

Azure Data Studio File Edit View Window Help

← → 🔍 Desktop

CONNECTIONS ...

SE... p20server.database...

SQLQuery_1 - (84) p...peg20b ● SQLQuery_Azure.sql - (79) p...peg20b

Run Cancel Disconnect Change Database: covid19database Estimated Plan Enable Actual Plan Parse

Enable SQLCMD To Notebook

```
1 -- Daily and Cumulative Infections and Deaths by Country in 2021
2 SELECT
3     location,
4     date,
5     new_cases AS new_infections,
6     SUM(new_cases) OVER (PARTITION BY location ORDER BY location, date) AS tot_infections,
7     new_deaths,
8     SUM(new_deaths) OVER (PARTITION BY location ORDER BY location, date) AS tot_deaths
9     FROM covid.case_death
10    Where date BETWEEN '2021-01-01' AND '2022-01-01'
11    ORDER BY location, date
12
13
```

Results Messages

	location	date	new_infections	tot_infections	new_deaths	tot_deaths
1	Afghanistan	2021-01-01	0	0	0	0
2	Afghanistan	2021-01-02	0	0	0	0
3	Afghanistan	2021-01-03	861	861	63	63
4	Afghanistan	2021-01-04	0	861	0	63
5	Afghanistan	2021-01-05	0	861	0	63
6	Afghanistan	2021-01-06	0	861	0	63
7	Afghanistan	2021-01-07	0	861	0	63
8	Afghanistan	2021-01-08	0	861	0	63
9	Afghanistan	2021-01-09	0	861	0	63
10	Afghanistan	2021-01-10	780	1641	56	119
11	Afghanistan	2021-01-11	0	1641	0	119
12	Afghanistan	2021-01-12	0	1641	0	119
13	Afghanistan	2021-01-13	0	1641	0	119
14	Afghanistan	2021-01-14	0	1641	0	119
15	Afghanistan	2021-01-15	0	1641	0	119
16	Afghanistan	2021-01-16	0	1641	0	119
17	Afghanistan	2021-01-17	495	2136	62	181
18	Afghanistan	2021-01-18	0	2136	0	181
19	Afghanistan	2021-01-19	0	2136	0	181



> AZURE

← →

○ Desktop

CONNECTIONS ... SQLQuery_1 - (76) p...peg20b ●



▶ Run □ Cancel & Disconnect ☰ Change
Enable SQLCMD □ To Notebook Database: covid19database ▶

...

