

MATERIAL DE APOIO

Google Cloud Skill Boost

**Laboratório 03 do Intermediate:
Analise dados com a ajuda do Gemini**

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1. Login no Console do Google Cloud

Link para o laboratório:

https://www.cloudskillsboost.google/parts/236/course_templates/978/labs/488168?locale=pt_BR

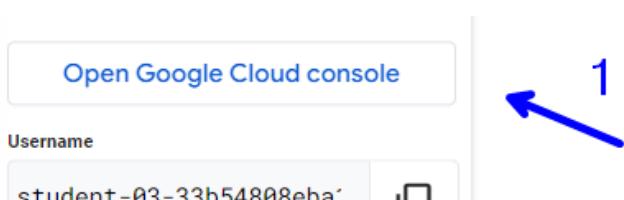
- 1) Primeiro passo é fazer login no Console do Google Cloud, clique no botão verde “Começar o laboratório”:



- 2) Após, irá abrir o Painel de login no Console:

Terminar o laboratório	02:14:42	Botão de terminar Lab, clique quando terminar todas as tarefas. Ao lado, tempo atual.
Cuidado: Quando estiver no console, siga as instruções do laboratório. Caso contrário, sua conta poderá ser bloqueada. Saiba mais.		Alerta do Lab, siga somente o que é pedido.
Open Google Cloud console		Botão para de login no Console do Google Cloud
Username	student-03-33b54808eba'	Usuário e senha usados no login do Console
Password	LqG9Sn08whm0	ID do Projeto temporário criado no Console
Project ID	qwiklabs-gcp-03-12d004f	

- 3) Clique no botão “Open Google Cloud Console” (1) com o botão direito do mouse e escolha para abrir em uma aba Anônima/InPrivate, depois preencha o usuário (2) e senha (3) na página de login:





Fazer login

Use sua Conta do Google

2

E-mail ou telefone
student-03-33b54808eba1@qwiklabs.net

[Esqueceu seu e-mail?](#)



Olá!

(student-03-33b54808eba1@qwiklabs.net ▾)

3

Digite sua senha
LqG9Sn08whmO

Mostrar senha

4) Aceite todos os termos e condições do Google Cloud (1-2):

em myaccount.google.com.

Seu uso dos Serviços do Google com esta conta também é regido por políticas internas da sua organização.

Entendi




Welcome student fe2a879d!

Create and manage your Google Cloud instances, disks, networks, and other resources in one place.

student fe2a879d
student-03-33b54808eba1@qwiklabs.net [SWITCH ACCOUNT](#)

Country

Brazil

Terms of Service

I agree to the [Google Cloud Platform Terms of Service](#), and the terms of service of [any applicable services and APIs](#).

1
Email updates

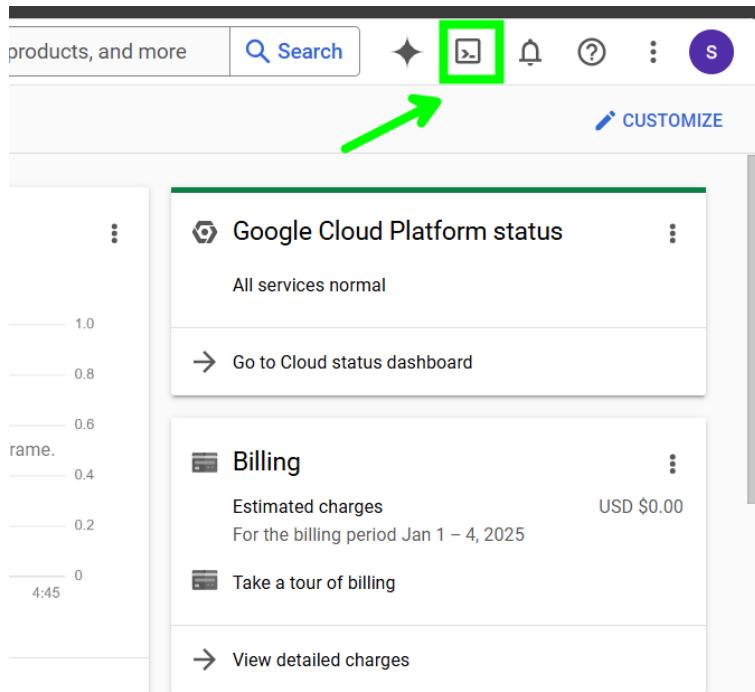
I would like to receive periodic emails on news, product updates and special offers from Google Cloud and Google Cloud Partners.

