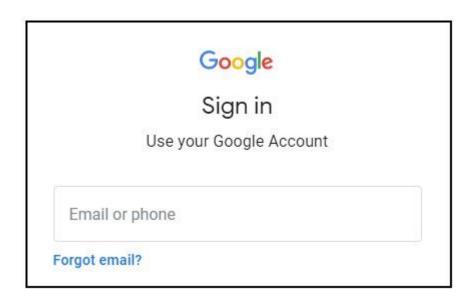
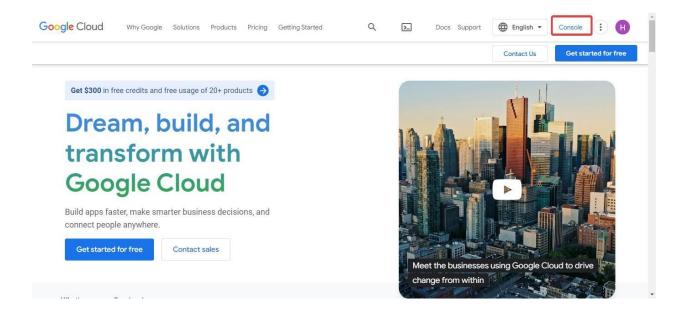
## **Exploring the Ethereum dataset Available in BigQuery**

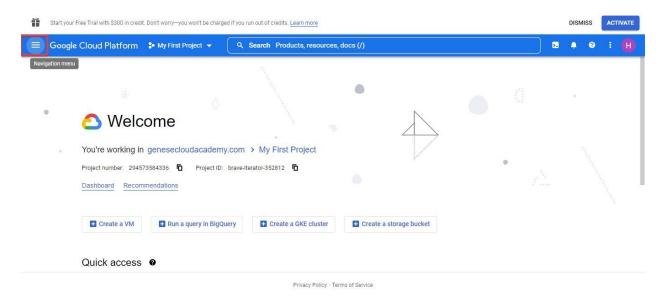
• Log In to google cloud with your Google Account

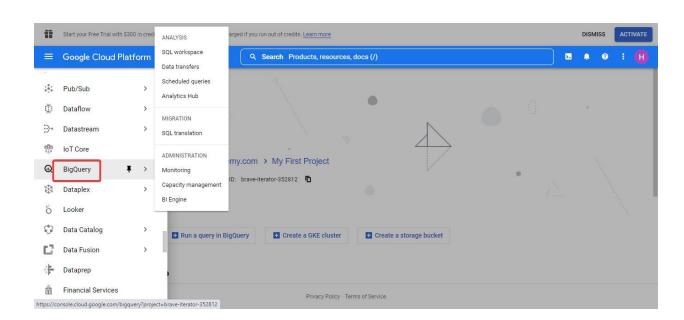


· Go to Console.

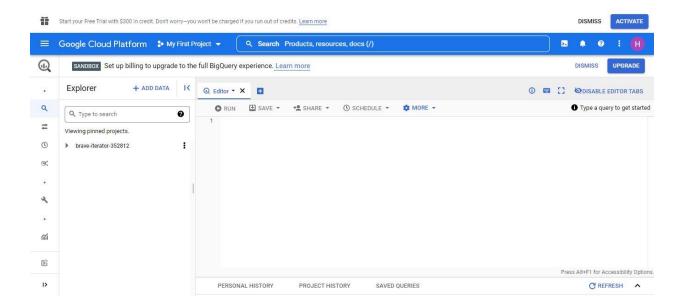


• Open **Navigation Menu > BigQuery**.

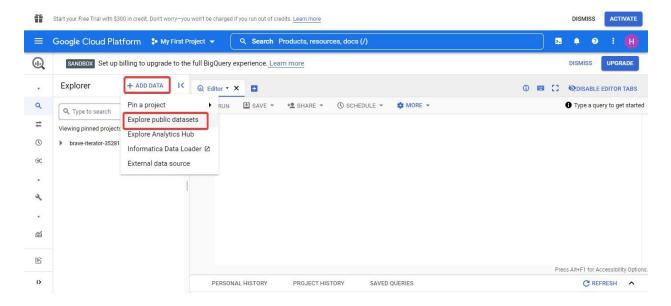




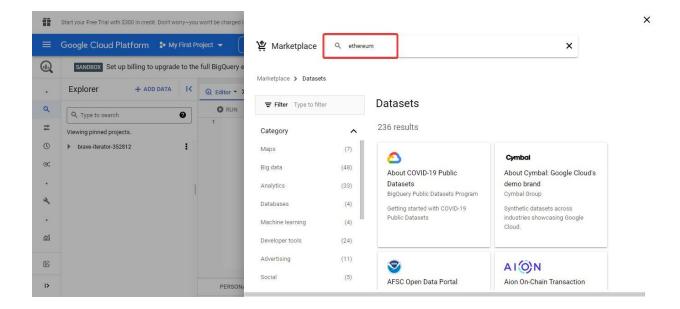
 The Welcome to BigQuery in the Cloud Console dailog box opens and click DONE.



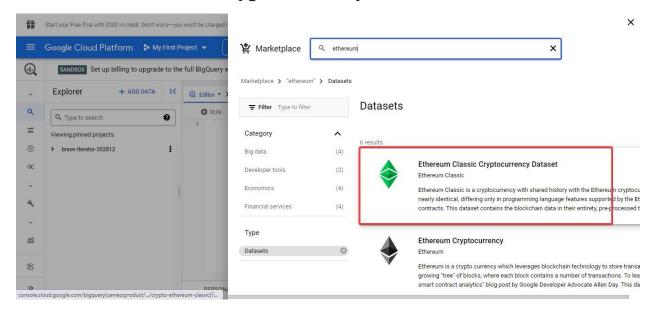
Click + ADD DATA > Explore public datasets.



