Google

Exam Questions Professional-Data-Engineer

Google Professional Data Engineer Exam

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NEW QUESTION 1
- (Exam Topic 1)
You want to use a database of information about tissue samples to classify future tissue samples as either normal or mutated. You are evaluating an unsupervised anomaly detection method for classifying the tissue samples. Which two characteristic support this method? (Choose two.)

A. There are very few occurrences of mutations relative to normal samples.
B. There are roughly equal occurrences of both normal and mutated samples in the database.
C. You expect future mutations to have different features from the mutated samples in the database.
D. You expect future mutations to have similar features to the mutated samples in the database.
E. You already have labels for which samples are mutated and which are normal in the database.

Answer: AD

Explanation:
Unsupervised anomaly detection techniques detect anomalies in an unlabeled test data set under the assumption that the majority of the instances in the data set are normal by looking for instances that seem to fit least to the remainder of the data set. https://en.wikipedia.org/wiki/Anomaly_detection

NEW QUESTION 2
- (Exam Topic 1)
Your company is streaming real-time sensor data from their factory floor into Bigtable and they have noticed extremely poor performance. How should the row key be redesigned to improve Bigtable performance on queries that populate real-time dashboards?

A. Use a row key of the form <timestamp>.
B. Use a row key of the form <sensorid>.
C. Use a row key of the form <timestamp>#<sensorid>.
D. Use a row key of the form >#<sensorid>#<timestamp>.

Answer: A

NEW QUESTION 3
- (Exam Topic 1)
You are building a model to predict whether or not it will rain on a given day. You have thousands of input features and want to see if you can improve training speed by removing some features while having a minimum effect on model accuracy. What can you do?

A. Eliminate features that are highly correlated to the output labels.
B. Combine highly co-dependent features into one representative feature.
C. Instead of feeding in each feature individually, average their values in batches of 3.
D. Remove the features that have null values for more than 50% of the training records.

Answer: B

NEW QUESTION 4
- (Exam Topic 1)
Your company's on-premises Apache Hadoop servers are approaching end-of-life, and IT has decided to migrate the cluster to Google Cloud Dataproc. A like-for-like migration of the cluster would require 50 TB of Google Persistent Disk per node. The CIO is concerned about the cost of using that much block storage. You want to minimize the storage cost of the migration. What should you do?

A. Put the data into Google Cloud Storage.
B. Use preemptible virtual machines (VMs) for the Cloud Dataproc cluster.
C. Tune the Cloud Dataproc cluster so that there is just enough disk for all data.
D. Migrate some of the cold data into Google Cloud Storage, and keep only the hot data in Persistent Disk.

Answer: B

NEW QUESTION 5
- (Exam Topic 1)
Your company's customer and order databases are often under heavy load. This makes performing analytics against them difficult without harming operations. The databases are in a MySQL cluster, with nightly backups taken using mysqldump. You want to perform analytics with minimal impact on operations. What should you do?

A. Add a node to the MySQL cluster and build an OLAP cube there.
B. Use an ETL tool to load the data from MySQL into Google BigQuery.
C. Connect an on-premises Apache Hadoop cluster to MySQL and perform ETL.
D. Mount the backups to Google Cloud SQL, and then process the data using Google Cloud Dataproc.

Answer: C

NEW QUESTION 6
- (Exam Topic 1)
You designed a database for patient records as a pilot project to cover a few hundred patients in three clinics. Your design used a single database table to represent all patients and their visits, and you used self-joins to generate reports. The server resource utilization was at 50%. Since then, the scope of the project has expanded. The database must now store 100 times more patient records. You can no longer run the reports, because they either take too long or they encounter errors with insufficient compute resources. How should you adjust the database design?

A. Add capacity (memory and disk space) to the database server by the order of 200.
B. Shard the tables into smaller ones based on date ranges, and only generate reports with prespecified date ranges.

C. Normalize the master patient-record table into the patient table and the visits table, and create other necessary tables to avoid self-join.
D. Partition the table into smaller tables, with one for each clini
E. Run queries against the smaller table pairs, and use unions for consolidated reports.

Answer: C

NEW QUESTION 7
- (Exam Topic 1)
You create an important report for your large team in Google Data Studio 360. The report uses Google BigQuery as its data source. You notice that visualizations are not showing data that is less than 1 hour old. What should you do?

