Marketing Analytics - Week 1

Introduction to Google Cloud Platform

In week 1, we will:

- Analytics Challenges Faced by Data Analysts
- Compare Data On-Premises vs on the Cloud
- Learn from Real-World Use Cases of Companies Transformed through Analytics on the Cloud
- Navigate Google Cloud Platform Project Basics
- Activate Your Google Cloud Free Sandbox Account
    - Task 1: Activate your account and create a project
    - Task 2: Star the lab project in BigQuery
    - Task 3: Explore e-commerce data

Analytics Challenges Faced by Data Analysts

Some comments from the analysts:

- *"My queries are taking way too long to run and is stalling my analysis."*
- *"I have no easy way to combine and query all the data I've collected"*
- *"We're a data department, not an infrastructure department. Maintaining and upgrading our own servers is unsustainable."*
- *"My on-premise clusters aren't scaling with my analysis"*
- *"We can only afford to store a subset of the data our business generates"*
- *"We don't have a central data analytics warehouse or set of tools"*

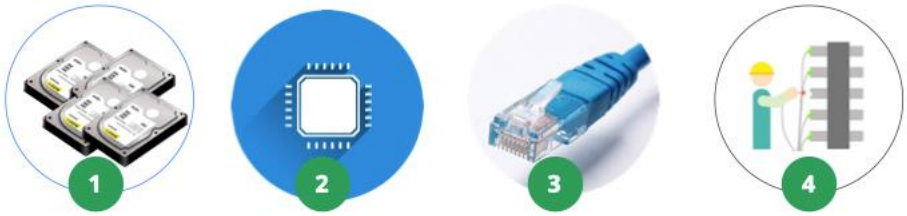
Q1: Based on the above comments and your experience, what are the challenges faced by data analysts?

There are three challenges faced by data analysts: Querying, Infrastructure, and Storage. Two of the most common barriers a data analyst will run into are either too much data or data that is not connected together.

Compare Data On-Premises vs on the Cloud

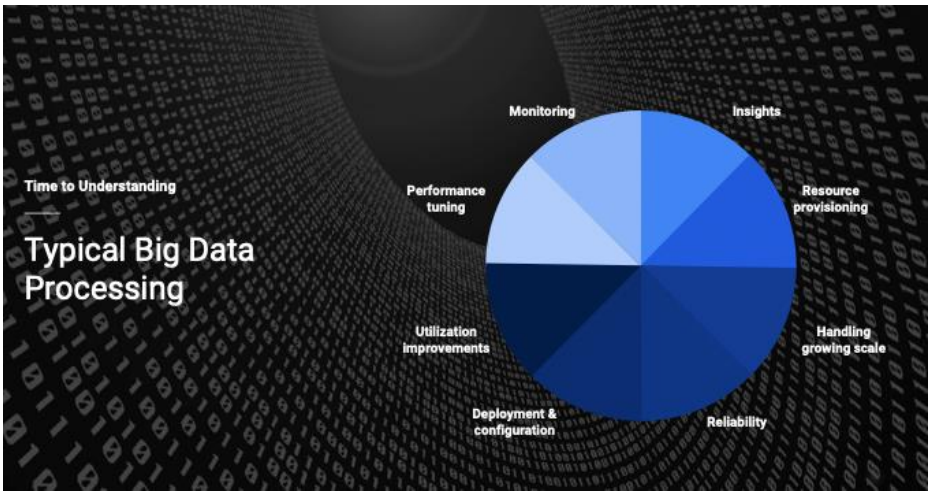
Reasons why Google Cloud Platform is used for Data Analysis

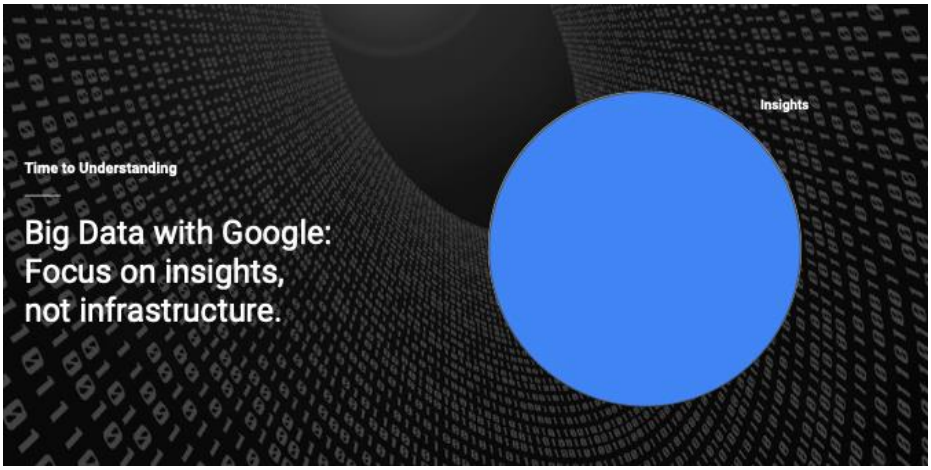
- Storage is Cheap
- Focus on Queries, not infrastructure
    - Traditional big data platforms require an investment in infrastructure



