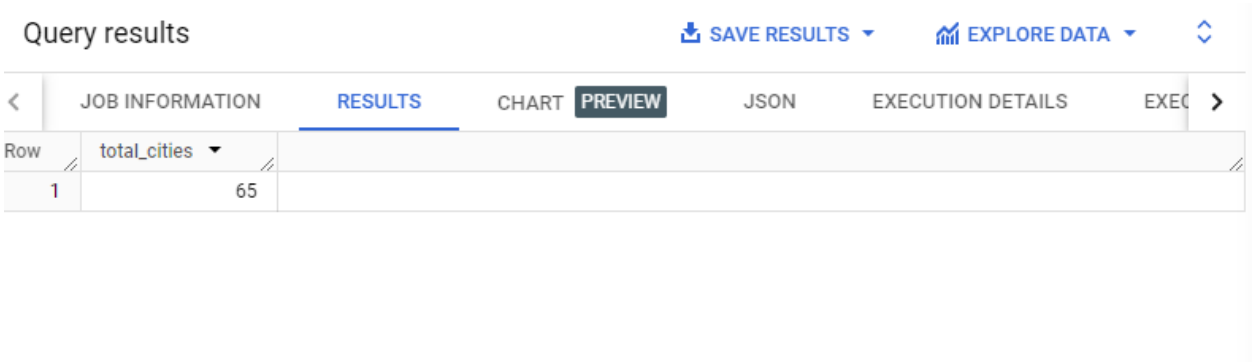
1. How many cities are included in the dataset?

```
SELECT COUNT(DISTINCT location) AS total_cities
FROM `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths`;
```



2. Which three locations have reported the highest total number of deaths in the dataset?

```
SELECT location, MAX(deaths_total) AS highest_deaths
FROM `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths`
GROUP BY location
ORDER BY highest_deaths DESC
LIMIT 3;
```

Query results

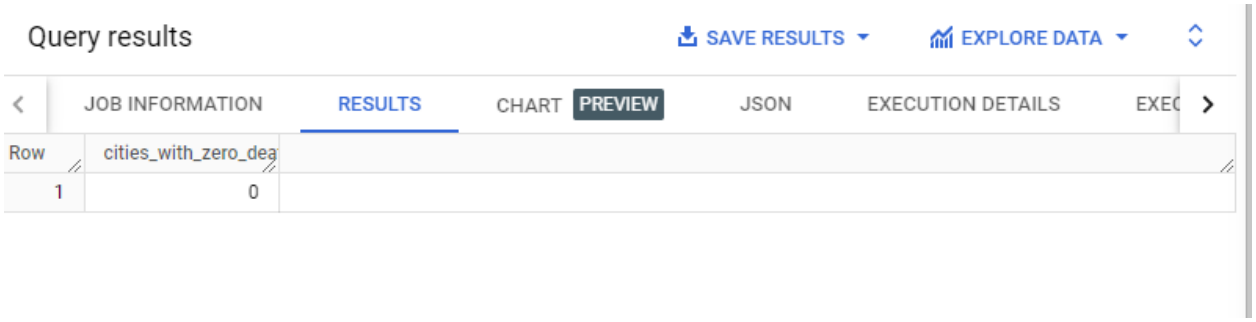
SAVE RESULTS | EXPLORE DATA

JOB INFORMATION | RESULTS | CHART | PREVIEW | JSON | EXECUTION DETAILS

Row	location	highest_deaths
1	New York City	19294
2	Los Angeles County (without the cities of Long Beach or Pasadena)	6560
3	Miami-Dade County	3582

