

## Lab 9.1g

- Take a screenshot of the Headers that includes the URL and the returned HTTP status code for the first two requests for your lab notebook.

The screenshot shows the Network tab in the Chrome DevTools Headers panel. A single request named "sign" is selected. The Headers tab is active, displaying the following details:

Name	Value
Request URL	https://gcp-oauth-gb-325950842705.us-west1.run.app/sign
Request Method	GET
Status Code	302 Found
Remote Address	34.143.78.2:443
Referrer Policy	strict-origin-when-cross-origin

Below the General section, the Response Headers section shows:

Name	Value
Alt-Svc	h3=":443"; ma=2592000; h3-29=":443"; ma=2592000
Content-Length	1019
Content-Type	text/html; charset=UTF-8
Date	Wed, 26 Nov 2025 19:45:28 GMT
Location	https://accounts.google.com/o/oauth2/auth?response_type=code&client_id=325950842705-1rm6n98u4eoau953mcus54il17i7e2.apps.googleusercontent.com&redirect_uri=https%3A%2F%2Fgcp-oauth-gb-325950842705.us-west1.run.app%2Fcallback&scope=https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.email+https%3A%2F%2Fwww.googleapis.com%2Foauth2%2Ftoken

A yellow callout box highlights the "Odin ID: emmanart" value under the Location header. The bottom of the Headers panel shows the "AI assistance" tab is active.

The screenshot shows the Chrome DevTools Network tab with the Headers panel selected. A tooltip for "Odin ID: emmanart" is displayed over the status bar.

**Request URL:** https://accounts.google.com/o/oauth2/auth?response\_type=code&client\_id=325050842705-1mfu48u4eoae953mcus54l17i7e2.apps.googleusercontent.com&redirect\_uri=https%3A%2F%2Fst1.run.app%2Fcallback&scope=https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fuserinfo.profile&state=RhtYeBNpaEvCZshEpD3rxma5VQ6Zef&prompt=consent

**Request Method:** GET

**Status Code:** 302 Found

**Remote Address:** 108.177.98.84:443

**Referrer Policy:** strict-origin-when-cross-origin

**Response Headers:**

- Alt-Svc: h3="443"; ma=2592000,h3-29="443"; ma=2592000
- Cache-Control: no-cache, no-store, max-age=0, must-revalidate
- Content-Encoding: gzip
- Content-Length: 1139
- Content-Security-Policy: require-trusted-types-for 'script'; report-uri /cspreport

**Console:** AI assistance

This feature is only available when you are signed into Chrome with your Google account

Ask a question about the selected network request Relevant data is sent to Google | >

- Based on the description of the source code, what lines of code in our application are responsible for the second request shown?
- Take a screenshot of the permissions you (as a user) are granting the Guestbook access to.

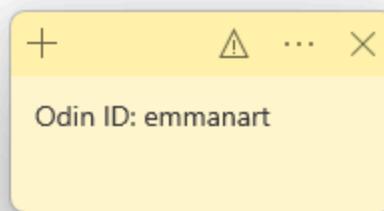
# Sign in to gcp-oauth-gb-325950842705.us-west1.run.app

E emmanart@pdx.edu ▾

Google will allow gcp-oauth-gb-325950842705.us-west1.run.app to access this info about you

👤 Emmanuel Arthur  
Name and profile picture

✉️ emmanart@pdx.edu  
Email address



Review gcp-oauth-gb-325950842705.us-west1.run.app's Privacy Policy and Terms of Service to understand how gcp-oauth-gb-325950842705.us-west1.run.app will process and protect your data.

To make changes at any time, go to your [Google Account](#).

Learn more about [Sign in with Google](#).

Cancel

Continue

- Take a screenshot of the Headers that includes the entire Callback URL and its returned HTTP status code. What is the URI for the Location that the User sent to by the Callback?