- Although hard drives are cheap, they're not the only thing you need to have to query big data.
- Essentials:
    - 1 – Storage
    - 2 - Computing Power
    - 3 – Networking
    - 4 - Admin and hardware teams to maintain and upgrade your infrastructure (Not to mention software and software license costs)

- Massive Scalability





Key insights from the Comparisons

1) **scale with data growth** even as it explodes
2) are **managed** so that you aren't wasting time on dealing with all the underlying complexities
3) are just generally **magically awesome,** so you can get back to **data insights**

Learn from Real-World Use Cases of Companies Transformed through Analytics on the Cloud

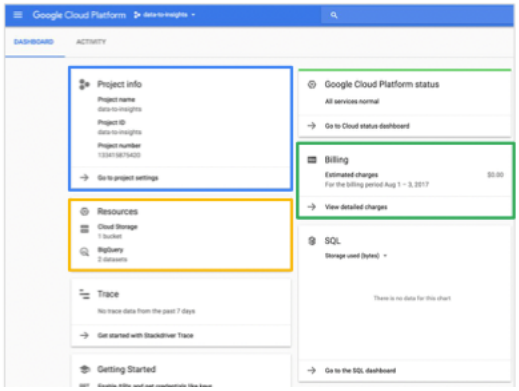
- **Twitter**
- **JB Hi-Fi**
  - Increasing revenue and improving the relevance of recommended products with Recommendations AI.

- **Target**
  - "We want to be a positive force behind millions of people, every day. If we're going to keep doing that, we need cloud technology that focuses on experiences. That's elegant, simple, and adaptive. That doesn't lock us in." (Krishnan Srinivasan, Vice President of Cloud and Compute Infrastructure Platforms, Target).

- Leading companies around the world are choosing Google Cloud

Navigate Google Cloud Platform Project Basics

1. Projects
2. Resources
3. Billing



Background on: Project resource

1. Projects organize and govern your activities in the cloud

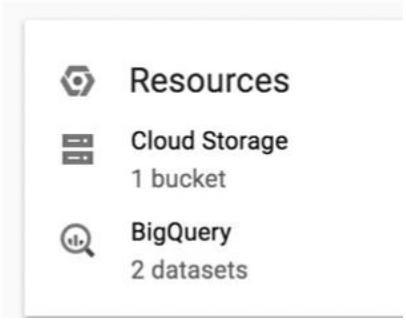
   First of all, a project is required to use Google Cloud Platform, and forms the basis for creating, enabling, and using all Cloud Platform services, managing APIs, enabling billing, adding and removing collaborators, and managing permissions.

   All projects consist of the following:

   - Two identifiers:
     - Project ID, which is a unique identifier for the project.
     - Project number, which is automatically assigned when you create the project. It is read-only.
   - One mutable display name.
   - The lifecycle state of the project; for example, ACTIVE or DELETE_REQUESTED.

- A collection of labels that can be used for filtering projects.
- The time when the project was created.

2. Resources are what you are using in the cloud
   Commonly used by data analysts:
   - **Storage** in Google Cloud Storage
     - Example: You use a Bucket for uploading large CSV files to ingest later for analysis
   - **Datasets** in Google BigQuery
     - Example: You perform analysis on raw data and create a brand-new dataset



   The Cloud Storage Bucket is your go to for scalable storage
   - Buckets are scalable containers that hold your data.
   - You can create and upload files to your buckets within your Cloud Console

3. You are billed for the resources you use (currently we are using a free Google sandbox)
   Commonly used by data analysts:
   - **Storage in Google Cloud Storage**
     - Billed for Bucket Storage
   - **Datasets in Google BigQuery**
     - Billed for Query processing
     - Billed for Table Storage

