:

```
SELECT
    Country_Region AS Country,
    TotalDeaths
FROM worldometer_data
ORDER BY TotalDeaths DESC;
```

O/P:

Results | Messages

	Country	TotalDeaths
1	USA	162804
2	Brazil	98644
3	Mexico	50517
4	UK	46413
5	India	41638

Query:

```
SELECT
    Continent,
    SUM(TotalDeaths) AS Total_Continent_Deaths
FROM worldometer_data
GROUP BY  Continent
ORDER BY Total_Continent_Deaths DESC;
```

O/P:

Results | Messages

	Continent	Total_Continent_Deaths
1	North America	229855
2	Europe	205232
3	South America	154885
4	Asia	100627
5	Africa	22114
6	Australia/Oceania	281
7	NULL	13

5. Average Number of Deaths by Day (Continents and Countries)

Objective:

To compute the average number of deaths per day for continents and countries.

Query:

```
SELECT
    Country_Region,Date,
     AVG(Deaths) AS DEATHS
FROM covid_19_clean
GROUP BY Country_Region,Date
```

O/P:

Results | Messages | Execution plan

	Country_Region	Date	DEATHS
1	Dominican Republic	2020-02-20	0
2	Suriname	2020-02-20	0
3	Belize	2020-03-02	0
4	Estonia	2020-03-29	3
5	Yemen	2020-05-24	42
6	Burma	2020-05-25	6
7	Panama	2020-07-19	1096
8	Mexico	2020-03-21	2
9	Niger	2020-04-09	11

Query:

```
SELECT
    WHO_Region AS Continent,Date,
     AVG(Deaths) AS DEATHS
FROM covid_19_clean
GROUP BY WHO_Region,Date
```

O/P:

Results | Messages | Execution plan

	Continent	Date	DEATHS
1	Africa	2020-04-26	17
2	Western Pacific	2020-06-08	129
3	Europe	2020-06-13	2354
4	Africa	2020-04-03	4
5	Europe	2020-05-21	2144
6	Western Pacific	2020-07-01	135
7	Eastern Mediterranean	2020-07-24	1683
8	South-East Asia	2020-01-23	0
9	Africa	2020-03-11	0
10	Eastern Mediterranean	2020-04-21	287

6. Average of Cases Divided by the Number of Population of Each Country (TOP 10)

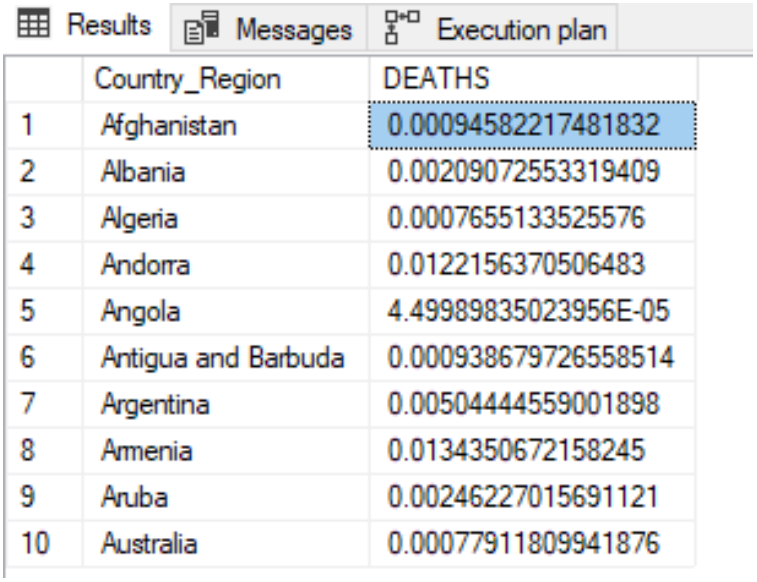
Objective:

To find the average number of cases divided by the population of each country and list the top 10 countries.

Query:

```
SELECT Top 10
    Country_Region,
     AVG(CAST(TotalCases AS float)/[Population]) AS DEATHS
FROM worldometer_data
GROUP BY Country_Region;
```

O/P:



Results | Messages | Execution plan

	Country_Region	DEATHS
1	Afghanistan	0.00094582217481832
2	Albania	0.00209072553319409
3	Algeria	0.0007655133525576
4	Andorra	0.0122156370506483
5	Angola	4.49989835023956E-05
6	Antigua and Barbuda	0.000938679726558514
7	Argentina	0.00504444559001898
8	Armenia	0.0134350672158245
9	Aruba	0.00246227015691121
10	Australia	0.00077911809941876

7. Considering the Highest Value of Total Cases, Which Countries Have the Highest Rate of Infection in Relation to Population?

