

# COVID 19 DATA ANALYSIS PROJECT

## USING SQL

BY AMIT



# Introduction

- This COVID-19 analysis project uses SQL to examine global data on infection, recovery, and mortality rates. It sources daily reports from WHO and public health institutions, including demographic and geographic details. The project applies SQL queries to uncover trends, identify hotspots, and evaluate containment measures.

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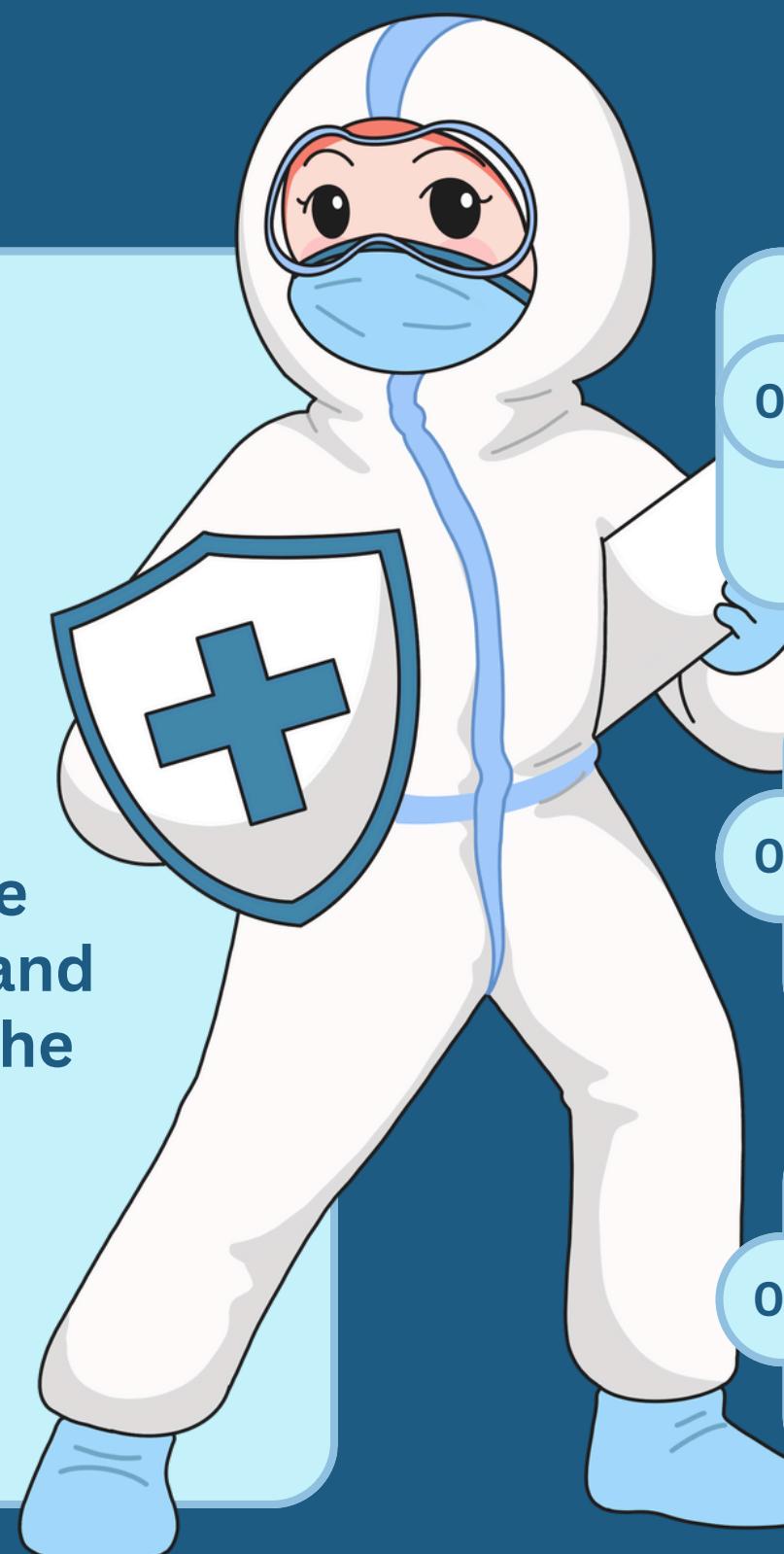