2

[AGREE AND CONTINUE](#)

2. Tarefa 1

- 1) Habilite o **Cloud Shell** no ícone do canto superior direito :



- 2) Quando terminal abrir, execute todos os comandos (Um por vez), indicados na **TASK 1**, do laboratório. Como no exemplo a seguir:

The screenshot shows a Cloud Shell terminal window. The terminal output is as follows:

```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to qwiklabs-gcp-02-29b343b60138.
Run "gcloud config set project [PROJECT_ID]" to change to a different project.
student_02_4cb01084faf66cloudshell:~ (qwiklabs-gcp-02-29b343b60138)$ PROJECT_ID=$(gcloud config get-value project)
REGION=us-west1
echo "PROJECT_ID=${PROJECT_ID}"
echo "REGION=${REGION}"
```

To the right of the terminal, there is a text box containing the commands:

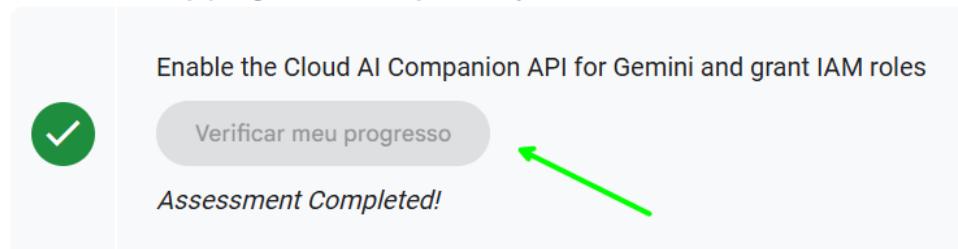
```
PROJECT_ID=$(gcloud config get-value project)
REGION=us-west1
echo "PROJECT_ID=${PROJECT_ID}"
echo "REGION=${REGION}"
```

A green arrow points from the text box to the echo command in the terminal output.

OBS: Para as próximas Tasks, utilize sempre a região que aparece no primeiro comando.

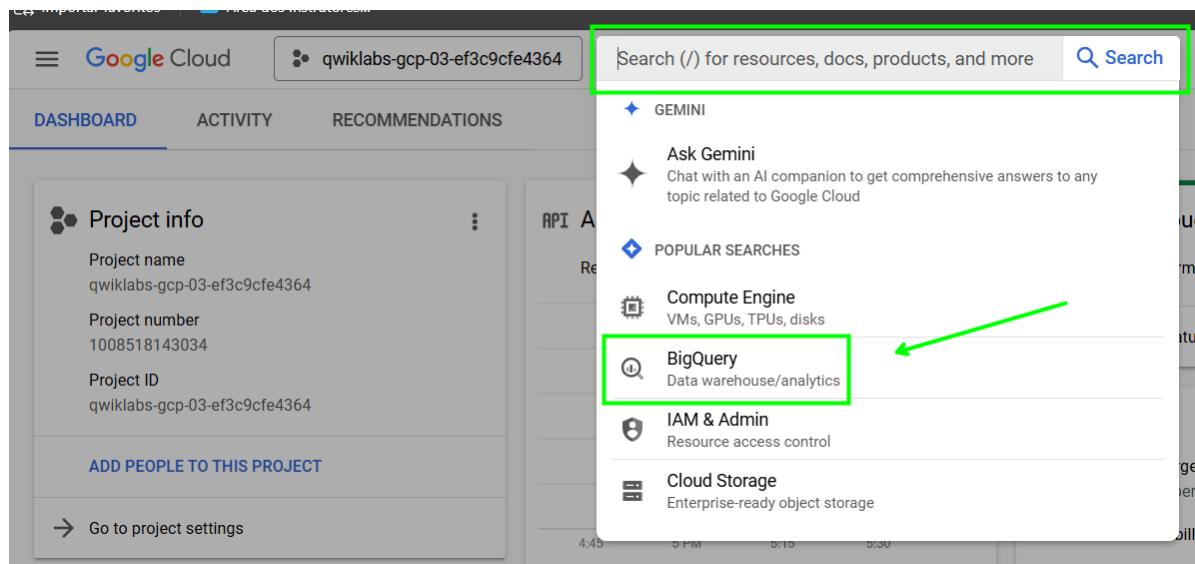
- 3) Depois, clique no botão do progresso (Se não ficar prontamente, clique novamente no botão):

Click *Check my progress* to verify the objective.