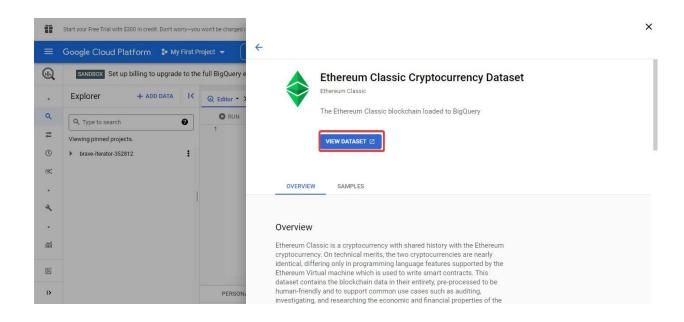
• In **Search for solutions**, type ethereum and press **enter**.



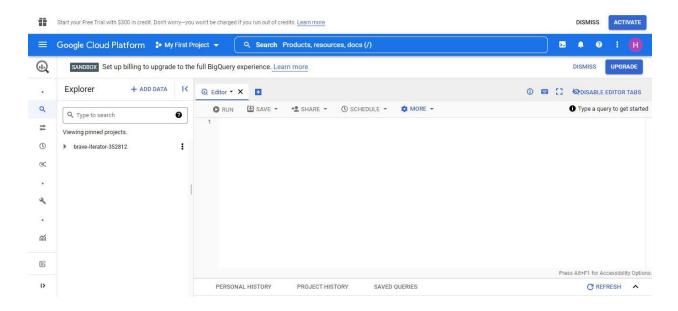
Click Ethereum Classic Cryptocurrency Dataset



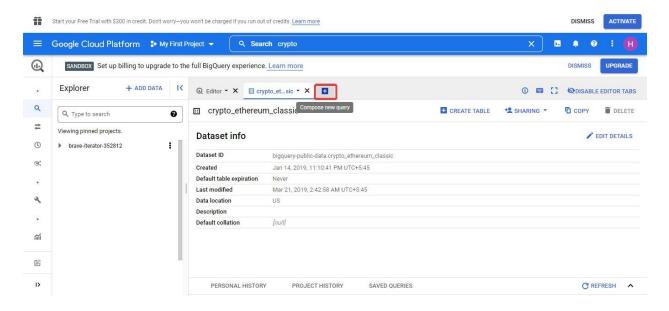
• Click VIEW DATASET



A new tab will open with BigQuery, and you should be on the bigquery-publicdata.crypto\_ethereum\_classic dataset.

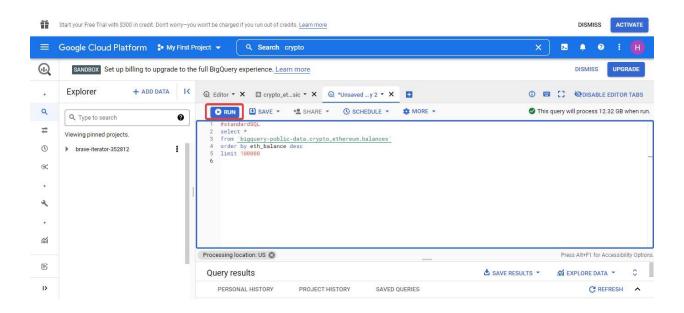


• Click + Compose new query.

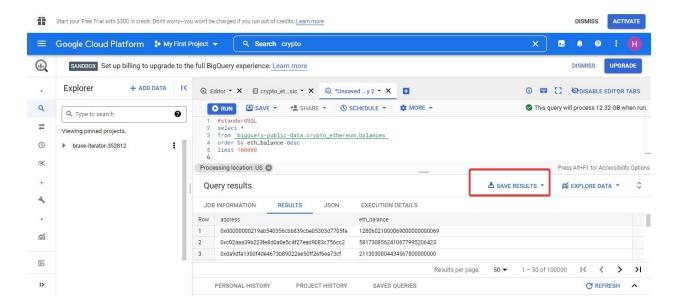


Copy and paste this query into the query window and then press Run.

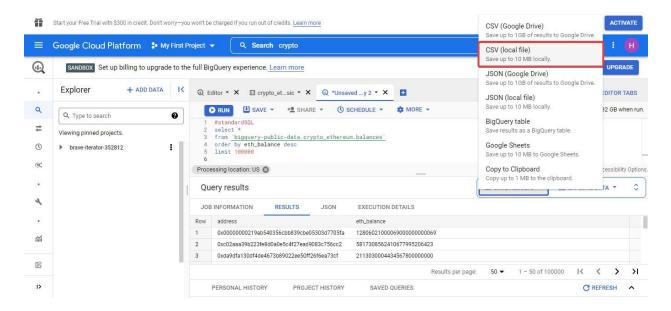
#standardSQL select \* from `bigquery-public-data.crypto\_ethereum.balances` order by eth\_balance desc limit 100000



Click SAVE RESULTS.



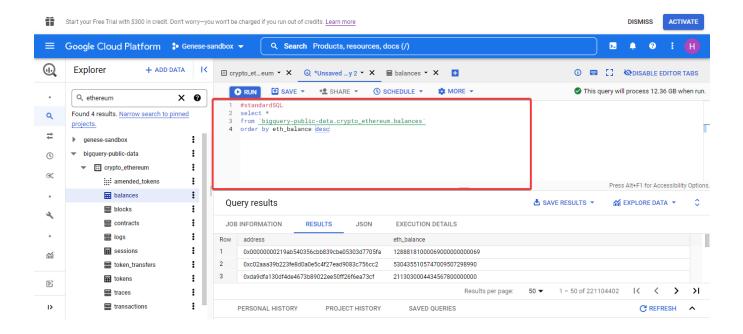
· Click CSV (local file) for download.



