Analytics as a Service for Data Sharing Partners | Google Cloud Skills Boost

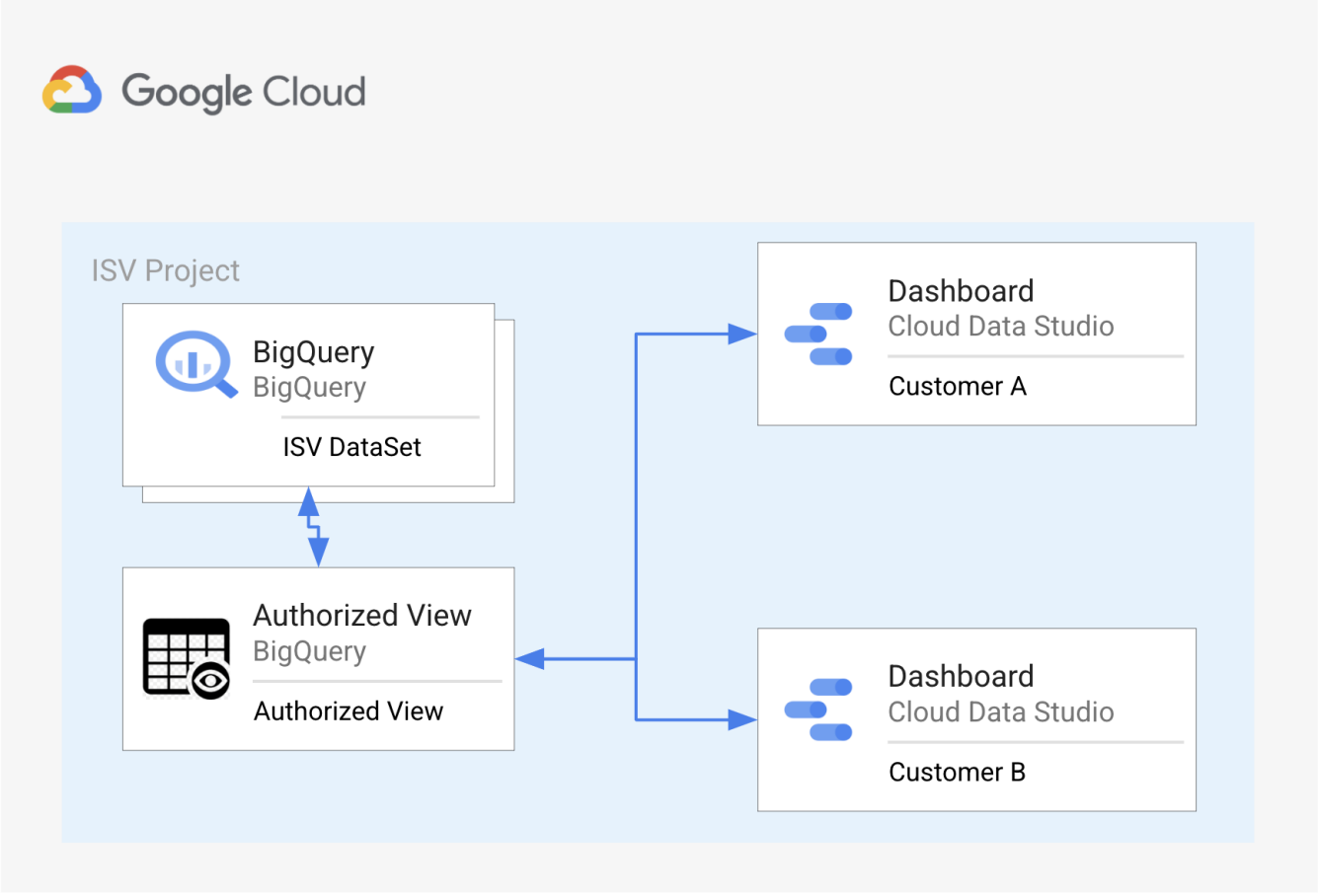
Qwiklabs : 13-17 minutes

GSP1042

Google Cloud Self-Paced Labs

Overview

A common scenario is where a Google Cloud Data Sharing Partner has proprietary datasets that customers can use for their analytics use cases. Customers need to subscribe to this data, query it within their own platform, then augment it with their own datasets and use their visualization tools for their customer facing dashboards. This enables Data Sharing Partners to simplify and accelerate how they build and deliver value from data-driven solutions.



Through integration with Google Cloud IAM, you can set permissions on BigQuery objects to enable access by users inside or outside of organizations. In this lab, you will learn how both Data Sharing Partners and their customers can use BigQuery data stored in a partner project in the form of customer facing dashboards for analytics as a managed service. You will be given three projects: the Data Sharing Partner project which owns the dataset and two separate and distinct customers who can access a subset of the dataset from their respective projects. Customers will list customer information specific to their geographical region.

Objectives

In this lab, you will:

- Copy a public dataset into a Data Sharing Partner Project
- Create distinct authorized views for each customer
- Consume the authorized views to create customer-specific dashboards

Setup and Requirements

Before you click the Start Lab button

Read these instructions. Labs are timed and you cannot pause them. The timer, which starts when you click **Start Lab**, shows how long Google Cloud resources will be made available to you.

This hands-on lab lets you do the lab activities yourself in a real cloud environment, not in a simulation or demo environment. It does so by giving you new, temporary credentials that you use to sign in and access Google Cloud for the duration of the lab.

To complete this lab, you need:

- Access to a standard internet browser (Chrome browser recommended).

Note: Use an Incognito or private browser window to run this lab. This prevents any conflicts between your personal account and the Student account, which may cause extra charges incurred to your personal account.

- Time to complete the lab---remember, once you start, you cannot pause a lab.

Note: If you already have your own personal Google Cloud account or project, do not use it for this lab to avoid extra charges to your account.

How to start your lab and sign in to the Google Cloud Console

1. Click the **Start Lab** button. If you need to pay for the lab, a pop-up opens for you to select your payment method. On the left is the **Lab Details** panel with the following:
    - The **Open Google Console** button
    - Time remaining
    - The temporary credentials that you must use for this lab
    - Other information, if needed, to step through this lab

2. Click **Open Google Console**. The lab spins up resources, and then opens another tab that shows the **Sign in** page.

   Tip: Arrange the tabs in separate windows, side-by-side.

   Note: If you see the **Choose an account** dialog, click **Use Another Account**.

3. If necessary, copy the **Username** from the **Lab Details** panel and paste it into the **Sign in** dialog. Click **Next**.

4. Copy the **Password** from the **Lab Details** panel and paste it into the **Welcome** dialog. Click **Next**.

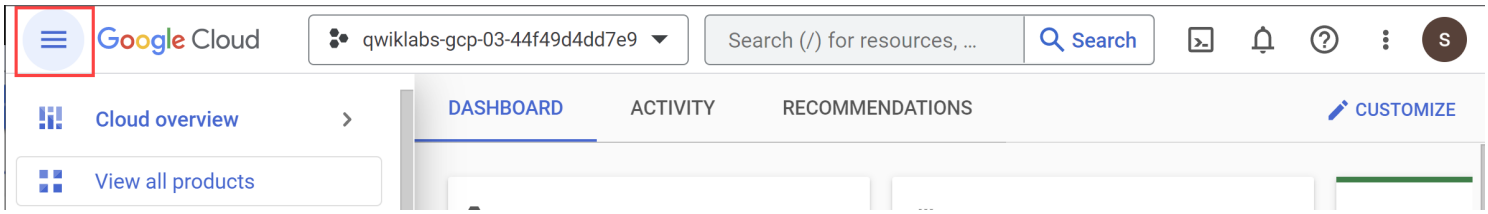
   Important: You must use the credentials from the left panel. Do not use your Google Cloud Skills Boost credentials. **Note:** Using your own Google Cloud account for this lab may incur extra charges.

5. Click through the subsequent pages:

   - Accept the terms and conditions.
   - Do not add recovery options or two-factor authentication (because this is a temporary account).
   - Do not sign up for free trials.

After a few moments, the Cloud Console opens in this tab.

Note: You can view the menu with a list of Google Cloud Products and Services by clicking the **Navigation menu** at the top-left.



Create authorized views

In the first project, you will take on the role of a Data Sharing Partner creating and sharing a dataset using an authorized view.

Create Authorized View A

1. From the lab pane. open the **Data Sharing Partner Project Console** and log in with the associated credentials.

2. From the **Navigation Menu**, go to **BigQuery** > **SQL Workspace**. If prompted click **Done**.

3. Click on **+ Compose new query** where you can run your query.

4. Run the following query to create an authorized view for Customer A, based on a public geographical dataset.

```
SELECT * FROM `bigquery-public-data.geo_us_boundaries.zip_codes` WHERE state_code="TX" LIMIT 4000
```

5. Click **Run**.
6. From the toolbar, click **Save** > **Save View**.
7. Keep the project as default and for the **Dataset** select `demo_dataset`.
8. For **Table** type `authorized_view_a`.
9. Click **Save**.