— Monthly Population Infection and Death Rates (per Million People) by Location

SELECT

```

 3   location,
 4   YEAR(date) AS date_year,
 5   MONTH(date) AS date_month,
 6   SUM(new_cases/population * 10000000) AS population_infection_rate,
 7   SUM(new_deaths/population * 10000000) AS population_death_rate
 8   FROM covid.case_death
 9   GROUP BY
 10  location, YEAR(date), MONTH(date)
 11 ORDER BY
 12  location, YEAR(date), MONTH(date)
 13
 14

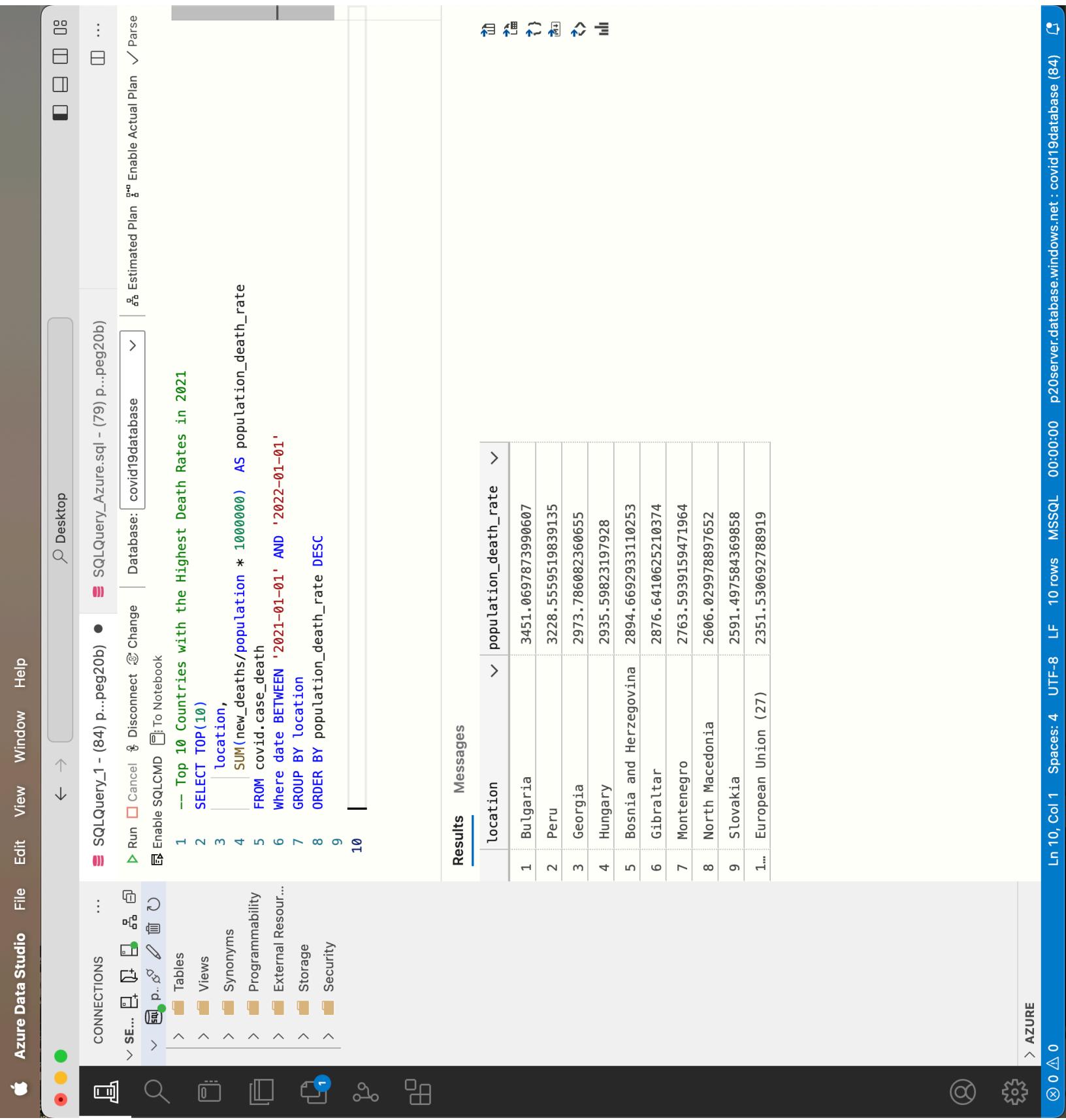
```