The URI for the location is <https://gcp-oauth-gb-325950842705.us-west1.run.app/sign>

The screenshot shows the Network tab in the Chrome DevTools. A specific request for 'sign' is selected. The Headers section is expanded, showing the following details:

- Request URL:** https://gcp-oauth-gb-325950842705.us-west1.run.app/callback?state=kUUovl33co3moxZwWdPeRlmReboxML&code=4%2F0Ab32j91NqSqdOPWltmONxNP6VXfgG3nJhsY0eQ1B2ZKcv7jVrbBUUcYct63TZ4yw&scope=email+openid+http://www.googleapis.com%2Fauth%2Fuserinfo.profile+https%3A%2Fwww.googleapis.com%2Fauth%2Fuserinfo
- Request Method:** GET
- Status Code:** 302 Found
- Remote Address:** 34.143.74.2:443
- Referrer Policy:** origin
- Response Headers:**
  - Alt-Svc: h3="443"; ma=2592000, h3-29="443"; ma=2592000
  - Content-Length: 197
  - Content-Type: text/html; charset=utf-8
  - Date: Wed, 26 Nov 2025 20:02:33 GMT
  - Location: /sign

A yellow callout box highlights the text "Odin ID: emmanart" in the Response Headers section.

- Find the request within Developer Tools that fetches the embedded image and take a screenshot of its URL.

The screenshot shows the Network tab in the Chrome DevTools. A specific request for 'style.css' is selected. The Headers section is expanded, showing the following details:

- Request URL:** https://lh3.googleusercontent.com/a/ACg8ocLN4slK5kj0OuOSYi7HXa\_RpX-7wsSab8APKoU\_LnxBOU1g9g=s96-c
- Request Method:** GET
- Status Code:** 200 OK (from memory cache)
- Remote Address:** 142.250.69.161:443
- Referrer Policy:** no-referrer
- Response Headers:**
  - Access-Control-Allow-Origin: \*
  - Access-Control-Expose-Headers: Content-Length
  - Alt-Svc: h3="443"; ma=2592000, h3-29="443"; ma=2592000
  - Cache-Control: public, max-age=86400, no-transform
  - Content-Disposition: inline;filename="unnamed.png"
  - Content-Length: 510
  - Content-Type: image/png

A yellow callout box highlights the text "Odin ID: emmanart" in the Response Headers section.

A message at the bottom of the DevTools interface states: "This feature is only available when you are signed into Chrome with your Google account".

- Take a screenshot showing multiple authenticated accounts have been able to sign the Guestbook.



(24) "software engin...



(25) "software engin...



Software Developer...

# Guestbook

[Sign here](#) | [Logout](#)

## Entries

 Emmanuel Arthur <emmanart@pdx.edu>  
on 2025-11-26 20:01:58.578065+00:00  
Hello OAuth Guest!

---

 Emmanuel Arthur <emmakarthur1800@gmail.com>  
on 2025-11-26 20:34:35.369129+00:00  
Hello OAuth Guestbook from different account!

---

Odin ID: emmanart

- Take a screenshot of the expanded information that includes your OdinId for your lab notebook.

Odin ID: emmanart

Sign in with Google

You use Sign in with Google to sign in to your Guestbook account. Google uses your name, email address, and profile picture to securely sign you in. [Learn more](#)

Access given on: 1 hour ago

Access given to: gcp-oauth-gb-325950842705.us-west1.run.app [?](#)

If you stop using Sign in with Google  
If Guestbook uses automatic sign-in, Google will no longer automatically sign you in to Guestbook

[Stop using Sign in with Google](#)

Guestbook uses Google Account sign-in prompts to offer a faster way to sign in  
To make changes, go to [Settings](#)

Privacy Terms Help About

## Lab9.2g

- What other domains are given access to this Firebase project by default?

Odin ID: emmanart

firebase-emmanart Authentication

User account management

- User account linking
- User actions
- Blocking functions
- User activity logging
- Sign-up quota
- Password policy

Domains

Authorized domains

For security, to use Phone, Google or third-party authentication, domains need to be authorized for OAuth redirects. [Learn more](#)

Authorized domain	Type
localhost	Default
fir-emmanart.firebaseio.com	Default
fir-emmanart.webapp.com	Default
cloudshell.dev	Custom

Add domain

SMS

SMS region policy

Fraud prevention

reCAPTCHA

From the above they are localhost, [fir-emmanart.firebaseio.com](https://fir-emmanart.firebaseio.com), [fir-emmanart.webapp.com](https://fir-emmanart.webapp.com)