A walkthrough guide on enabling billing to look at BigQuery usage:

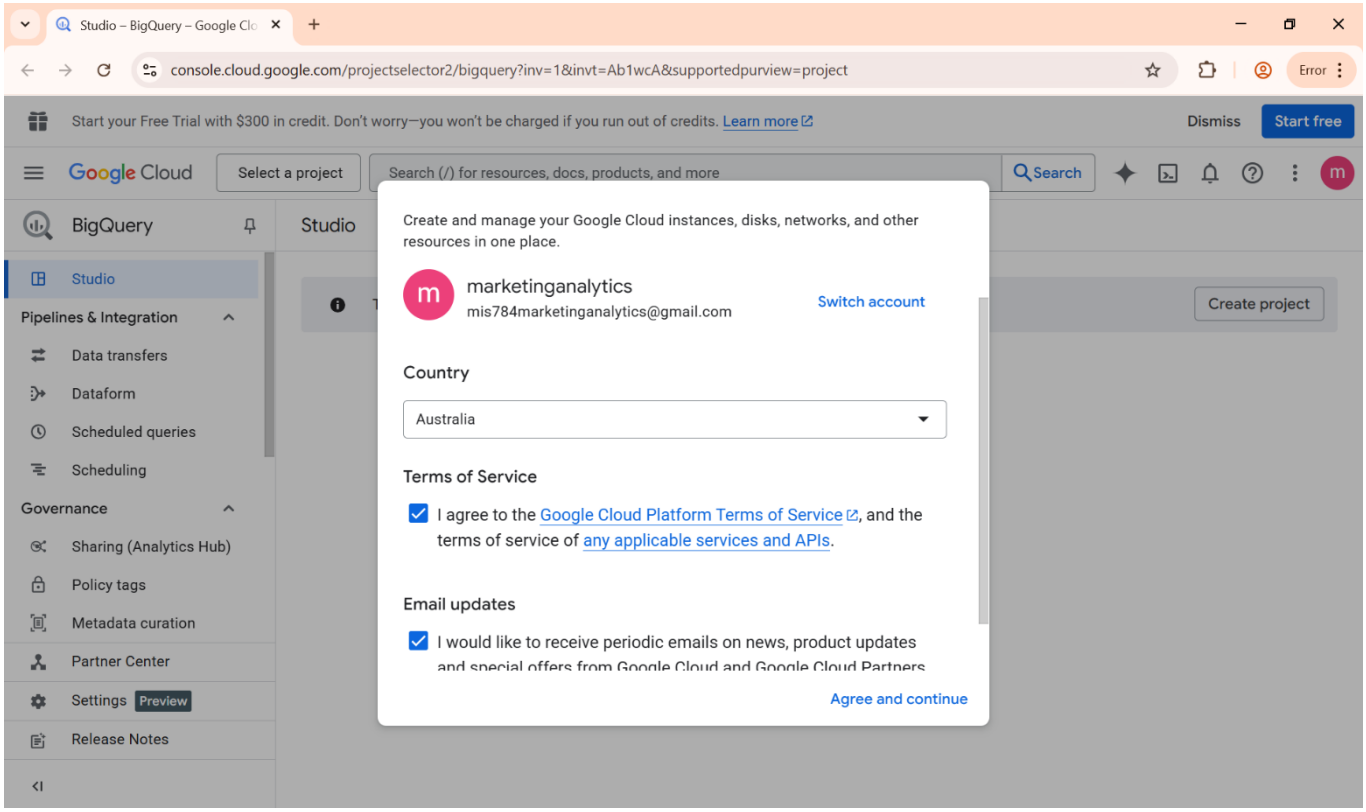
https://medium.com/google-cloud/visualize-gcp-billing-using-bigquery-and-data-studio - d3e695f90c08

Activate Your Google Cloud Free Sandbox Account (BigQuery sandbox) - A Step-by-Step Guide

The BigQuery sandbox lets you experience BigQuery without providing a credit card or creating a billing account for your project.

