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GCPFDIGC

From Data to Insights with Google Cloud

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From Data to Insights with Google Cloud

GCPFDIGC - Version: 1

 3 days Course

Description:

Explore ways to derive insights from data at scale using BigQuery, Google Cloud's serverless, highly scalable, and cost-effective cloud data warehouse. This course uses lectures, demos, and hands-on labs to teach you the fundamentals of BigQuery, including how to create a data transformation pipeline, build a BI dashboard, ingest new datasets, and design schemas at scale.

Intended audience:

Data Analysts, Business Analysts, Business Intelligence professionals

Cloud Data Engineers who will be partnering with Data Analysts to build scalable data solutions on Google Cloud Platform

Prerequisites:

To get the most out of this specialization, we recommend participants have some proficiency with ANSI SQL.

Objectives:

- Derive insights from data using the analysis and visualization tools on Google Cloud
- Load, clean, and transform data at scale with Dataprep



- Explore and Visualize data using Google Data Studio
- Troubleshoot, optimize, and write high performance queries
- Practice with pre-built ML APIs for image and text understanding
- Train classification and forecasting ML models using SQL with BigQuery ML

Topics:

Introduction to Data on Google Cloud

- • Analytics Challenges Faced by Data Analysts
- • Big Data On-premise Versus on the Cloud
- • Real-world Use Cases of Companies Transformed Through Analytics on the Cloud
- • Google Cloud Project Basics

Analyzing Large Datasets with BigQuery

- • Data Analyst Tasks, Challenges, and Google Cloud Data Tools
- • Fundamental BigQuery Features
- • Google Cloud Tools for Analysts, Data Scientists, and Data Engineers

Exploring your Public Dataset with SQL

- • Common Data Exploration Techniques
- • Use SQL to Query Public Datasets

Cleaning and Transforming your Data with Dataprep

- • 5 Principles of Dataset Integrity
- • Dataset Shape and Skew



- • Clean and Transform Data using SQL
- • Introducing Dataprep by Trifacta

Visualizing Insights and Creating Scheduled Queries

- • Data Visualization Principles
- • Common Data Visualization Pitfalls
- • Google Data Studio

Storing and Ingesting New Datasets

- • Permanent Versus Temporary Data Tables
- • Ingesting New Datasets

Enriching your Data Warehouse with JOINS

- • Merge Historical Data Tables with UNION
- • Introduce Table Wildcards for Easy Merges
- • Review Data Schemas: Linking Data Across Multiple Tables
- • JOIN Examples and Pitfalls

Advanced Features and Partitioning your Queries and Tables for Advanced Insights

- • Advanced Functions (Statistical, Analytic, User-defined)
- • Date-Partitioned Tables

Designing Schemas that Scale: Arrays and Structs in BigQuery



- • BigQuery Versus Traditional Relational Data Architecture
- • ARRAY and STRUCT Syntax
- • BigQuery Architecture

Optimizing Queries for Performance

- • BigQuery Performance Pitfalls
- • Prevent Data Hotspots
- • Diagnose Performance Issues with the Query Explanation Map

Controlling Access with Data Security

- • Hashing Columns
- • Authorized Views
- • IAM and BigQuery Dataset Roles
- • Access Pitfalls

Predicting Visitor Return Purchases with BigQuery ML

- • Machine Learning on Structured Data
- • Scenario: Predicting Customer Lifetime Value
- • Choosing the Right Model Type
- • Creating ML models with SQL

Deriving Insights From Unstructured Data Using Machine Learning

- • ML Drives Business Value
- • How does ML on unstructured data work?
- • Choosing the Right ML Approach
- • Pre-built AI Building Blocks

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- • Customizing Pre-built Models with AutoML
- • Building a Custom Model