Proprietary + Confidential

DDMA DIGITAL ANALYTICS

Top tools and resources for learning google cloud data analytics products

13/10/2022

Khrystyna Grynko, Customer Engineer, Google

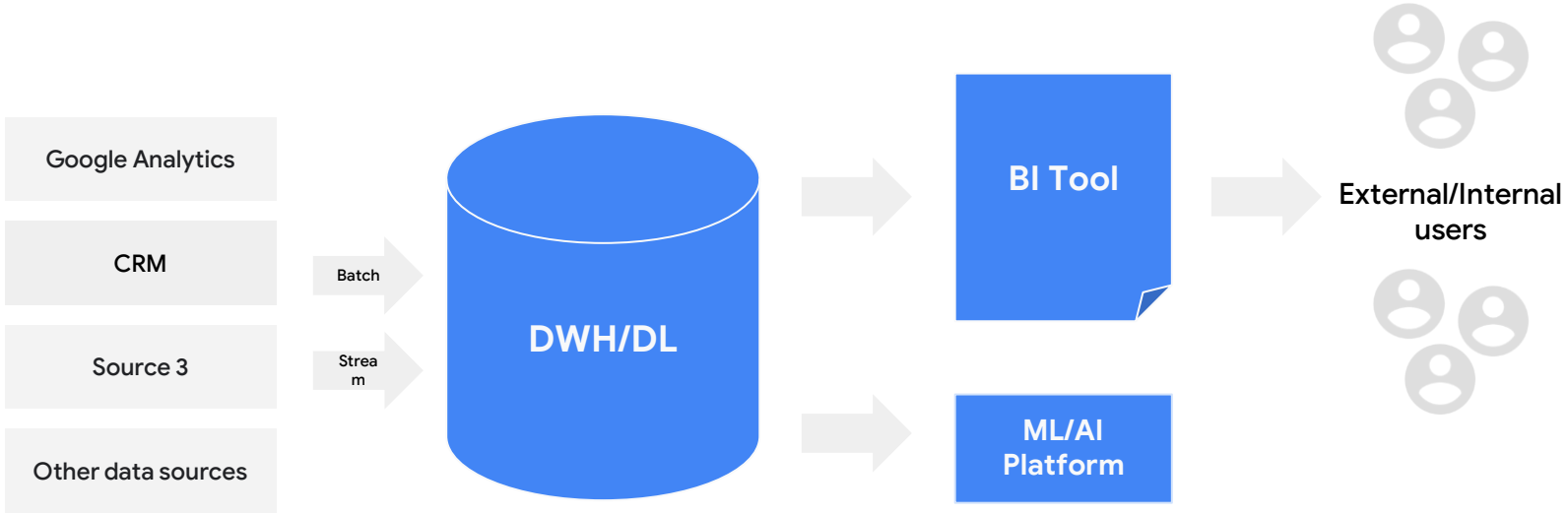
Proprietary + Confidential

00

Google Cloud Products for Data Analytics

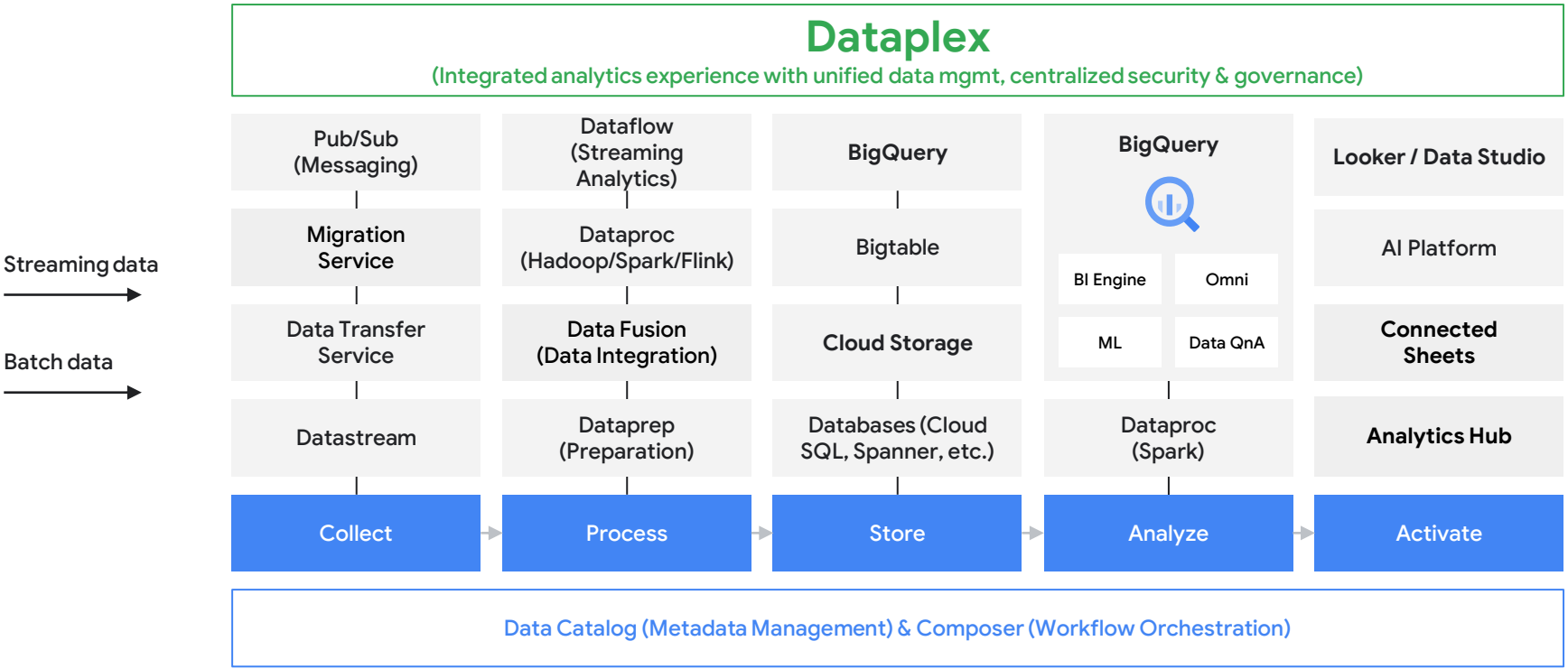
Proprietary + Confidential

Get your data together



Proprietary + Confidential

A service for every need



Proprietary + Confidential

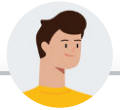
A service for every team member

Product Manager
Insights and objectives

- Interactive BI
  Looker
- EDW in a Spreadsheet
  Connected Sheets
- Natural Language Query
  Data QnA

Data analyst
Query and analyze

- Endless EDW
  BigQuery
- Self-managed data pipelines
  Data Fusion, Dataflow
- Data models, catalog
  Looker, Data Catalog
- Machine learning in SQL
  BigQuery ML



Data engineer
Get clean, useful data

- Self-driving infra
  BigQuery, Dataflow, Composer
- Broad choice of tools/language
  Dataproc, Dataflow
- Data quality /lineage
  Vertex AI, BigQuery, Dataflow
- Real-time capabilities
  BigQuery, Dataflow

Data scientist
Models that work

- Portable notebooks
  Workbench
- Model eval and selection