For unlimited query result,

# bigquery-public-data.crypto\_ethereum.balances

#standardSQL
select \*
from `bigquery-public-data.crypto\_ethereum.balances`
order by eth\_balance desc

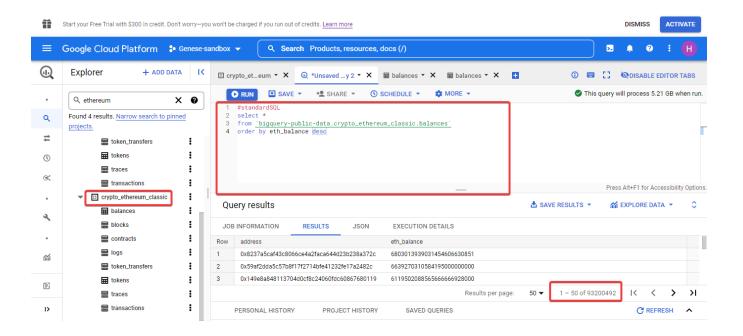


## # bigquery-public-data.crypto\_ethereum\_classic.balances

## #standardSQL

select \*

from `bigquery-public-data.crypto\_ethereum\_classic.balances` order by eth\_balance desc



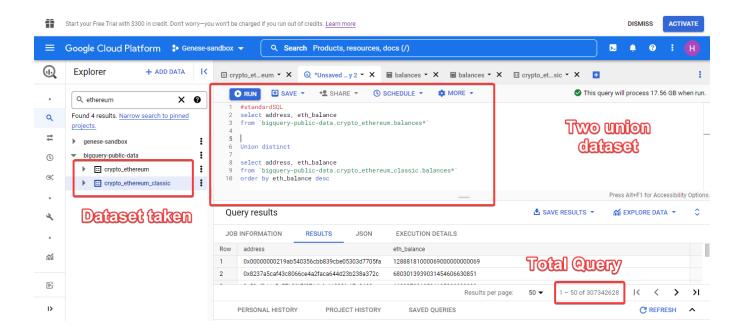
In order to prevent overlapping **bigquery-public-data.crypto\_ethereum\_classic** and **bigquery-public-data.crypto\_ethereum.balances** in single output

Run the following code

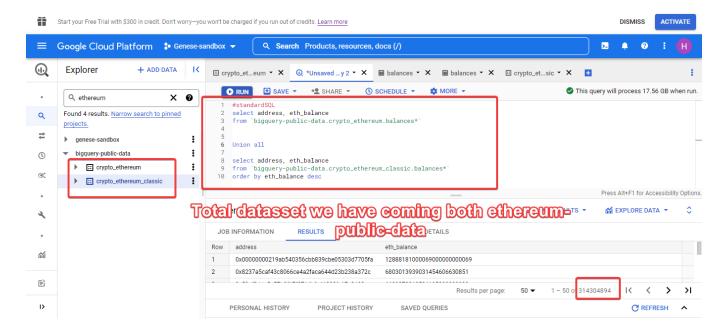
```
#standardSQL
select address, eth_balance
from `bigquery-public-data.crypto_ethereum.balances*`
```

#### Union distinct

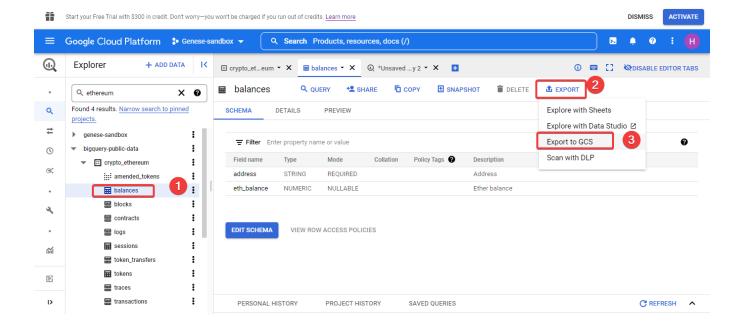
select address, eth\_balance from `bigquery-public-data.crypto\_ethereum\_classic.balances\*` order by eth\_balance desc



# In order to overlapping, **bigquery-public- data.crypto\_ethereum\_classic** and **bigquery-public- data.crypto\_ethereum.balances** in single output

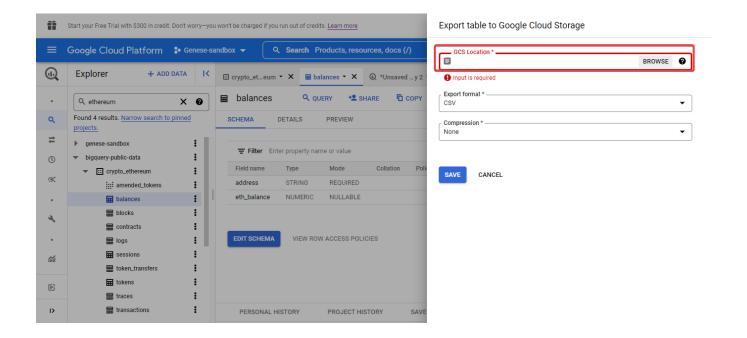


- Click balances on crypto\_ethereum bigquery-public-data
- Click Export
- Click Export to GCS