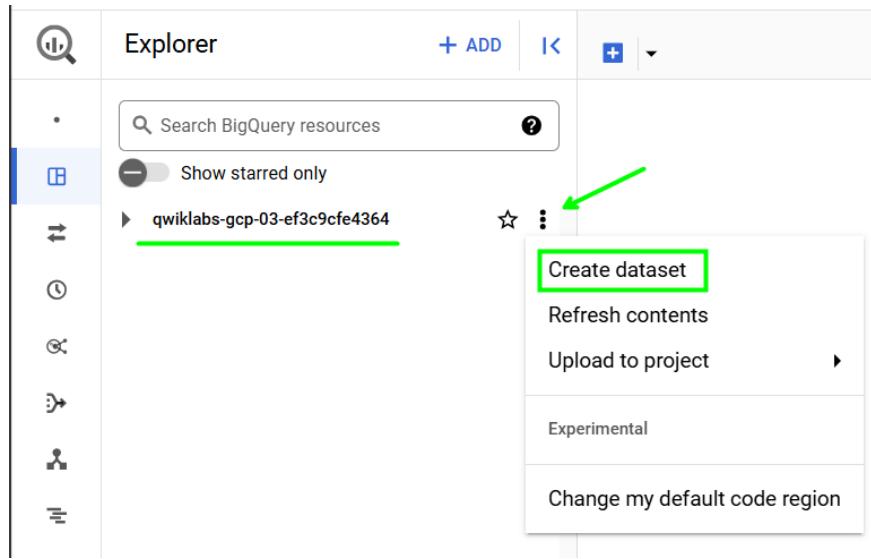


3. Tarefa 2

- 1) No campo de pesquisa, localizado acima na página inicial, procure na busca popular o serviço **BigQuery** e clique nele:



- 2) Assim que abrir o recurso, clique nos três pontos ao lado direito do seu projeto, e depois em **Create Dataset**:



- 3) No **Dataset ID**, coloque: bqmlTutorial. Garanta que a **Multi-Region** esteja selecionada, deixe tudo o restante como padrão e clique no botão azul embaixo **CREATE DATASET**:

Create dataset

Project ID *
qwiklabs-gcp-03-ef3c9cf4364 CHANGE

Dataset ID *
bqml_tutorial

Letters, numbers, and underscores allowed

Location type ?

Region
Specify a region to colocate your datasets with other Google Cloud services.

Multi-region
Allow BigQuery to select a region within a group to achieve higher quota limits.

Multi-region *
US (multiple regions in United States)

External Dataset
The selected region supports the following external dataset types: Cloud Spanner

Link to an external dataset ?

Default table expiration

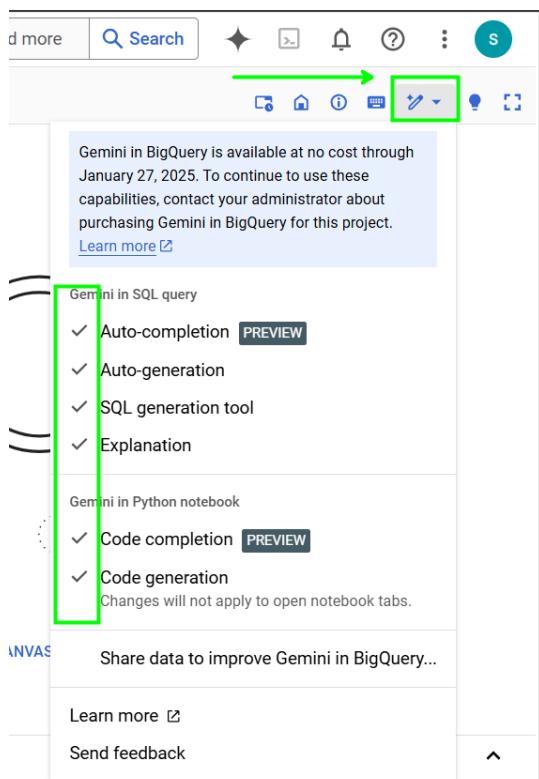
Enable table expiration ?

Default maximum table age Days

Tags

CREATE DATASET CANCEL

- 4) Selecione todas as opções que estiverem faltando ticar no ícone dos recursos do BigQuery  , no canto superior direito:



- 5) Tique a **Task 2** no laboratório.

4. Tarefa 3

- 1) Recarregue a página do **BigQuery** (F5), e agora clique no símbolo do Gemini no canto superior direito ✨. Você poderá agora começar o chat com o Gemini:

Welcome to BigQuery Studio!