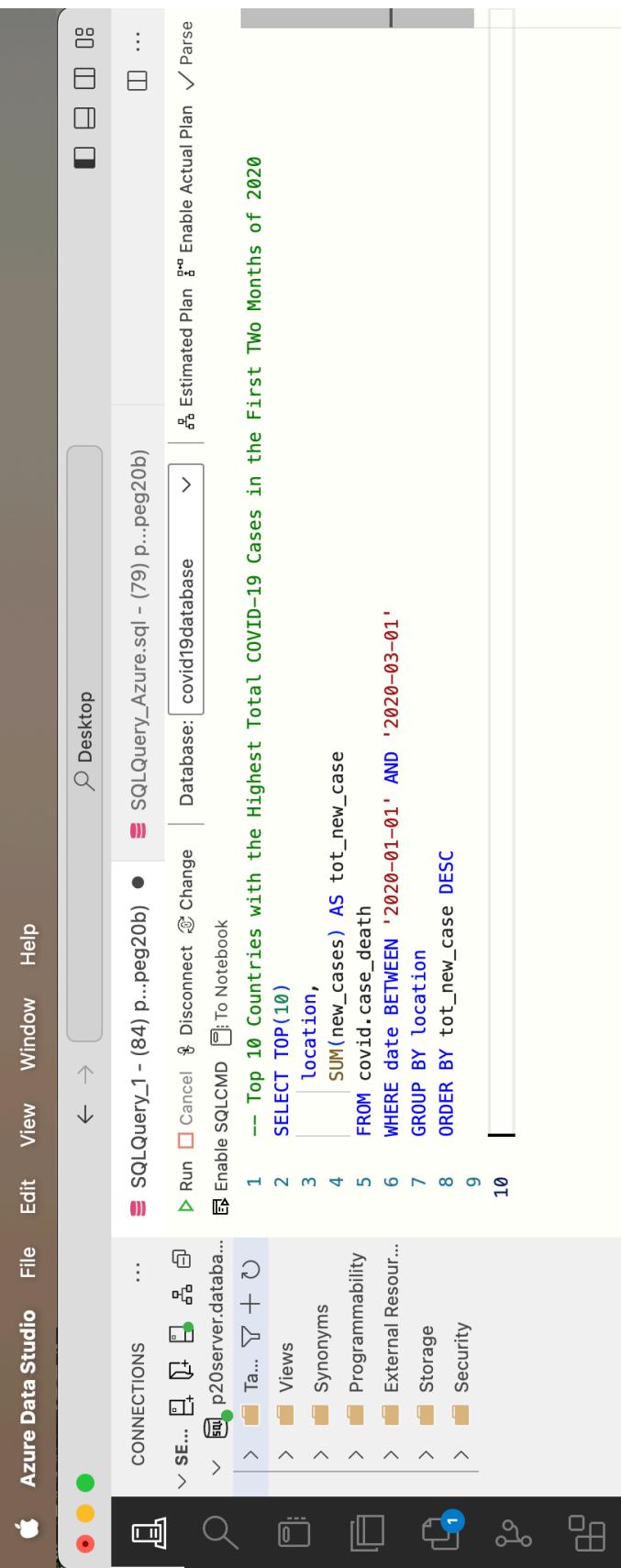
Results Messages

	location	date_year	date_month	population_infection_rate	population_death_rate
1	Afghanistan	2020	1	0	0
2	Afghanistan	2020	2	0	0
3	Afghanistan	2020	3	2.212563020359567	0.04862275868922126
4	Afghanistan	2020	4	30.124896507972572	0.9968690531290358
5	Afghanistan	2020	5	318.82278998458792	4.984345265645179
6	Afghanistan	2020	6	393.22283706403877	11.06285101797836
7	Afghanistan	2020	7	131.7812260477896	13.20243648412357
8	Afghanistan	2020	8	51.22933437790946	3.7929651777592586
9	Afghanistan	2020	9	25.50525943249655	1.2400007846575142
10	Afghanistan	2020	10	38.31867384710635	1.41020050019874164
11	Afghanistan	2020	11	126.38354483328605	5.859644922051162
12	Afghanistan	2020	12	143.0142380499974	9.871435013911915
13	Afghanistan	2021	1	77.19656691913875	5.883958801395772
14	Afghanistan	2021	2	16.800890627125945	1.045496811818257
15	Afghanistan	2021	3	14.102050019874167	0.656474742304487
16	Afghanistan	2021	4	61.9760784494125	2.7231544865963904
17	Afghanistan	2021	5	289.7728140290695	8.193777339133781
18	Afghanistan	2021	6	1056.6568824374333	42.08735145521
19	Afghanistan	2021	7	720.9308364470497	43.15713583668387