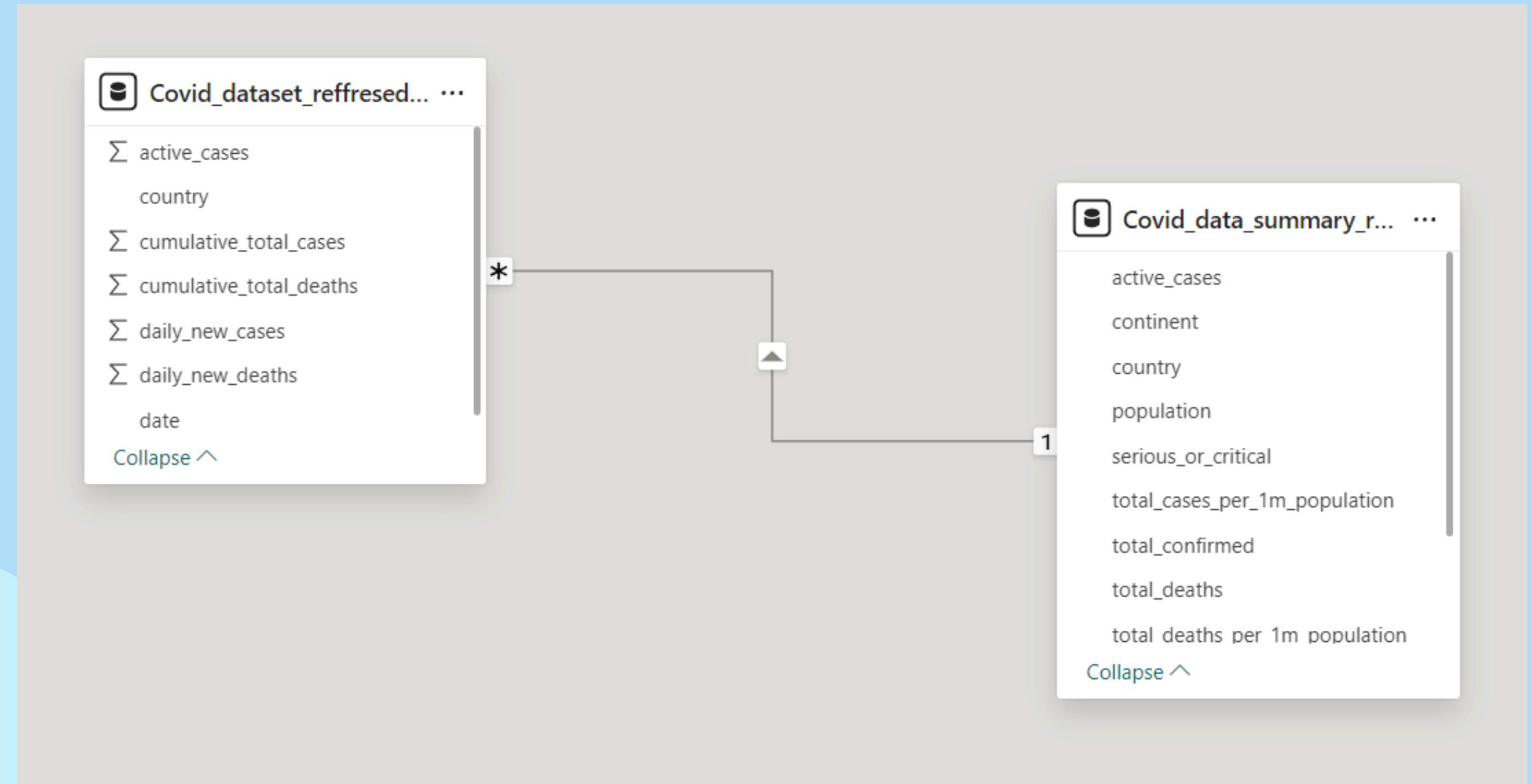
# Project objectives

The project aims to analyze COVID-19 data to understand the spread and impact of the virus globally.

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- 01 Analyze COVID-19 data to understand the virus's spread and impact globally, focusing on infection, recovery, and mortality rates.
- 02 Utilize daily reports from WHO and public health institutions, covering confirmed cases, recoveries, fatalities, and demographic and geographic information.
- 03 Employ SQL for data cleaning, transformation, and complex queries to identify trends, hotspots, and the effectiveness of containment measures.





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**Find the total number of confirmed cases in the continent "Europe".**

```
SELECT  
    SUM(total_confirmed) AS total_conformed_cases  
FROM  
    Covid_data_summary  
WHERE  
    continent = 'Europe'
```

total_conformed_cases
177630778

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# Select the country and total number of deaths for countries with more than 1000 deaths.

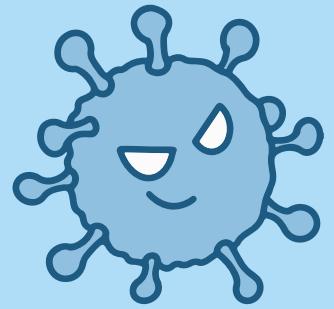
```
SELECT  
    country, SUM(total_deaths) AS total_death  
FROM  
    Covid_data_summary  
WHERE  
    total_deaths > 1000  
GROUP BY country
```

country	total_death
Afghanistan	7690
Albania	3497
Algeria	6875
Argentina	128729
Australia	7794
Austria	18303
Bahrain	1479
Bangladesh	29127
Belgium	31613
Bolivia	21943