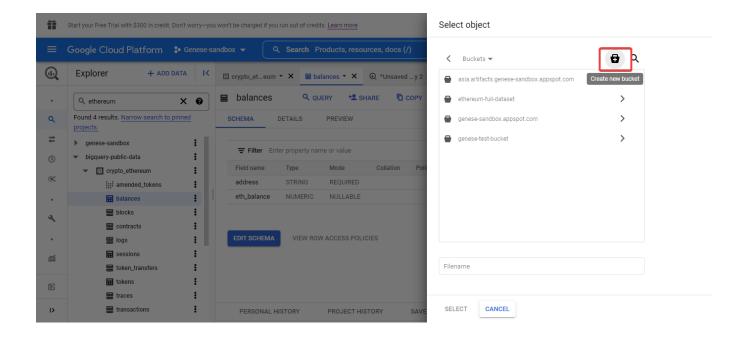


# A dialogue box will appear

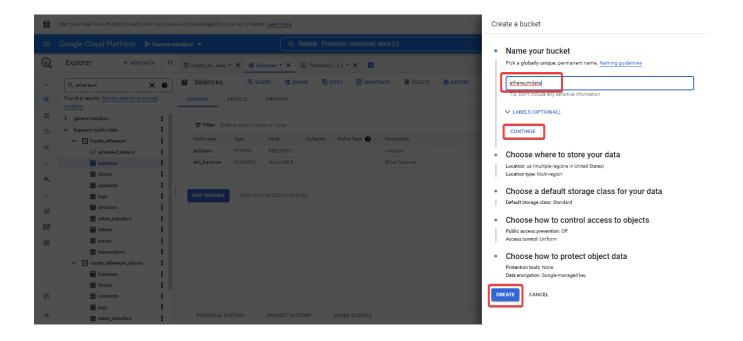
• Click **browse** to choose your bucket where you want to store your file.



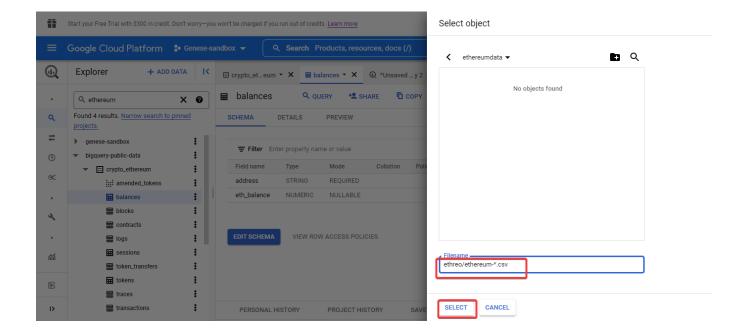
• Create new bucket.



• Name your bucket and continue. Then.click CREATE.

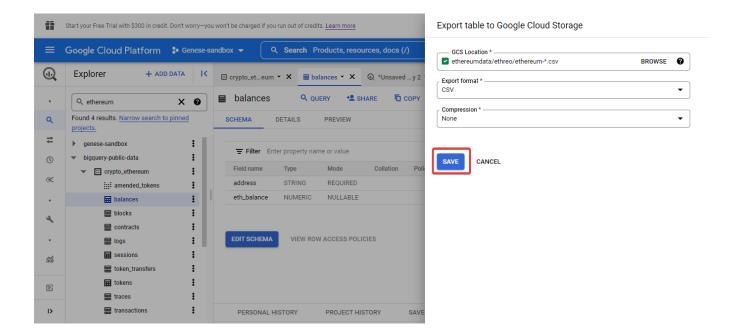


- Give a folder and file format you want to save on CSV or json file.
- Once completed Click Select.

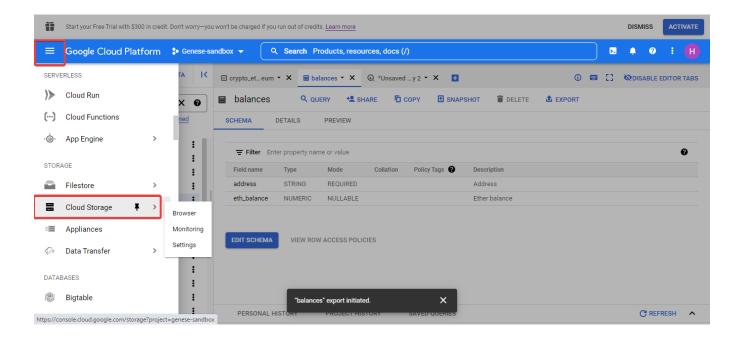


Lastly, we come into initial phase.

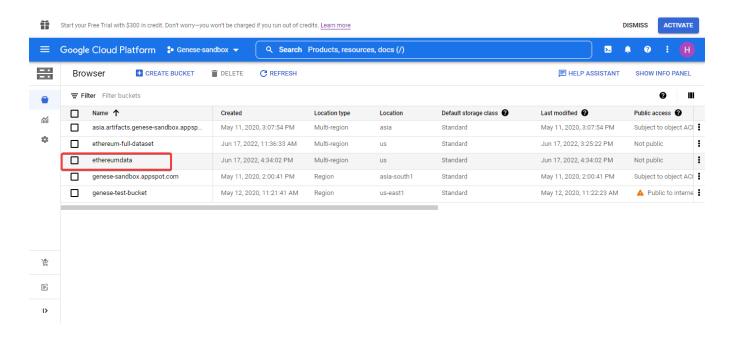
• Click Save.



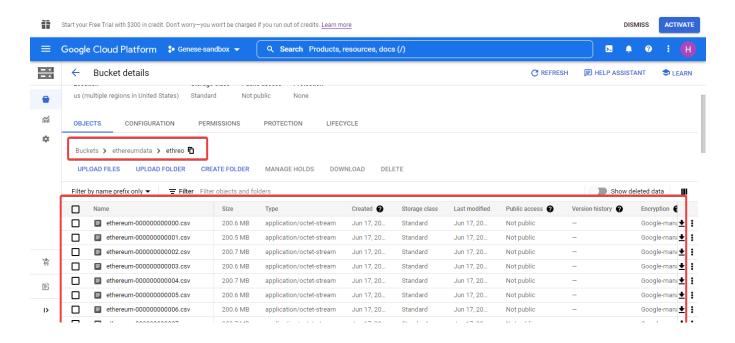
• Go to **Navigation** and Click **Cloud Storage**.



