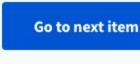
Congratulations! You passed! Grade received 100% To pass 80% or higher





1.

By now, you have been introduced to BigQuery, a data warehouse on Google Cloud that data analysts can use to query, filter large datasets, aggregate results,

queries using SELECT, FROM, and WHERE.

By the time you complete this activity, you will be more familiar with writing queries in the BigQuery interface. This will enable you to practice SQL, which is important for working with databases in your career as a data analyst.

and perform complex operations. In this activity, you will explore the BigQuery interface; upload public data to your console; and write some simple SQL

Explore BigQuery

For this activity, you will need a BigQuery account. If you haven't made one already, you can follow the instructions from the Using BigQuery reading. C Once you have your account, you can start exploring!

Open your console

 Log in to <u>BigQuery</u> 2. Then, click the **Go to console** button on the BigQuery homepage. This will open a new tab with your console.

first 90 days. All customers get 10 GB storage and up to 1 TB queries/month,

BigQuery

BigQuery

::

airy-shuttle-315515

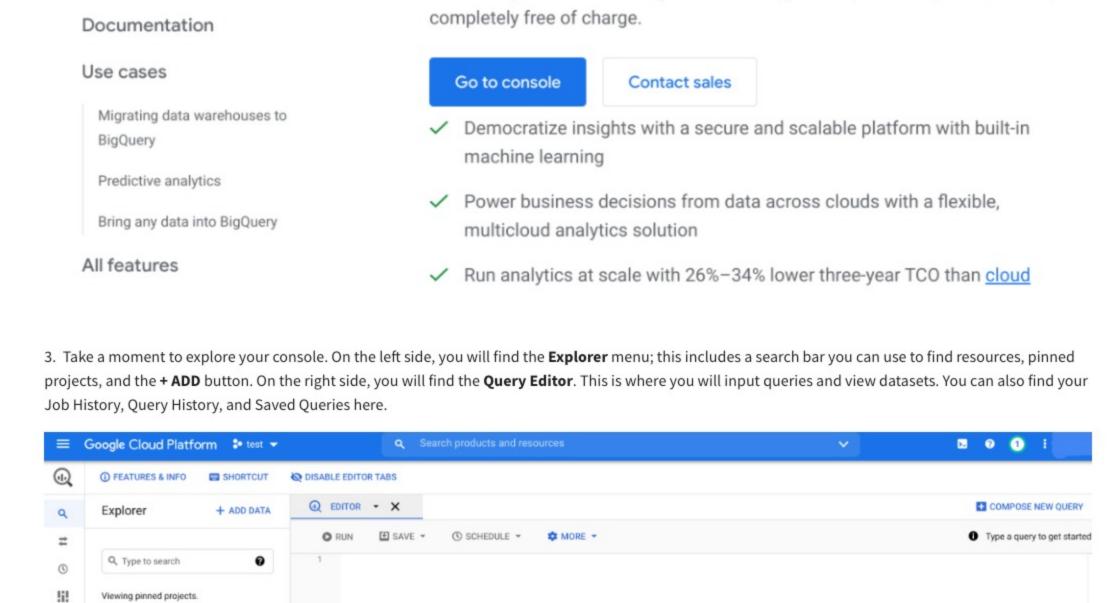
bigquery-public-data

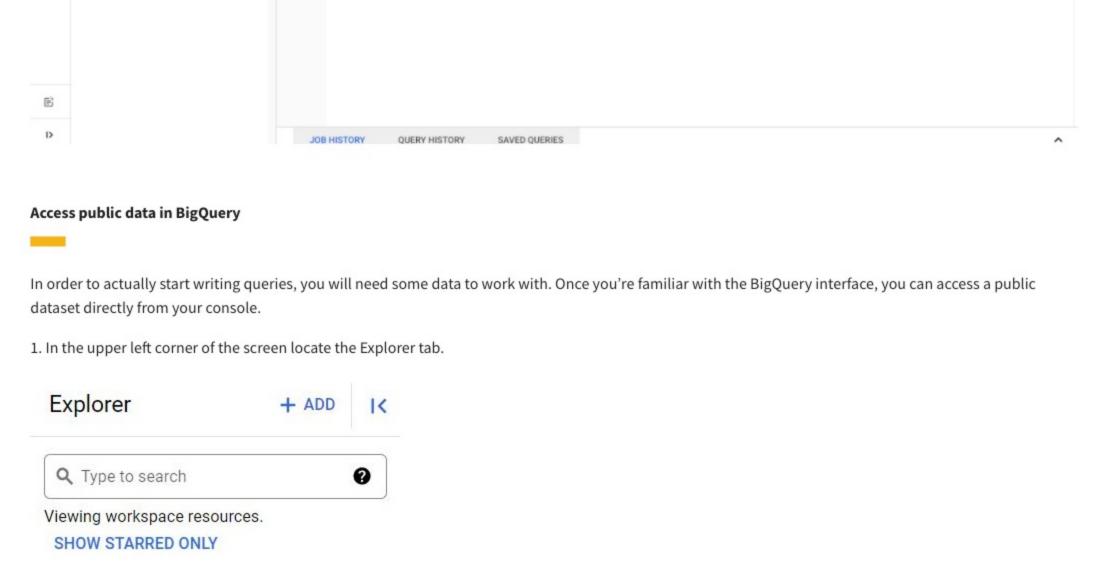
ŧ

Benefits

What's new

Serverless, highly scalable, and cost-effective multicloud data warehouse Key features designed for business agility. Customers New customers get \$300 in free credits to spend on Google Cloud during the





Public Datasets

Marketplace

Marketplace > Datasets

Filter Type to filter

Big data

Analytics

Q Type to search

Viewing pinned projects.