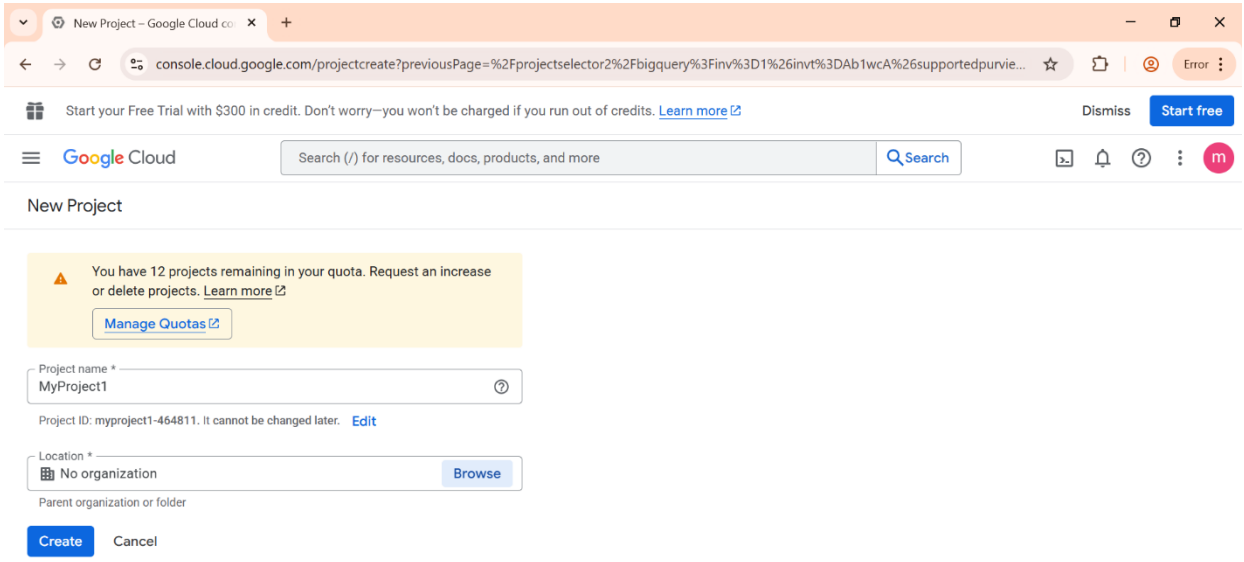
Task 1: Activate your account and create a project

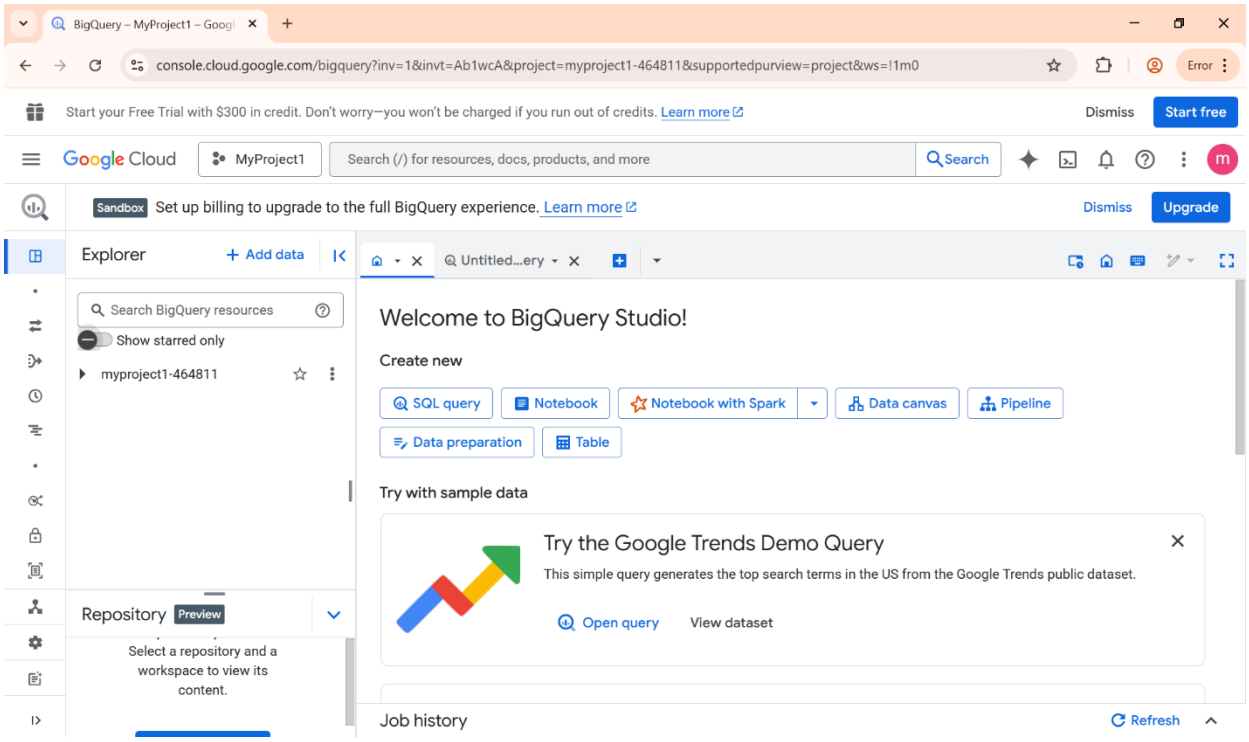
- **Step 1:** Sign in to your Google account. If you don't have a Google account, you can create one.
- **Step 2:** Once you sign in to your Google account, you can open BigQuery in the Google Cloud console by entering the following URL in your browser. https://console.cloud.google.com/bigquery
- **Step 3:** On the welcome page, do the following:
    - For Country, select your country as "Australia".
    - For Terms of Service, select the checkbox if you agree to the terms of service.
    - Optional: If you are asked about email updates, select the checkbox if you want to receive email updates.
    - Click Agree and continue (while you're using the sandbox, you do not need to create a billing account, and you do not need to attach a billing account to the project).