  Explainable AI, Tensorboard
- Point-and-click dev
  AutoML
- Collaboration
  Feature Store, Model Registry Pipelines

ML developer
Intelligent apps

- Images, videos
  Vision, Video Intelligence
- Sentiment analysis, entity extraction
  NL, Translation
- Chatbots, voice commands
  Conversation
- Fleet routing, forecasting
  Optimization

ML engineer
Models in production

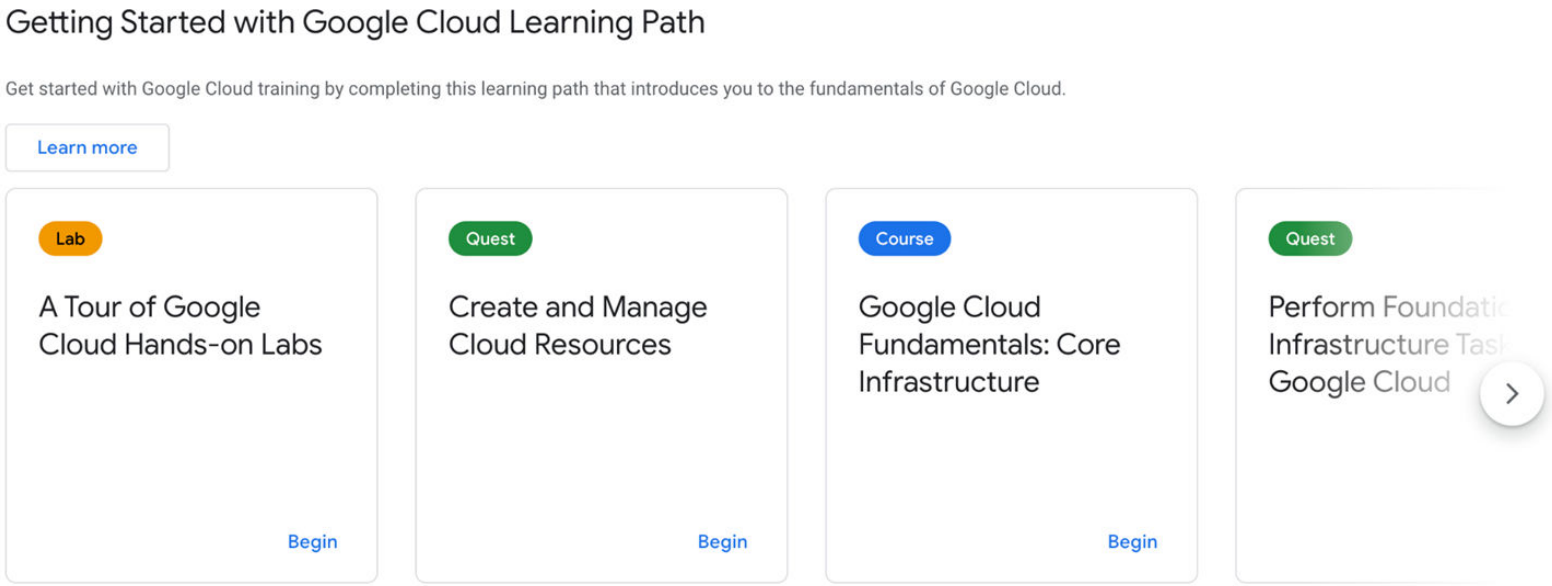
- Scalable model hosting
  Prediction
- ML CI/CD and orchestration
  Pipelines
- Provenance and lineage
  ML Metadata, Model Registry
- Improvements and retraining
  Model Monitoring

Proprietary + Confidential

01

Explore & Test

Cloud Skills Boost



https://www.cloudskillsboost.google/catalog

Cloud Skills Boost

Lab

Introduction to SQL for BigQuery and Cloud SQL

In this lab you will learn fundamental SQL clauses and will get hands on practice running structured queries on BigQuery and Cloud SQL.

1 hour Introductory 1 Credit

Lab

BigQuery: Qwik Start - Command Line

This hands-on lab shows you how to query public tables and load sample data into BigQuery using the Command Line Interface. Watch the short videos Get Meaningful Insights with Google BigQuery and BigQuery: Qwik Start - Qwiklabs Preview.