airy-shuttle-315515

bigquery-public-data

0

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0

Navigate to the Explorer menu in BigQuery.

Click "Broaden search to all projects".

will list two tables. Click on cycle_hire.

Viewing pinned projects.

:: hud_zipcode_crosswalk

:: human_genome_variants

:: human_variant_annotation

immune_epitope_db

iowa_liquor_sales

:: labeled_patents

libraries_io

:: london_bicycles

london_fire_brigade

better idea of what kind of data you'll be working with.

bike_id

3038

6748

11430

QUERY HISTORY

cycle_hire table, such as the **end_station_name** column.

Click the Blue + button or QUERY - In new tab to start a new query.

Once you have finished previewing the data, you can write a query!

medicare

ml datacate

⊕ EDITOR ▼ X

DETAILS

duration

3180

7380

2040

2400

3000

6540

1980

2580

cycle_hire

rental_id

47469109

46915469

65899423

47150505

54154089

52607737

49135790

50251732

JOB HISTORY

Query your data

Write a basic query

SCHEMA

2

11

12

13

:: irs_990

Explorer

Type the word public in the search box and enter.

Find the bigquery-public-data and click on the star to pin it.

+ ADD DATA

Description /

Dataset info /

Default table expiration

Follow these steps to find and star the **bigquery-public-data** if you do not have it starred.

bigquery-public-data:london_bicycles

You'll notice that bigquery-public-data is now starred in your Explorer menu. You can now explore and query these public datasets.

May 25, 2017, 8:26:18 AM

Mar 20, 2019, 4:09:10 PM

Never

Dataset ID

Last modified

Created

Category Cymbal About COVID-19 Public About Cymbal: Google Cloud's Maps demo brand Datasets

(18)

(21)