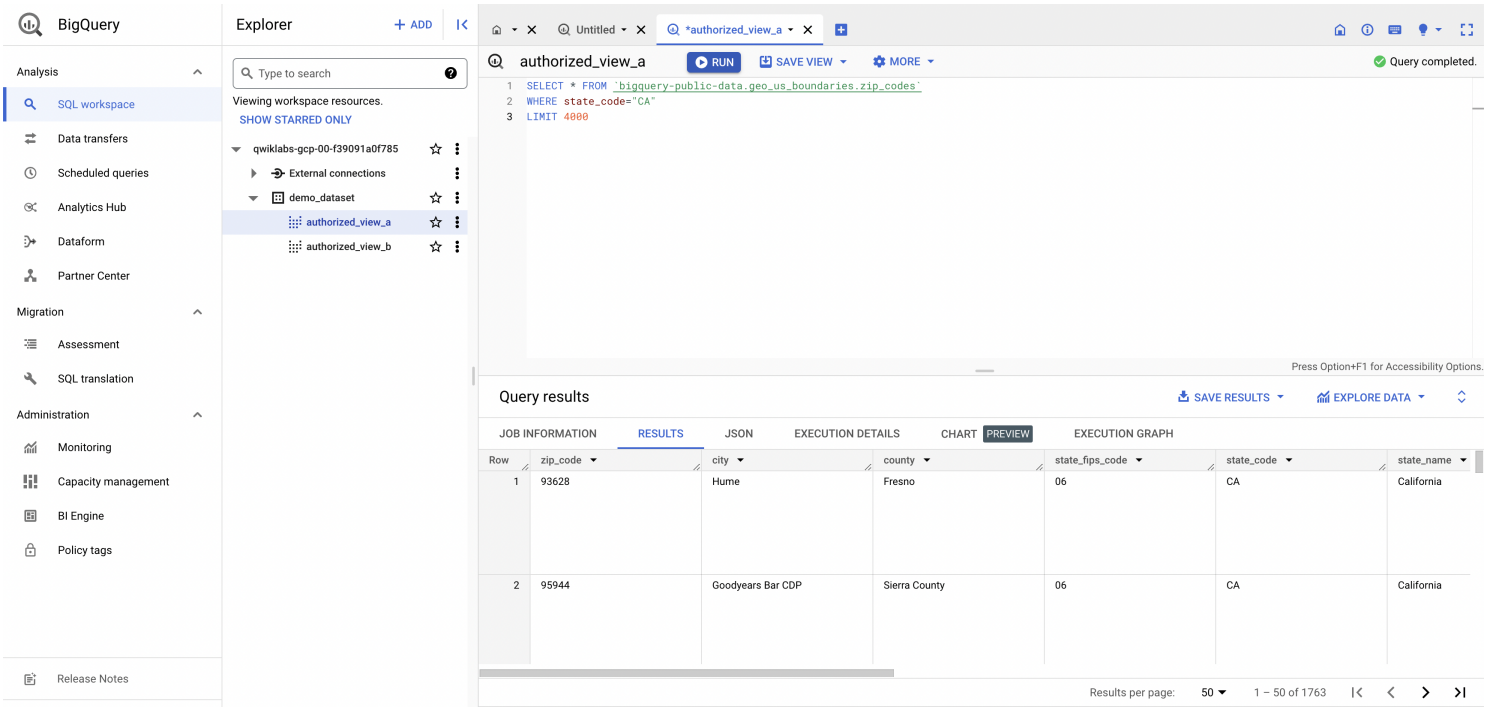
Create Authorized View B

1. In the query editor, remove the previous query you just ran.
2. Run the following query to create an authorized view for Customer B, based on a public geographical dataset.

```
SELECT * FROM `bigquery-public-data.geo_us_boundaries.zip_codes` WHERE state_code="CA" LIMIT 4000
```

3. Click **Run**.
4. From the toolbar, click **Save View** > **Save View as**.
5. Keep the project as default and for the **Dataset** select `demo_dataset`.
6. For **Table** type `authorized_view_b`.
7. Click **Save**.

Your authorized views should resemble the following:

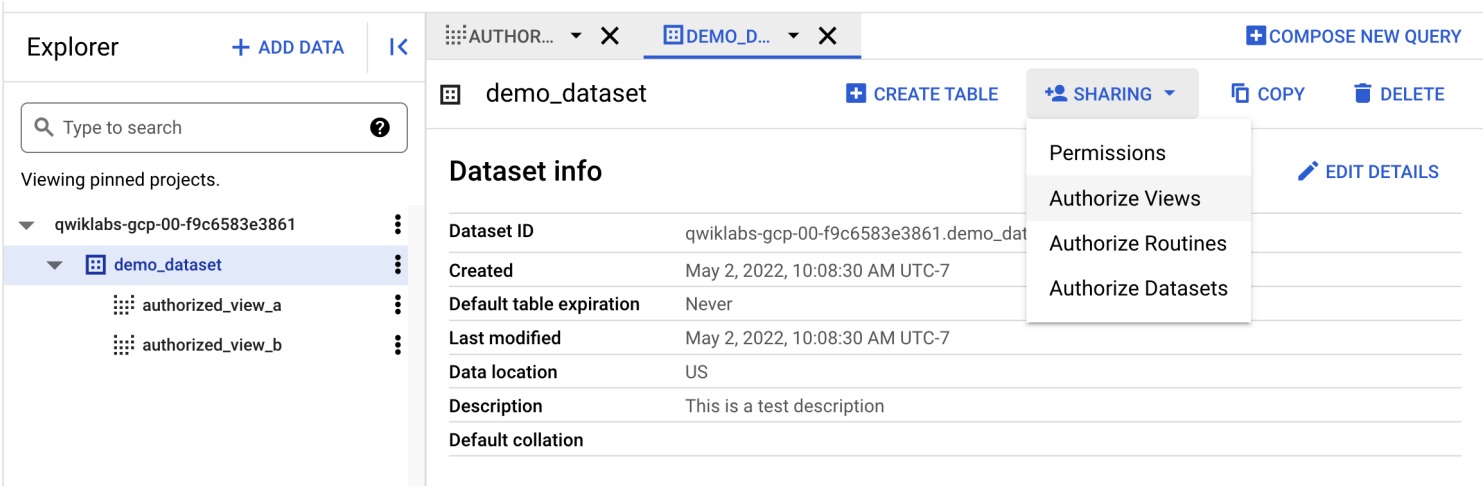


Click **Check my progress** to verify your performed task.

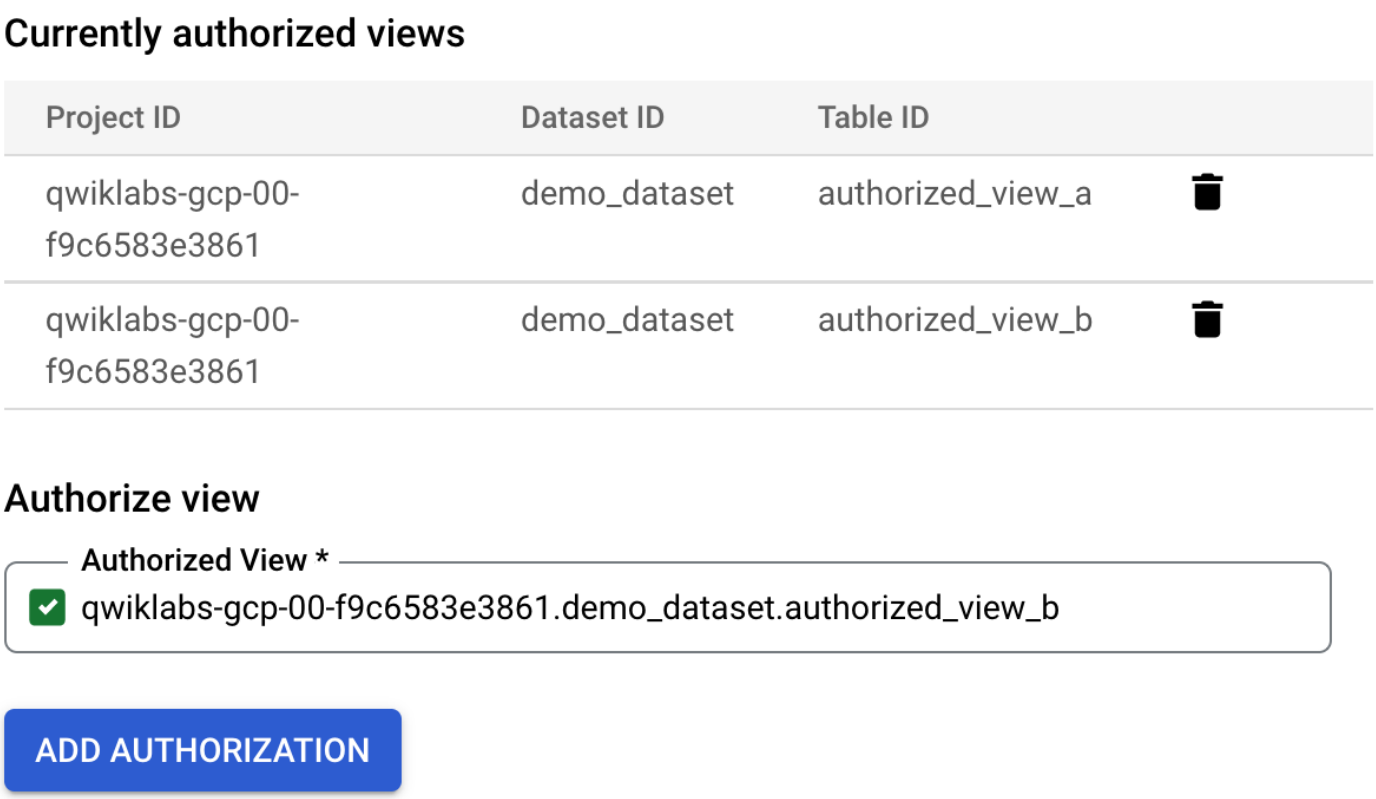
Created Authorized Views

Assign IAM permissions to both the views

1. From the BigQuery Explorer pane, open the **demo_dataset** and click **+ Sharing** > **Authorize Views**.



2. Add **Authorized View A** that needs to be authorized to share: `.demo_dataset.authorized_view_a`.
3. Click **Add Authorization**.
4. Add **Authorized View B** that needs to be authorized to share: `.demo_dataset.authorized_view_b`.
5. Click **Add Authorization**. Your authorized views should resemble the following:



6. Click **Close**.

Click **Check my progress** to verify your performed task.

