

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



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CONNECTIONS ...

SQLQuery\_1 - (76) p...peg20b ●

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

Enable SQLCMD To Notebook

```
1 -- Monthly Population Infection and Death Rates (per Million People) by Location
2 SELECT
3     location,
4     YEAR(date) AS date_year,
5     MONTH(date) AS date_month,
6     SUM(new_cases/population * 1000000) AS population_infection_rate,
7     SUM(new_deaths/population * 1000000) 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	0.04862775868922126
4	Afghanistan	2020	4	30.124896507972572	0.9968690531290358
5	Afghanistan	2020	5	318.8278998458792	4.984345265645179
6	Afghanistan	2020	6	393.2283706403877	11.062815101797836
7	Afghanistan	2020	7	131.7812260477896	13.20243648412357
8	Afghanistan	2020	8	51.2293437790946	3.7929651777592586
9	Afghanistan	2020	9	25.50525943249655	1.240007846575142
10	Afghanistan	2020	10	38.31867384710635	1.4102050019874164
11	Afghanistan	2020	11	126.38354483328605	5.859644922051162
12	Afghanistan	2020	12	143.01423830499974	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	42.087325145521
19	Afghanistan	2021	7	720.9308364470497	43.15713583668387



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CONNECTIONS ...

SE... + - ⚙️ 📁 🗑️

Tables  
Views  
Synonyms  
Programmability  
External Resour...  
Storage  
Security

SQLQuery\_1 - (84) p...peg20b ● SQLQuery\_Azure.sql - (79) p...peg20b

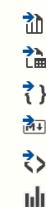
Run Cancel Disconnect Change Database: covid19database Estimated Plan Enable Actual Plan Parse

Enable SQLCMD To Notebook

```
1 -- Top 10 Countries with the Highest Death Rates in 2021
2 SELECT TOP(10)
3     location,
4     SUM(new_deaths/population * 1000000) AS population_death_rate
5 FROM covid.case_death
6 Where date BETWEEN '2021-01-01' AND '2022-01-01'
7 GROUP BY location
8 ORDER BY population_death_rate DESC
9
10
```

Results Messages

	location	population_death_rate
1	Bulgaria	3451.0697873990607
2	Peru	3228.5559519839135
3	Georgia	2973.786082360655
4	Hungary	2935.59823197928
5	Bosnia and Herzegovina	2894.6692933110253
6	Gibraltar	2876.6410625210374
7	Montenegro	2763.5939159471964
8	North Macedonia	2606.029978897652
9	Slovakia	2591.497584369858
1...	European Union (27)	2351.530692788919





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CONNECTIONS ...

- ✓ SE... + - ⚡ 🔍 📁 📈
- ✓ p20server.database... + Ta... Y + ⚡
- > Views
- > Synonyms
- > Programmability
- > External Resour...
- > Storage
- > Security

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 -- Top 10 Countries with the Highest Total COVID-19 Cases in the First Two Months of 2020
2 SELECT TOP(10)
3     | location,
4     | SUM(new_cases) AS tot_new_case
5 FROM covid.case_death
6 WHERE date BETWEEN '2020-01-01' AND '2020-03-01'
7 GROUP BY location
8 ORDER BY tot_new_case DESC
9
10 |
```

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



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CONNECTIONS ...

- ✓ SE...
- ✓ p20server.database...
  - > Tables
  - > Views
  - > Synonyms
  - > Programmability
  - > External Resour...
  - > Storage
  - > Security