- **Step 4:** Click Create project (to use the BigQuery sandbox, you must create a Cloud project).

- For Project name, enter a name for your project.
- For Location, select “No organization”.
- Click Create. You are redirected back to the BigQuery page in the Google Cloud console (after you create a Cloud project, the Google Cloud console displays the sandbox banner).

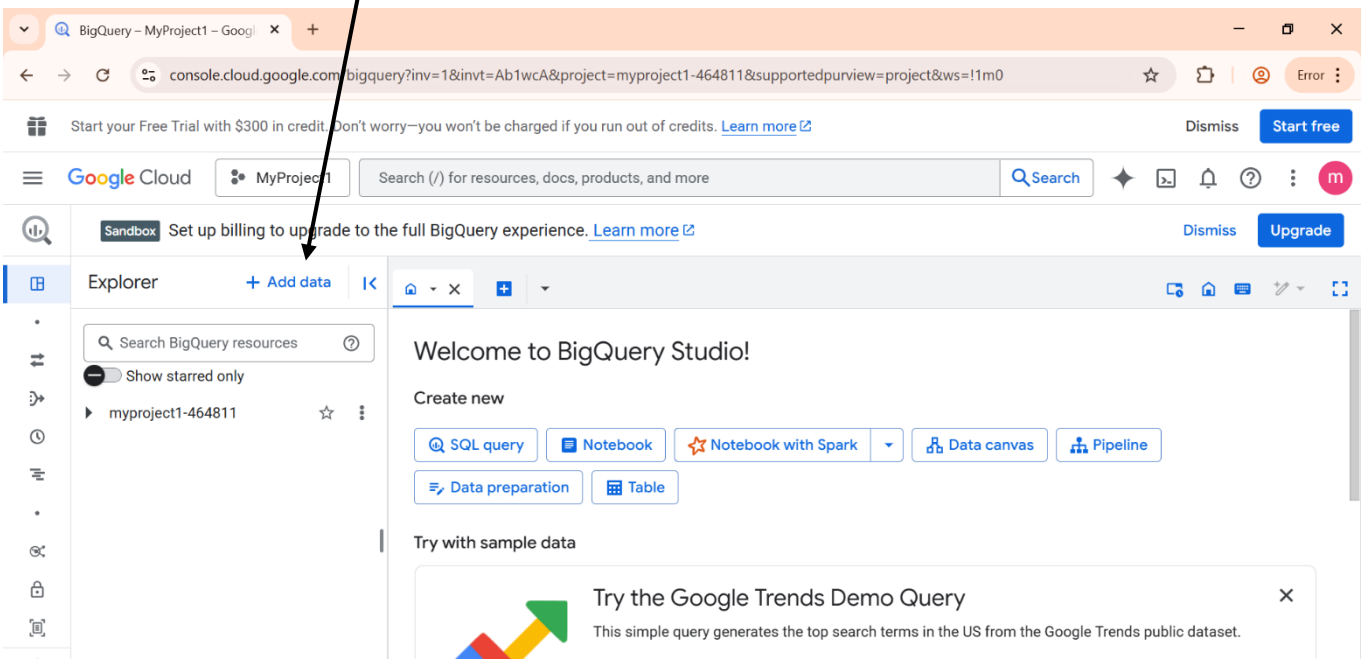




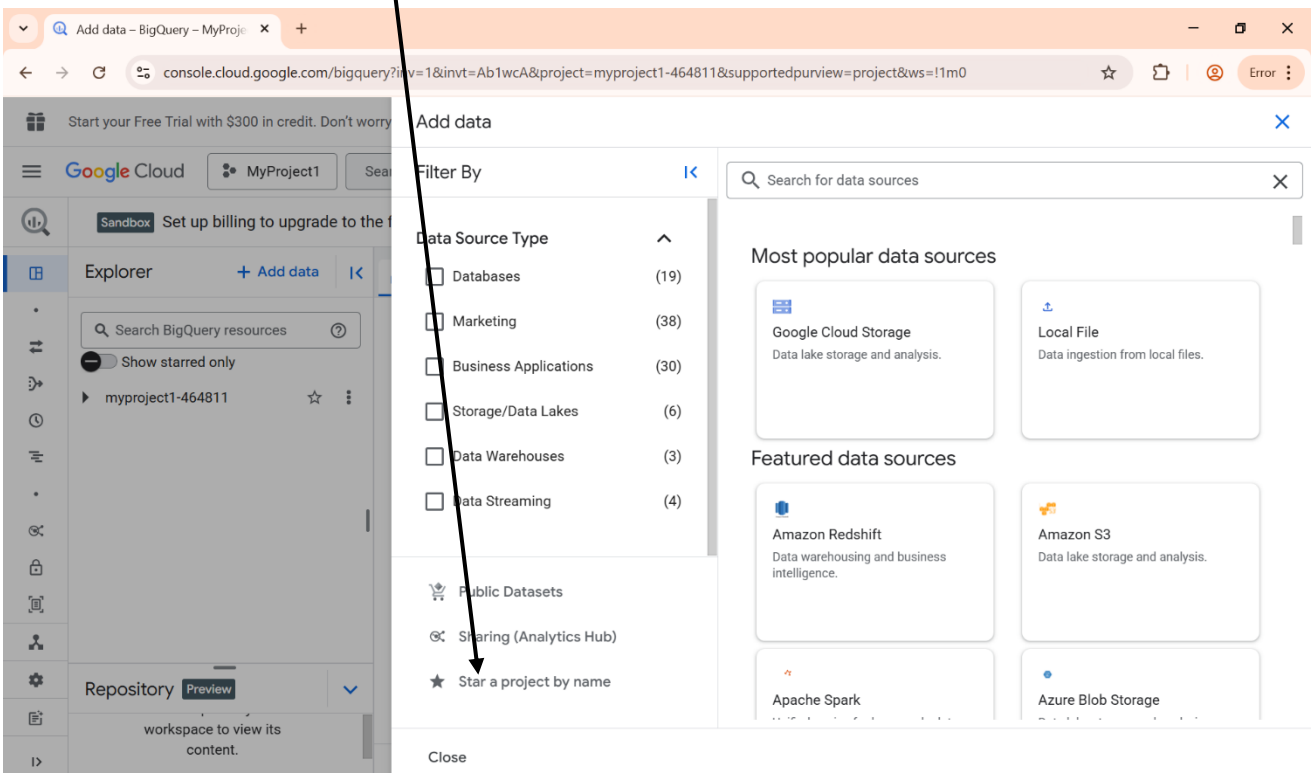
Note: Learn more about additional Google Cloud benefits for students