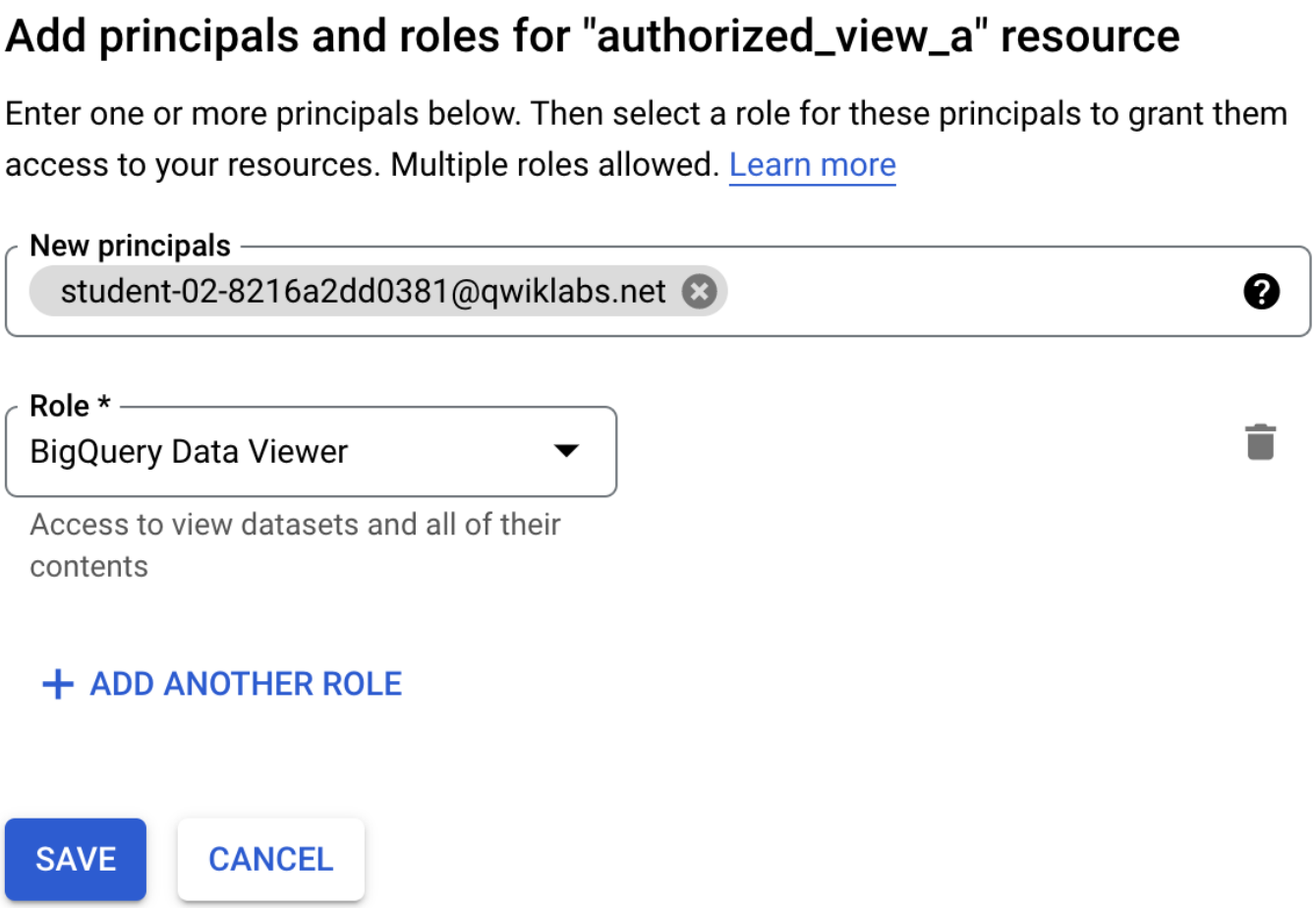
Assign IAM permissions to both the views

Grant permissions to the users to access the views

In this section, you will assign permissions for each customer user and their associated authorized views.

Assign IAM permissions for Customer A

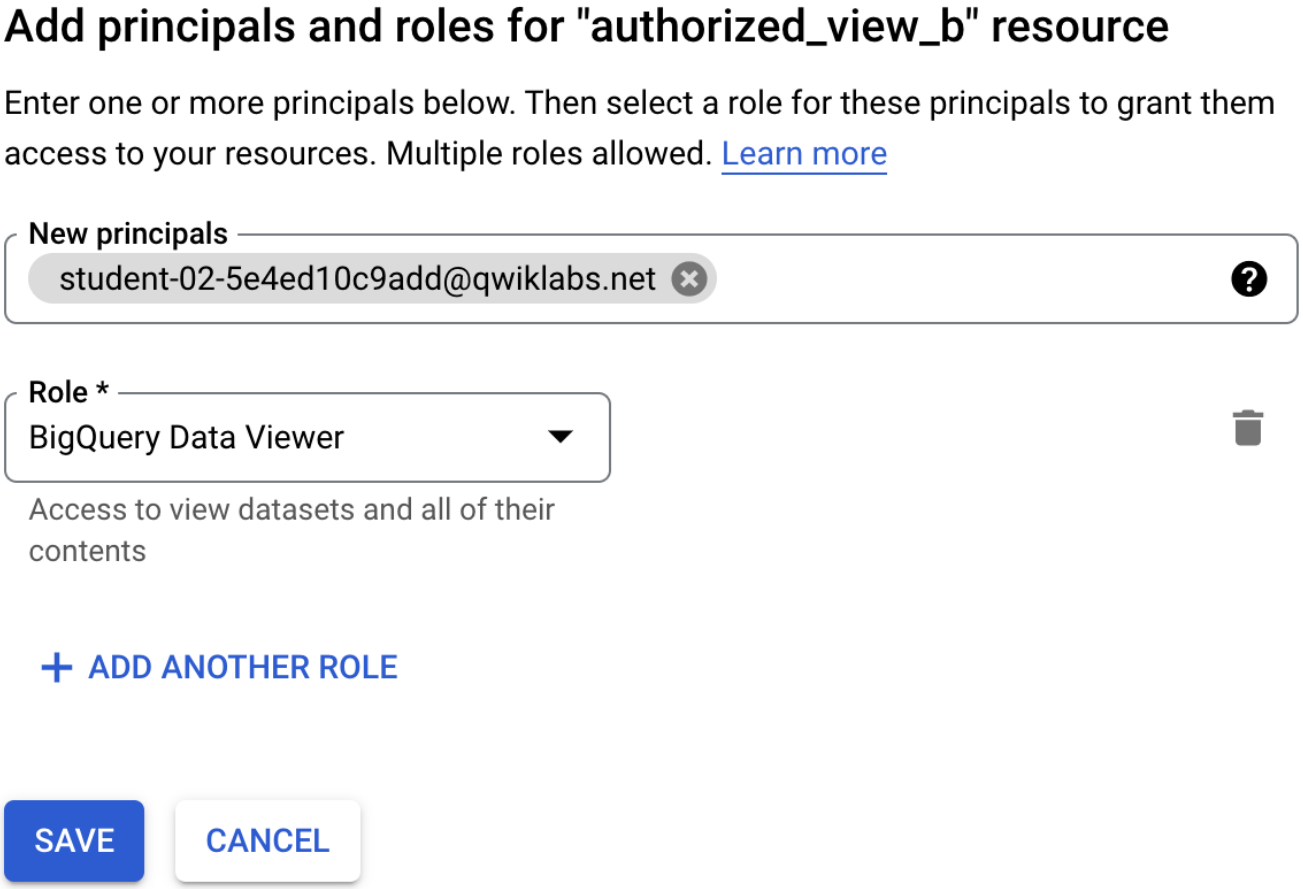
1. Under your project, inside of **demo_dataset**, open the `authorized_view_a` view.
2. Click **Share**.
3. Click on **Add Principal** and add the *Customer A* user:
    -
4. Select the **BigQuery Data Viewer** role.



6. Click **Save**.
7. Click **Close**.

Assign IAM permissions for Customer B

1. Under your project, inside of **demo_dataset**, open the `authorized_view_b` view.
2. Click **Share**.
3. Click on **Add Principal** and add the *Customer B* user:
    -
4. Select the **BigQuery Data Viewer** role.



6. Click **Save**.
7. Click **Close**.

Click **Check my progress** to verify your performed task.

Grant permissions to the users to access the views

Display insights for View A

In this section, you will verify that the authorized views were shared for each customer user correctly.

Verify authorized view sharing for Customer A

1. Close the **Data Sharing Partner Project Console** and from the lab pane open the **Customer Project A Console**. Log in with the associated credentials.
2. From the **Navigation Menu**, go to **BigQuery** > **SQL Workspace**. If prompted click **Done**.
3. Click on **+ Compose new query** where you can run your query.