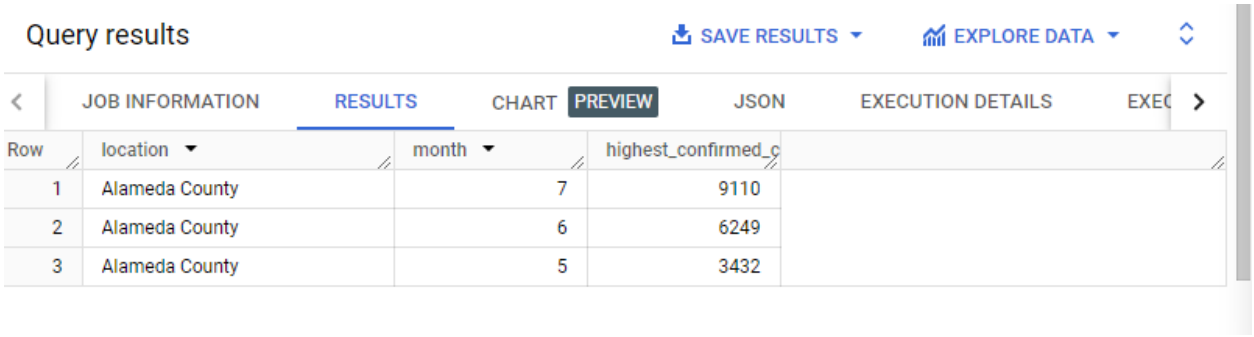
3. How many cities have reported zero deaths?

```
SELECT COUNT(DISTINCT location) AS cities_with_zero_deaths
FROM `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths`
WHERE deaths_total = 0;
```



4. In which month did a specific city have the highest number of confirmed cases?

```
SELECT location, EXTRACT(MONTH FROM date) AS month, MAX(cases_total) AS
highest_confirmed_cases
FROM `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths`
WHERE location = 'Alameda County'
GROUP BY location, month;
```



5. List the top 5 cities with the lowest number of confirmed cases.

```
SELECT location, SUM(cases_total) AS cases_total
FROM `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths`
GROUP BY location
ORDER BY cases_total ASC
LIMIT 5;
```

Query results

SAVE RESULTS | EXPLORE DATA

JOB INFORMATION | RESULTS | CHART | PREVIEW | JSON | EXECUTION DETAILS | EXEC

Row	location	cases_total
1	Santa Cruz County	20682
2	El Paso County, CO	58243
3	Bellevue	72277
4	Santa Barbara County	91745
5	Ventura County	96651

6. How many cities had more than 10 confirmed cases on 2020-07-05?

```
SELECT COUNT(DISTINCT location) AS cities_with_zero_confirmed
FROM `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths`
WHERE date = '2020-07-05' AND cases_total >10;
```

7. Calculate the average testing rate and the average death rate for each month in the dataset:

```
SELECT EXTRACT(MONTH FROM date) AS month,
   AVG(total_test_results) AS avg_test_rate,
   AVG(death) AS avg_death_rate
FROM `bigquery-public-data.covid19_tracking.national_testing_and_outcomes`
GROUP BY month
ORDER BY month;
```

Query results

SAVE RESULTS | EXPLORE DATA

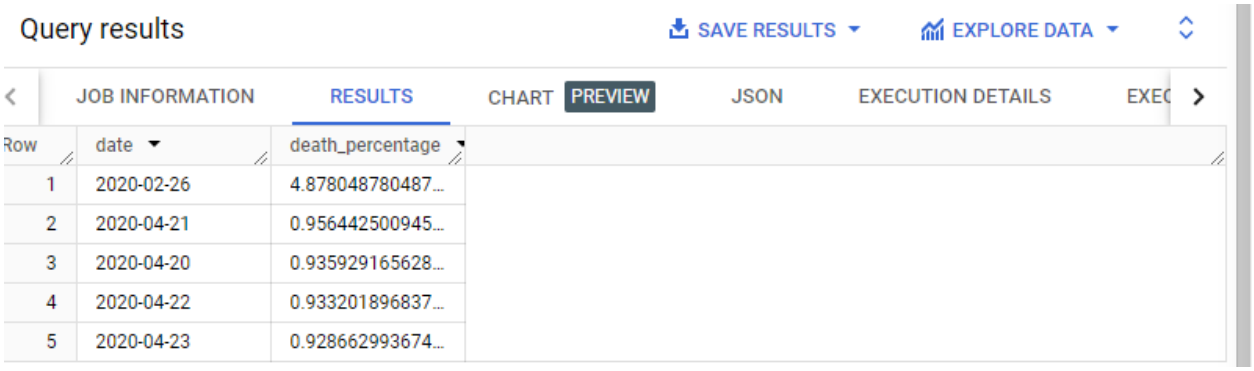
JOB INFORMATION | RESULTS | CHART | PREVIEW | JSON | EXECUTION DETAILS | EXEC

Row	month	avg_test_rate	avg_death_rate
1	1	175887673.7599...	384889.0645161...
2	2	164053598.5964...	275845.4375000...
3	3	66456543.28947...	94541.89473684...
4	4	3732819.766666...	31353.4

8. What is the percentage of deaths among confirmed COVID-19 cases, and what are the top 5 dates with the highest death percentages?