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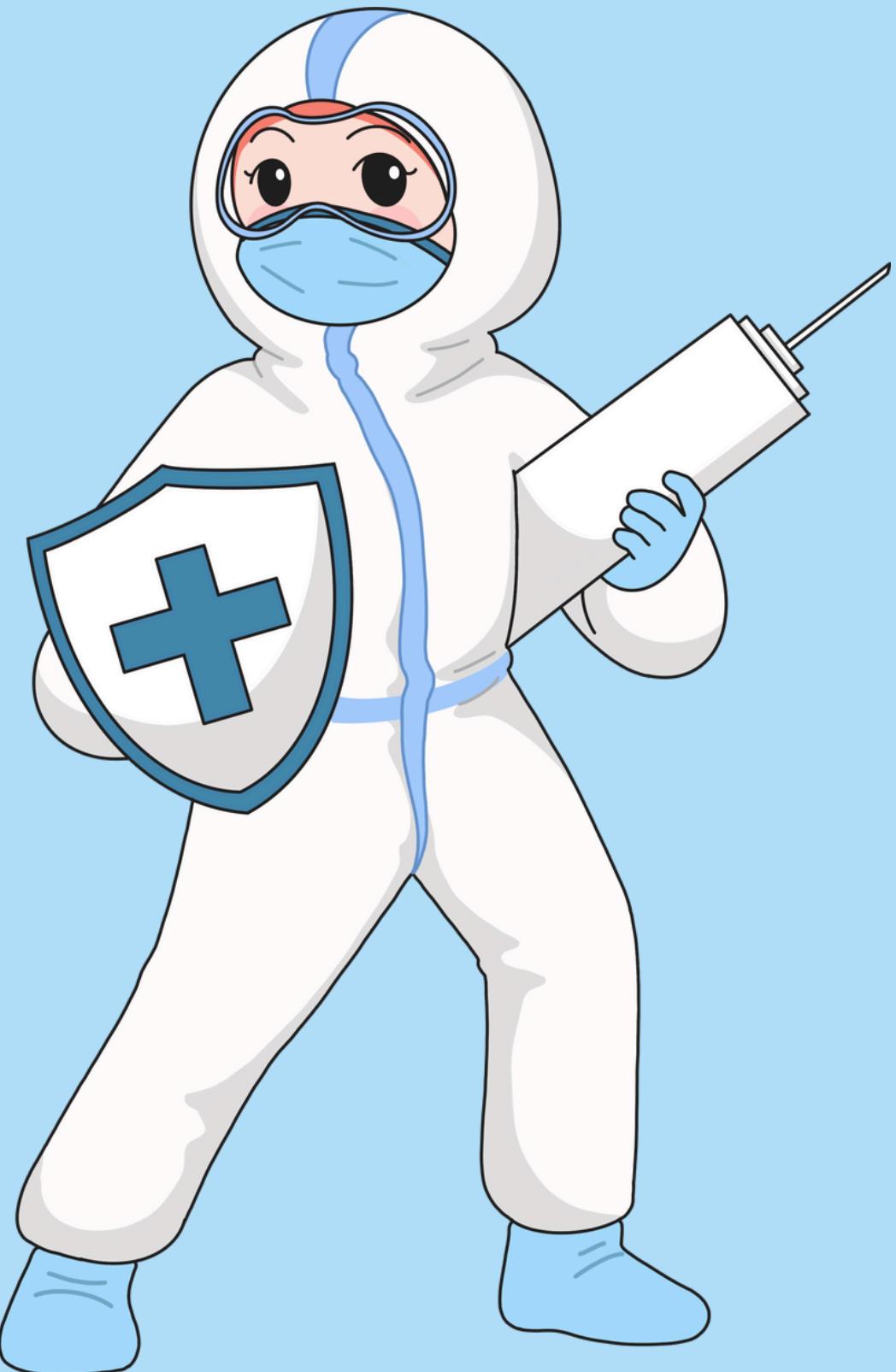
# Find the total number of recovered cases in the country "India".

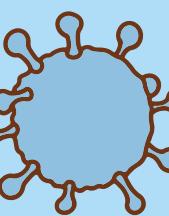


```
SELECT  
    country, SUM(total_recovered) AS total_recovered  
FROM  
    Covid_data_summary  
WHERE  
    country = 'India'  
GROUP BY country
```

country	total_recovered
India	42579693

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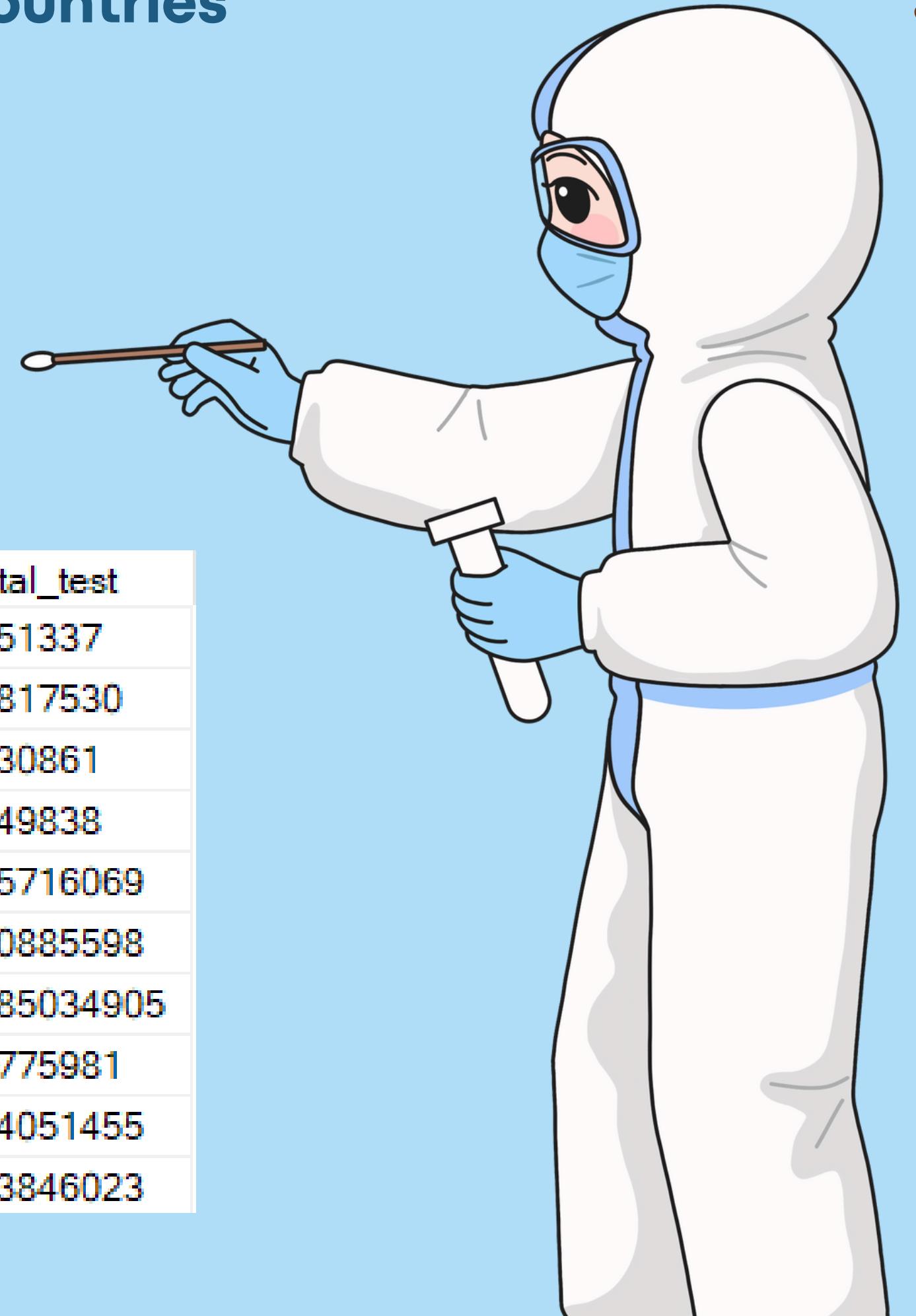