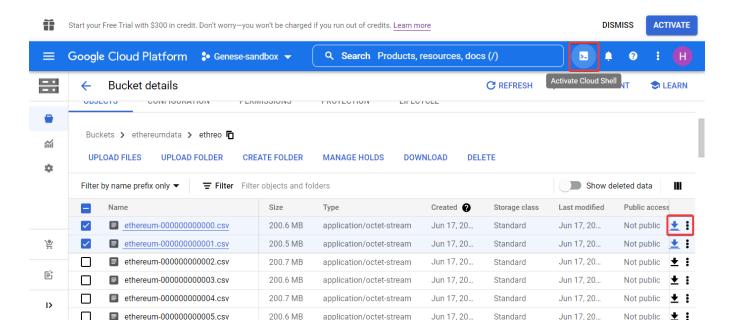
Go to your bucket once you created and open the folder on it.



Finally you will see your files downloaded in segmented and numerical CSV files .



You can download file either using Activate Cloud Shell down-arrow button on corner.



#### Resources

& EthereumETL | Grants (no date) & EthereumETL | Grants. Available at: <a href="https://gitcoin.co/grants/233/ethereumetl">https://gitcoin.co/grants/233/ethereumetl</a> (Accessed: 17 June 2022).

A Brief History of NFTs (no date). Available at: https://www.web3.university/tracks/build-vour-first-

at: <a href="https://www.web3.university/tracks/build-your-first-nft/brief-history-of-nfts">https://www.web3.university/tracks/build-your-first-nft/brief-history-of-nfts</a> (Accessed: 17 June 2022).

Adrianus Yoga (2022) *Coursera - Exporting data from BigQuery to Cloud Storage*. Available at: <a href="https://www.youtube.com/watch?v=b6cV2W65s84">https://www.youtube.com/watch?v=b6cV2W65s84</a> (Accessed: 17 June 2022).

Analyse Ethereum transactions with Google BigQuery (2020) Anyblock Analytics. Available at: <a href="https://www.anyblockanalytics.com/blog/analyse-transactions-with-ethereum-google-bigquery-data-set/">https://www.anyblockanalytics.com/blog/analyse-transactions-with-ethereum-google-bigquery-data-set/</a> (Accessed: 17 June 2022).

Banik, R. (2021) 'Tutorial: Building a web3 frontend with React', *Scrappy Squirrels*, 9 December. Available at: <a href="https://medium.com/scrappy-squirrels/tutorial-building-a-web3-frontend-with-react-eoa87ea3bad">https://medium.com/scrappy-squirrels/tutorial-building-a-web3-frontend-with-react-eoa87ea3bad</a> (Accessed: 17 June 2022).

BharatiDWConsultancy (2020) GCP - BigQuery - Union ALL, DISTINCT & Wildcard \*\_Table\_Suffix - DIY#6. Available

at: <a href="https://www.youtube.com/watch?v=rAAeYt7Y7wQ">https://www.youtube.com/watch?v=rAAeYt7Y7wQ</a> (Accessed: 17 June 2022).

BoostUpStation (2021) Google Cloud Platform Credentials | Using OAuth 2.0 to Access Google APIs | Client ID, access token. Available

at: <a href="https://www.youtube.com/watch?v=6MBLrH1j6Tg">https://www.youtube.com/watch?v=6MBLrH1j6Tg</a> (Accessed: 17 June 2022).

Brossard, E. (2017) 'Answer to "Wildcard % operator not working on bigquery", *Stack Overflow*. Available

at: <a href="https://stackoverflow.com/a/44135182">https://stackoverflow.com/a/44135182</a> (Accessed: 17 June 2022).

Buterin, V. (no date) 'Ethereum: A Next-Generation Smart Contract and Decentralized Application Platform.', p. 36.

Cloud Storage client libraries (no date) Google Cloud. Available at: <a href="https://cloud.google.com/storage/docs/reference/libraries">https://cloud.google.com/storage/docs/reference/libraries</a> (Accessed: 17 June 2022).

CommandException: One or more URLs matched no objects. when I ran gsutil from Circle CI · Issue #1179 · GoogleCloudPlatform/gsutil (no date) GitHub. Available at: <a href="https://github.com/GoogleCloudPlatform/gsutil/issues/1179">https://github.com/GoogleCloudPlatform/gsutil/issues/1179</a> (Accessed: 17 June 2022).

Community guides and resources (no date) ethereum.org. Available at: <a href="https://ethereum.org">https://ethereum.org</a> (Accessed: 17 June 2022).

Creating New BigQuery Datasets and Visualizing Insights (no date) Coursera. Available at: <a href="https://www.coursera.org/learn/gcp-creating-bigquery-datasets-visualizing-insights?action=enroll">https://www.coursera.org/learn/gcp-creating-bigquery-datasets-visualizing-insights?action=enroll</a> (Accessed: 17 June 2022).

CryptoKitties (no date) *CryptoKitties* | *Collect and breed digital cats!*, *CryptoKitties*. Available at: <a href="https://www.cryptokitties.co">https://www.cryptokitties.co</a> (Accessed: 17 June 2022).

DappReview - Discover your next favourite decentralized App (no date) DappReview. Available at: <a href="https://dapp.review">https://dapp.review</a> (Accessed: 17 June 2022).