30 minutes Introductory Free

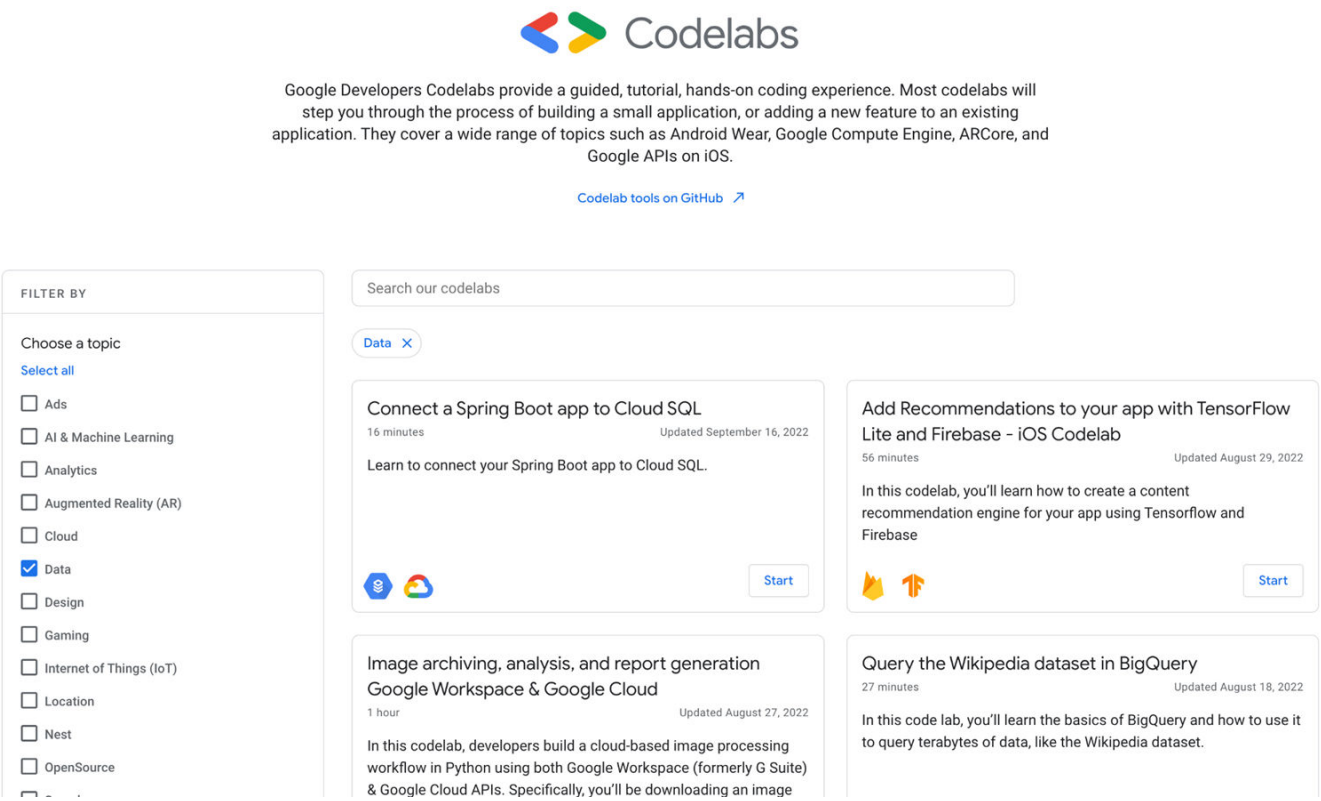
Lab

Weather Data in BigQuery

In this lab you analyze historical weather observations using BigQuery and use weather data in conjunction with other datasets. This lab is part of a series of labs on processing scientific data.

35 minutes Introductory Free

Codelabs



https://codelabs.developers.google.com/

BigQuery Cookbook

This article is about Universal Analytics properties, which will stop processing data on July 1, 2023 (October 1, 2023 for Analytics 360 properties). If you haven't already, start using a Google Analytics 4 property .

BigQuery cookbook

This feature is only available in Analytics 360, part of Google Marketing Platform.
Learn more about Google Marketing Platform .

This article contains examples of how to construct queries of the Analytics data you export to BigQuery. We have made available a sample dataset so you can practice with some of the queries in this article.

In this article:

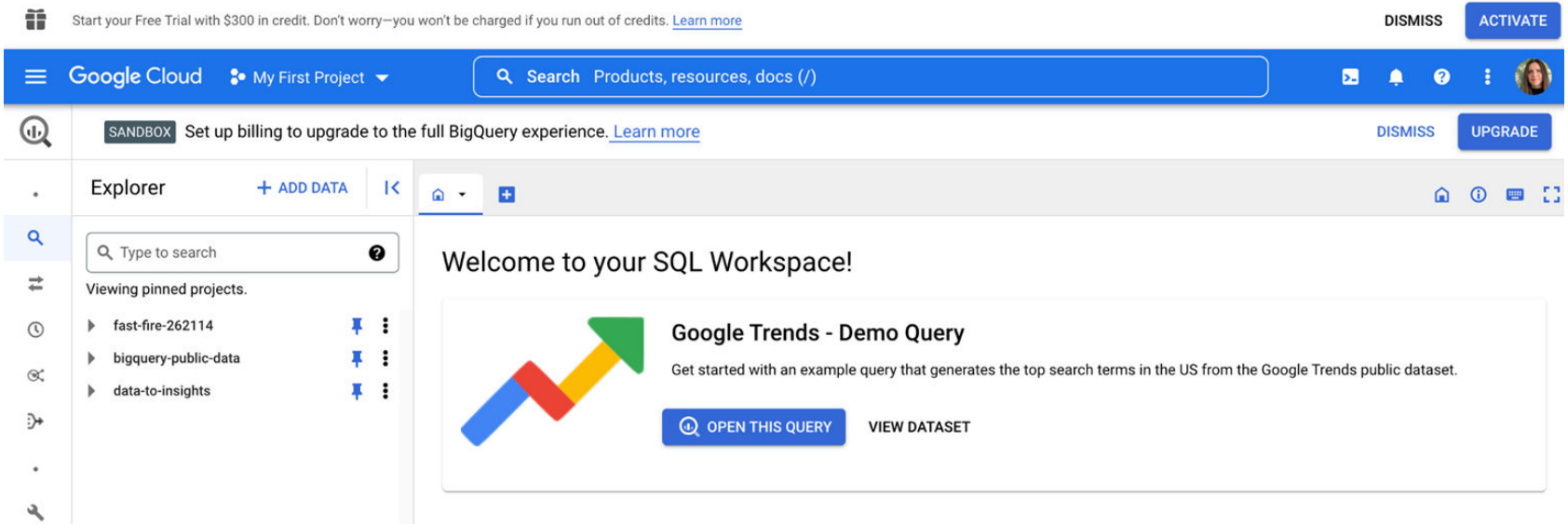
Query optimization
Tips and best practices
- Using the sample datset
- Using Standard SQL
- Query multiple tables
  - 3 Days
  - Last 1095 Days
  - Last 36 Months
  - Last 3 Years
  - Specific date range
  - Last 3 years plus today's data (intraday)

Basic query examples

BigQuery Export

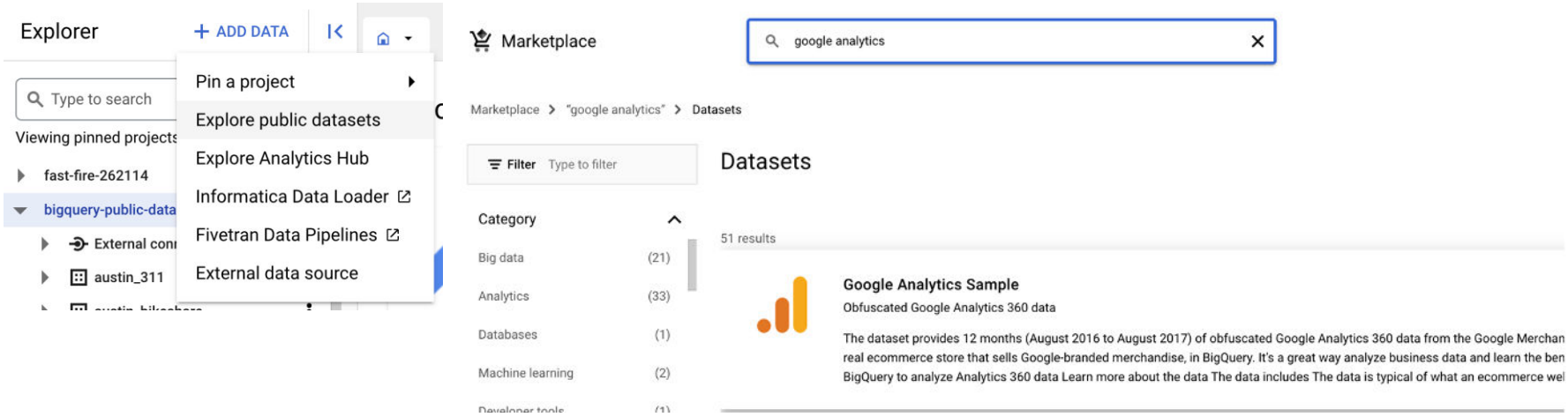
BigQuery Export for Analytics
Set up BigQuery Export
Localize your BigQuery Export in the EU
Google Analytics sample dataset for BigQuery
[UA] BigQuery Export schema
BigQuery streaming export
BigQuery cookbook
Export error messages

BigQuery Sandbox



Proprietary + Confidential

BigQuery Public Datasets



Google Cloud Free Trial

Solve real business challenges on Google Cloud

Contact sales | Go to console

Run workloads for free

20+ free products for all customers

All customers get free hands-on experience with popular products, including Compute Engine and Cloud Storage, up to monthly limits.