- Take a screenshot of the first 10 lines of the produced file.

```

✓ Enter authorization code: 4/0Ab32j90dGNsNLsairHUt62iVOuyi5yvU6AyJZ2u16jxkp22ZUOJt_CUYyDTElqS63uLVA
✓ Success! Logged in as emmanart@pdx.edu
emmanart@cloudshell:~/codeLab-FriendlyChat-web/web-start (firebase-emmanart)$ cd codeLab-FriendlyChat-web/web-start (firebase-emmanart)$ firebase use --add
? Which project do you want to add? firebase-emmanart
? What alias do you want to use for this project? (e.g. staging) default

Created alias default for firebase-emmanart.
Now using alias default (firebase-emmanart)
emmanart@cloudshell:~/codeLab-FriendlyChat-web/web-start (firebase-emmanart)$ ls
firebase.json  node_modules  package.json  package-lock.json  public  README.md  src  webpack.config.js
emmanart@cloudshell:~/codeLab-FriendlyChat-web/web-start (firebase-emmanart)$ cd src
emmanart@cloudshell:~/codeLab-FriendlyChat-web/web-start/src (firebase-emmanart)$ ls
firebase-config.js  firebase-messaging-sw.js  index.js
emmanart@cloudshell:~/codeLab-FriendlyChat-web/web-start/src (firebase-emmanart)$ cd ..
emmanart@cloudshell:~/codeLab-FriendlyChat-web/web-start (firebase-emmanart)$ head -n 10 public/scripts/main.js
/*
 * ATTENTION: An "eval-source-map" devtool has been used.
 * This devtool is neither made for production nor for readable output files.
 * It uses "eval()" calls to create a separate source file with attached SourceMaps in the browser devtools.
 * If you are trying to read the output file, select a different devtool (https://webpack.js.org/configuration/devtool/)
 * or disable the default devtool with "devtool: false".
 * If you are looking for production-ready output files, see mode: "production" (https://webpack.js.org/configuration/mode/).
 */
/******/ (( ) => { // webpackBootstrap
/******/   "use strict";
emmanart@cloudshell:~/codeLab-FriendlyChat-web/web-start (firebase-emmanart)$ 

```

Odin ID: emmanart

- What missing functions deal with user authentication?

Below are the functions that have to do with user authentication directly from the code:

```

// Signs-in Friendly Chat.

async function signIn() {

  alert('TODO: Implement Google Sign-In');

  // TODO 1: Sign in Firebase with credential from the Google user.

}

// Signs-out of Friendly Chat.

function signOutUser() {

  // TODO 2: Sign out of Firebase.

}

```

```
// Initiate firebase auth

function initFirebaseAuth() {
    // TODO 3: Subscribe to the user's signed-in status
}

// Returns the signed-in user's profile Pic URL.

function getProfilePicUrl() {
    // TODO 4: Return the user's profile pic URL.
}

// Returns the signed-in user's display name.

function getUserId() {
    // TODO 5: Return the user's display name.
}

// Returns true if a user is signed-in.

function isUserSignedIn() {
    // TODO 6: Return true if a user is signed-in.
}
```

- What missing functions deal with sending and receiving messages?

These are the functions below

```
// Saves a new message on the Cloud Firestore.

async function saveMessage(messageText) {

    // TODO 7: Push a new message to Cloud Firestore.

}

// Loads chat messages history and listens for upcoming ones.

function loadMessages() {

    // TODO 8: Load and listen for new messages.

}

// Saves a new message containing an image in Firebase.

// This first saves the image in Firebase storage.

async function saveImageMessage(file) {

    // TODO 9: Posts a new image as a message.

}

// Saves the messaging device token to Cloud Firestore.

async function saveMessagingDeviceToken() {
```

```
// TODO 10: Save the device token in Cloud Firestore

}

// Requests permissions to show notifications.

async function requestNotificationsPermissions() {

    // TODO 11: Request permissions to send notifications.

}
```

- What are the names of the elements that are hidden when the user is signed out?

userNameElement, userPicElement, signOutButtonElement

- What is the name of the element that is not hidden when the user is signed out?

signInButtonElement

- Include a screenshot of the message and its fields in the database for your lab notebook