# Select the country and total number of tests for countries with more than 100000 tests.

```
SELECT  
    country, SUM(total_tests) AS total_test  
FROM  
    Covid_data_summary  
WHERE  
    total_tests > 100000  
GROUP BY country
```

country	total_test
Afghanistan	951337
Albania	1817530
Algeria	230861
Andorra	249838
Argentina	35716069
Australia	70885598
Austria	185034905
Bahrain	9775981
Bangladesh	14051455
Belgium	33846023



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# Find the population count for the country "China".

```
SELECT  
    country, SUM(population) AS total_population  
FROM  
    Covid_data_summary  
WHERE  
    country = 'China'  
GROUP BY country
```

country	total_population
China	1439323776

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# Find the total number of confirmed cases per 1 million population for the country "Brazil".

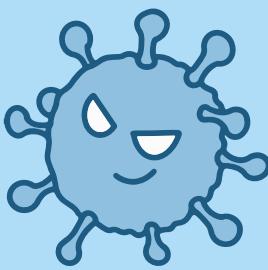
```
SELECT  
    country,  
    SUM(total_confirmed) AS conformed_cases,  
    total_cases_per_1m_population  
FROM  
    Covid_data_summary  
WHERE  
    country = 'Brazil'  
GROUP BY total_cases_per_1m_population , country
```

country	conformed_cases	total_cases_per_1m_population
Brazil	30682094	142460

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# Find the average number of daily new cases for all countries in the continent "Africa".



```
SELECT  
    p.country, AVG(p.daily_new_cases) AS avg_daily_cases  
FROM  
    Covid_dataset_daily_data p  
        JOIN  
    Covid_data_summary A ON p.country = a.country  
WHERE  
    continent = 'Africa'  
GROUP BY p.country
```

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country	avg_daily_cases
South Africa	4995
Morocco	1451
Libya	650
Egypt	632
Ethiopia	612
Reunion	560
Botswana	395
Algeria	328
Zimbabwe	318
Nigeria	317



Select the country and cumulative total cases for countries with more than 100000 cumulative total cases.



```
SELECT  
    country, cumulative_total_cases  
FROM  
    Covid_dataset_daily_data  
WHERE  
    cumulative_total_cases > 100000  
GROUP BY country , cumulative_total_cases;
```

country	cumulative_total_cases
Algeria	109782
Greece	140526
Italy	16008689
Uruguay	384287
Azerbaijan	133733
Brunei Darussalam	138811
Canada	189387
Germany	179021
Honduras	109960
Morocco	486833

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Find the total number of deaths per 1 million population for the continent "Europe".

```
SELECT
    continent,
    SUM(total_deaths_per_1m_population) AS total_deaths_per_1m_population
FROM
    Covid_data_summary
WHERE
    continent = 'Europe'
GROUP BY continent
```