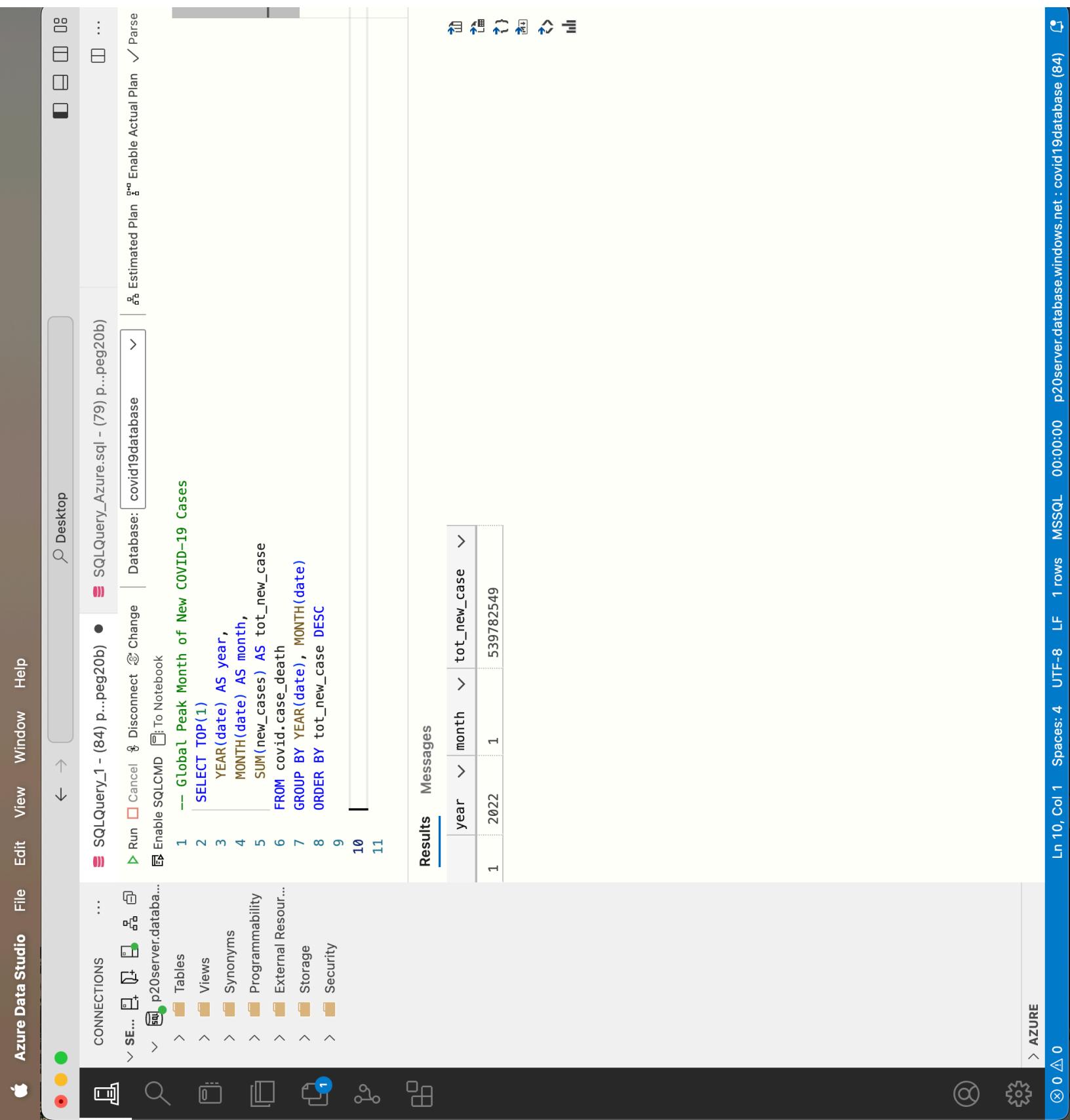
> AZURE







Results	Messages	location	tot_new_case
1	World	86515	
2	Asia	84693	
3	Upper-middle-income countries	80070	
4	China	79968	
5	High-income countries	5802	
6	South Korea	3526	
7	Europe	1697	
8	European Union (27)	1534	
9	Italy	1128	
10	Lower-middle-income countries	642	



← → 🔍 Desktop

CONNECTIONS ... SQLQuery_1 - (84) p...peg20b ● SQLQuery_Azure.sql - (79) p...peg20b Database: covid19database

SE... 📡 📤 📥 📧 🔍 Run Cancel Disconnect Change Enable SQLCMD To Notebook ...

p20server:database... Ta... 🌐 + ○ Views Synonyms Programmability External Resour... Storage Security

```

1 -- Peak Month of New COVID-19 Cases by Country
2 WITH ranked_inf_rate AS (
3     SELECT
4         location,
5             YEAR(date) AS year,
6             MONTH(date) AS month,
7             SUM(new_cases) AS tot_new_case,
8             ROW_NUMBER() OVER (PARTITION BY location ORDER BY SUM(new_cases) DESC) AS inf_rank
9     FROM covid.case_death
10    GROUP BY location, YEAR(date), MONTH(date)
11 )
12     SELECT location,
13         year,
14         month,
15         tot_new_case
16     FROM ranked_inf_rate
17     WHERE inf_rank = 1
18
19

```

Results Messages

	location	year	month	tot_new_case
1	Afghanistan	2021	6	43459
2	Africa	2022	1	1433745
3	Albania	2022	1	48520
4	Algeria	2021	8	33803
5	American Samoa	2022	3	3194
6	Andorra	2022	1	13826
7	Angola	2022	1	26915
8	Anguilla	2022	1	678
9	Antigua and Barbuda	2022	1	2329
10	Argentina	2022	1	2840506
11	Armenia	2020	11	56931
12	Aruba	2022	1	15553
13	Asia	2022	12	58654497
14	Australia	2022	1	1956529
15	Austria	2022	3	1077185
16	Azerbaijan	2022	2	132919

Ln 19, Col 1 Spaces: 4 UTF-8 LF 246 rows MSSQL 00:00:00 p20server.database.windows.net : covid19database (84)

CONNECTIONS ... SQLQuery_1 - (84) p...peg20b ● SQLQuery_Azure.sql - (79) p..peg20b)