The screenshot shows the Firebase Firestore Database interface. On the left, the navigation bar includes 'Project Overview', 'Authentication', 'Firestore Database' (which is selected), and 'Storage'. Below these are sections for 'Build', 'Run', 'Analytics', and 'AI'. Under 'Related development tools' is 'Firebase Studio'. At the bottom, there are links for 'Blaze' and 'Modify'. The main area displays a hierarchical view of collections: '(default)', 'messages', and a specific document 'X7MG4Z6uadZZUEDvq4Tj'. This document contains fields: 'name' (Emmanuel Arthur), 'profilePicUrl' (a URL), 'text' (hello Firebase), and 'timestamp' (November 28, 2025 at 6:08:55 AM UTC-8). A yellow modal window is open, showing the 'Odin ID: emmanart'.

- Include a screenshot of the application with its two messages for your lab notebook

The screenshot shows the 'Friendly Chat' application. At the top, there's a header with a user icon (E), the name 'Emmanuel Arthur', and a 'SIGN-OUT' button. The main area shows a conversation between the user ('E') and another person ('Pretend the instructor added a message'). The user has sent a message: 'hello Firebase' with the subtitle 'Emmanuel Arthur'. Below the messages is a text input field with placeholder 'Message...' and a 'SEND' button. A yellow modal window is open, showing the 'Odin ID: emmanart'.

- What is the URL of the image that is first shown in the UI as the message is loading?

It's '<https://www.google.com/images/spin-32.gif?a>' from the variable which is declared as "var LOADING\_IMAGE\_URL = '<https://www.google.com/images/spin-32.gif?a>';"

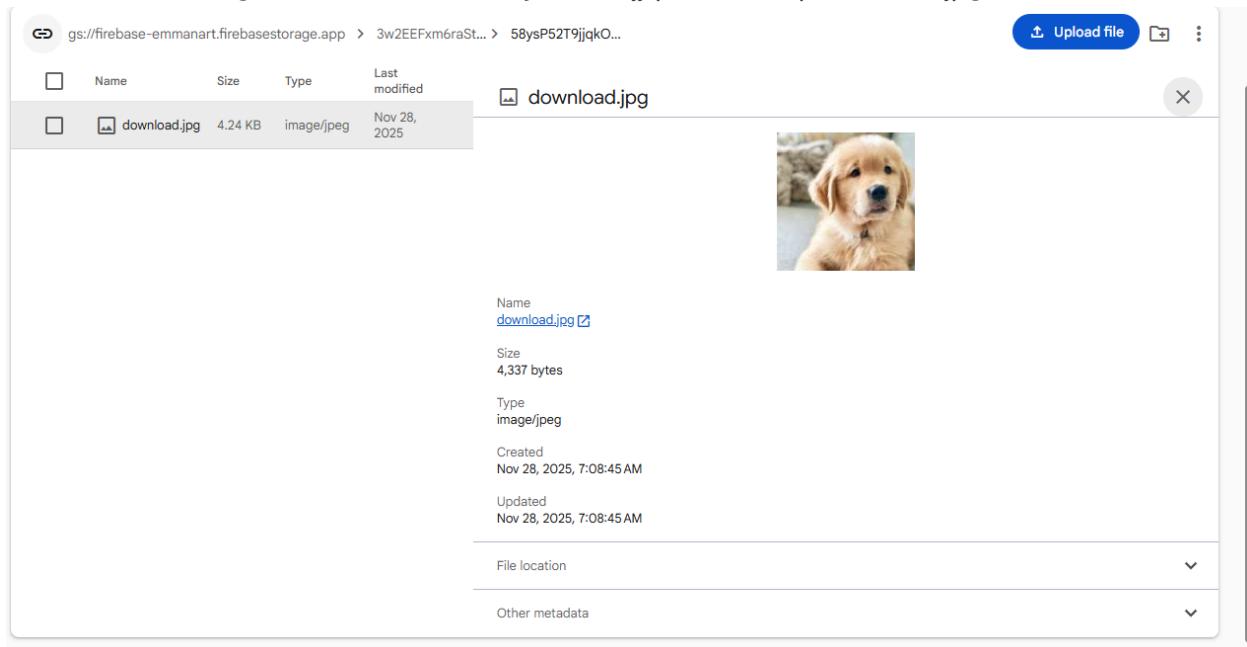
- How do the fields in an image document differ from that of the text document?