continent	total_deaths_per_1m_population
Europe	86513

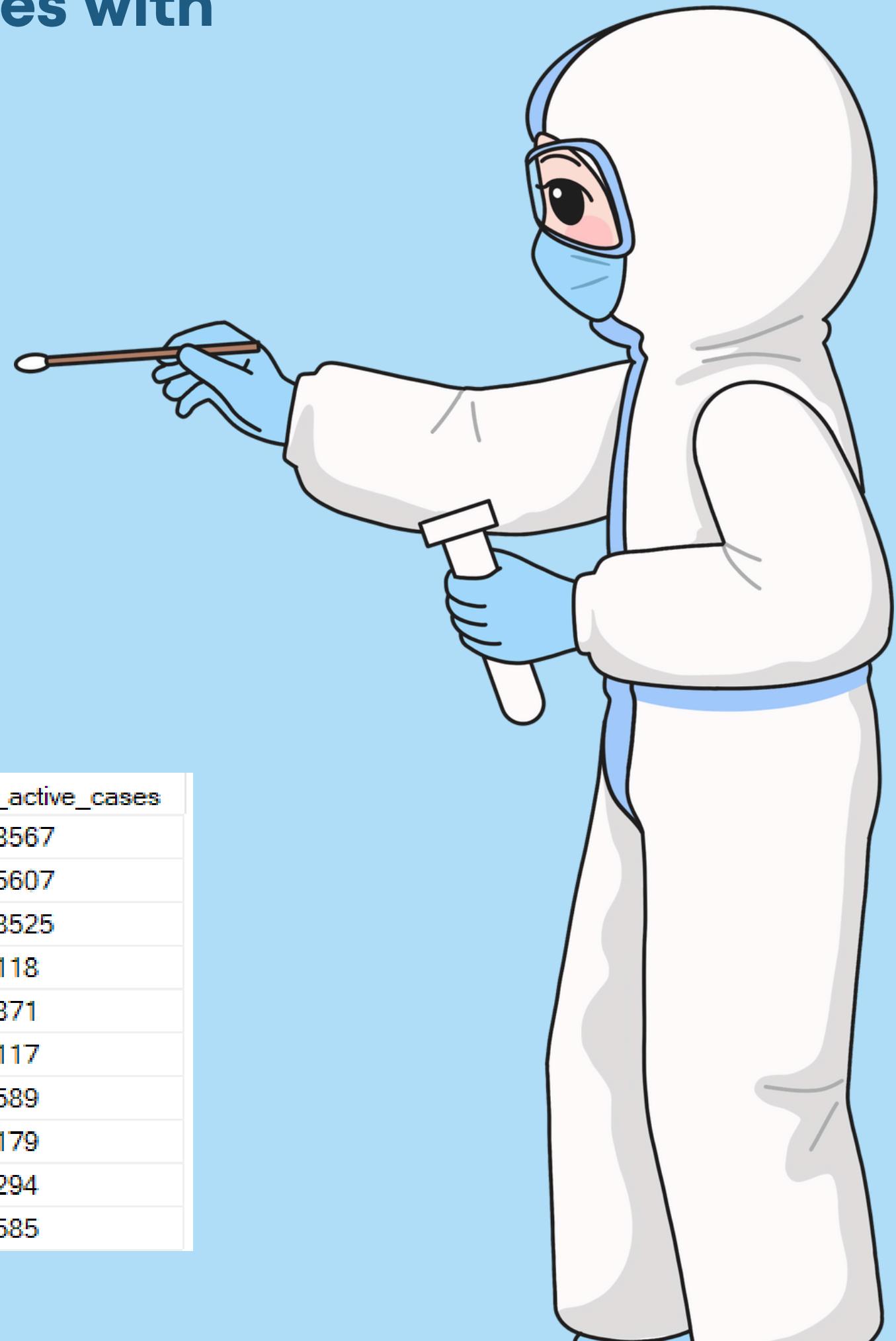
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# Select top 10 country and active cases for countries with more than 50000 active cases.

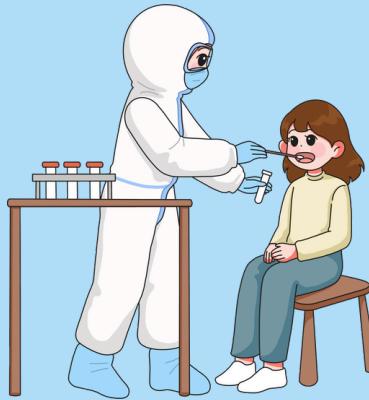
```
SELECT  
    country, SUM(active_cases) AS total_active_cases  
FROM  
    Covid_data_summary  
WHERE  
    active_cases > 50000  
GROUP BY country  
ORDER BY total_active_cases DESC  
LIMIT 10
```

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country	total_active_cases
USA	1938567
Germany	1685607
Viet Nam	1298525
Italy	998118
France	856871
Poland	552117
Spain	473589
Australia	386179
Mexico	376294
Japan	356585



# Find the total number of tests per 1 million population for the country "Japan".



```
SELECT  
    country,  
    SUM(total_tests_per_1m_population) AS total_tests_per_1m_population  
FROM  
    Covid_data_summary  
WHERE  
    country = 'Japan'  
GROUP BY country
```