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 -- Global Peak Month of New COVID-19 Cases
2 | SELECT TOP(1)
3 |     YEAR(date) AS year,
4 |     MONTH(date) AS month,
5 |     SUM(new_cases) AS tot_new_case
6 | FROM covid.case_death
7 | GROUP BY YEAR(date), MONTH(date)
8 | ORDER BY tot_new_case DESC
9 |
10 |
11 |
```

Results Messages

	year	month	tot_new_case
1	2022	1	539782549



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CONNECTIONS ...

- ✓ SE...
- ✓ p20server.database.windows.net
- > Tables
- > Views
- > Synonyms
- > Programmability
- > External Resources
- > Storage
- > Security



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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  -- 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



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CONNECTIONS ...

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 Vaccinations by Location in July 2021
2 SELECT vac.location ,
3          vac.date ,
4          cd.population,
5          vac.daily_people_vaccinated AS daily_people_vaccinated,
6          Sum(vac.daily_people_vaccinated)
7          OVER (PARTITION BY vac.location ORDER BY vac.location, vac.date)
8          AS cumulative_people_vaccinated
9 FROM covid.vaccine AS vac
10 JOIN covid.case_death AS cd
11 ON vac.date = cd.date AND vac.location = cd.location
12 Where vac.date BETWEEN '2021-07-01' AND '2021-08-01'
13 ORDER BY 1, 2
14
15
```

## Results Messages

	location	date	population	daily_people_vaccinated	cumulative_peop
1	Afghanistan	2021-07-01 00:00:00.000	41128772	13654	13654
2	Afghanistan	2021-07-02 00:00:00.000	41128772	12507	26161
3	Afghanistan	2021-07-03 00:00:00.000	41128772	11360	37521
4	Afghanistan	2021-07-04 00:00:00.000	41128772	10212	47733
5	Afghanistan	2021-07-05 00:00:00.000	41128772	8618	56351
6	Afghanistan	2021-07-06 00:00:00.000	41128772	6881	63232
7	Afghanistan	2021-07-07 00:00:00.000	41128772	5145	68377
8	Afghanistan	2021-07-08 00:00:00.000	41128772	4645	73022
9	Afghanistan	2021-07-09 00:00:00.000	41128772	4145	77167
10	Afghanistan	2021-07-10 00:00:00.000	41128772	3645	80812
11	Afghanistan	2021-07-11 00:00:00.000	41128772	3145	83957
12	Afghanistan	2021-07-12 00:00:00.000	41128772	2468	86425
13	Afghanistan	2021-07-13 00:00:00.000	41128772	1933	88358
14	Afghanistan	2021-07-14 00:00:00.000	41128772	1399	89757
15	Afghanistan	2021-07-15 00:00:00.000	41128772	1222	90079



Azure Data Studio

File

Edit

View   Window

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CONNECTIONS ...

- ✓ SE... [ ] [ ] [ ] [ ]
- ✓ p20server.database... [ ] [ ] [ ] [ ]
  - > Tables
  - > Views
  - > Synonyms
  - > Programmability
  - > External Resour...
  - > Storage
  - > Security



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  -- Vaccination Progress: Daily, Cumulative, and Population Percentage by Country
2  WITH pop_vac(location, date, population, daily_vaccine, cumulative_vaccine)
3  AS (
4      SELECT vac.location ,
5             vac.date,
6             cd.population,
7             vac.daily_people_vaccinated,
8             Sum(vac.daily_people_vaccinated)
9             OVER (PARTITION BY vac.location ORDER BY vac.location, vac.date)
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	0.013294829225633093
6	Afghanistan	2021-02-27 ...	1367	6835	0.016618536532041366
7	Afghanistan	2021-02-28 ...	1367	8202	0.019942243838449638
8	Afghanistan	2021-03-01 ...	1580	9782	0.02378386774898117
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

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CONNECTIONS ...