The image document has an imageUrl field and a storage uri field

- What URL and storage location can the image be found at?

URL:

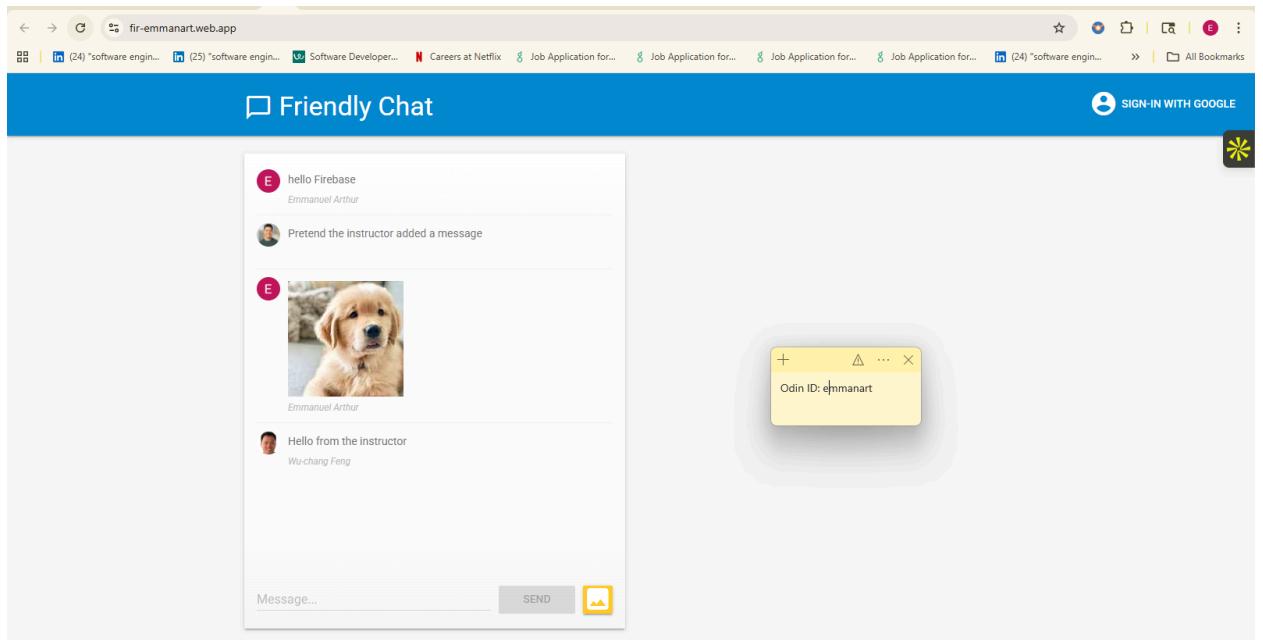
"<https://firebasestorage.googleapis.com/v0/b/firebase-emmanart.firebaseioapp.com/o/3w2EEFxm6raStxgxZOuoWb5w3EU2%2F58ysP52T9jjqkO5LmN4q%2Fdownload.jpg?alt=media&token=179361e6-9179-4c54-aaa8-e31dd27696e4>" and Storage Location is "3w2EEFxm6raStxgxZOuoWb5w3EU2/58ysP52T9jjqkO5LmN4q/download.jpg"



- What directory is the application going to be served from?