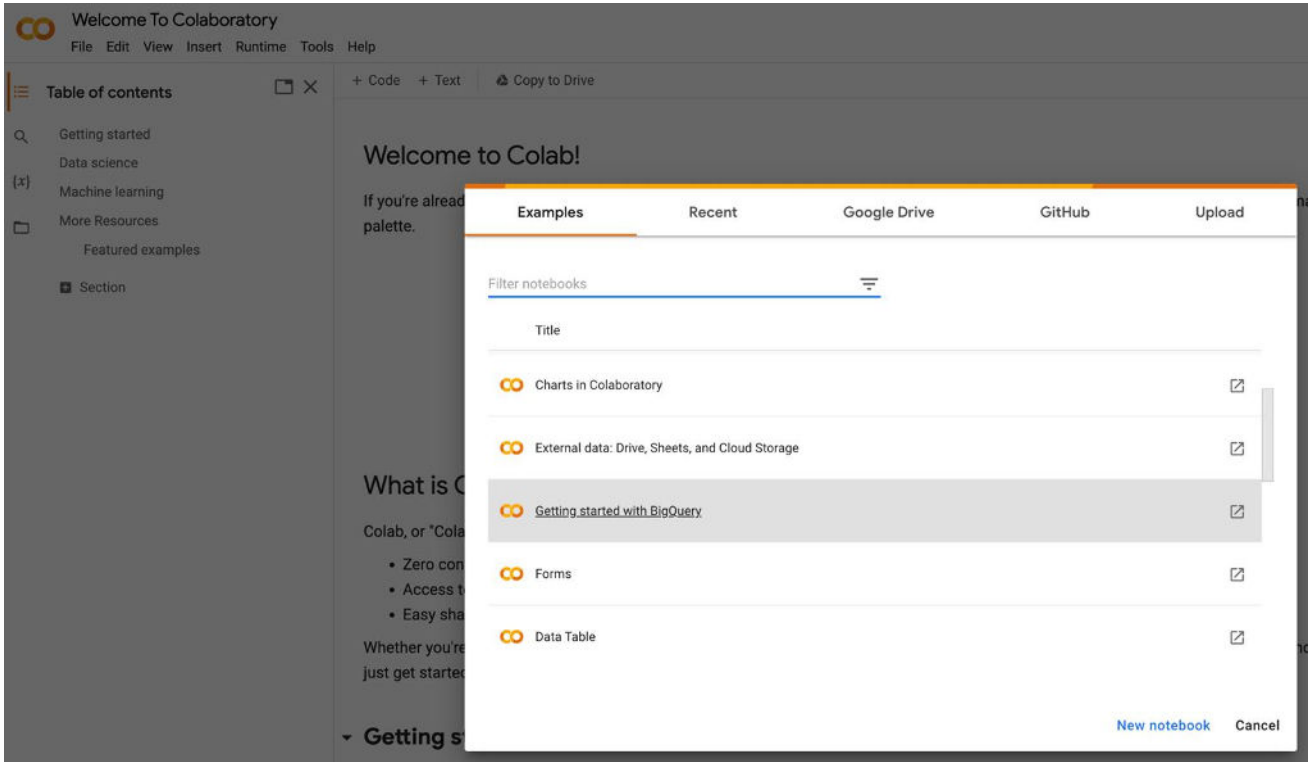
$300 in free credits for new customers

New customers get $300 in free credits to fully explore and conduct an assessment of Google Cloud. You won't be charged until you upgrade.

Additional free credits for businesses

New customers who verify their business email will get additional free credits to use while exploring and evaluating Google Cloud.

Colab


Welcome To Colaboratory
File Edit View Insert Runtime Tools Help
Table of contents
Getting started
Data science
Machine learning
More Resources
Featured examples
Section
+ Code + Text Copy to Drive
Welcome to Colab!
Examples
Recent
Google Drive
GitHub
Upload
Filter notebooks
Title
Charts in Colaboratory
External data: Drive, Sheets, and Cloud Storage
Getting started with BigQuery
Forms
Data Table
New notebook
Cancel

Colab

Provide your credentials to the runtime

```
[ ] from google.colab import auth
    auth.authenticate_user()
    print('Authenticated')
```

Optional: Enable data table display

Colab includes the `google.colab.data_table` package that can be used to display large pandas dataframes as an interactive data table. It can be enabled with:

```
[ ] %load_ext google.colab.data_table
```

If you would prefer to return to the classic Pandas dataframe display, you can disable this by running:

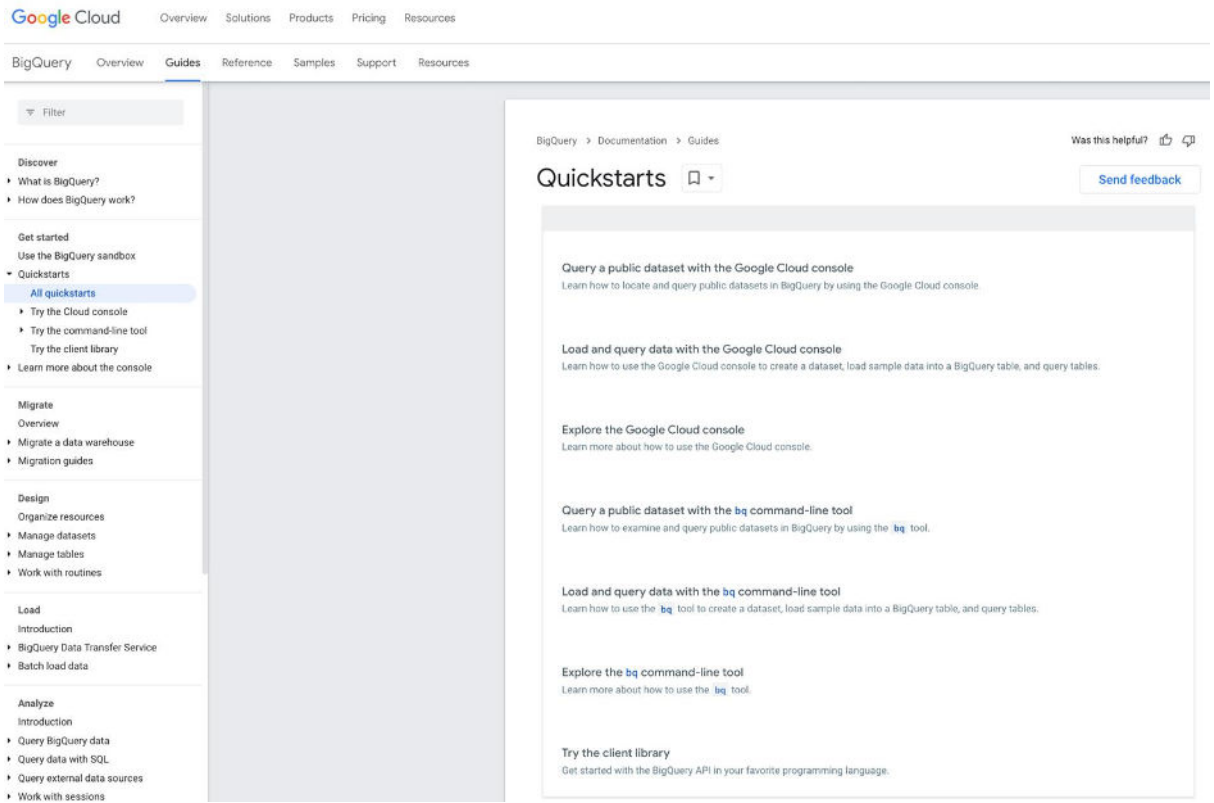
```
%unload_ext google.colab.data_table
```

Use BigQuery via magics

The `google.cloud.bigquery` library also includes a magic command which runs a query and either displays the result or saves it to a variable as a `DataFrame`.