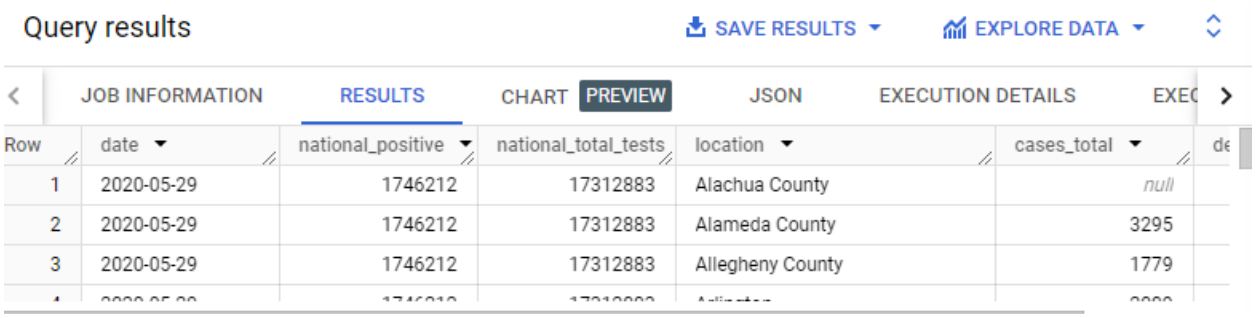
```
SELECT date,
       (SUM(death) / SUM(total_test_results)) * 100 AS death_percentage
FROM `bigquery-public-data.covid19_tracking.national_testing_and_outcomes`
GROUP BY date
```

```
ORDER BY death_percentage DESC
LIMIT 5;
```



9. What were the COVID-19 testing outcomes at the national level and the corresponding total cases and deaths at the city level on May 29, 2020?

```
SELECT
  nt.date,
  nt.positive AS national_positive,
  nt.total_test_results AS national_total_tests,
  cl.location,
  cl.cases_total,
  cl.deaths_total
FROM
  `bigquery-public-data.covid19_tracking.national_testing_and_outcomes` nt
JOIN
  `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths` cl
ON
  nt.date = cl.date
 WHERE
  nt.date = '2020-05-29'
ORDER BY
  nt.date, cl.location;
```



10. How does the national COVID-19 testing positivity rate relate with city-level cases and deaths over time, considering the datasets on national testing outcomes and city-level cases and deaths?

```
WITH national_testing AS (
  SELECT date, positive AS national_positive, total_test_results AS
national_total_tests
  FROM `bigquery-public-data.covid19_tracking.national_testing_and_outcomes`),
city_cases_and_deaths AS (
  SELECT date, location, cases_total, deaths_total
  FROM `bigquery-public-data.covid19_tracking.city_level_cases_and_deaths`)

SELECT
  n.date,
  n.national_positive,
  n.national_total_tests,
  c.location,
  c.cases_total,
  c.deaths_total,
  IF(n.national_total_tests > 0, n.national_positive / n.national_total_tests * 100,
NULL) AS national_positivity_rate
FROM national_testing n
JOIN city_cases_and_deaths c ON n.date = c.date
ORDER BY n.date, c.location;
```

Query results

SAVE RESULTS | EXPLORE DATA

JOB INFORMATION | RESULTS | CHART PREVIEW | JSON | EXECUTION DETAILS | EXEC

Row	l_positive	national_total_tests	location	cases_total	deaths_total	national_pos
1	1746212	17312883	Alachua County	null	null	10.0861999
2	1746212	17312883	Alameda County	3295	104	10.0861999
3	1746212	17312883	Allegheny County	1779	170	10.0861999
4	1746212	17312883	Arlington	2089	111	10.0861999