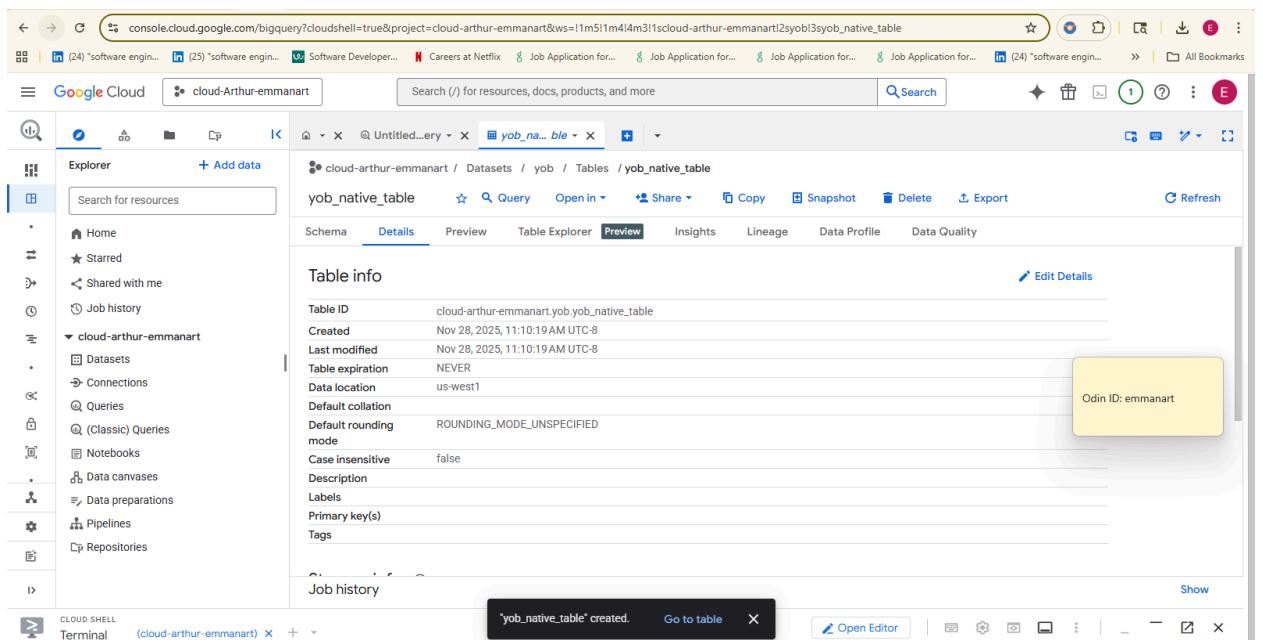
## The public folder

- Take a screenshot of the message including the URL for your lab notebook.

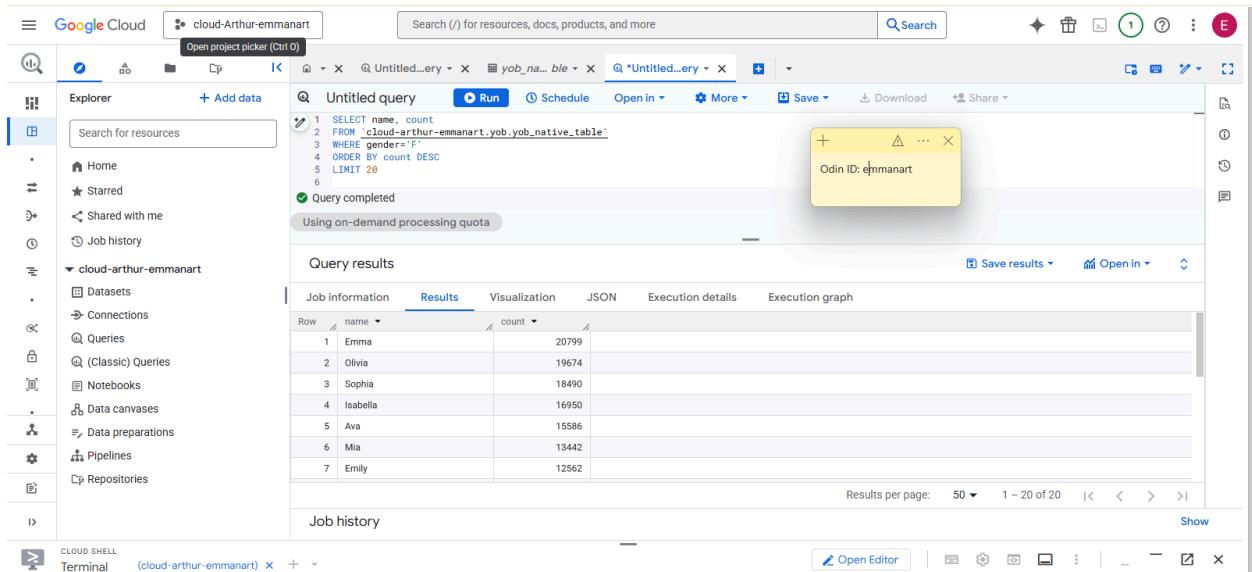


## Lab 9.3g

- Take a screenshot of the table's details that includes the number of rows in the table.



