



COVID-19
CORONAVIRUS 2019 - nCoV

SQL PROJECT COVID19

Harshil Trivedi



ABOUT PROJECT

The objective of the project is to gain insights about the effect of Covid 19 to all over world continents and countries.

Source of Data :

<https://ourworldindata.org/>



FUNCTIONS AND SQL THAT USED IN THE PROJECT

- PostgreSQL
- JOINS
- Table creation
- Groupby
- Max
- Avg

STEPS COVERED

DATA COLLECTION

The CSV file has been downloaded from the website and performed raw data cleaning

NEW DB AND TABLE CREATION

Database and 2 new table named CovidDeaths and CovidVaccination has been created for data source

QUERY COLLECTION

Queries has been collected to solve different questions

QUERY SOLUTION

Queries has been solved using different functions and prompts

TABLE 1 - COVID DEATHS

pgAdmin 4

File Object Tools Help

Object Explorer

- FTS Templates
- Foreign Tables
- Functions
- Materialized Views
- Operators
- Procedures
- 1.3 Sequences
- Tables (2)
 - CovidVaccinations
 - Columns (28)
 - Constraints
 - Indexes
 - RLS Policies
 - Rules
 - Triggers
 - CovidDeaths
 - Columns (16)
 - Constraints
 - Indexes
 - RLS Policies
 - Rules
 - Triggers
 - Trigger Functions
 - Types
 - Views
- Subscriptions
- postgres
 - Casts
 - Catalogs

ovidVacci... x Processes x PortfolioProjectCo... x public.CovidVacci... x public.CovidDeaths/PortfolioProjectCovid19/postgres@PostgreSQL 16 x

public.CovidDeaths/PortfolioProjectCovid19/postgres@Postgre...

Query Query History

```
1 SELECT * FROM public."CovidDeaths"
2
```

Data Output Messages Notifications

	iso_code character varying	continent character varying	location character varying	date character varying	population character varying	total_cases character varying	new_cases character varying	total_deaths character varying	new_deaths character varying
1	AFG	Asia	Afghanistan	03-01-2020	41128772	[null]	0	[null]	0
2	AFG	Asia	Afghanistan	04-01-2020	41128772	[null]	0	[null]	0
3	AFG	Asia	Afghanistan	05-01-2020	41128772	[null]	0	[null]	0
4	AFG	Asia	Afghanistan	06-01-2020	41128772	[null]	0	[null]	0
5	AFG	Asia	Afghanistan	07-01-2020	41128772	[null]	0	[null]	0
6	AFG	Asia	Afghanistan	08-01-2020	41128772	[null]	0	[null]	0
7	AFG	Asia	Afghanistan	09-01-2020	41128772	[null]	0	[null]	0
8	AFG	Asia	Afghanistan	10-01-2020	41128772	[null]	0	[null]	0

Servers > PostgreSQL 16 > Databases > PortfolioProjectCovid19 > Schemas > public > Tables > CovidDeaths

Database for Covid Deaths

00:01.024

Ln 1, Col 1

19:38 18-05-2024

TABLE 2 - COVID VACCINATION

pgAdmin 4

File Object Tools Help

Object Explorer

- > Templates
- > Foreign Tables
- > Functions
- > Materialized Views
- > Operators
- > Procedures
- > 1.3 Sequences
- > Tables (2)
 - > CovidVaccinations
 - > Columns (28)
 - > Constraints
 - > Indexes
 - > RLS Policies
 - > Rules
 - > Triggers
 - > CovidDeaths
 - > Columns (16)
 - > Constraints
 - > Indexes
 - > RLS Policies
 - > Rules
 - > Triggers
 - > Trigger Functions
 - > Types
 - > Views
- > Subscriptions
- > postgres
 - > Casts
 - > Catalogs

idents x public.CovidVacci... x Processes x PortfolioProjectCo... x public.CovidVaccinations/PortfolioProjectCovid19/postgres@PostgreSQL 16 x

public.CovidVaccinations/PortfolioProjectCovid19/postgres@P...