Task 2: Star the lab project in BigQuery

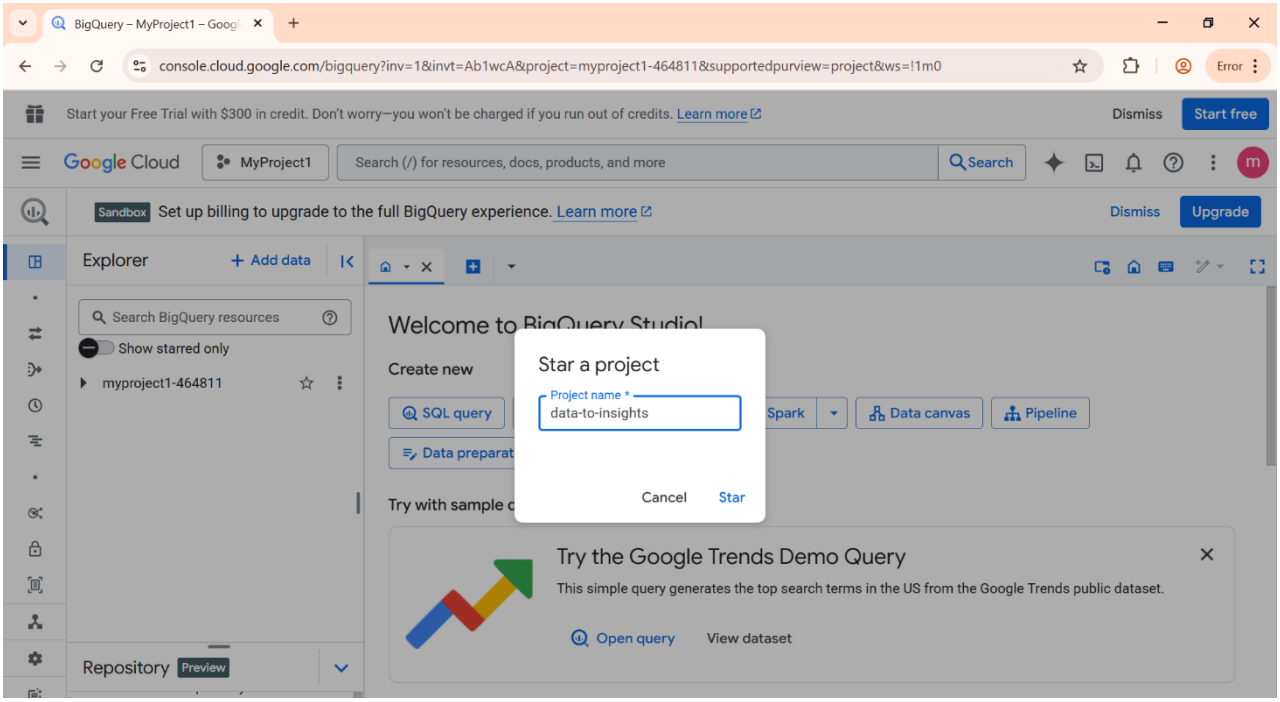
- **Step 1:** Click + Add data.



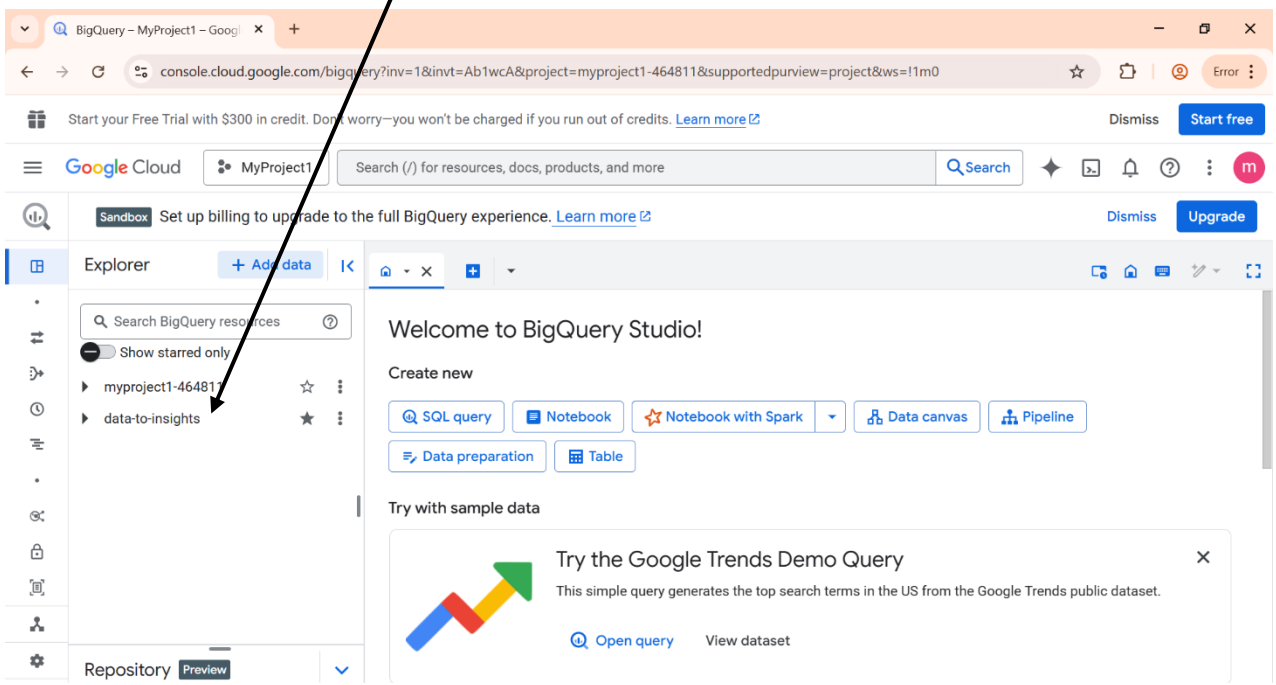
- **Step 2:** Select Star a project by name.