SQLQuery\_1 - (84) p...peg20b ● SQLQuery\_Azure.sql - (79) p...peg20b

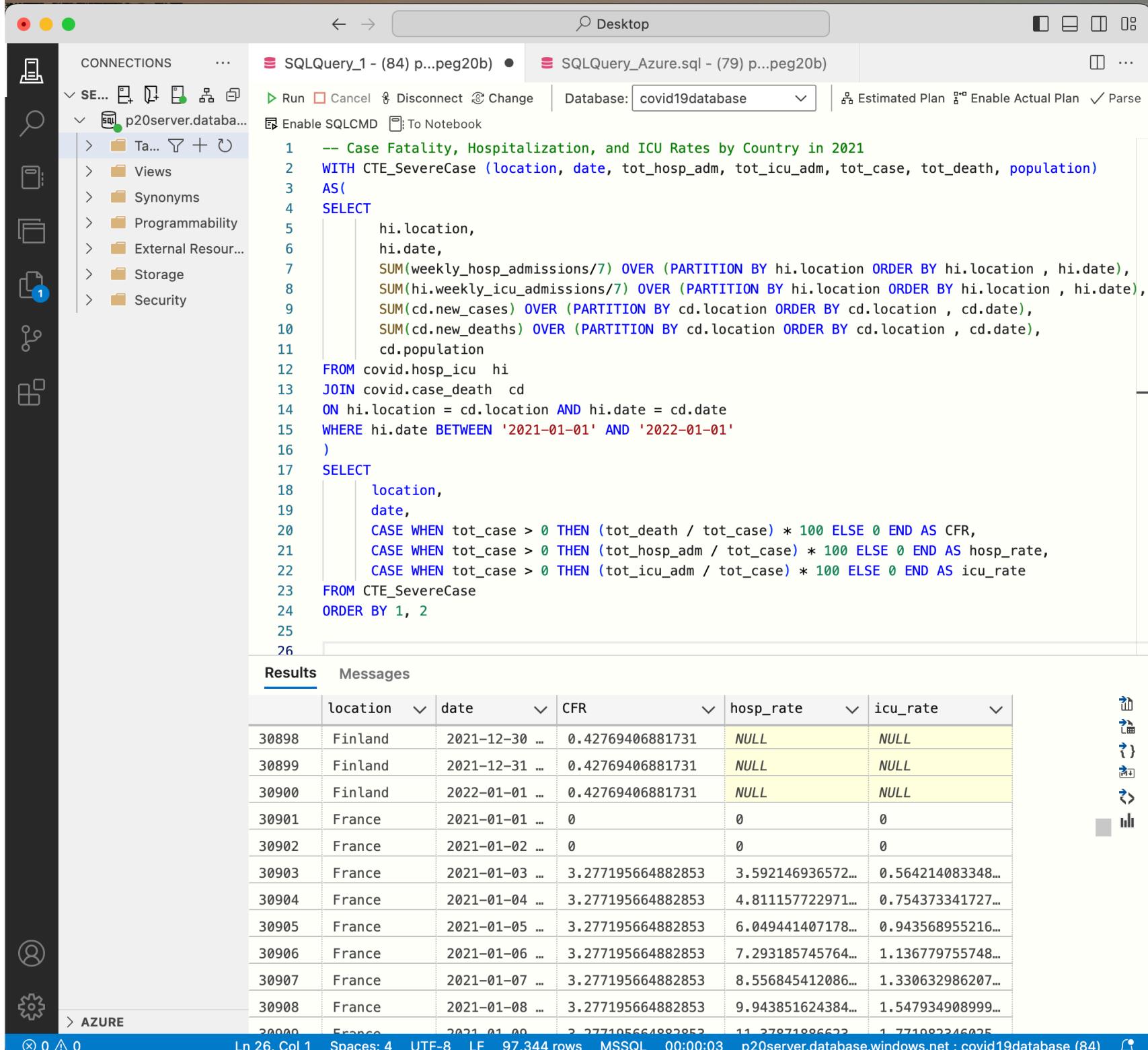
Run Cancel Disconnect Change Database: covid19database Estimated Plan Enable Actual Plan Parse

Enable SQLCMD To Notebook

```
1 -- 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 Messages

	location	year	infect_rate_avg	death_rate_avg	vaccine_rate_avg
1	Afghanistan	2020	105.0521680216143	4.3724459688058115	NULL
2	Afghanistan	2021	214.88201333444465	10.5238574429923	9205.079995182845
3	Afghanistan	2022	100.13265976755476	0.9988952097410868	14848.939974834813
4	Afghanistan	2023	46.70898837760907	0.25934804634251335	15480.829332808673
5	Afghanistan	2024	14.706857768571355	0.07598087295190821	NULL
6	Africa	2020	155.50943167986856	3.6585238990719557	NULL
7	Africa	2021	407.27197131658755	9.644445371564098	11327.408711191876
8	Africa	2022	196.263508334786	1.7950638598620372	16847.377269312863
9	Africa	2023	8.14194894325931	0.03381843539062635	3975.1281778394637
10	Africa	2024	1.0467944716248798	0.004468238872854776	NULL
11	Albania	2020	1623.674761233613	33.24751136220507	NULL
12	Albania	2021	4451.794861330318	60.19148221041183	33473.588575709444
13	Albania	2022	3678.013274142208	11.001386372140025	5017.1706466107355





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