country	total_tests_per_1m_population
Japan	401129

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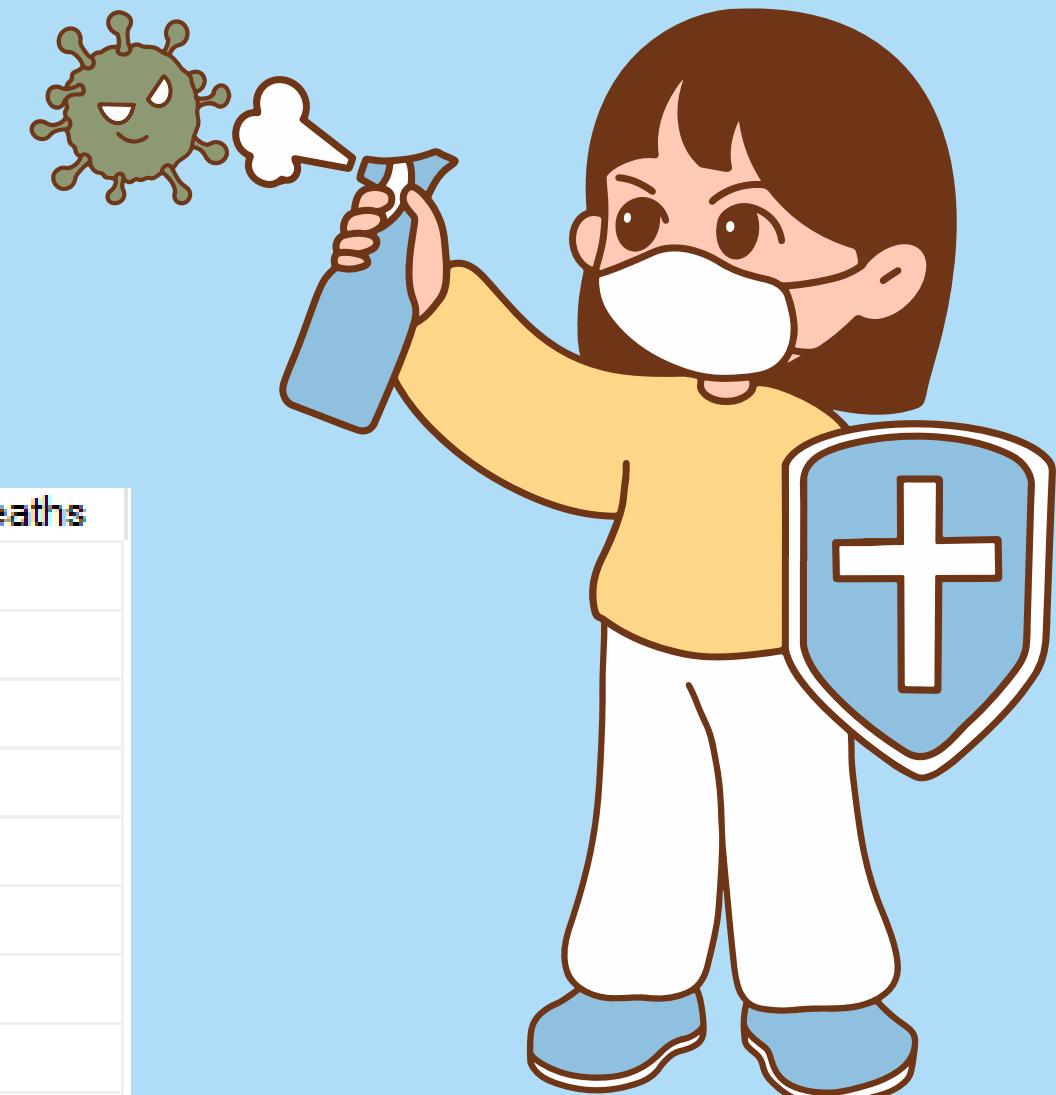
# Select the country and daily new deaths for countries with more than 100 daily new deaths

```
SELECT  
    country, daily_new_deaths  
FROM  
    Covid_dataset_daily_data  
WHERE  
    daily_new_deaths > 100  
GROUP BY country , daily_new_deaths  
ORDER BY daily_new_deaths
```