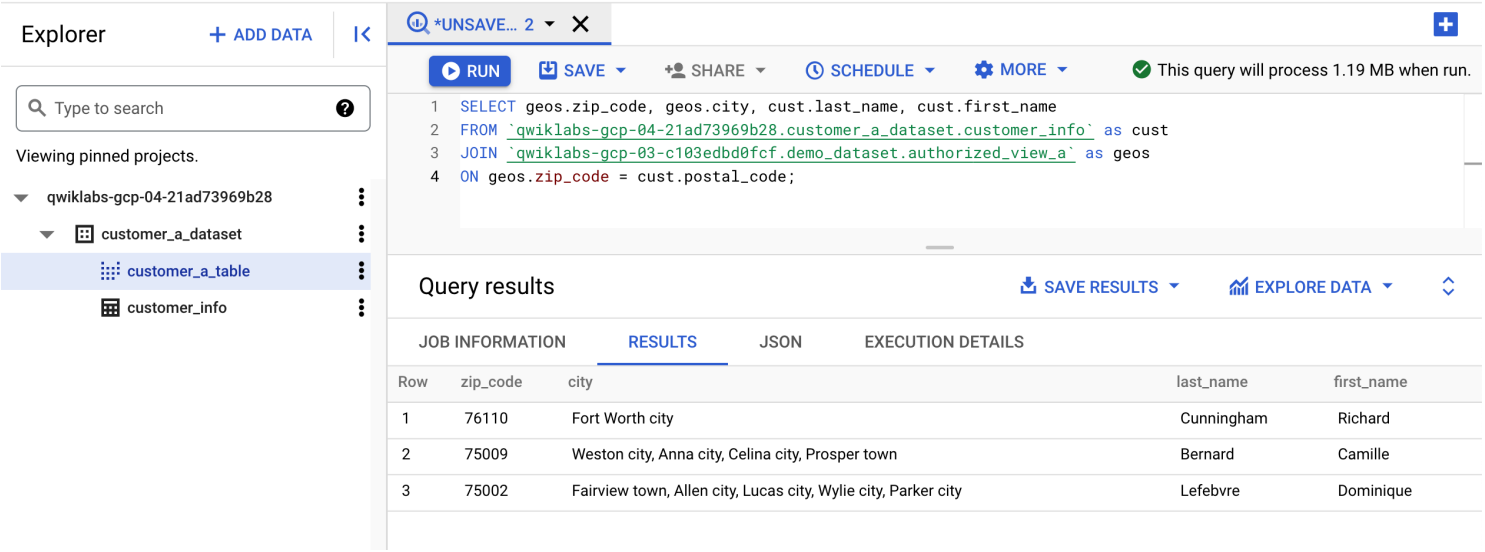
Now you will join the data from *Customer A's* authorized view to the customer specific dataset to generate new insights.

4. Run the following query to find all customers in a State. Since the authorized view available to Customer A is filtered on the state of Texas, the query should return only customers in that state.

```
SELECT geos.zip_code, geos.city, cust.last_name, cust.first_name FROM `{{{consumer_project.project_id|Customer A Project ID}}}.customer_a_dataset.customer_info` as cust JOIN `{{{isv_project.project_id|Partner Project ID}}}.demo_dataset.authorized_view_a` as geos ON geos.zip_code = cust.postal_code;
```

5. Click **Run**.

Your results should resemble the following:



6. On the query toolbar, select **Save** > **Save View**.

7. Click in the **Dataset** field and select `customer_a_dataset`.

8. In the **Table** field, type `customer_a_table`.

9. Click **Save**. You should now be able to see the dataset and table, as well as query it.

Connect BigQuery to Looker Studio

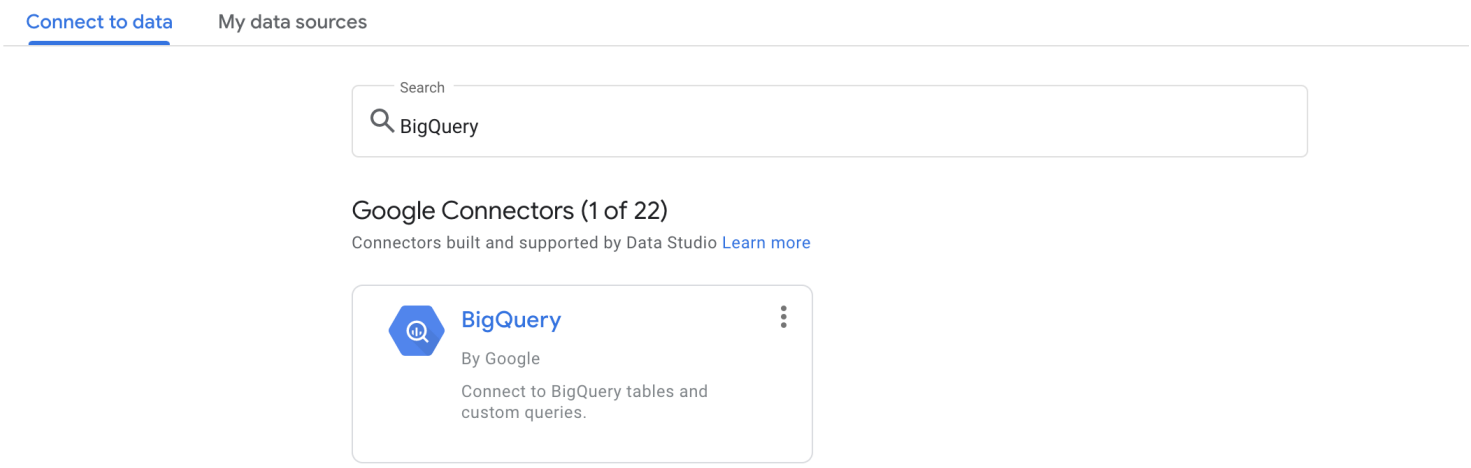
1. Open Looker Studio.

2. On the **Reports** page, in the **Start with a Template** section, click the **Blank Report** template. This creates a new untitled report.

If prompted, complete **Account setup** settings and then click **Continue**.

3. Click the **Blank Report** template again.

4. In the **Add data to report** window, in the search box, enter `BigQuery`.

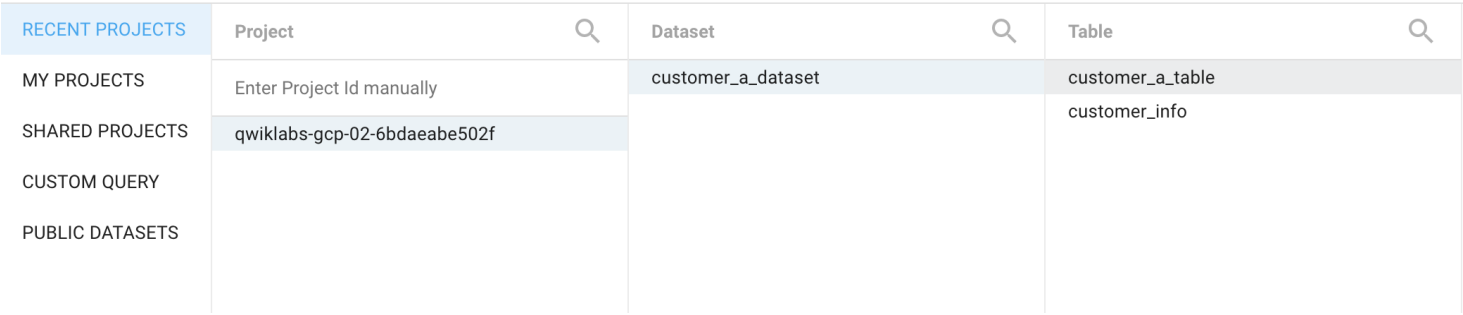


5. Click the **BigQuery** Connector.

6. For Authorization, click **Authorize**. This action lets Looker Studio access to your Google Cloud project.

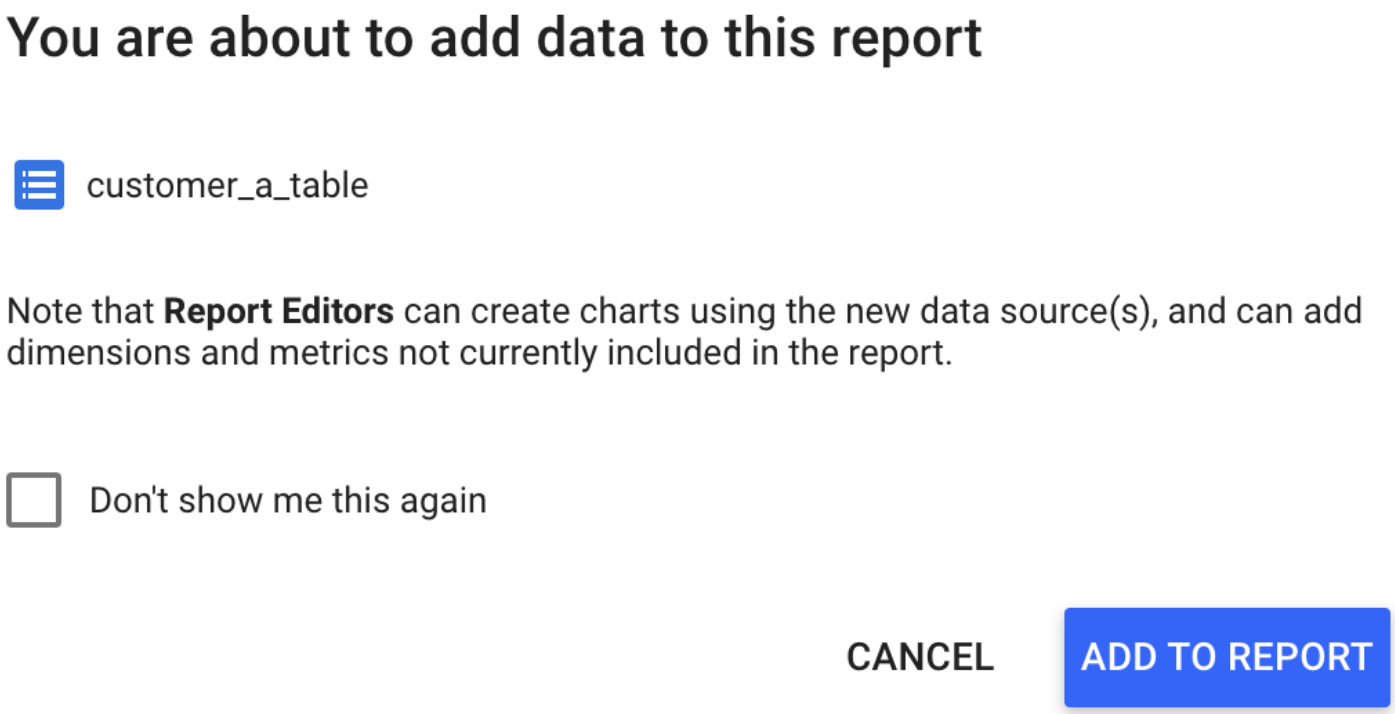
In the **Request for permission dialog**, click **Allow** to give Looker Studio the ability to view data in BigQuery.