- **Step 3:** For Project name, enter "data-to-insights" and click Star.



- **Step 4:** In the left Panel, under Viewing pinned projects, you will see the data-to-insights project stared.

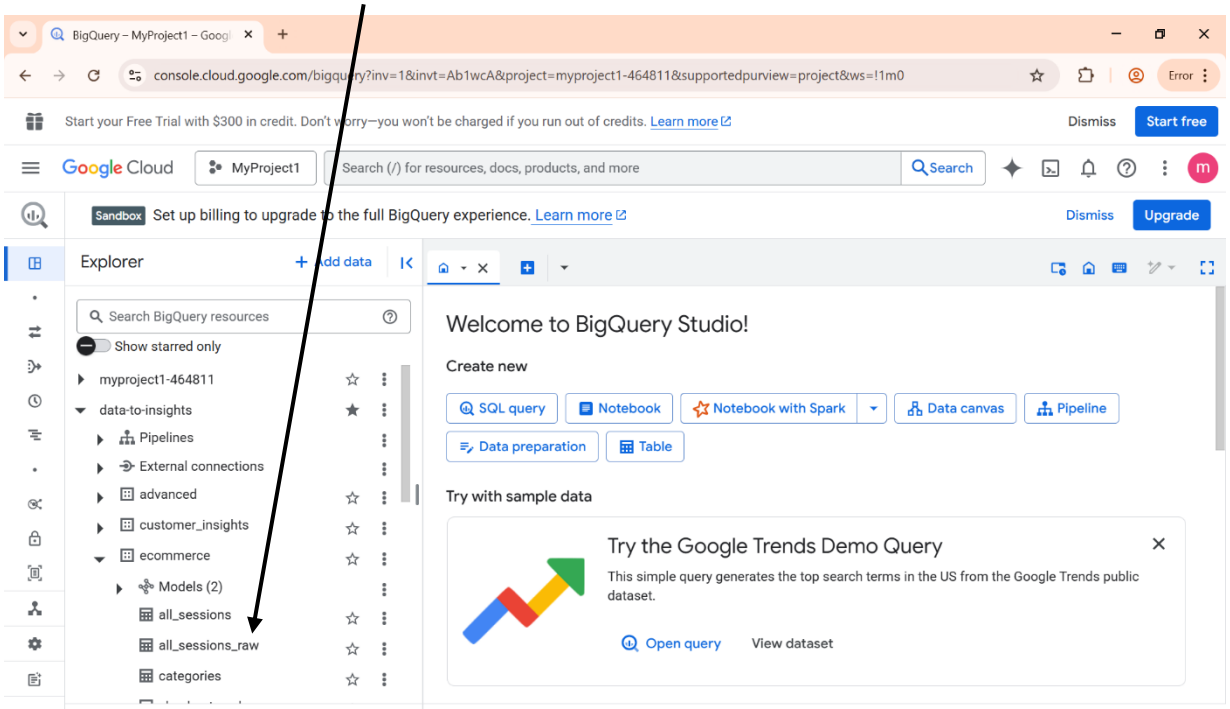


Note: The “data-to-insights” project is a publicly available dataset in Google BigQuery, commonly used in educational settings and sandbox environments to help users practice data analysis and SQL querying.

Task 3: Explore e-commerce data

Scenario: Your data analyst team exported Google Analytics logs for an e-commerce website into BigQuery and created a new table of all the raw e-commerce visitor session data.

- **Step1:** Explore all_sessions_raw table data:
  - Expand **data-to-insights** project.
  - Expand **ecommerce**.
  - Click **all_sessions_raw**.



- **Step 2:** In the right panel, a section opens that provides 3 views of the table data:
  - Schema tab: Field name, Type, Mode, and Description; the logical constraints used to organize the data.
  - Details tab: Table metadata.
  - Preview tab: Table preview.
  - Click the Details tab to view the table metadata.