Gemini in BigQuery is available at no cost through January 27, 2025. To use these capabilities after January 27, purchase BigQuery Enterprise Plus edition or Gemini Code Assist Enterprise.

Start chatting

Welcome to Gemini

Gemini Cloud Assist is an AI-powered collaborator to help you get more done faster. Get answers to your questions about Google Cloud products and best practices, and retrieve information about your cloud resources.

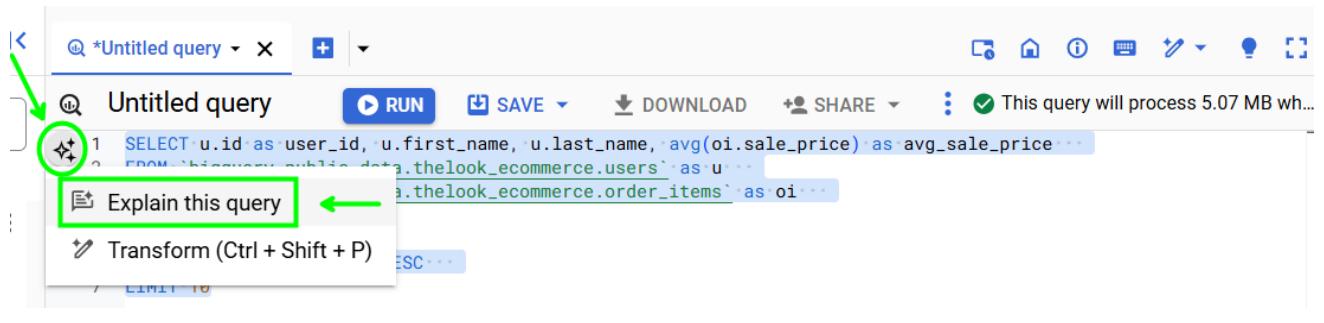
- 2) Interaja inicialmente, pedindo um tipo de informação como o prompt a seguir:
Como posso saber quais conjuntos de dados e tabelas estão disponíveis para mim no BigQuery?

- 3) Coloque o código indicado no laboratório em um novo **Editor de SQL**:

```

1 SELECT u.id as user_id, u.first_name, u.last_name, avg(oi.sale_price) as avg_sale_price
2 FROM `bigquery-public-data.thelook_ecommerce.users` as u
3 JOIN `bigquery-public-data.thelook_ecommerce.order_items` as oi
4 ON u.id = oi.user_id
5 GROUP BY 1,2,3
6 ORDER BY avg_sale_price DESC
7 LIMIT 10
  
```

- 4) Selecione todo o código, e clique no ícone de estrela que aparece agora ao lado esquerdo, e clique em **Explain this query**:



- 5) O chat irá então explicar a consulta SQL que foi selecionada:

This GoogleSQL query aims to identify the 10 users with the highest average sale price of items they've purchased. Let's break down each part:

- ** FROM `bigquery-public-data.thelook_ecommerce.users` as u **: This specifies the primary data source: the users table within the thelook_ecommerce dataset located in the bigquery-public-data project. It assigns the alias `u` for brevity.
- ** JOIN `bigquery-public-data.thelook_ecommerce.order_items` as oi ON u.id = oi.user_id **: This joins the users table with the order_items table. The join condition (ON u.id = oi.user_id) links users to their respective order items based on matching user

- 6) Clique no botão de progresso da **Task 3** no laboratório.

5. Tarefa 4

- 1) Limpe o Editor de Consultas SQL, e coloque o texto sugerido para geração de códigos pelo laboratório, em seguida clique **Enter**:

```
# select the sum of sales by date, and product_id casted to day from order_items, joined with products. Include the product name in the results. Round the total_sales field to two decimal places and order results by total_sales descending.
```

OBS: Se necessário, use a **Versão em Inglês** do laboratório para o comando correto.

- 2) Execute o comando através do botão azul **RUN**, na parte de cima do editor, os resultados aparecerão embaixo:

The screenshot shows the BigQuery SQL Editor interface. At the top, there are tabs for 'Untitled query' and several datasets ('order_items', 'products', 'orders'). Below the tabs is a toolbar with a 'RUN' button (highlighted with a green box), a 'SAVE' button, a 'DOWNLOAD' button, a 'SHARE' button, a 'SCHEDULE' button, an 'OPEN IN' dropdown, a 'MORE' dropdown, and a note about processing 5.79 M rows. The main area contains the following SQL code:

```

1 # select the sum of sales by date, and product_id casted to day from order_items, joined with products. Include the product name in the
2 # results. Round the total_sales field to two decimal places and order results by total_sales descending.
3
4 SELECT
5   DATE(order_items.created_at) AS order_date,
6   order_items.product_id,
7   products.name AS product_name,
8   ROUND(SUM(order_items.sale_price), 2) AS total_sales
9
10 FROM
11   `bigquery-public-data.thelook_ecommerce.order_items` AS order_items
12 LEFT JOIN
13   `bigquery-public-data.thelook_ecommerce.products` AS products
14 ON
15   order_items.product_id = products.id
16 GROUP BY
17   order_date