SE... Tables — Daily and Cumulative Vaccinations by Location in July 2021

p20server.database... Views SELECT vac.location ,

> Synonyms vac.date ,

> Programmability cd.population ,

> External Resour... vac.daily_people_vaccinated as daily_people_vaccinated ,

> Storage Sum(vac.daily_people_vaccinated)

> Security OVER (PARTITION BY vac.location ORDER BY vac.location, vac.date)

FROM covid.vaccine AS vac

JOIN covid.case_death AS cd

ON vac.date = cd.date AND vac.location = cd.location

Where vac.date BETWEEN '2021-07-01' AND '2021-08-01'

ORDER BY 1, 2

15

Results	Messages	location	date	population	daily_people_vaccinated	cumulative_people_vaccinated
1	Afghanistan	2021-07-01 00:00:00.000	41128772	13654	13654	13654
2	Afghanistan	2021-07-02 00:00:00.000	41128772	12507	26161	26161
3	Afghanistan	2021-07-03 00:00:00.000	41128772	11360	37521	37521
4	Afghanistan	2021-07-04 00:00:00.000	41128772	10212	47733	47733
5	Afghanistan	2021-07-05 00:00:00.000	41128772	8618	56351	56351
6	Afghanistan	2021-07-06 00:00:00.000	41128772	6881	63232	63232
7	Afghanistan	2021-07-07 00:00:00.000	41128772	5145	68377	68377
8	Afghanistan	2021-07-08 00:00:00.000	41128772	4645	73022	73022
9	Afghanistan	2021-07-09 00:00:00.000	41128772	4145	77167	77167
10	Afghanistan	2021-07-10 00:00:00.000	41128772	3645	80812	80812
11	Afghanistan	2021-07-11 00:00:00.000	41128772	3145	83957	83957
12	Afghanistan	2021-07-12 00:00:00.000	41128772	2468	86425	86425
13	Afghanistan	2021-07-13 00:00:00.000	41128772	1933	88358	88358
14	Afghanistan	2021-07-14 00:00:00.000	41128772	1399	89757	89757
15	Afghanistan	2021-07-15 00:00:00.000	41128772	1222	90070	90070

← → ○ Desktop ○ Desktop

CONNECTIONS ... SQLQuery_1 - (84) p...peg20b ● SQLQuery_Azure.sql - (79) p...peg20b)

SQL Server database... ▶ Run □ Cancel ⌂ Change Database: covid19database ▶ ↗ Estimated Plan ↘ Actual Plan ✓ Parse

Tables ▶ Enable SQLCMD ☰ To Notebook

Views

Synonyms

Programmability

External Resour...

Storage

Security

— Vaccination Progress: Daily, Cumulative, and Population Percentage by Country

```

1 WITH pop_vac(location, date, population, daily_vaccine, cumulative_vaccine)
2 AS (
3     SELECT vac.location,
4         vac.date,
5         cd.population,
6         vac.daily_people_vaccinated,
7             Sum(vac.daily_people_vaccinated)
8     OVER (PARTITION BY vac.location ORDER BY vac.location, vac.date)
9 )
10 FROM covid.vaccine AS vac
11 JOIN covid.case_death AS cd
12 ON vac.date = cd.date AND vac.location = cd.location
13 )
14 SELECT location,
15     date,
16     daily_vaccine,
17     cumulative_vaccine,
18     cumulative_vaccine/population * 100 AS population_vaccination_percentage
19 From pop_vac
20 Where date BETWEEN '2021-01-01' AND '2022-01-01'
21 ORDER BY 1, 2
22
23

```

Results Messages

	location	date	daily_vaccine	cumulative_vaccine	population_vaccination_percent
1	Afghanistan	2021-02-22 ..	NULL	NULL	NULL
2	Afghanistan	2021-02-23 ..	1367	1367	0.0033237073064082733
3	Afghanistan	2021-02-24 ..	1367	2734	0.006647414612816547
4	Afghanistan	2021-02-25 ..	1367	4101	0.009971121919224819
5	Afghanistan	2021-02-26 ..	1367	5468	0.01329429225633093
6	Afghanistan	2021-02-27 ..	1367	6835	0.01661853653201366
7	Afghanistan	2021-02-28 ..	1367	8202	0.019942243838449638
8	Afghanistan	2021-03-01 ..	1580	9782	0.023778336774888117
9	Afghanistan	2021-03-02 ..	1794	11576	0.028145746729321262
1...	Afghanistan	2021-03-03 ..	2008	13584	0.033027973701719074
1...	Afghanistan	2021-03-04 ..	2221	15805	0.0384280863041571
1...	Afghanistan	2021-03-05 ..	2435	18240	0.04434851592456979
1...	Afghanistan	2021-03-06 ..	2649	20889	0.05078926256295714