Query Query History

```
1 SELECT * FROM public."CovidVaccinations"
2
```

Data Output Messages Notifications

	iso_code character varying	continent character varying	location character varying	date character varying	total_tests character varying	new_tests character varying	positive_rate character varying	tests_per_case character varying	tests_u character
1	GEO	Asia	Georgia	14-03-2021	1558279	26399	0.0146	68.3	tests pe
2	GEO	Asia	Georgia	15-03-2021	1572009	13730	0.0141	70.7	tests pe
3	GEO	Asia	Georgia	16-03-2021	1601661	29652	0.0145	68.8	tests pe
4	GEO	Asia	Georgia	17-03-2021	1628828	27167	0.0134	74.6	tests pe
5	GEO	Asia	Georgia	18-03-2021	1652575	23747	0.0133	75.1	tests pe
6	GEO	Asia	Georgia	19-03-2021	1676402	23827	0.0137	73	tests pe
7	GEO	Asia	Georgia	20-03-2021	1699571	23169	0.0149	67.2	tests pe
8	GEO	Asia	Georgia	21-03-2021	1711494	11923	0.0163	61.5	tests pe

Servers > PostgreSQL 16 > Databases > PortfolioProjectCovid19 > Schemas > public > Tables > CovidVaccinations

Dataset regarding Covid Vaccinations

962

Ln 1, Col 1

19:38 18-05-2024

QUERY 1

DATE WISE LIKELIHOOD OF DYING DUE TO COVID-TOTAL CASES VS TOTAL DEATH- IN INDIA

The screenshot displays the pgAdmin 4 interface. On the left, the Object Explorer shows the database structure for 'PortfolioProjectCovid19'. The main pane shows a SQL query being executed. The query is as follows:

```
-- Portfolio Project
-- a.Datewise Likelihood of dying due to covid-Totalcases vs TotalDeath- in India
select date,total_cases,total_deaths,(cast (total_deaths as double precision)/cast(total_cases as double precision)*100) as death_percentage
```

The results are shown in a table with the following columns: date, total_cases, total_deaths, and death_percentage. The table contains 10 rows of data, showing a general upward trend in both total cases and total deaths over time, with the death percentage fluctuating between approximately 3.1% and 3.3%.

	date	total_cases	total_deaths	death_percentage
115	26-04-2020	26496	824	3.109903381642512
116	27-04-2020	27892	872	3.126344471533056
117	28-04-2020	29435	934	3.173093256327501
118	29-04-2020	31332	1007	3.21396655176816
119	30-04-2020	33050	1074	3.249621785173979
120	01-05-2020	35043	1147	3.2731215934708784
121	02-05-2020	37336	1218	3.2622669809299336
122	03-05-2020	39980	1301	3.2541270635317656
123	04-05-2020	42533	1373	3.2280817247784075

Total rows: 1000 of 2444 Query complete 00:00:00.270 Ln 3, Col 191

QUERY 2

TOTAL % OF DEATHS OUT OF ENTIRE POPULATION- IN INDIA

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure for 'PortfolioProjectCovid19' under 'PostgreSQL 16'. The 'public' schema is expanded, showing various database objects. The main pane shows a SQL query being executed. The query is as follows:

```
1 -- Portfolio Project
2 -- a.Datewise Likelihood of dying due to covid-Totalcases vs TotalDeath- in India
3 select date,total_cases,total_deaths,(cast (total_deaths as double precision)/cast(total_cases as double precision)*100) as death_rate
4 -- b.Total % of deaths out of entire population- in India
5 select (cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDeaths"
6
```

The 'Data Output' tab shows the result of the query, which is a single row with the value 0.007040283123631359 for the 'percentage' column.

	percentage double precision
1	0.007040283123631359

The status bar at the bottom indicates 'Total rows: 1 of 1' and 'Query complete 00:00:00.197'. The taskbar at the very bottom shows the Windows search bar and several open applications.

QUERY 4

COUNTRY WITH HIGHEST DEATH AS A % OF POPULATION

The screenshot shows the pgAdmin 4 interface. On the left, the Object Explorer displays the database structure for 'PortfolioProjectCovid19'. The main pane shows a SQL query being executed. The query is as follows:

```
1  -- Portfolio Project
2  -- a.Datewise Likelihood of dying due to covid-Totalcases vs TotalDeath- in India
3  select date,total_cases,total_deaths,(cast (total_deaths as double precision)/cast(total_cases as double precision)*100) as death_rate
4  -- b.Total % of deaths out of entire population- in India
5  select (cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDeaths"
6  -- c.Verify b by getting info separately
7  select max(total_deaths) as total_deaths,avg(cast(population as double precision)) as population from "CovidDeaths" where location like '%India%';
8  SELECT * FROM public."CovidDeaths" where location like '%India%';
9  -- d.Country with highest death as a % of population
10 select location,(cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDeaths"
11
```

The 'Data Output' tab shows the results of the query, which is a table with two columns: 'location' (character varying) and 'percentage' (double precision). The results are as follows:

location	percentage
Sint Maarten (Dutch part)	0.20818247646632876
Colombia	0.19264746512455136
Lebanon	0.18195748289902042
Montserrat	0.1812825742125538
Italy	0.1690197710362666
South Africa	0.16692188471196825
North America	0.16614970747354704
Suriname	0.16082945282389985
Montenegro	0.1593093088304241

The status bar at the bottom indicates 'Total rows: 255 of 255' and 'Query complete 00:00:01.534'. The bottom right corner shows the current position 'Ln 10, Col 185'.