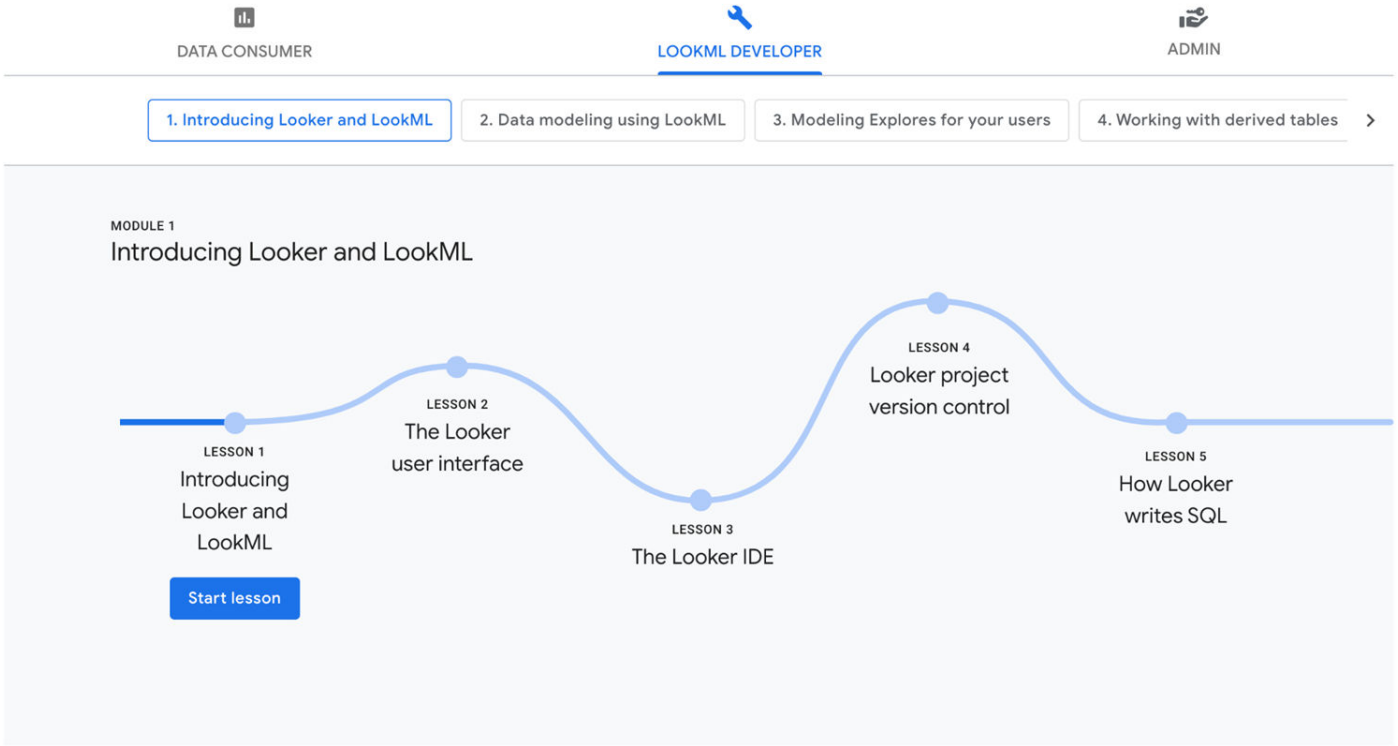
```
[ ] # Display query output immediately

    %%bigquery --project yourprojectid
    SELECT
      COUNT(*) as total_rows
    FROM `bigquery-public-data.samples.gsod`
```