Ln 23, Col 1 Spaces: 4 UTF-8 LF 68,338 rows MSSQL 00:00:00 p20server.database.windows.net : covid19database (84) ↗

← → 🔍 Desktop

CONNECTIONS ... SQLQuery_1 - (84) p...peg20b ● SQLQuery_Azure.sql - (79) p..peg20b

SE... 📡 + 📡 🔍 Run ▶ Cancel & Disconnect ⚙ Change Database: covid19database 🔍

p20server.databa... Enable SQLCMD 📁 To Notebook

Tables — Monthly Average Infection, Death, and Vaccination Rates (per Million People per Month) by Location

Views — WITH idv_rates (location, year, month, monthly_infect , monthly_death , monthly_vaccine)

Synonyms

Programmability

External Resour...

Storage

Security

```

1 — Monthly Average Infection, Death, and Vaccination Rates (per Million People per Month) by Location
2 WITH idv_rates (location, year, month, monthly_infect , monthly_death , monthly_vaccine)
3 AS (
4     SELECT cd.location,
5         YEAR(cd.date),
6         MONTH(cd.date),
7         SUM(cd.new_cases/cd.population * 1000000),
8         SUM(cd.new_deaths/cd.population * 1000000),
9         SUM(vac.daily_people_vaccinated/cd.population * 1000000)
10    FROM covid.case_death cd
11   LEFT JOIN covid.vaccine vac
12  ON cd.location = vac.location AND cd.date = vac.date
13 GROUP BY cd.location, YEAR(cd.date), MONTH(cd.date)
14 )
15 SELECT location,
16     year,
17     AVG(monthly_infect) AS infect_rate_avg,
18     AVG(monthly_death) AS death_rate_avg,
19     AVG(monthly_vaccine) AS vaccine_rate_avg
20 FROM idv_rates
21 GROUP BY location, year
22 ORDER BY location, year
23

```

Results

location	year	infect_rate_avg	death_rate_avg	vaccine_rate_avg
Afghanistan	2020	105.0521680216143	4.3724459688058115	NULL
Afghanistan	2021	214.88201333444465	10.5238574429923	9205.079995182845
Afghanistan	2022	100.13265976755476	0.9988952097410868	14848.939974834813
Afghanistan	2023	46.70898837760907	0.25934804634251335	15480.829332808673
Afghanistan	2024	14.706857768571355	0.075980877295190821	NULL
Africa	2020	155.50943167986856	3.6585238990719557	NULL
Africa	2021	407.27197131658755	9.64445371564098	11327.408711191876
Africa	2022	196.263508334786	1.7950638598620372	16847.377269312863
Africa	2023	8.14194894325931	0.03381843539062635	3975.1281778394637
Africa	2024	1.0467944716248798	0.004468238872854776	NULL
Albania	2020	1623.674761233613	33.24751136220507	NULL
Albania	2021	4451.794861330318	60.19148221041183	33473.588575709444
Albania	2022	2670.012271142208	11.0012096222110005	5017.4706466127255

> AZURE

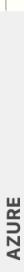
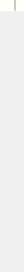
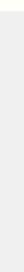
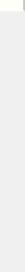
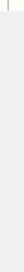
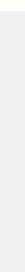
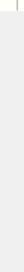
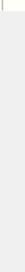
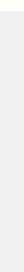
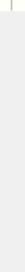
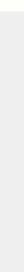
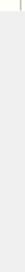
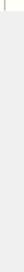
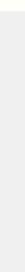
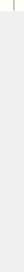
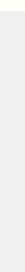
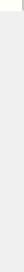
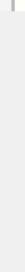
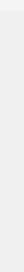
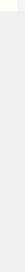
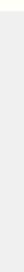
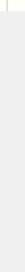
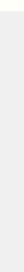
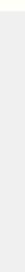
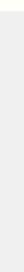
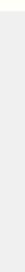
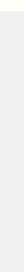
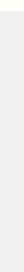
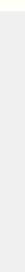
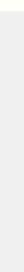
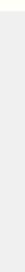
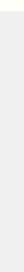
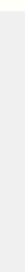
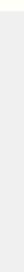
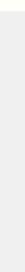
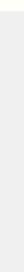
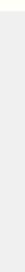
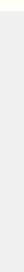
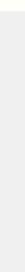
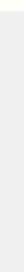
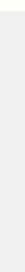
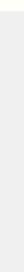
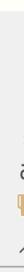
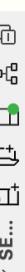