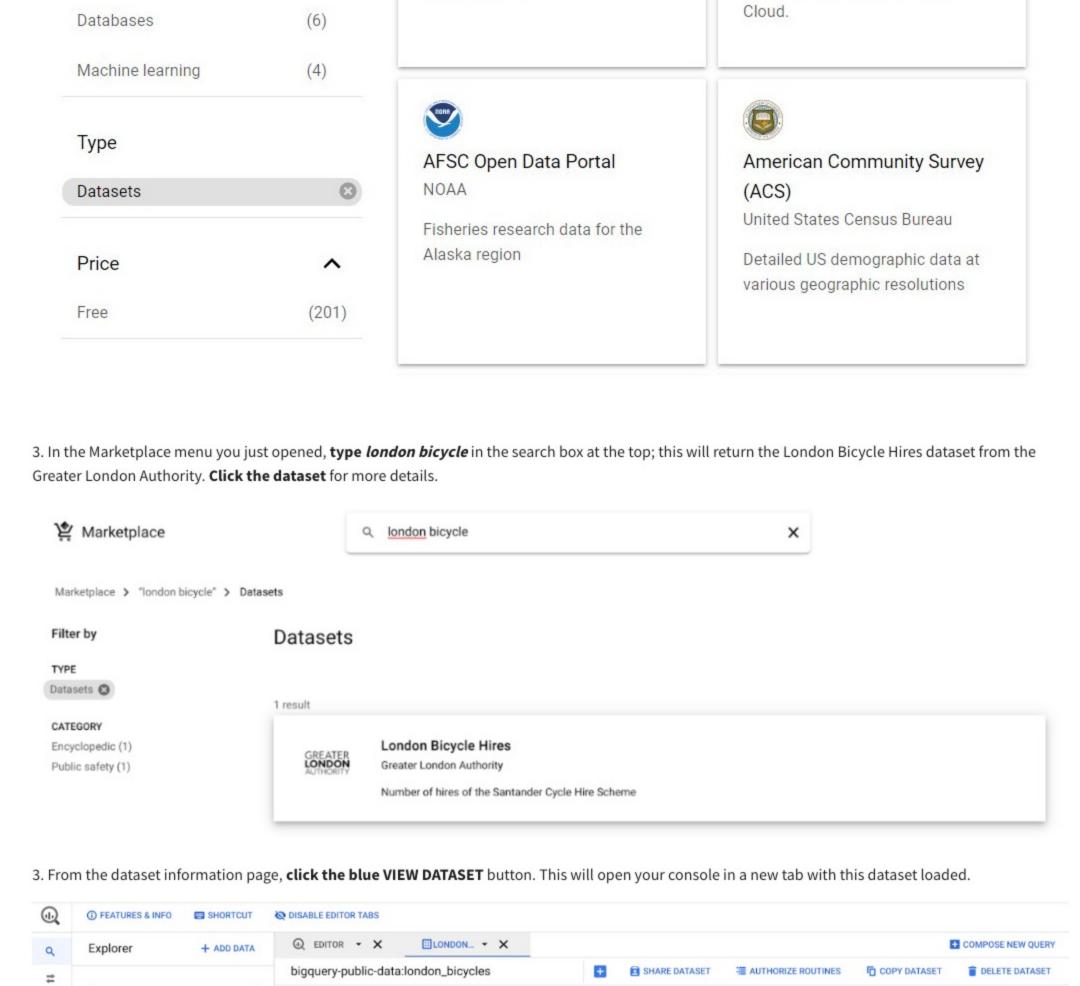
201 results

Click on the + ADD button in the Explorer menu and navigate down the list in the Add window and select Public Datasets.

BigQuery public datasets from the Google Cloud Public Dataset Program

This will open a new menu where you can search public datasets that are already available through Google Cloud.

Q Search Marketplace



Labels .

BigQuery Public Datasets Program

Getting started with COVID-19

Public Datasets

Cymbal Group

Synthetic datasets across

industries showcasing Google

Type to search

4. Click on the drop-down arrow to the left of bigquery-public-data and scroll down the list of public datasets until you find the london_bicycles data (You may also type london_bicycles in the Explorer search bar to quickly locate the dataset). Once located, click on the drop-down arrow next to the dataset, it

```
cycle_hire
   cycle_st cycle_hire
:: london_crime
```

This will pull up a new tab in your Query Editor with information about the table schema.

□LONDON... ▼ X

PREVIEW

end_date

2015-09-03 12:45:00 UTC

2015-08-16 11:59:00 UTC

2017-06-09 18:30:00 UTC

2015-08-22 17:15:00 UTC

2016-05-23 22:03:00 UTC

2016-04-03 16:39:00 UTC

2015-10-27 14:29:00 UTC

SAVED QUERIES

SELECT is the section of a query that indicates what data you want SQL to return to you

FROM is the section of a query that indicates which table the desired data comes from.