7. Select **Recent Projects** from the left pane, select > `customer_a_dataset` > `customer_a_table`.



8. Click **Add**.

9. When prompted, click **Add to Report**.



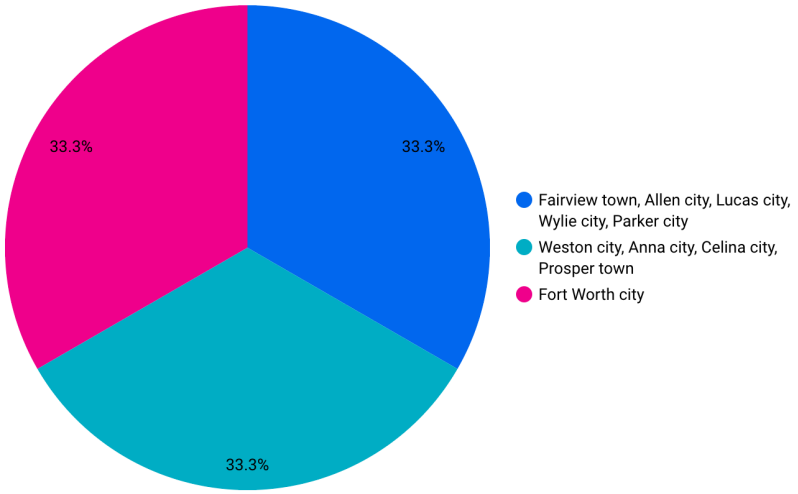
Create a visualization in Looker Studio

1. At the top of the page, click **Untitled Report** to change the report name. Type `Customer A Visualization`.
2. After the report editor loads, click **Insert** > **Pie chart**.
3. On the Pie Chart **Data** tab, notice the value for Data Source (`customer_a_table`) and the default values for Dimension and Metric: `zip_code` and `Record Count`.
4. Drag `city` from **Available Fields** onto the `zip_code` dimension to replace it.

The visualization should resemble the following:

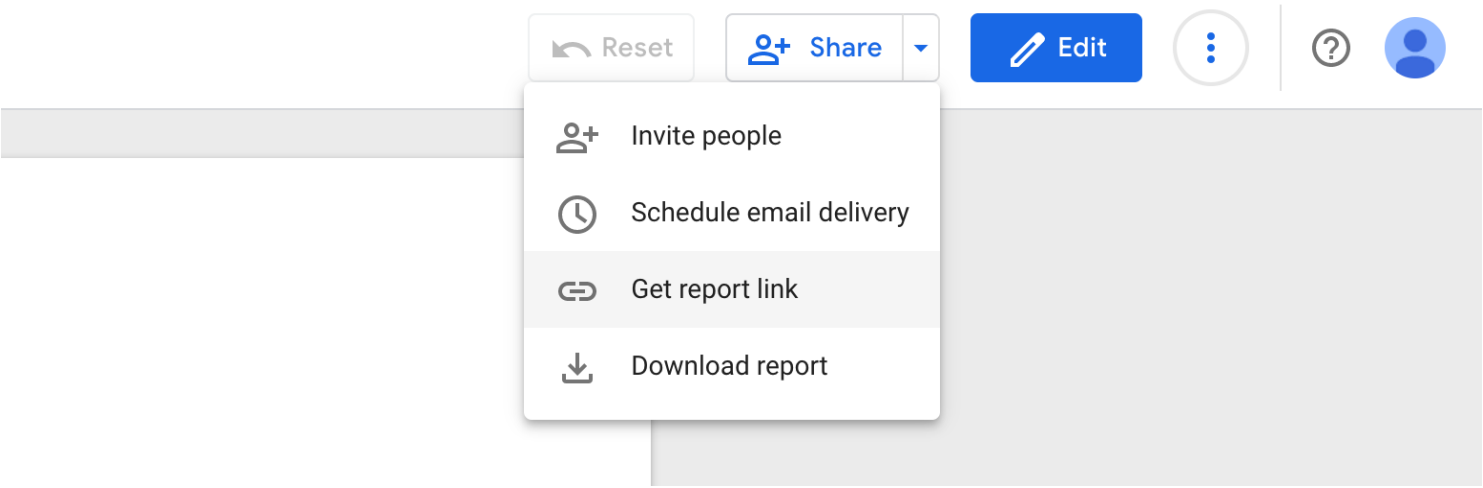
	zip_code	Record Count
1.	75002	1
2.	75009	1
3.	76110	1