```
1  -- Infection, Death, and Vaccination Rates by Location and Date
2  DROP TABLE IF EXISTS #CovidRates;
3  CREATE TABLE #CovidRates
4  (
5      continent nvarchar(255),
6      location nvarchar(255),
7      date datetime,
8      population numeric,
9      pop_infect_rate decimal(18, 2),
10     pop_death_rate decimal(18, 2),
11     pop_vaccine_pct decimal(18, 2)
12 );
13 INSERT INTO #CovidRates (continent, location, date, population, pop_infect_rate, pop_death_rate, pop_vaccine_pct)
14 SELECT cd.continent,
15        vac.location,
16        vac.date,
17        cd.population,
18        SUM(cd.new_cases)
19        OVER (PARTITION BY cd.location ORDER BY cd.location , cd.date) / cd.population * 1000000,
20        SUM(cd.new_deaths)
21        OVER (PARTITION BY cd.location ORDER BY cd.location , cd.date) / cd.population * 1000000,
22        SUM(vac.daily_people_vaccinated)
23        OVER (PARTITION BY vac.location ORDER BY vac.location, vac.date) / cd.population * 100
24 FROM covid.case_death AS cd
25 LEFT JOIN covid.vaccine AS vac
26 ON vac.date = cd.date AND vac.location = cd.location
27 ORDER BY vac.location, vac.date;
28
29 SELECT * FROM #CovidRates
30 WHERE location = 'Canada' AND date BETWEEN '2021-08-01' AND '2021-09-01' -- (for example)
31 ORDER BY location, date
32
```

Results Messages

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

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Desktop



CONNECTIONS ...

- ✓ SE...
- ✓ p20server.database... Ta... +
  - > Views
  - > Synonyms
  - > Programmability
  - > External Resour...
  - > Storage
  - > Security

SQLQuery\_1 - (84) p...peg20b ● SQLQuery\_Azure.sql - (79) p...peg20b

 Run Cancel Disconnect Change  
 Enable SQLCMD To Notebook

Database: covid19database

Estimated Plan Enable Actual Plan Parse

```
28
29  -- Population Infection, Death, and Vaccination Rates by Continent
30  SELECT continent,
31      MAX(pop_infect_rate) AS population_infection_rate,
32      MAX(pop_death_rate) AS population_death_rate,
33      MAX(pop_vaccine_pct) AS population_vaccination_percentage
34  FROM #CovidRates
35  WHERE continent IS NOT NULL AND continent <> ''
36  GROUP BY continent
37
38  |
```

Results Messages

	continent	population_infection_rate	population_death_rate	population_vaccination_per
1	Africa	507765.42	2381.25	86.48
2	Oceania	550204.92	2439.12	113.73
3	Europe	1240412.67	5706.32	136.65
4	North America	626793.14	3527.05	98.31
5	Asia	774435.30	4580.19	122.69
6	South America	505919.49	6489.80	92.32



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Azure Data Studio

File

Edit

View Window

Help



Desktop



- CONNECTIONS ...
- ✓ SE...
  - ✓ p20server.database...
    - > Ta...
    - > Views
    - > Synonyms
    - > Programmability
    - > External Resour...
    - > Storage
    - > Security

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

```
29 -- Death and Vaccination Rates in Top 10 Countries with Highest Infection Rates
30 SELECT TOP(10)
31     location,
32     MAX(pop_infect_rate) AS population_infection_rate,
33     MAX(pop_death_rate) AS population_death_rate,
34     MAX(pop_vaccine_pct) AS population_vaccination_percentage
35 FROM #CovidRates
36 GROUP BY location
37 ORDER BY population_infection_rate DESC
38
39
```

Results   Messages

	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



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