Objective:

To identify countries with the highest infection rate relative to their population based on the highest value of total cases.

Query:

```
SELECT
    Country_Region,
    TotalCases,
    Population,
    (TotalCases * 1.0 / Population) AS InfectionRate
FROM worldometer_data
ORDER BY InfectionRate DESC
```

O/P:

Results | Messages | Execution plan

	Country_Region	TotalCases	Population	InfectionRate
1	Qatar	112092	2807805	0.039921575750
2	French Guiana	8127	299385	0.027145648579
3	Bahrain	42889	1706669	0.025130239079
4	San Marino	699	33938	0.020596381637
5	Chile	366671	19132514	0.019164810228
6	Panama	71418	4321282	0.016527039892
7	Kuwait	70045	4276658	0.016378443167
8	Oman	80713	5118446	0.015769043963
9	USA	5032179	331198130	0.015193862960

JOIN Queries Problem

1. Population vs Number of People Vaccinated

Objective:

To compare the population with the number of people vaccinated.

Query:

```
SELECT c.State,
SUM(c.Total_Individuals_Vaccinated) AS Total_Vaccine,
SUM(s.TotalSamples) AS Population
FROM
covid_vaccine_statewise AS c
INNER JOIN StatewiseTestingDetails AS s
ON s.state=c.state
GROUP BY c.State,s.State
```

O/P:

Results | Messages

	State	Total_Vaccine	Population
1	Andaman and Nicobar Islands	3670262625	18543656324
2	Andhra Pradesh	275520463144	1053167951684
3	Arunachal Pradesh	10055902689	34685231172
4	Assam	112451703679	604943981776
5	Bihar	323154623100	1567272825140
6	Chandigarh	9451386584	21146375024
7	Chhattisgarh	209819054162	394983406724
8	Dadra and Nagar Haveli and Daman and Diu	1930962000	1340744604
9	Delhi	149505496179	918157045128
10	Goa	15511440672	41956228032

2. Percentage of Different Vaccines Taken by People in a Country

Objective:

To find out the percentage of different vaccines taken by people in each country.

Query:

```
SELECT State,
ROUND(SUM(Covaxin_Doses_Administered)*100.0/SUM(Total_Doses_Administered),4) AS Covaxin,
ROUND(SUM(CoviShield_Doses_Administered)*100.0/SUM(Total_Doses_Administered),4) AS Covishield,
ROUND(SUM(Sputnik_V_Doses_Administered)*100.0/SUM(Total_Doses_Administered),4) AS Sputnik
FROM
covid_vaccine_statewise
GROUP BY State
```

O/P:

Results Messages

	State	Covaxin	Covishield	Sputnik
1	Lakshadweep	0.0014	99.9603	0
2	Maharashtra	11.6515	88.2102	0.0576
3	Telangana	17.7404	81.7067	0.3339
4	Jammu and Kashmir	2.1548	97.7868	0
5	Punjab	10.3653	89.5299	0.0244
6	Kerala	7.774	92.0601	0.0374
7	Rajasthan	9.1657	90.6942	0.0085
8	Arunachal Pradesh	0.003	99.7755	0
9	Tripura	1.1354	98.7135	0
10	Nagaland	0.0072	99.7328	0.0833
11	Sikkim	0.0069	99.9126	0

3. Percentage of People Who Took Both Doses

Objective:

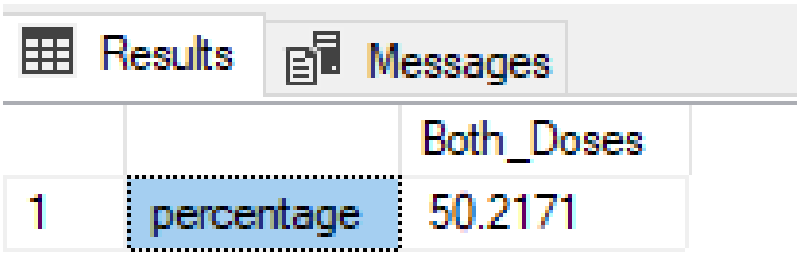
To determine the percentage of people who took both doses of the vaccine in each country.

Query:

```
SELECT 'percentage' AS ' ',

ROUND(SUM(Second_Dose_Administered)*100.0/SUM(Total_Indiv
iduals_Vaccinated),4) AS Both_Doses
FROM
    covid_vaccine_statewise;
```

O/P:



		Both_Doses
1	percentage	50.2171