Quickstarts



Proprietary + Confidential

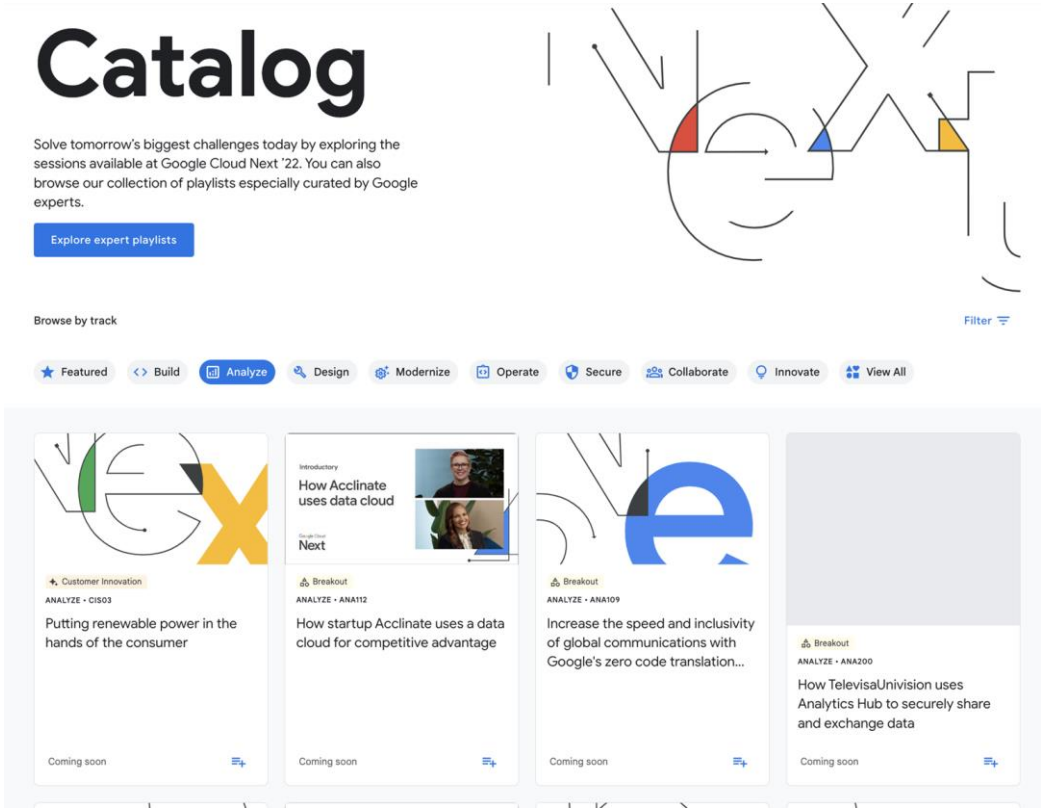
Looker



https://connect.looker.com/

Google Next 2022

Watch the Google Next for free and discover the latest announcements!



02

Learn to be certified

Professional Data Engineer certification

Professional Data Engineer

Professional Data Engineers enable data-driven decision making by collecting, transforming, and publishing data. A Data Engineer should be able to design, build, operationalize, secure, and monitor data processing systems with a particular emphasis on security and compliance; scalability and efficiency; reliability and fidelity; and flexibility and portability. A Data Engineer should also be able to leverage, deploy, and continuously train pre-existing machine learning models.

The Professional Data Engineer exam assesses your ability to:

- ✓ Design data processing systems
- ✓ Operationalize machine learning models
- ✓ Ensure solution quality
- ✓ Build and operationalize data processing systems

Register | View FAQs

Also available in Japanese.

Quick links

- Exam guide
- Train for the exam
- Review sample questions
- Google Cloud Free Tier
- Community: Learning & Certification Hub

About this certification exam

Length: 2 hours

Registration fee: $200 (plus tax where applicable)

Languages: English, Japanese.

Exam format: Multiple choice and multiple select taken remotely or in person at a test center. Locate a test center near you.

Exam Delivery Method:

a. Take the online-proctored exam from a remote location

b. Take the onsite-proctored exam at a testing center

Prerequisites: None

Recommended experience: 3+ years of industry experience including 1+ years designing and managing solutions using Google Cloud.

Proprietary + Confidential

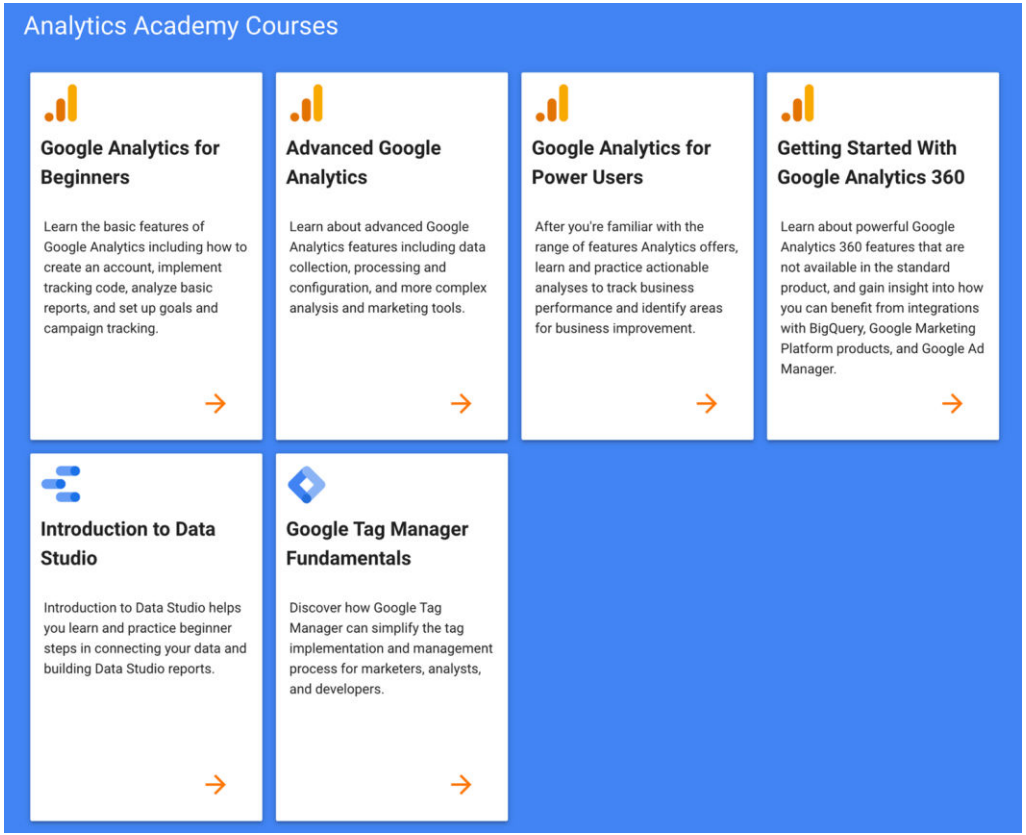
Professional Data Engineer certification

How to prepare?