1 - 3 / 3



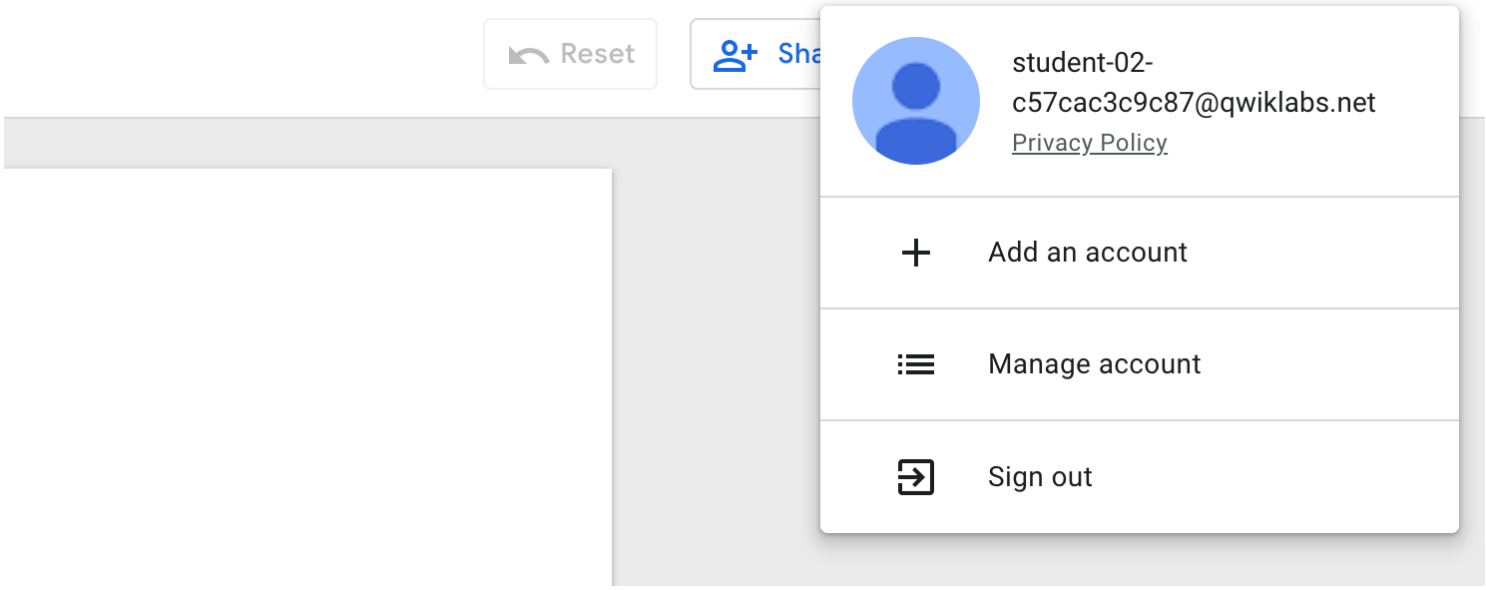
Verify Analytics security

1. From the toolbar, expand **+ Share** > **Get report link**.

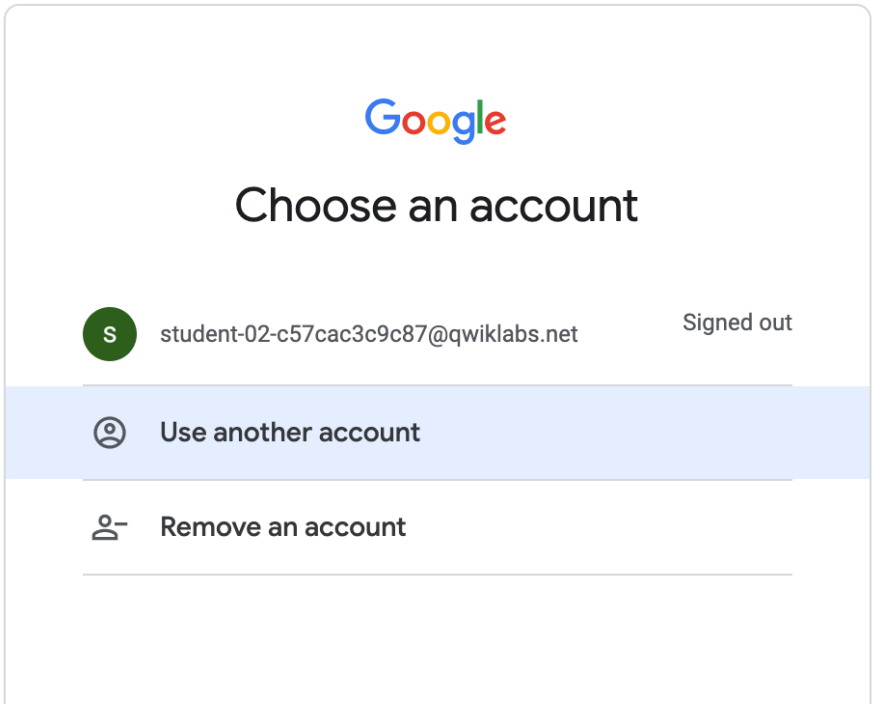


2. In the pop-up dialogue, click **Copy Link** and save it somewhere. **Exit** out of the window.

3. Click the student profile in the top right and click **Sign out**.



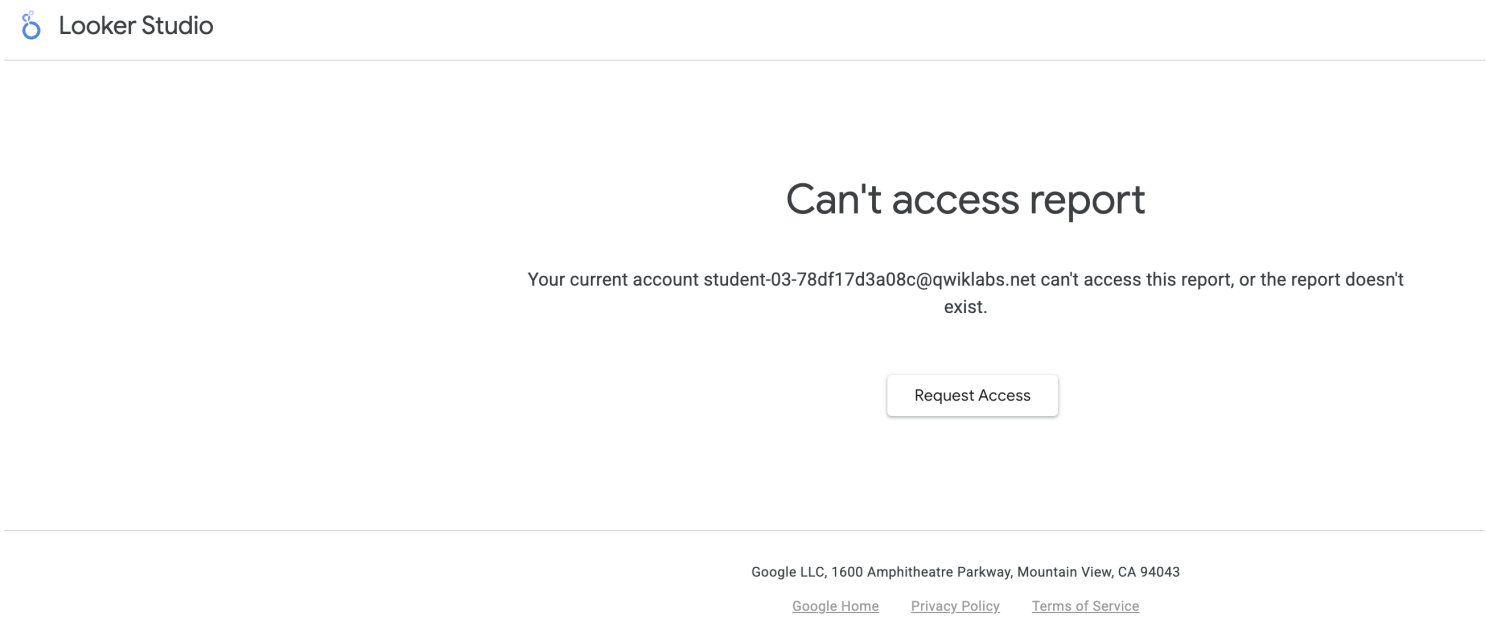
4. Select **Use another account**.



5. Log in with the **Customer B** user credentials.

6. You will be taken to your **Google Account** home page.

7. Open a new tab and navigate to the Looker Studio link you copied earlier.



Upon logging in as Customer B, you should not be able to access the Analytics Dashboard of Customer A since you are not authorized.

Click **Check my progress** to verify your performed task.

Display insights for View A

Display insights for View B

Verify authorized view sharing for Customer B

1. Close the **Customer Project A Console** and from the lab pane open the **Customer Project B Console**. Log in with the associated credentials.

2. From the **Navigation Menu**, go to **BigQuery** > **SQL Workspace**. If prompted click **Done**.

3. Click on **+ Compose new query** where you can run your query.

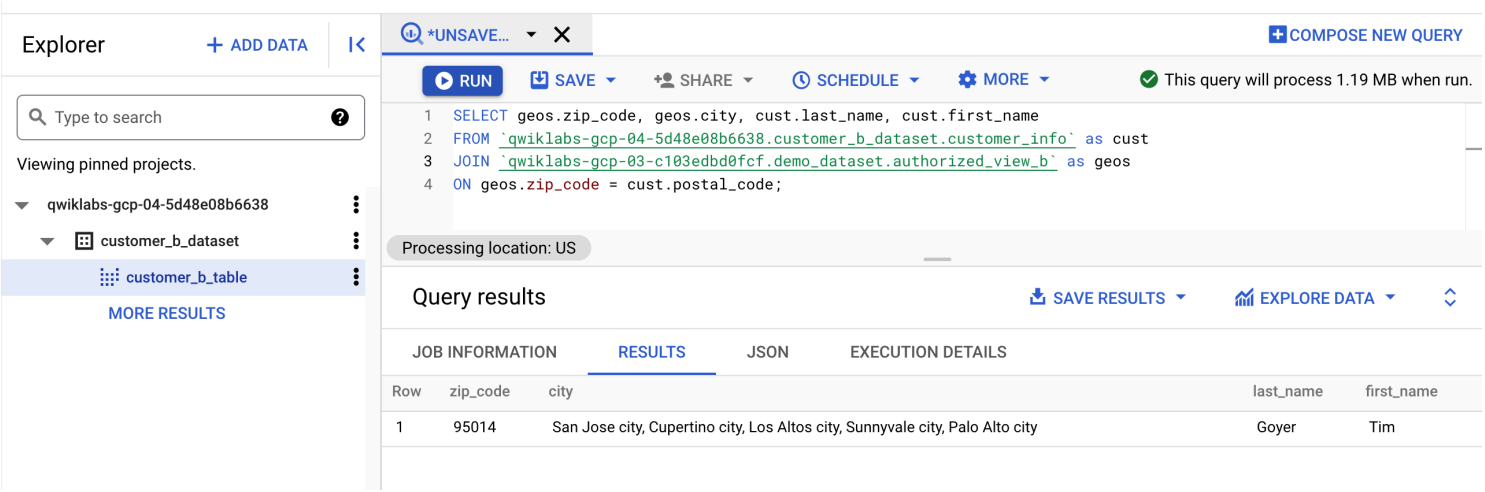
Now you will join the data from *Customer B's* authorized view to the customer specific dataset to generate new insights.

4. Run the following query to find all customers in a State. Since the authorized view available to Customer A is filtered on the state of California, the query should return only customers in that state.

```
SELECT geos.zip_code, geos.city, cust.last_name, cust.first_name FROM `{{{consumer_project_2.project_id|Customer B Project ID}}}.customer_b_dataset.customer_info` as cust JOIN `{{{isv_project.project_id|Partner Project ID}}}.demo_dataset.authorized_view_b` as geos ON geos.zip_code = cust.postal_code;
```

5. Click **Run**.

Your results should resemble the following:



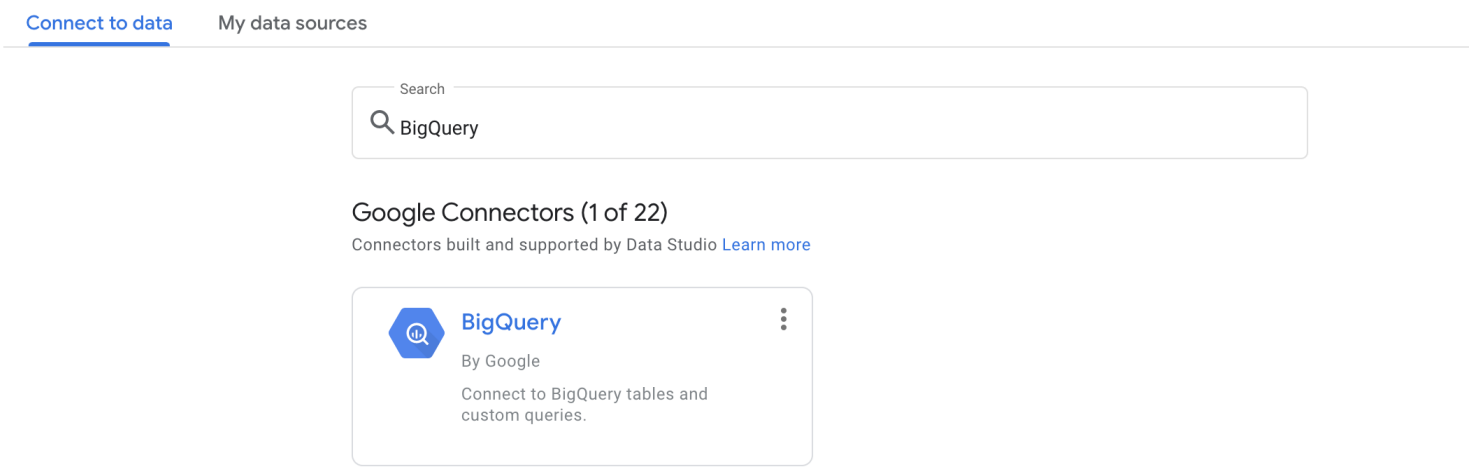
5. On the query toolbar, select **Save** > **Save View**.
6. Click in the **Dataset** field and select `customer_b_dataset`.
7. In the **Table** field, type `customer_b_table`.
8. Click **Save**. You should now be able to see the dataset and table, as well as query it.