WHERE is the section of a query that indicates any filters you'd like to apply to your dataset

9160 2015-12-12 13:12:00 UTC

```
2017-04-22 10:14:00 UTC
                                                                                                                         2017-04-22 09:36:00 UTC
      64280726
                     2280
                            10868
                                                                       553
                                                                            Regent's Row, Haggerston
                                                                                                                                                                  Teviot Street, Poplar
                                                                                                                         2016-10-09 03:52:00 UTC
      59235489
                             7183
                                    2016-10-09 04:31:00 UTC
                                                                            Albert Embankment, Vauxhall
                                                                                                                                                                  Wandsworth Rd, Isley
5
                     2340
                                                                       100
      55248935
                                                                                                                         2016-06-26 06:50:00 UTC
                     2160
                             7619
                                    2016-06-26 07:26:00 UTC
                                                                       465
                                                                            Pitfield Street North, Hoxton
                                                                                                                                                             459
                                                                                                                                                                  Gunmakers Lane, Old
                                    2015-04-27 22:50:00 UTC
      43015438
                     5400
                                                                            Binfield Road, Stockwell
                                                                                                                         2015-04-27 21:20:00 UTC
                                                                                                                                                                   Wright's Lane, Kensing
                                    2016-12-15 21:16:00 UTC
      61090882
                     1980
                             1710
                                                                       487
                                                                            Canton Street, Poplar
                                                                                                                         2016-12-15 20:43:00 UTC
                                                                                                                                                                  Somerset House, Stra
8
```

end_station_name

111 Park Lane, Hyde Park

Speakers' Corner 1, Hyde Park

Orsett Terrace, Bayswater

Claverton Street, Pimlico

304 Cumberland Gate, Hyde Park

209 Denyer Street, Knightsbridge

229 Whitehall Place, Strand

So far, you've learned three basic parts of a query: SELECT, FROM, and WHERE. As a refresher, here are what those basic parts represent in the query:

Now, construct a simple command using the basic parts of a query you have already learned! For example, you can select a specific column from the

Aquatic Centre, Queen Elizabeth Olympic Park

100 -

5. After checking out the table schema, you can take a peek into what data the cycle_hire table contains by clicking on the Preview tab. This will give you a