- Screenshot the query results and include it in your lab notebook



The screenshot shows the Google Cloud BigQuery interface. The left sidebar displays the project 'cloud-Arthur-emmanart' with various options like Home, Starred, Shared with me, Job history, Datasets, Connections, Queries, (Classic) Queries, Notebooks, Data canvases, Data preparations, Pipelines, and Repositories. The main area shows an 'Untitled query' tab with the following SQL code:

```

1 SELECT name, count
2 FROM `cloud-arthur-emmanart.yob_yob_native_table`
3 WHERE gender='F'
4 ORDER BY count DESC
5
6 LIMIT 20

```

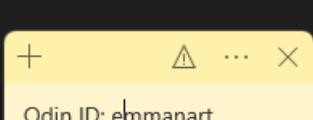
The status bar indicates 'Query completed'. Below the code, the 'Results' tab is selected, showing a table with the following data:

Row	name	count
1	Emma	20799
2	Olivia	19674
3	Sophia	18490
4	Isabella	16950
5	Ava	15586
6	Mia	13442
7	Emily	12562

The bottom of the interface includes a 'CLOUD SHELL' tab, a terminal window showing '(cloud-arthur-emmanart)', and various navigation and settings icons.

- Screenshot your results and include it in your lab notebook

- Screenshot your results and include it in your lab notebook

```
emmanart@cloudshell:~ (cloud-arthur-emmanart)$ bq shell
Welcome to BigQuery! (Type help for more information.)
cloud-arthur-emmanart> SELECT name, count FROM [cloud-arthur-emmanart.yob.yob_native_table] WHERE gender='M' ORDER BY count ASC LIMIT 10
+-----+-----+
| name | count |
+-----+-----+
| Aari |      5 |
| Aaliyah |     5 |
| Aadian |     5 |
| Aaroh |     5 |
| Aarit |     5 |
| Aadiv |     5 |
| Aadhi |     5 |
| Aarohan |    5 |
| Aariyan |    5 |
| Aamer |     5 |
+-----+-----+
cloud-arthur-emmanart> 
```

- Screenshot your results and include it in your lab notebook

```

cloud-arthur-emmanart> SELECT name, count FROM [cloud-arthur-emmanart.yob.yob_native_table] WHERE name='Emmanuel' ORDER BY count ASC LIMIT 10
+-----+-----+
|   name | count |
+-----+-----+
| Emmanuel |     8 |
| Emmanuel | 2548 |
+-----+-----+
cloud-arthur-emmanart> 

```

- Screenshot the query results and include it in your lab notebook

Row	name	count
1	Emma	20799
2	Olivia	19674
3	Sophia	18490
4	Isabella	16950
5	Ava	15586

### Lab 9.4g

- How much less data does this query process compared to the size of the table?

The more filtered query has 18.89 GB less data compared to the size of the table.

- How many twins were born during this time range?

375362

- How much lighter on average are they compared to single babies?

About 2.18 (difference) units lighter and 1.42 (ratio) times lighter

- Show the plots generated for the two most important features for your lab notebook

- What day saw the largest spike in trips to grocery and pharmacy stores?

2020-03-13

- On the day the stay-at-home order took effect (3/23/2020), what was the total impact on workplace trips?

Workplace trips reduced by 49

- Which three airports were impacted the most in April 2020 (the month when lockdowns became widespread)?

Daniel K. Inouye International, Chicago OHare International, Miami International

- Run the query again using the month of August 2020. Which three airports were impacted the most?

Newark Liberty International, Daniel K. Inouye International, Charlotte Douglas International

- What table and columns identify the place name, the starting date, and the number of excess deaths from COVID-19?

The table ID is excess deaths and the columns are: placename, start\_date, end\_date, excess\_deaths

- What table and columns identify the date, county, and deaths from COVID-19?