Connect BigQuery to Looker Studio

1. Open Looker Studio.
2. On the **Reports** page, in the **Start with a Template** section, click the **Blank Report** template. This creates a new untitled report.

If prompted, complete **Account setup** settings and then click **Continue**.

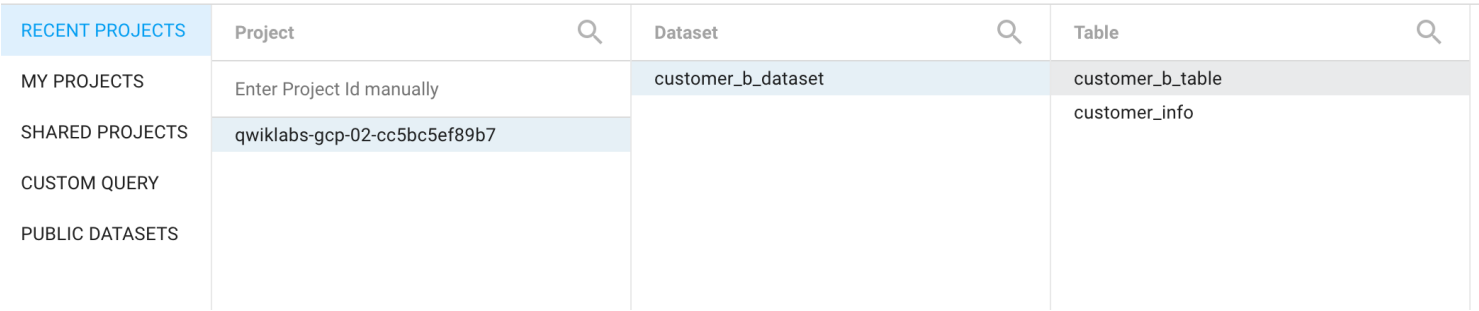
3. In the **Add data to report** window, in the search box, enter `BigQuery`.
4. Click the **Blank Report** template again.



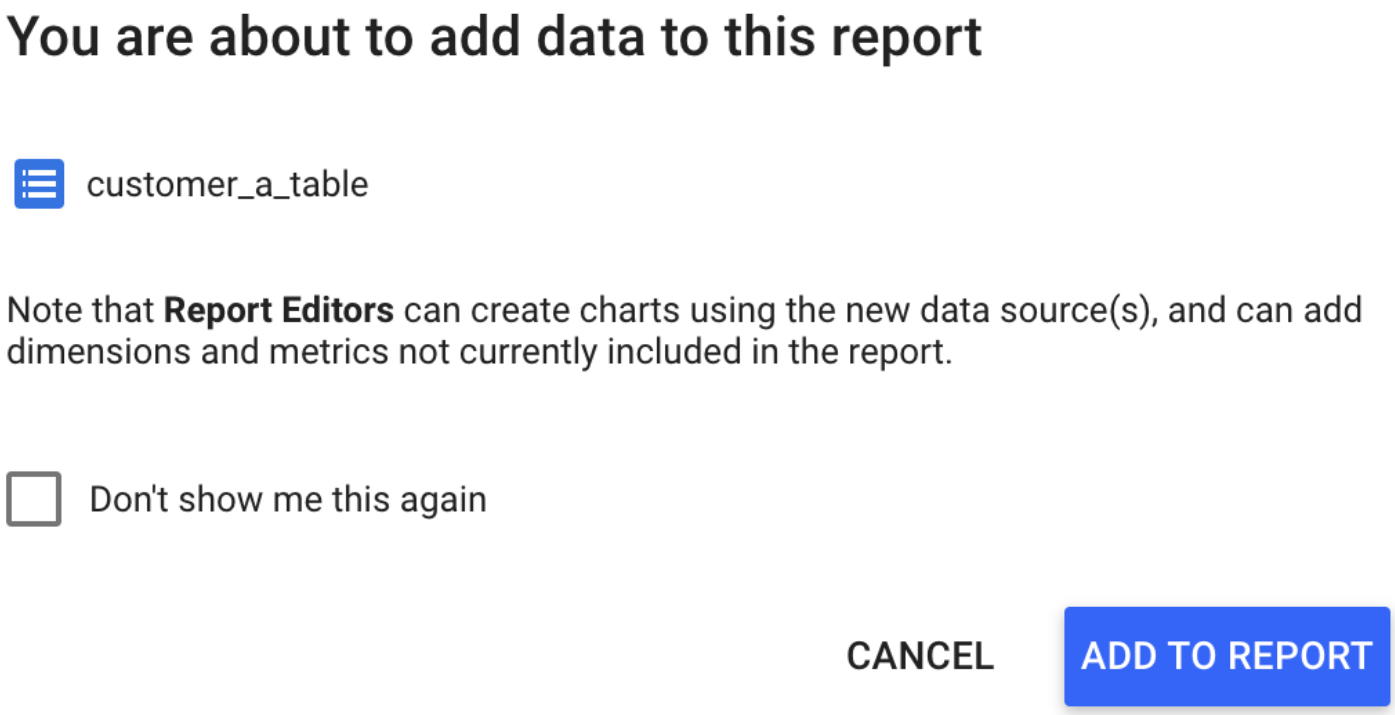
5. Click the **BigQuery** Connector.
6. For Authorization, click **Authorize**. This action lets Google Looker Studio access to your Google Cloud project.

In the **Request for permission dialog**, click **Allow** to give Looker Studio the ability to view data in BigQuery.

7. Select **Recent Projects** from the left pane, select > `customer_b_dataset` > `customer_b_table`.



8. Click **Add**.
9. When prompted, click **Add to Report**.



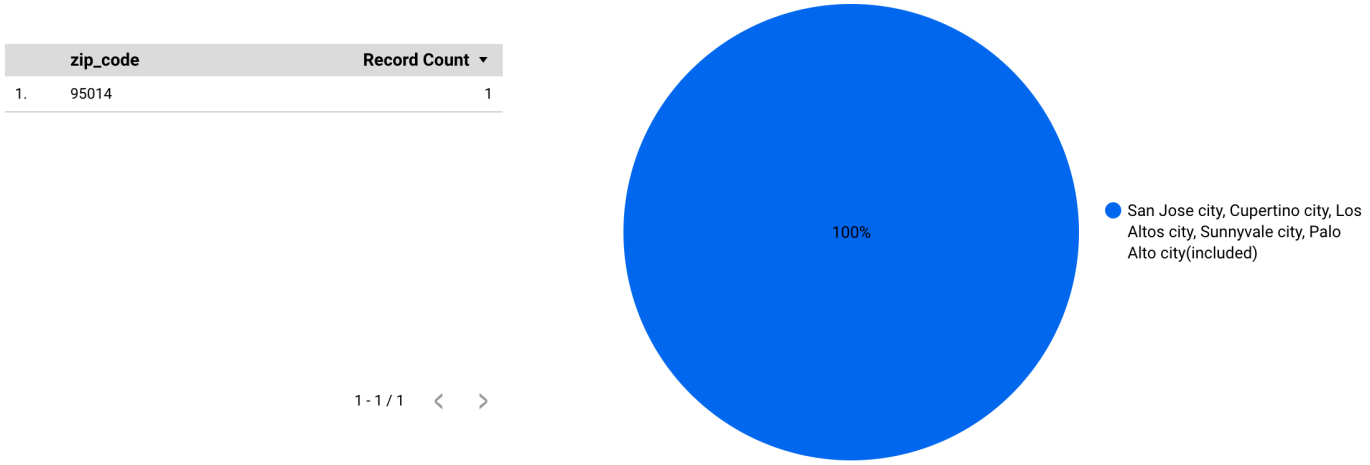
Create a visualization in Looker Studio

1. At the top of the page, click **Untitled Report** to change the report name. Type `Customer B Visualization`.
2. After the report editor loads, click **Insert** > **Pie chart**.

3. On the Pie Chart **Data** tab, notice the value for Data Source (`customer_b_table`) and the default values for Dimension and Metric: `zip_code` and `Record Count`.

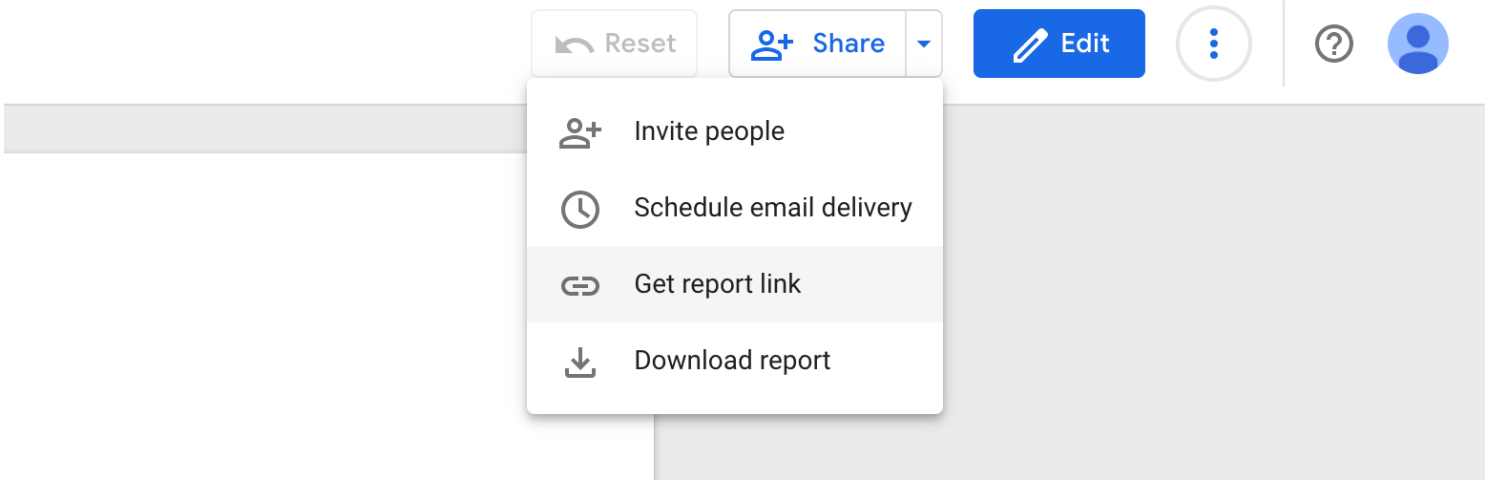
4. Drag `city` from **Available Fields** onto the `zip_code` dimension to replace it.