QUERY 5

TOTAL % OF COVID +VE CASES- IN INDIA

The screenshot shows the pgAdmin 4 interface with the following components:

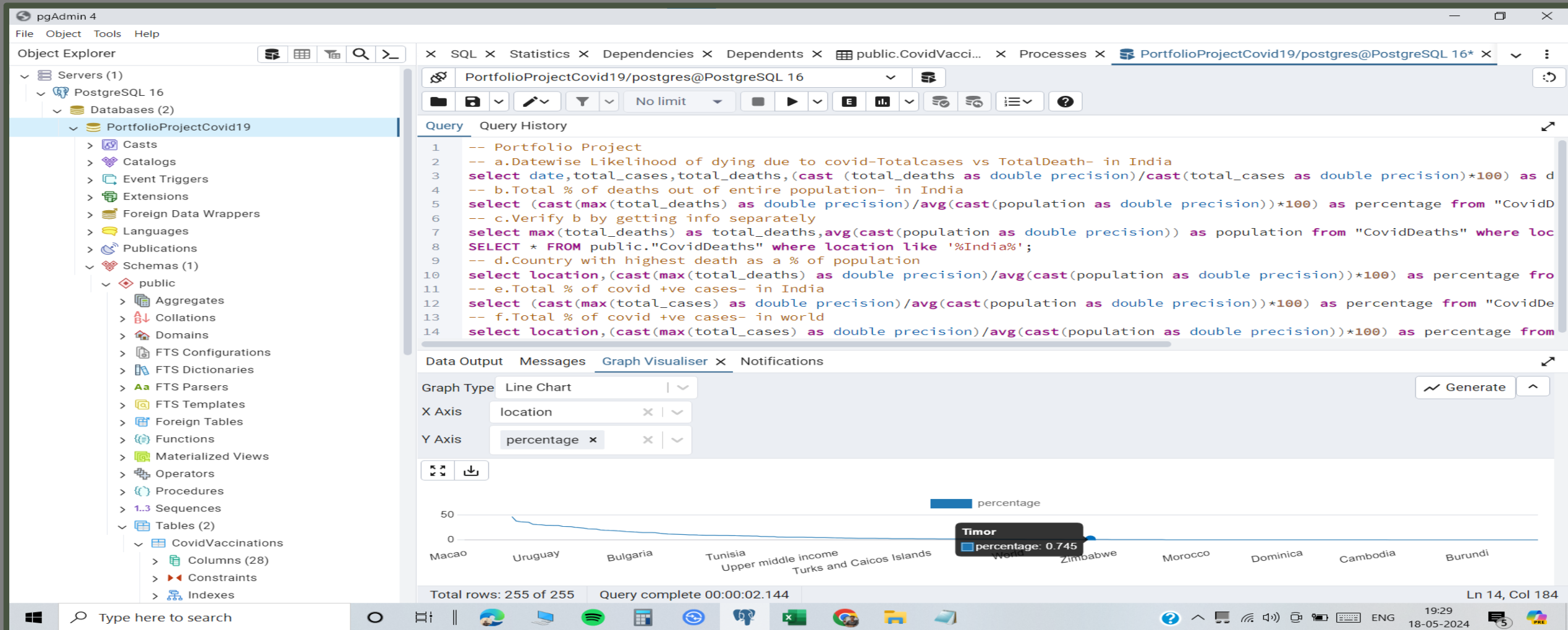
- Object Explorer:** Displays the database structure. The 'public' schema is selected, showing various objects like Aggregates, Collations, Domains, FTS Configurations, FTS Dictionaries, FTS Parsers, FTS Templates, Foreign Tables, Functions, Materialized Views, Operators, Procedures, Sequences, Tables (2), and Indexes.
- Query Editor:** Contains the following SQL query:

```
1 -- Portfolio Project
2 -- a.Datewise Likelihood of dying due to covid-Totalcases vs TotalDeath- in India
3 select date,total_cases,total_deaths,(cast (total_deaths as double precision)/cast(total_cases as double precision)*100) as dea
4 -- b.Total % of deaths out of entire population- in India
5 select (cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDea
6 -- c.Verify b by getting info separately
7 select max(total_deaths) as total_deaths,avg(cast(population as double precision)) as population from "CovidDeaths" where locat
8 SELECT * FROM public."CovidDeaths" where location like '%India%';
9 -- d.Country with highest death as a % of population
10 select location,(cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage from
11 -- e.Total % of covid +ve cases- in India
12 select (cast(max(total_cases) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDeat
```
- Data Output:** Shows the results of the query. The first result is a single row with the value 0.704179811144033 under the column 'percentage'.
- Status Bar:** Indicates 'Total rows: 1 of 1' and 'Query complete 00:00:01.648'.