The table ID is us\_counties and the columns are date, county and deaths

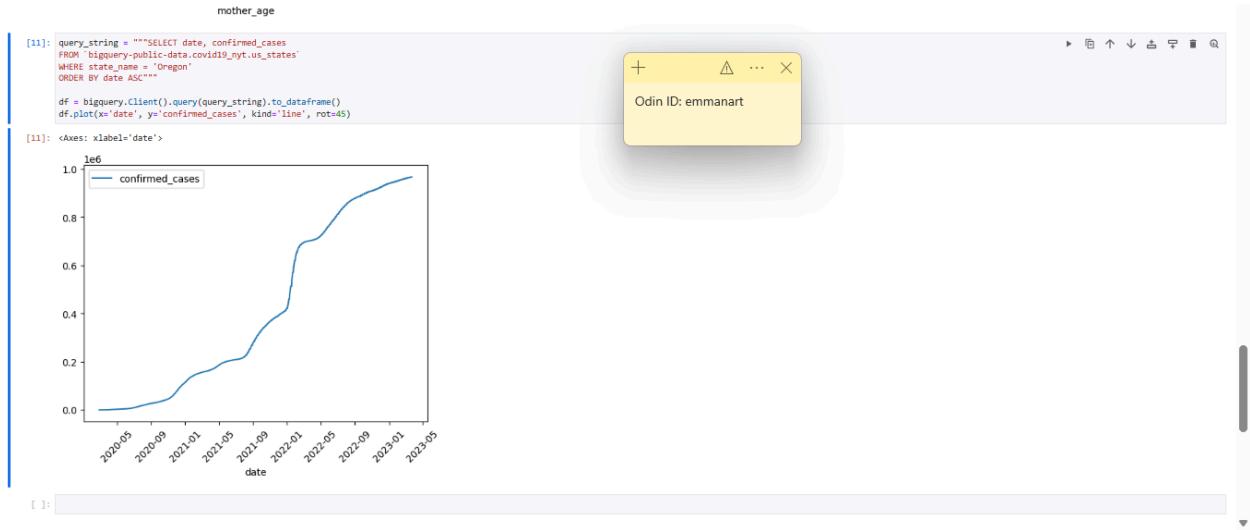
- What table and columns identify the date, state, and confirmed cases of COVID-19?

The table ID is us\_states and the columns are date, state\_name, confirmed\_cases

- What table and columns identify a county code and the percentage of its residents that report they always wear masks?

The table ID is mask\_use\_by\_county and the columns are: county\_fips\_code, always

- Show a screenshot of the plot and the code used to generate it for your lab notebook



- From within your Jupyter notebook, run the query and write code that shows the first 10 states that reached 1000 deaths from COVID-19. Take a screenshot for your lab notebook.

```

[15]: query_string = """SELECT state_name, MIN(date) as date_of_1000
FROM `bigquery-public-data.covid19_nyt.us_states`
WHERE deaths > 1000
GROUP BY state_name
ORDER BY date_of_1000 ASC"""
df = bigquery.Client().query(query_string).to_dataframe()
df.head(10)

```

	state_name	date_of_1000
0	New York	2020-03-29
1	New Jersey	2020-04-06
2	Michigan	2020-04-09
3	Louisiana	2020-04-14
4	Massachusetts	2020-04-15
5	Illinois	2020-04-16
6	California	2020-04-17
7	Connecticut	2020-04-17
8	Pennsylvania	2020-04-17
9	Florida	2020-04-24

- Take a screenshot for your lab notebook of the Top 5 counties and the states they are located in.

```

[16]: query_string = """SELECT DISTINCT mu.county_fips_code, mu.always, ct.county
FROM `bigquery-public-data.covid19_nyt.mask_use_by_county` as mu
LEFT JOIN `bigquery-public-data.covid19_nyt.us_counties` as ct
ON mu.county_fips_code = ct.county_fips_code
ORDER BY mu.always DESC"""
df = bigquery.Client().query(query_string).to_dataframe()
df.head(5)

```

	county_fips_code	always	county
0	06027	0.889	Inyo
1	36123	0.884	Yates
2	06051	0.880	Mono
3	48229	0.880	Hudspeth
4	48141	0.877	El Paso

- Plot the results and take a screenshot for your lab notebook.



- Plot the results and take a screenshot for your lab notebook.