The visualization should resemble the following:



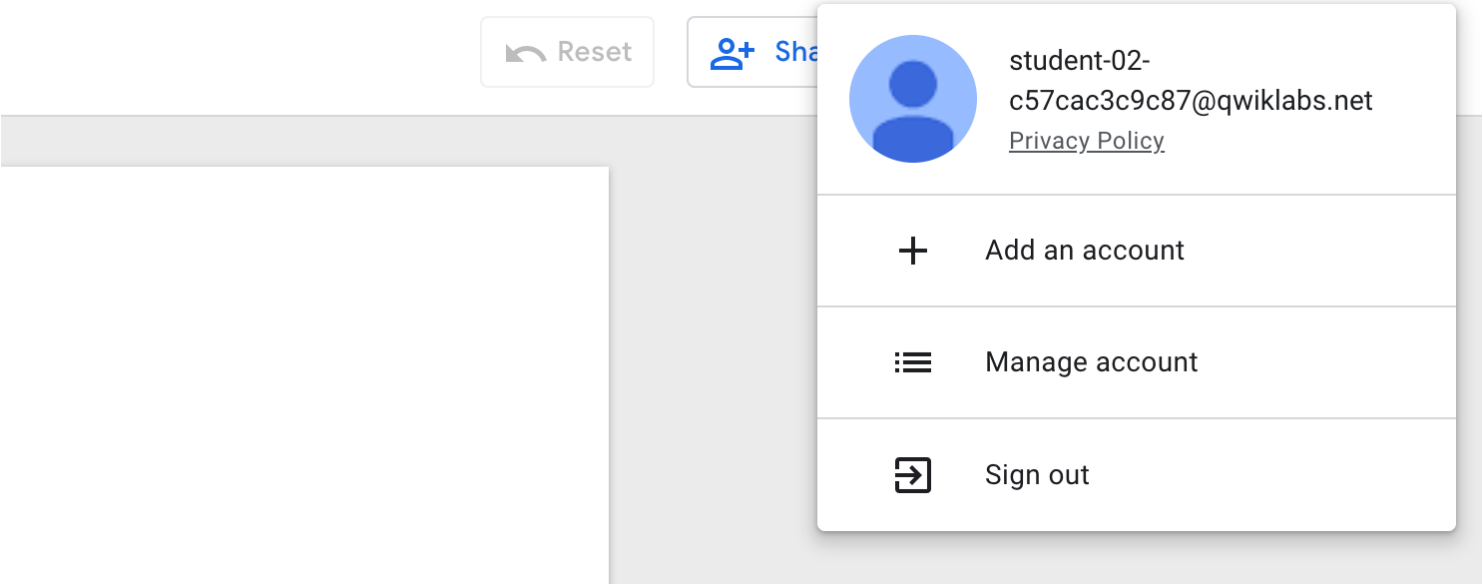
Verify Analytics security

1. From the toolbar, expand **+ Share** > **Get report link**.

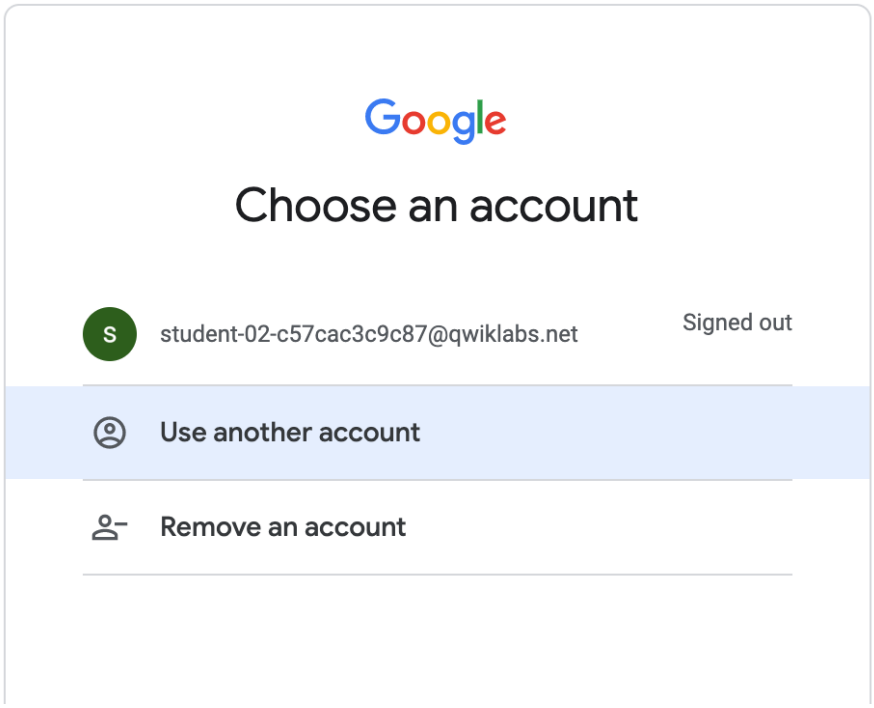


2. In the pop-up dialogue, click **Copy Link** and save it somewhere. **Exit** out of the window.

3. Click the student profile in the top right and click **Sign out**.



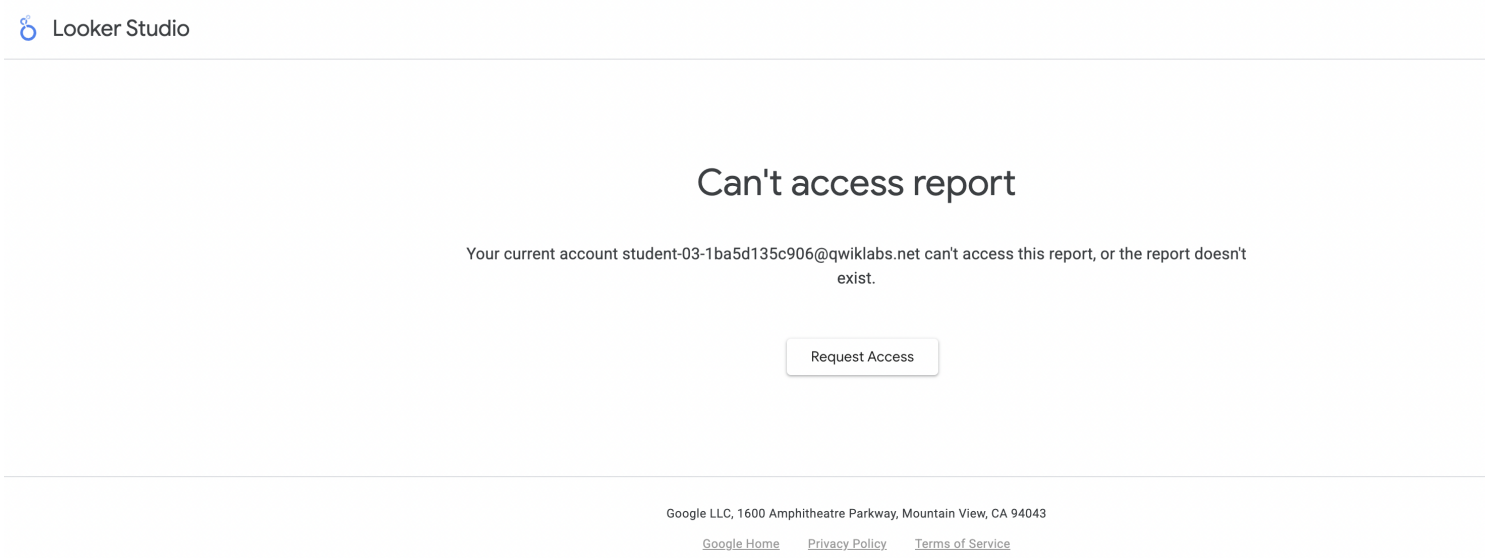
4. Select **Use another account**.



5. Log in with the **Customer A** user credentials.

6. You will be taken to your **Google Account** home page.

7. Open a new tab and navigate to the Looker Studio link you copied earlier.



Upon logging in as Customer A, you should not be able to access the Analytics Dashboard of Customer B since you are not authorized.

Click **Check my progress** to verify your performed task.

Display insights for View B

Congratulations!

In this lab, you learned how to copy datasets from a Data Sharing Partner to a customer's BigQuery project, create distinct authorized views for each customer, and consume the authorized views to create customer-specific dashboards.

Google Cloud training and certification

...helps you make the most of Google Cloud technologies. Our classes include technical skills and best practices to help you get up to speed quickly and continue your learning journey. We offer fundamental to advanced level training, with on-demand, live, and virtual options to suit your busy schedule. Certifications help you validate and prove your skill and expertise in Google Cloud technologies.

Manual Last Updated August 24, 2023

Lab Last Tested August 24, 2023