Azure

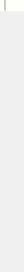
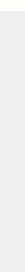
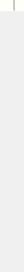
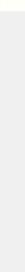
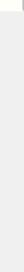
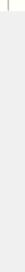
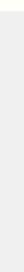
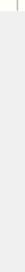
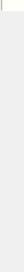
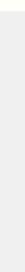
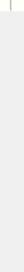
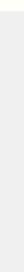
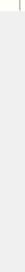
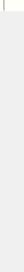
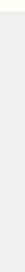
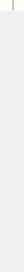
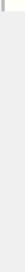
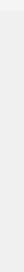
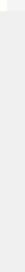
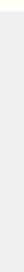
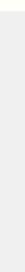
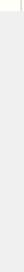
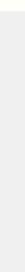
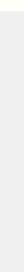
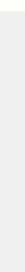
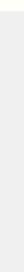
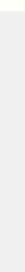
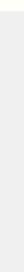
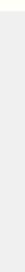
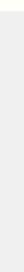
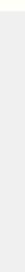
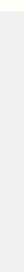
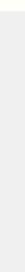
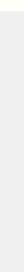
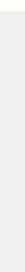
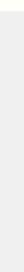
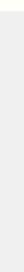
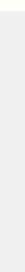
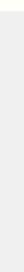
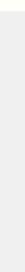
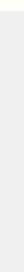
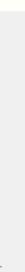
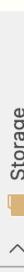
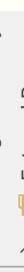
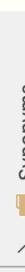
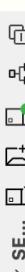
Ln 23, Col 1 Spaces: 4 UTF-8 LF 1,230 rows MSSQL 00:00:00 p20server.database.windows.net : covid19database (84)

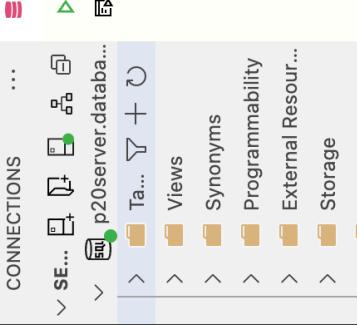


CONNECTIONS ...