*Data to CSV, execution failed due to file size - bytemeta* (no date). Available at: <a href="https://bytemeta.vip/repo/google/crmint/issues/150">https://bytemeta.vip/repo/google/crmint/issues/150</a> (Accessed: 17 June 2022).

DataExpert (2021) *Extracting Data from Google Cloud BigQuery to your Database* | *CSV* | *Excel Using Talend*. Available at: <a href="https://www.youtube.com/watch?v=Mv-DI8SmD84">https://www.youtube.com/watch?v=Mv-DI8SmD84</a> (Accessed: 17 June 2022).

Ethereum ETL Airflow (2022). Blockchain ETL. Available at: <a href="https://github.com/blockchain-etl/ethereum-etl-airflow">https://github.com/blockchain-etl/ethereum-etl-airflow</a> (Accessed: 17 June 2022).

Ethereum (execution layer) (no date). Available at: <a href="https://docs.infura.io/infura/networks/ethereum">https://docs.infura.io/infura/networks/ethereum</a> (Accessed: 17 June 2022).

Ethereum Historical Dataset (no date). Available at: <a href="https://www.kaggle.com/prasoonkottarathil/ethereum-historical-dataset">https://www.kaggle.com/prasoonkottarathil/ethereum-historical-dataset</a> (Accessed: 17 June 2022).

Ethereum price today, ETH to USD live, marketcap and chart (no date) CoinMarketCap. Available

at: <a href="https://coinmarketcap.com/currencies/ethereum/">https://coinmarketcap.com/currencies/ethereum/</a> (Accessed: 17 June 2022).

ethereum/go-ethereum (2022). ethereum. Available

at: <a href="https://github.com/ethereum/go-ethereum">https://github.com/ethereum/go-ethereum</a> (Accessed: 17 June 2022).

'Export BigQuery Table to CSV: 3 Easy Methods' (no date) *Learn* | *Hevo*. Available at: <a href="https://hevodata.com/learn/export-bigquery-table-to-csv/">https://hevodata.com/learn/export-bigquery-table-to-csv/</a> (Accessed: 17 June 2022).

Exporting Data From BigQuery - Google BigQuery — Google Developers (no date). Available

at: <a href="https://download.huihoo.com/google/gdgdevkit/DVD1/developers.google.com/bigquery/exporting-data-from-bigquery.html">https://download.huihoo.com/google/gdgdevkit/DVD1/developers.google.com/bigquery/exporting-data-from-bigquery.html</a> (Accessed: 17 June 2022).

Exporting data from BigQuery into Athena (2018) Big Data Demystified. Available at: <a href="https://big-data-demystified.ninja/2018/05/27/how-to-export-data-from-google-big-query-into-aws-s3-emr-hive/">https://big-data-demystified.ninja/2018/05/27/how-to-export-data-from-google-big-query-into-aws-s3-emr-hive/</a> (Accessed: 17 June 2022).

*Exporting table data* | *BigQuery* (no date) *Google Cloud*. Available at: <a href="https://cloud.google.com/bigquery/docs/exporting-data">https://cloud.google.com/bigquery/docs/exporting-data</a> (Accessed: 17 June 2022).

Exporting the Blockchain - Ethereum ETL (no date). Available at: <a href="https://ethereum-etl.readthedocs.io/en/latest/exporting-the-blockchain/">https://ethereum-etl.readthedocs.io/en/latest/exporting-the-blockchain/</a> (Accessed: 17 June 2022).

gcloud auth login error Code Example (no date). Available at: <a href="https://www.codegrepper.com/code-examples/whatever/gcloud+auth+login+error">https://www.codegrepper.com/code-examples/whatever/gcloud+auth+login+error</a> (Accessed: 17 June 2022).

Getting started with authentication | Authentication (no date a) Google Cloud. Available at: <a href="https://cloud.google.com/docs/authentication/getting-started">https://cloud.google.com/docs/authentication/getting-started</a> (Accessed: 17 June 2022).

Getting started with authentication | Authentication (no date b) Google Cloud. Available at: <a href="https://cloud.google.com/docs/authentication/getting-started">https://cloud.google.com/docs/authentication/getting-started</a> (Accessed: 17 June 2022).

Google Cloud Tech (2015) *Getting started with Google Cloud Trace*. Available at: <a href="https://www.youtube.com/watch?v=NCFDqeo7AeY">https://www.youtube.com/watch?v=NCFDqeo7AeY</a> (Accessed: 17 June 2022).

Google Cloud Tech (2020) *BigQuery Web UI quickstart*. Available at: <a href="https://www.youtube.com/watch?v=PqGqmzLYb8A">https://www.youtube.com/watch?v=PqGqmzLYb8A</a> (Accessed: 17 June 2022).

'google-auth Documentation' (no date), p. 134.

 $google.auth\_default-google-auth\ 1.30.0\ documentation\ (no\ date).$  Available at: https://google-

<u>auth.readthedocs.io/en/master/\_modules/google/auth/\_default.html</u> (Accessed: 17 June 2022).

google.oauth2.service\_account\_async module — google-auth 1.30.0 documentation (no date). Available at: <a href="https://google-auth.readthedocs.io/en/master/reference/google.oauth2">https://google-auth 1.30.0 documentation (no date). Available at: <a href="https://google-auth.readthedocs.io/en/master/reference/google.oauth2">https://google-auth 1.30.0 documentation (no date). Available at: <a href="https://google-auth.readthedocs.io/en/master/reference/google.oauth2">https://google-auth.readthedocs.io/en/master/reference/google.oauth2</a>. service account async.ht ml (Accessed: 17 June 2022).