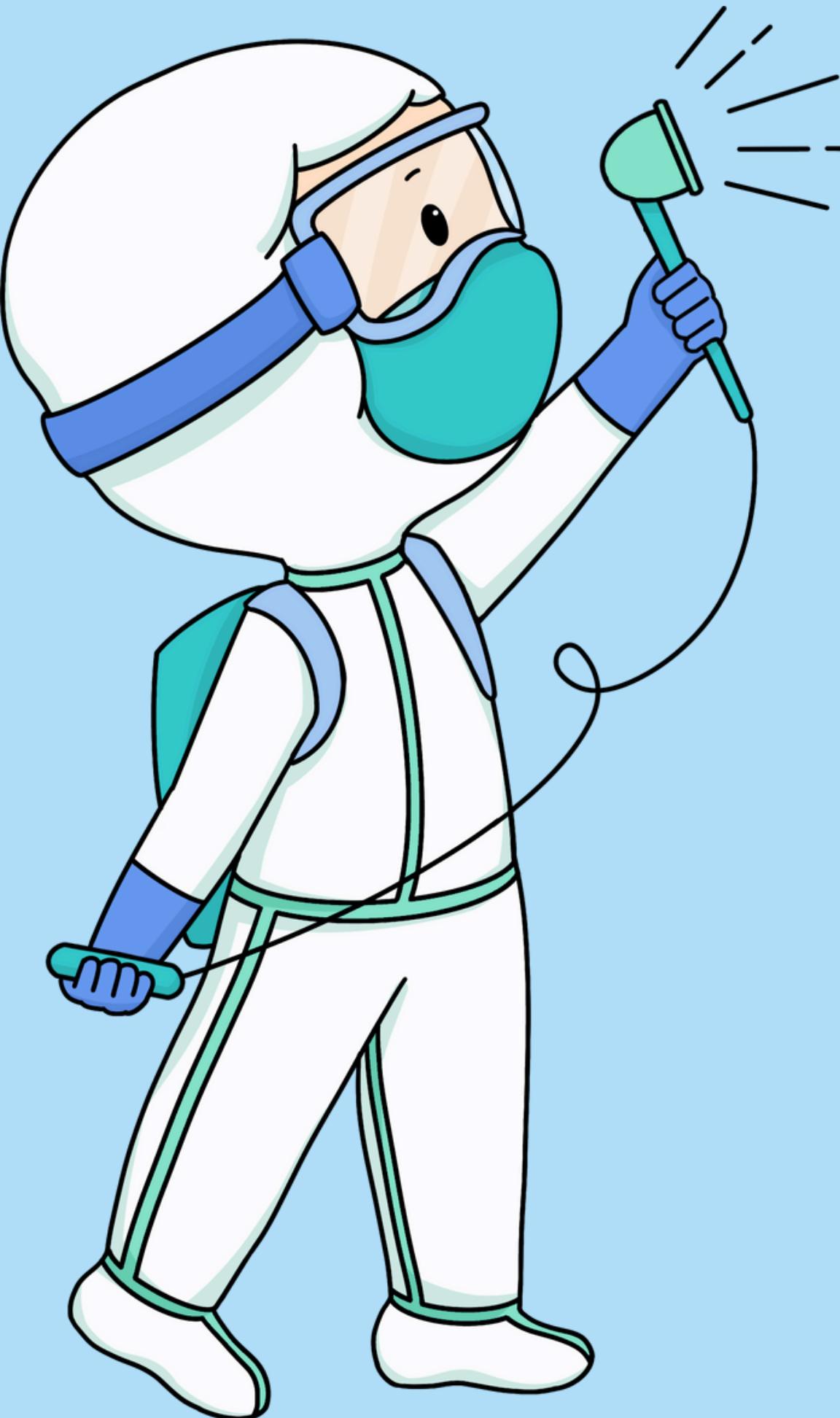


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country	daily_new_deaths
Switzerland	102
Thailand	102
Turkey	102
UK	102
Viet Nam	102
Zimbabwe	102
Belgium	103
Bolivia	103
Brazil	103
Bulgaria	103



# Find the cumulative total deaths for the continent "North America".



```
SELECT  
    SUM(a.cumulative_total_deaths) AS cumulative_deaths,  
    p.continent  
FROM  
    Covid_dataset_daily_data A  
    JOIN  
    Covid_data_summary P ON a.country = p.country  
WHERE  
    continent = 'North America'  
GROUP BY p.continent
```

continent	cumulative_deaths
North America	602640836

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Select the country and total cases per 1 million population for countries with more than 5000 total cases per 1 million population.

```
SELECT  
    country, total_cases_per_1m_population  
FROM  
    Covid_data_summary  
WHERE  
    total_cases_per_1m_population > 5000  
ORDER BY total_cases_per_1m_population DESC
```

country	total_cases_per_1m_population
Faeroe Islands	704302
Andorra	543983
Denmark	510561
San Marino	494716
Slovenia	490254
Saint Pierre And Miquelon	477095
Netherlands	468869
Austria	462804
Liechtenstein	452546
Reunion	447503

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# Find the top 5 countries with the highest number of serious or critical in continent 'Asia' .

```
SELECT
    country, MAX(serious_or_critical) AS maximum_serious_cases
FROM
    Covid_data_summary
WHERE
    continent = 'Asia'
GROUP BY country
ORDER BY maximum_serious_cases DESC
LIMIT 5;
```

country	maximum_serious_cases
Indonesia	2771
Thailand	1496
Bangladesh	1273
Afghanistan	1124
Turkey	975

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# Find the country with the highest number of daily new deaths per 1 million population, and the corresponding value.

```
SELECT
    A.country,
    A.date,
    (a.daily_new_deaths / B.population) * 1000000 AS daily_new_deaths_per_1m_population
FROM
    Covid_dataset_daily_data A
        JOIN
    Covid_data_summary B ON A.country = B.country
WHERE
    A.date = (SELECT
        MAX(date)
    FROM
        Covid_dataset_daily_data)
```



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Select the country and average number of total cases per 1 million population, grouped by country, for countries with more than 5000 total cases per 1 million population.

```
SELECT
    country,
    AVG(total_cases_per_1m_population) AS avg_of_total_cases_1m_population
FROM
    Covid_data_summary
WHERE
    total_cases_per_1m_population > 5000
GROUP BY country
ORDER BY avg_of_total_cases_1m_population DESC
```

country	avg_of_total_cases_1m_population
Faeroe Islands	704302
Andorra	543983
Denmark	510561
San Marino	494716
Slovenia	490254
Saint Pierre And Miquelon	477095
Netherlands	468869
Austria	462804
Liechtenstein	452546
Reunion	447503

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Select the continent and average number of recovered cases, grouped by continent, for continents with more than 1000 recovered cases.



```
SELECT
    continent, AVG(total_recovered) AS total_recovered
FROM
    Covid_data_summary
WHERE
    total_recovered > 1000
GROUP BY continent
```

continent	total_recovered
Africa	330913
Asia	3862333
Australia/Oceania	1054248
Europe	5006093
North America	3937990
South America	5657728

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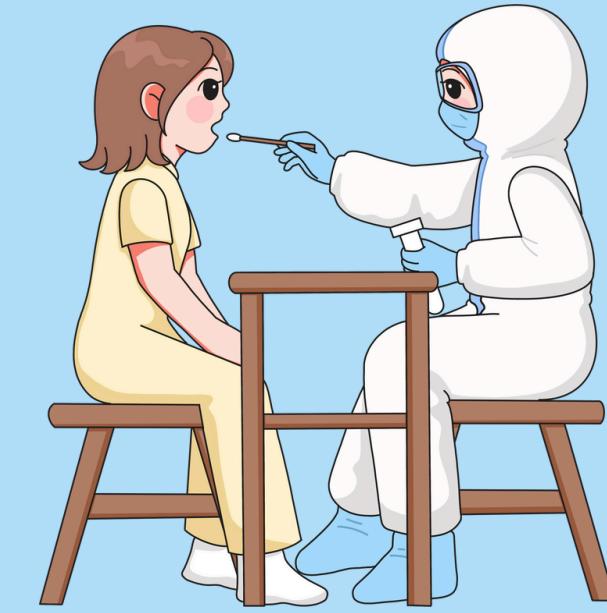