Q QUERY

COPY

start_date

2015-09-03 11:52:00 UTC

2015-08-16 09:56:00 UTC

2017-06-09 17:56:00 UTC

2015-08-22 16:35:00 UTC

2016-05-23 21:13:00 UTC

2016-04-03 14:50:00 UTC

2015-10-27 13:56:00 UTC

2015-12-12 12:29:00 UTC

First page 14

1 - 100 of 24369201

DELETE

***** SHARE

■ COMPOSE NEW QUERY

▲ EXPORT

start_station_name

Serpentine Car Park, F

Speakers' Corner 1, H

Queen Street 2, Bank

Triangle Car Park, Hyc

Aquatic Centre, Queer

382 Farm Street, Mayfair

127 Wood Street, Guildhal

421 Southwark Station 2, 5

MORE -

>| Last page

■ LOAD DATA

start_station_id

ECYCLE_H... ▼ X

end_station_id

165

2. Start your query with a SELECT clause and indicate which column you want to select from the table; in this case, you'll input end_station_name .	
3. After you have indicated which column you are selecting, write your FROM clause . You will need to specify the table you are querying from by inputting the following location: `bigquery-public-data.london_bicycles.cycle_hire`;	
The completed query should appear like this:	
SELECT	
end_station_name	
FROM	
`bigquery-public-data.london_bicycles.cycle_hire`;	
4. Run your completed query by clicking on the blue RUN button.	
This query may take a few seconds to execute. Once it has finished, you will find the list of station names you requested under the Query Results console pane.	
Write a query to answer a question	
After running the first basic query, try answering a specific question about the data. For example, how many bike trips lasted for 20 minutes or longer?	
1. Click the Blue + button or QUERY - In new tab to start a new query. Start with your SELECT statement again. This time, you will want to include all of the columns in the table for this query. You can use an asterisk to indicate that you are selecting all of the data like this: SELECT COUNT(*) AS num_of_trips	
2. Then you will add your FROM statement. You will be using the same dataset as the previous query: FROM `bigquery-public-data.london_bicycles.cycle_hire`.	
3. Finally, you'll add a WHERE statement to specify that you want to filter for only bike rides 20 minutes or longer. If you check the preview of this data, you might notice that the duration is recorded in seconds, so you'll specify 1200 seconds in your query. You can write that as WHERE duration>=1200;	

SCHEDULE ▼

`bigquery-public-data.london_bicycles.cycle_hire`

SELECT COUNT(*) AS num_of_biketrips

4. Run your completed query by clicking on the blue **RUN** button.

bigquery-public-data.london_bicycles.cycle_hire

SAVE ▼

duration >= 1200;

Your completed query should be written like this:

COUNT(*) AS num_of_trips

RUN

FROM

WHERE

million rows with bike trips that are 20 minutes or longer!

What are the names of the stations that bike_id 1710 started from?

bigquery-public-data.london_bicycles.cycle_hire`

duration >= 1200;

3

4

5

6

Up for a challenge?

SELECT

FROM

WHERE

```
How many bike_ids have ended at "Moor Street, Soho"?
     What is the station_id for "Canton Street, Poplar"?
     What is the name of the station whose ID is 111?

    How many distinct bike_ids had trip durations greater than 2400 seconds (or 40 minutes)?

You can use the solutions doc to check your work: Intro to BigQuery Solutions []
Or download the file directly here:
        Intro to BigQuery solutions
         DOCX File
Confirmation and reflection
Run another query on your table:
SELECT
      end_station_name
```

This query may take a few seconds to execute. Once it has finished, you will find a list of rides from this table that fit your criteria. There are more than 7

If you're comfortable using queries to answer questions, try creating and running queries to answer any of the questions below:

East Village, Queen Elizabeth Olympic Park Correct The address listed under the end_station_name column for Row 1 of your results table was East Village, Queen Elizabeth Olympic Park. To find this, you successfully ran a query. Going forward, you will continue using SELECT, FROM, and WHERE statements in your queries to interact with databases

Southwark Street, Bankside

Tower Gardens, Tower

rental_id = 57635395;

Notting Hill Gate Station, Notting Hill

response to each of the following questions:

At what station did the bike trip with rental_id 57635395 end?

FROM

WHERE

How do you think understanding basic query syntax will help you write more complicated queries in the future? How do you think you can use public datasets on BigQuery to help develop your data analysis skills? I think public datasets on BigQuery can help me develop my data analysis skills by giving me access to a wide variety of data that I can use to practice different types of analysis. For example, I could use public datasets to practice creating visualizations, performing statistical analysis, or identifying trends.

1/1 point

How do you think understanding basic query syntax will help you write more complicated queries in the future?

How do you think you can use public datasets on BigQuery to help develop your data analysis skills?

using SQL. This will help you build more complicated SQL queries when you are analyzing data in the future.

Understanding basic query syntax will help me write more complicated queries in the future by giving me a foundation to build on. Once I understand the basic syntax, I can start to learn more advanced concepts, such as joins, subqueries, and aggregations. This will allow me to write more complex queries that can be used to answer more sophisticated questions. Correct Congratulations on completing this hands-on activity! You explored BigQuery, uploaded public data to your console, and constructed some queries. A good response would include that BigQuery public datasets can help you practice writing SQL. Being able to construct SQL queries is an important skill for data analysts, because they frequently need to work with databases. In upcoming activities, you will continue working with databases and writing queries with SQL-- an essential tool in every data analyst's toolkit.

2. In this activity, you had an opportunity to get more familiar with BigQuery and writing SQL queries. In the text box below, write 2-3 sentences (40-60 words) in

1/1 point