Hoffa, F. (2018) 'Answer to "Exporting large file from BigQuery to Google cloud using wildcard", *Stack Overflow*. Available

at: <a href="https://stackoverflow.com/a/51415646">https://stackoverflow.com/a/51415646</a> (Accessed: 17 June 2022).

*How to buy ETH* (no date) *ethereum.org*. Available at: <a href="https://ethereum.org">https://ethereum.org</a> (Accessed: 17 June 2022).

How to Export BigQuery Data On a Schedule (2021) Coupler.io Blog. Available at: <a href="https://blog.coupler.io/bigquery-data-export/">https://blog.coupler.io/bigquery-data-export/</a> (Accessed: 17 June 2022).

How to export data from the BigQuery API with Python | Census (2021) Census Blog. Available at: <a href="https://blog.getcensus.com/how-to-hack-it-extracting-data-from-google-bigguery-with-python-2">https://blog.getcensus.com/how-to-hack-it-extracting-data-from-google-bigguery-with-python-2</a>/ (Accessed: 17 June 2022).

How to Export Data to a File in Google BigQuery (no date) Chartio. Available at: <a href="https://chartio.com/resources/tutorials/how-to-export-data-to-a-file-in-google-bigquery/">https://chartio.com/resources/tutorials/how-to-export-data-to-a-file-in-google-bigquery/</a> (Accessed: 17 June 2022).

How to import Google BigQuery tables to AWS Athena (2019) freeCodeCamp.org. Available at: <a href="https://www.freecodecamp.org/news/how-to-import-google-bigquery-tables-to-aws-athena-5da842a13539/">https://www.freecodecamp.org/news/how-to-import-google-bigquery-tables-to-aws-athena-5da842a13539/</a> (Accessed: 17 June 2022).

Hwang, Y. (2021) 'Streaming Ethereum On-Chain Data to QuestDB', *Geek Culture*, 12 April. Available at: <a href="https://medium.com/geekculture/streaming-ethereum-on-chain-data-to-questdb-ea6b51d990ab">https://medium.com/geekculture/streaming-ethereum-on-chain-data-to-questdb-ea6b51d990ab</a> (Accessed: 17 June 2022).

Isan-Rivkin (2018) 'How do you get all ERC20 tokens balances an address has? How do you sign transactions locally?', r/ethdev. Available

at: www.reddit.com/r/ethdev/comments/84le1j/how do you get all erc20 token s balances an/ (Accessed: 17 June 2022).

jz22 (2021) 'Google Cloud Load Balancer with wildcard', *Server Fault*. Available at: <a href="https://serverfault.com/q/1088518">https://serverfault.com/q/1088518</a> (Accessed: 17 June 2022).

Kasireddy, P. (2019) 'How does Ethereum work, anyway?', *Medium*, 29 October. Available at: <a href="https://preethikasireddy.medium.com/how-does-ethereum-work-anyway-22d1df506369">https://preethikasireddy.medium.com/how-does-ethereum-work-anyway-22d1df506369</a> (Accessed: 17 June 2022).

Liang, J. (2018) 'Ethereum'. Harvard Dataverse. doi: 10.7910/DVN/XIXSPR.

LLC, G. (no date) *google-cloud-bigquery: Google BigQuery API client library* [OS Independent]. Available at: <a href="https://github.com/googleapis/python-bigquery">https://github.com/googleapis/python-bigquery</a> (Accessed: 17 June 2022).

Lopp, J. (2019) 'The Challenges of Building Ethereum Infrastructure', *Medium*, 14 July. Available at: <a href="https://medium.com/@lopp/the-challenges-of-building-ethereum-infrastructure-87e443e47a4b">https://medium.com/@lopp/the-challenges-of-building-ethereum-infrastructure-87e443e47a4b</a> (Accessed: 17 June 2022).

Marius (2017) 'Answer to "Set GOOGLE\_APPLICATION\_CREDENTIALS in Python project to use Google API", *Stack Overflow*. Available at: <a href="https://stackoverflow.com/a/46651026">https://stackoverflow.com/a/46651026</a> (Accessed: 17 June 2022).

Medvedev, E. (2018) 'Exporting and Analyzing Ethereum Blockchain', *Medium*, 23 November. Available at: <a href="https://evgemedvedev.medium.com/exporting-and-analyzing-ethereum-blockchain-f5353414a94e">https://evgemedvedev.medium.com/exporting-and-analyzing-ethereum-blockchain-f5353414a94e</a> (Accessed: 17 June 2022).

Medvedev, E. (2020) 'How to Query Balances for all Ethereum Addresses in BigQuery', *Google Cloud - Community*, 22 January. Available at: <a href="https://medium.com/google-cloud/how-to-query-balances-for-all-ethereum-addresses-in-bigquery-fb594e4034a7">https://medium.com/google-cloud/how-to-query-balances-for-all-ethereum-addresses-in-bigquery-fb594e4034a7</a> (Accessed: 17 June 2022).

Medvedev, E. (2021) 'Query Ethereum Blockchain with SQL in Google BigQuery', *Medium*, 24 February. Available at: <a href="https://evgemedvedev.medium.com/ethereum-blockchain-on-google-bigquery-283fb300f579">https://evgemedvedev.medium.com/ethereum-blockchain-on-google-bigquery-283fb300f579</a> (Accessed: 17 June 2022).

N, J. (2020) 'How to export more than 16000 rows in bigquery table to local machine as CSV file?', *Stack Overflow*. Available at: <a href="https://stackoverflow.com/q/65108688">https://stackoverflow.com/q/65108688</a> (Accessed: 17 June 2022).