Select the continent and average number of total tests per 1 million population, grouped by continent, for continents with more than 100000 total tests.

```
SELECT
    continent,
    AVG(total_tests_per_1m_population) AS total_tests_per_1m_population
FROM
    Covid_data_summary
WHERE
    total_tests > 100000
GROUP BY continent
```

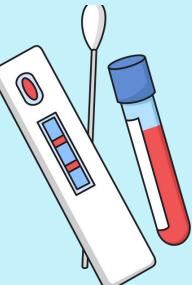


continent	total_tests_per_1m_population
Europe	4518590
North America	2019908
Asia	1524839
Australia/Oceania	1373970
South America	906029
Africa	248132



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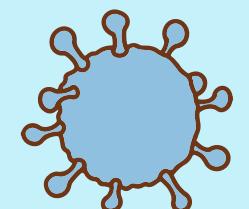
## Project Conclusions



The project highlighted the importance of accurate and timely data collection, as inconsistencies and delays in reporting affected the analysis quality.

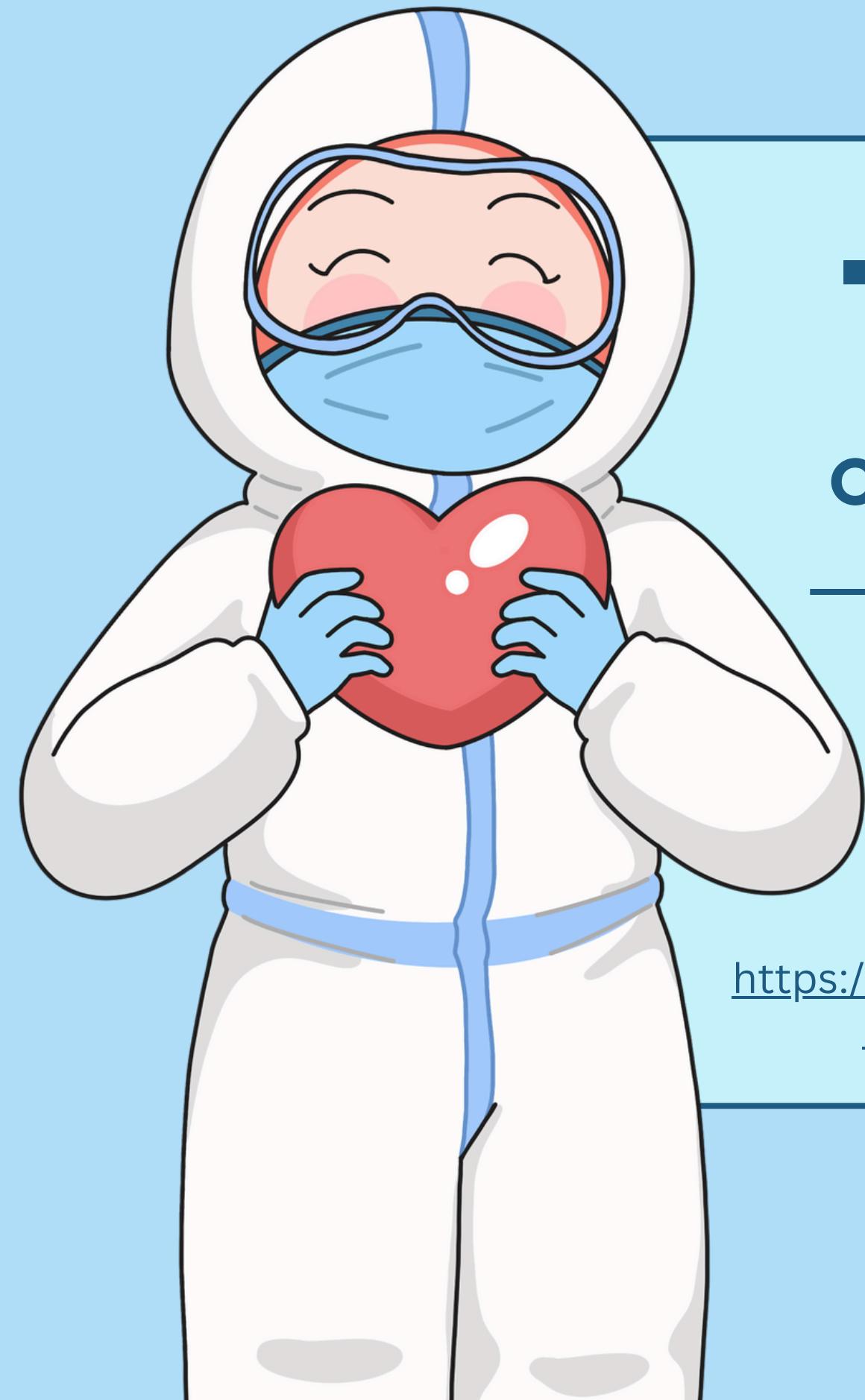


The analysis revealed significant trends in infection, recovery, and mortality rates, highlighting critical hotspots and regions most affected by COVID-19.



Findings indicated periods of heightened strain on healthcare systems, underscoring the need for robust healthcare infrastructure and resource allocation during pandemics.





# THANK YOU!

**Contact me if you have questions**



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