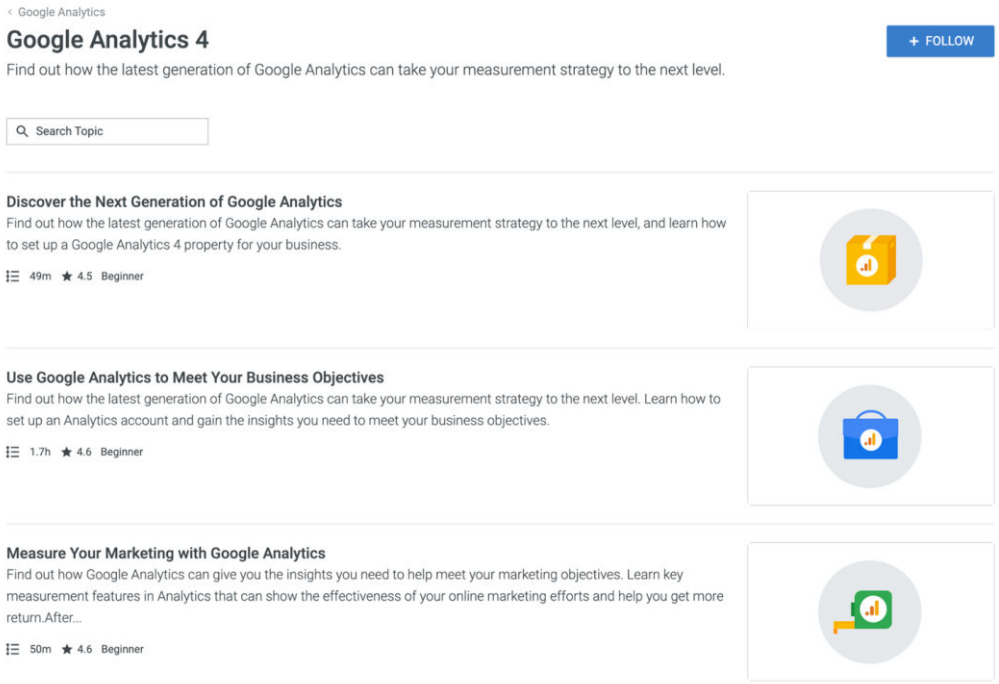
- Official Google Cloud Certified Professional Data Engineer Study Guide
- Documentation on Smart Analytics
- Coursera courses
- Everything we mentioned before to explore and test - qwiklabs, codelabs, etc.

Proprietary + Confidential

Google Analytics Academy



Google Skillshop



03

Teach (sources for education)

Google Cloud for Faculty

Access resources

Prepare your students for careers with the cloud. Access cloud credits for hands-on learning, the Cloud Computing Foundations curriculum, and the Career Readiness program.

Credits

Apply for cloud credits for your students. Eligible faculty can apply to receive up to $100 in Google Cloud credits per teaching staff, up to $50 in Cloud credits per student, up to 5,000 Google Cloud Skills Boost credits, certification discounts, and more.

Apply for teaching credits

Apply for training credits

Curriculum

Apply to use the Cloud Computing Foundations curriculum to teach students who have little to no experience in cloud at no cost. The 40 hour curriculum covers critical concepts to prepare learners.

Learn about the curriculum

Coaching

Coach students through one of three tracks as part of an on-demand learning program designed to help prepare your students for certification and careers in cloud.

Facilitate the Career Readiness Program

https://cloud.google.com/edu/faculty

Google Cloud for Faculty

Apply for Google Cloud research credits

Google Cloud research credits can advance your research by giving you access to computing power that will make the next big thing possible. Learn more about our programs for researchers.

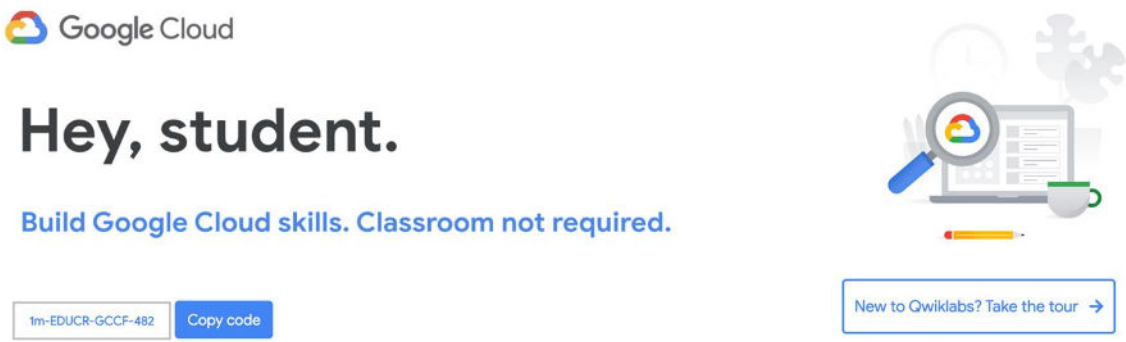
Program overview

Academic Research Grants

Eligibility for research grants is limited to faculty, PhD students and postdoctoral researchers from accredited higher education institutions and eligible nonprofit research institutions in approved countries. Review program FAQs to learn more.

https://edu.google.com/programs/credits/research/

Hey, student



Google Cloud Computing Foundations

Complete this **four-course series** in order. The series is designed for students with **little to no experience** in cloud computing and is an ideal foundation for diverse career paths. **Build your cloud skills** and **demonstrate your proficiency** by earning badges along the way.

Before attending this course, students should:

- Have basic IT knowledge and be interested in learning more about Cloud and ML.
- Have competency in at least one language (such as Python, Java).
- Be familiar with the basics of shell scripting, SQL.

https://go.qwiklabs.com/hey-student

Proprietary + Confidential

Thank you.

Google Cloud