```

Below the code is a green box labeled 'Query results'. The results table has columns: Row, order_date, product_id, product_name, and total_sales. The data is as follows:

Row	order_date	product_id	product_name	total_sales
1	2023-10-15	24283	The North Face Nuptse 2 Jack...	1806.0
2	2020-12-01	23546	Alpha Industries Rip Stop Short	999.0
3	2022-02-19	24447	Darla	999.0

At the bottom right of the results table, there are buttons for 'SAVE RESULTS', 'OPEN IN', and a refresh icon.

- 3) Tique a **Task 4** no laboratório.

6. Tarefa 5

- 1) Limpe novamente o Editor de Consultas SQL, e execute o comando indicado no laboratório para a criação do modelo de forecasting, clicando no botão RUN. Como o exemplo a seguir:

The screenshot shows the BigQuery SQL Editor interface. At the top, there are tabs for 'Untitled query' and several datasets ('order_items', 'products', 'orders'). Below the tabs is a toolbar with a 'RUN' button (highlighted with a green box), a 'SAVE' button, a 'DOWNLOAD' button, a 'SHARE' button, a 'SCHEDULE' button, an 'OPEN IN' dropdown, a 'MORE' dropdown, and a note about the query being completed. The main area contains the following SQL code:

```

1 CREATE MODEL bqgl.tutorial.sales_forecasting_model
2 OPTIONS(MODEL_TYPE='ARIMA_PLUS',
3 time_series_timestamp_col='date_col',
4 time_series_data_col='total_sales',
5 time_series_id_col='product_id') AS
6 SELECT sum(sale_price) as total_sales,
7 DATE(created_at) as date_col,
8 product_id
9 FROM `bigquery-public-data.thelook_ecommerce.order_items`
10 AS t1
11 INNER JOIN `bigquery-public-data.thelook_ecommerce.products`
12 AS t2
13 ON t1.product_id = t2.id
14 GROUP BY 2, 3;

```

Below the code is a green box labeled 'Query results'. The results table has a single row indicating the successful creation of the model:

Successfully created model named sales_forecasting_model.

At the bottom right of the results table, there is a 'GO TO MODEL' button.

OBS: A criação pode demorar alguns minutos, depois que criado aparecerá a mensagem "Successfully created model named sales_forecasting_model" no campo de resultados abaixo, como indicado na figura.

- 2) Depois que o modelo for criado, limpe o Editor e execute o seguinte comando:
- ```
SELECT * FROM ML.FORECAST(MODEL `bqml_tutorial.sales_forecasting_model`)
```

The screenshot shows the BigQuery interface. At the top, there are tabs for 'Untitled query' and several datasets: 'order\_items', 'products', and 'orders'. Below the tabs, the query 'SELECT \* FROM ML.FORECAST(MODEL `bqml\_tutorial.sales\_forecasting\_model`)' is entered in the editor area, which is highlighted with a green box. To the right of the editor are buttons for 'RUN', 'SAVE', 'DOWNLOAD', and 'SHARE'. The results section below shows the output of the query, which is a table with five rows of forecast data. The table has columns: Row, product\_id, forecast\_timestamp, forecast\_value, and standard\_error.

| Row | product_id | forecast_timestamp      | forecast_value | standard_error |
|-----|------------|-------------------------|----------------|----------------|
| 1   | 1          | 2025-01-01 00:00:00 UTC | 49.0           | 0.0            |
| 2   | 1          | 2025-01-19 00:00:00 UTC | 49.0           | 0.0            |
| 3   | 1          | 2025-02-06 00:00:00 UTC | 49.0           | 0.0            |
| 4   | 2          | 2025-01-25 00:00:00 UTC | 69.5           | 0.0            |
| 5   | 2          | 2025-10-14 00:00:00 UTC | 69.5           | 0.0            |

- 3) Tique o último botão de progresso, garanta que todos estejam ticados no quadrado amarelo do lado esquerdo da página. Após, termine o laboratório.