	percentage double precision
1	0.704179811144033

QUERY 6

TOTAL % OF COVID +VE CASES- IN WORLD



CONTINENT WISE +VE CASES

SQL X Statistics X Dependencies X Dependents X public.CovidVacci... X Processes X PortfolioProjectCovid19/postgres@PostgreSQL 16*

PortfolioProjectCovid19/postgres@PostgreSQL 16

No limit

Query Query History

```

3 select date,total_cases,total_deaths,(cast (total_deaths as double precision)/cast(total_cases as double precision)*100) as d
4 -- b.Total % of deaths out of entire population- in India
5 select (cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDe
6 -- c.Verify b by getting info separately
7 select max(total_deaths) as total_deaths,avg(cast(population as double precision)) as population from "CovidDeaths" where loc
8 SELECT * FROM public."CovidDeaths" where location like '%India%';
9 -- d.Country with highest death as a % of population
10 select location,(cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage fro
11 -- e.Total % of covid +ve cases- in India
12 select (cast(max(total_cases) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDe
13 -- f.Total % of covid +ve cases- in world
14 select location,(cast(max(total_cases) as double precision)/avg(cast(population as double precision))*100) as percentage from
15 -- g.Continentwise +ve cases
16 select location,max(total_cases) as total_cases from "CovidDeaths" where continent is null group by location order by total_c

```

Data Output Messages Graph Visualiser X Notifications

	location character varying	total_cases text
3	High income	99868016
4	North America	99861590
5	South America	9985245
6	Lower middle income	9978951
7	Africa	9972062
8	Low income	997146
9	Asia	99714340
10	Oceania	9968
11	Upper middle income	99452212

Total rows: 12 of 12 Query complete 00:00:02.406 Ln 16, Col 136

QUERY 8

COUNTRY WISE TOTAL VACCINATED PERSONS

pgAdmin 4

File Object Tools Help

Object Explorer

Servers (1)

PostgreSQL 16

Databases (2)

PortfolioProjectCovid19

Casts

Catalogs

Event Triggers

Extensions

Foreign Data Wrappers

Languages

Publications

Schemas (1)

public

Aggregates

Collations

Domains

FTS Configurations

FTS Dictionaries

FTS Parsers

FTS Templates

Foreign Tables

Functions

Materialized Views

Operators

Procedures

Sequences

Tables (2)

CovidVaccinations

Columns (28)

Constraints

Indexes

SQL Statistics Dependencies Dependents public.CovidVacci... Processes PortfolioProjectCovid19/postgres@PostgreSQL 16*

PortfolioProjectCovid19/postgres@PostgreSQL 16

No limit

Query Query History

```
7 select max(total_deaths) as total_deaths,avg(cast(population as double precision)) as population from "CovidDeaths" where loc
8 SELECT * FROM public."CovidDeaths" where location like '%India%';
9 -- d.Country with highest death as a % of population
10 select location,(cast(max(total_deaths) as double precision)/avg(cast(population as double precision))*100) as percentage fro
11 -- e.Total % of covid +ve cases- in India
12 select (cast(max(total_cases) as double precision)/avg(cast(population as double precision))*100) as percentage from "CovidDe
13 -- f.Total % of covid +ve cases- in world
14 select location,(cast(max(total_cases) as double precision)/avg(cast(population as double precision))*100) as percentage from
15 -- g.Continentwise +ve cases
16 select location,max(total_cases) as total_cases from "CovidDeaths" where continent is null group by location order by total_c
17 --h.Continentwise deaths
18 select location,max(total_deaths) as total_deaths from "CovidDeaths" where continent is null group by location order by total
19 --i. Countrywise total vaccinated persons
20 select "CovidDeaths".location as country,max("CovidVaccinations".people_fully_vaccinated) as Fully_vaccinated from "CovidDeat
```

Data Output Messages Graph Visualiser Notifications

	country character varying	fully_vaccinated text
32	Sri Lanka	9994589
33	Chile	9993848
34	Barbados	99921
35	South Korea	9990867
36	Malaysia	999026
37	India	99893015
38	Luxembourg	9988
39	Jordan	998765
40	Kenya	9985687

Total rows: 243 of 243 Query complete 00:00:11.076

Ln 19, Col 4