SQLQuery_1 - (84) p...peg20b





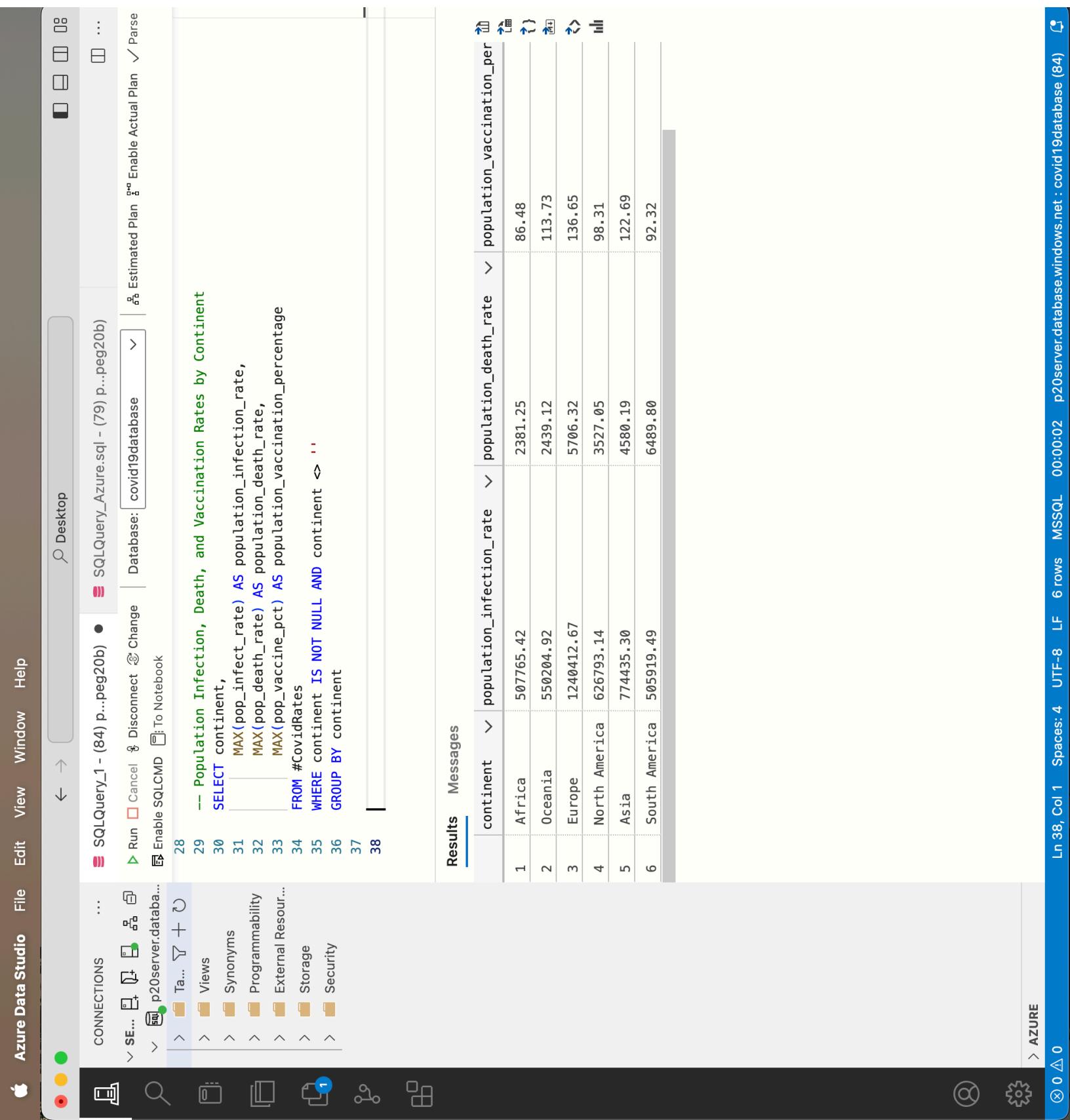
```

CONNECTIONS ... SQLQuery_1 - (84) p...peg20b ● SQLQuery_Azure.sql - (79) p...peg20b)
Database: covid19database | Database: covid19database > | Estimated Plan & Actual Plan ✓ Parse
> SE... □+ □- □ □< □< □> □>
> p20server:database... ▶ Run □ Cancel & Disconnect ☰ Change ▶ Enable SQLCMD ▶ To Notebook ...
1 -- Infection, Death, and Vaccination Rates by Location and Date
DROP TABLE IF EXISTS #CovidRates;
CREATE TABLE #CovidRates
(
    continent nvarchar(255),
    location nvarchar(255),
    date datetime,
    population numeric,
    pop_infect_rate decimal(18, 2),
    pop_death_rate decimal(18, 2),
    pop_vaccine_pct decimal(18, 2)
);
INSERT INTO #CovidRates (continent, location, date, population, pop_infect_rate, pop_death_rate, pop_vaccine_pct)
SELECT cd.continent,
       vac.location,
       vac.date,
       cd.population,
       SUM(cd.new_cases)
OVER (PARTITION BY cd.location ORDER BY cd.location , cd.date) / cd.population * 10000000,
       SUM(cd.new_deaths)
OVER (PARTITION BY cd.location ORDER BY cd.location , cd.date) / cd.population * 10000000,
       SUM(vac.daily_people_vaccinated)
OVER (PARTITION BY vac.location ORDER BY vac.location , vac.date) / cd.population * 100
FROM covid.case_death AS cd
LEFT JOIN covid.vaccine AS vac
ON vac.date = cd.date AND vac.location = cd.location
ORDER BY vac.location, vac.date;
SELECT * FROM #CovidRates
WHERE location = 'Canada' AND date BETWEEN '2021-08-01' AND '2021-09-01' -- (for example)
ORDER BY location, date
32

```

Results

location	date	population	pop_infect_rate	pop_death_rate	pop_vaccine_pct
ica	Canada	2021-08-01 ...	38454328	37199.53	684.47
ica	Canada	2021-08-02 ...	38454328	37199.53	684.47
ica	Canada	2021-08-03 ...	38454328	37199.53	684.47
ica	Canada	2021-08-04 ...	38454328	37199.53	684.47
ica	Canada	2021-08-05 ...	38454328	37199.53	684.47
ica	Canada	2021-08-06 ...	38454328	37199.53	684.47



Record	Message	location	∨	population_infection_rate	∨	population_death_rate	∨	population_vaccination_p
1	NULL			1240412.67		6489.80		NULL
2	Cyprus			722127.17		1447.53		74.65
3	Brunei			689061.52		358.57		100.85
4	Austria			680205.32		2520.69		77.24
5	Gibraltar			618875.66		3366.28		136.65
6	South Korea			608719.35		669.43		86.40
7	Andorra			601367.68		1991.41		72.01
8	Jersey			599101.05		1417.02		41.06
9	Luxembourg			591019.78		1544.16		74.49
10	Denmark			580847.94		1498.40		80.69