Numpy Ninja (2021) *GCPDE-BigQuery wildcard tables*. Available at: <a href="https://www.youtube.com/watch?v=u7Pd7fpZO4I">https://www.youtube.com/watch?v=u7Pd7fpZO4I</a> (Accessed: 17 June 2022).

Peace (2022) *A Labeled Transactions-Based Dataset on the Ethereum Network*. Available at: <a href="https://github.com/salam-ammari/Labeled-Transactions-based-Dataset-of-Ethereum-Network">https://github.com/salam-ammari/Labeled-Transactions-based-Dataset-of-Ethereum-Network</a> (Accessed: 17 June 2022).

Puccetti, A. (2020) 'BigQuery Wildcards', *Medium*, 21 January. Available at: <a href="https://alepuccetti.medium.com/bigquery-wildcards-3aa155157484">https://alepuccetti.medium.com/bigquery-wildcards-3aa155157484</a> (Accessed: 17 June 2022).

Query multiple tables using a wildcard table | BigQuery (no date) Google Cloud. Available at: <a href="https://cloud.google.com/bigquery/docs/querying-wildcard-tables">https://cloud.google.com/bigquery/docs/querying-wildcard-tables</a> (Accessed: 17 June 2022).

*Quickstart: Using client libraries* | *BigQuery* (no date) *Google Cloud.* Available at: <a href="https://cloud.google.com/bigquery/docs/quickstarts/quickstart-client-libraries">https://cloud.google.com/bigquery/docs/quickstarts/quickstart-client-libraries</a> (Accessed: 17 June 2022).

Qwiklabs (2019) 'Hey, BigQuery!', *Medium*, 19 February. Available at: <a href="https://qwiklabs.medium.com/hey-bigquery-e9b5bdf786bo">https://qwiklabs.medium.com/hey-bigquery-e9b5bdf786bo</a> (Accessed: 17 June 2022).

Siddiqui, I. (2020) 'Solution To Extract Data From Ethereum', *Coinmonks*, 1 September. Available at: <a href="https://medium.com/coinmonks/solution-to-extract-data-from-ethereum-52dob8007d1b">https://medium.com/coinmonks/solution-to-extract-data-from-ethereum-52dob8007d1b</a> (Accessed: 17 June 2022).

'[Solved] ImportError: No module named "google" (2021) *Exception Error*, 22 October. Available at: <a href="https://exerror.com/importerror-no-module-named-google/">https://exerror.com/importerror-no-module-named-google/</a> (Accessed: 17 June 2022).

Supermetrics (2019) Supermetrics for BigQuery - How to extract the data you need with 3 query types. Available

at: <a href="https://www.youtube.com/watch?v=5ZaOqEkyp8E">https://www.youtube.com/watch?v=5ZaOqEkyp8E</a> (Accessed: 17 June 2022).

Svanevik, A. (2020) 'How to get any Ethereum smart contract into BigQuery (in 8 mins)', *Medium*, 5 May. Available at: <a href="https://medium.com/@ASvanevik/how-to-get-any-ethereum-smart-contract-into-bigquery-in-8-mins-bab5db1fdeee">https://medium.com/@ASvanevik/how-to-get-any-ethereum-smart-contract-into-bigquery-in-8-mins-bab5db1fdeee</a> (Accessed: 17 June 2022).

Tech Vine (2022) *ETL Processing on Google Cloud Using Dataflow and BigQuery* || [GSP290] || Solution. Available

at: <a href="https://www.youtube.com/watch?v=s7LufrmQsGQ">https://www.youtube.com/watch?v=s7LufrmQsGQ</a> (Accessed: 17 June 2022).

Three methods for exporting CSV files from BigQuery | Census (2021) Census Blog. Available at: <a href="https://blog.getcensus.com/3-ways-to-export-csv-files-from-google-bigquery/">https://blog.getcensus.com/3-ways-to-export-csv-files-from-google-bigquery/</a> (Accessed: 17 June 2022).

Tutorial: How to query multiple 'events\_' tables with '\_table\_suffix' (GA4) (2021) GA4BigQuery. Available at: <a href="https://www.ga4bigquery.com/tutorial-how-to-query-multiple-analytics-events-tables-with-table-suffix-ga4/">https://www.ga4bigquery.com/tutorial-how-to-query-multiple-analytics-events-tables-with-table-suffix-ga4/</a> (Accessed: 17 June 2022).

*Understanding Ethereum* (no date) *districtox Education Portal*. Available at: <a href="https://education.districtox.io/general-topics/understanding-ethereum/">https://education.districtox.io/general-topics/understanding-ethereum/</a> (Accessed: 17 June 2022).

*Use table wildcards for easy merges - Joining and Merging Datasets* (no date) *Coursera*. Available at: <a href="https://www.coursera.org/lecture/gcp-creating-datasets">https://www.coursera.org/lecture/gcp-creating-datasets</a>

bigquery-datasets-visualizing-insights/use-table-wildcards-for-easy-merges-mKWIf (Accessed: 17 June 2022).

Using OAuth 2.0 for Web Server Applications | YouTube Data API (no date) Google Developers. Available

at: <a href="https://developers.google.com/youtube/v3/guides/auth/server-side-webapps">https://developers.google.com/youtube/v3/guides/auth/server-side-webapps</a> (Accessed: 17 June 2022).

What Is Ethereum? (no date) districtox Education Portal. Available at: <a href="https://education.districtox.io/general-topics/understanding-ethereum/what-is-ethereum/">https://education.districtox.io/general-topics/understanding-ethereum/what-is-ethereum/</a> (Accessed: 17 June 2022).

Zheng, P., Zheng, Z. and Dai, H. (2019) 'XBlock-ETH: Extracting and Exploring Blockchain Data From Ethereum'. arXiv. doi:10.48550/arXiv.1911.00169.