A. Disable caching by editing the report settings.
B. Disable caching in BigQuery by editing table details.
C. Refresh your browser tab showing the visualizations.
D. Clear your browser history for the past hour then reload the tab showing the virtualizations.

Answer: A

Explanation:
Reference https://support.google.com/datastudio/answer/7020039?hl=en

NEW QUESTION 8
- (Exam Topic 2)
Flowlogistic's management has determined that the current Apache Kafka servers cannot handle the data volume for their real-time inventory tracking system. You need to build a new system on Google Cloud Platform (GCP) that will feed the proprietary tracking software. The system must be able to ingest data from a variety of global sources, process and query in real-time, and store the data reliably. Which combination of GCP products should you choose?

A. Cloud Pub/Sub, Cloud Dataflow, and Cloud Storage
B. Cloud Pub/Sub, Cloud Dataflow, and Local SSD
C. Cloud Pub/Sub, Cloud SQL, and Cloud Storage
D. Cloud Load Balancing, Cloud Dataflow, and Cloud Storage

Answer: C

NEW QUESTION 9
- (Exam Topic 3)
MJTelco's Google Cloud Dataflow pipeline is now ready to start receiving data from the 50,000 installations. You want to allow Cloud Dataflow to scale its compute power up as required. Which Cloud Dataflow pipeline configuration setting should you update?

A. The zone
B. The number of workers
C. The disk size per worker
D. The maximum number of workers

Answer: A

NEW QUESTION 10
- (Exam Topic 4)
You are choosing a NoSQL database to handle telemetry data submitted from millions of Internet-of-Things (IoT) devices. The volume of data is growing at 100 TB per year, and each data entry has about 100 attributes. The data processing pipeline does not require atomicity, consistency, isolation, and durability (ACID). However, high availability and low latency are required.
You need to analyze the data by querying against individual fields. Which three databases meet your requirements? (Choose three.)

A. Redis
B. HBase
C. MySQL
D. MongoDB
E. Cassandra
F. HDFS with Hive

Answer: BDF

NEW QUESTION 10
- (Exam Topic 4)
Your company produces 20,000 files every hour. Each data file is formatted as a comma separated values
(CSV) file that is less than 4 KB. All files must be ingested on Google Cloud Platform before they can be processed. Your company site has a 200 ms latency to Google Cloud, and your Internet connection bandwidth is limited as 50 Mbps. You currently deploy a secure FTP (SFTP) server on a virtual machine in Google Compute Engine as the data ingestion point. A local SFTP client runs on a dedicated machine to transmit the CSV files as is. The goal is to make reports with data from the previous day available to the executives by 10:00 a.m. each day. This design is barely able to keep up with the current volume, even though the bandwidth utilization is rather low.
You are told that due to seasonality, your company expects the number of files to double for the next three months. Which two actions should you take? (choose two.)

A. Introduce data compression for each file to increase the rate file of file transfer.
B. Contact your internet service provider (ISP) to increase your maximum bandwidth to at least 100 Mbps.
C. Redesign the data ingestion process to use gsutil tool to send the CSV files to a storage bucket in parallel.
D. Assemble 1,000 files into a tape archive (TAR) fil
E. Transmit the TAR files instead, and disassemble the CSV files in the cloud upon receiving them.

F. Create an S3-compatible storage endpoint in your network, and use Google Cloud Storage Transfer Service to transfer on-premices data to the designated storage bucket.

Answer: CE

NEW QUESTION 12
- (Exam Topic 4)
Your company has recently grown rapidly and now ingesting data at a significantly higher rate than it was previously. You manage the daily batch MapReduce analytics jobs in Apache Hadoop. However, the recent increase in data has meant the batch jobs are falling behind. You were asked to recommend ways the development team could increase the responsiveness of the analytics without increasing costs. What should you recommend they do?

A. Rewrite the job in Pig.
B. Rewrite the job in Apache Spark.
C. Increase the size of the Hadoop cluster.
D. Decrease the size of the Hadoop cluster but also rewrite the job in Hive.

Answer: A

NEW QUESTION 16
- (Exam Topic 5)
Which SQL keyword can be used to reduce the number of columns processed by BigQuery?

A. BETWEEN
B. WHERE
C. SELECT
D. LIMIT

Answer: C

Explanation:
SELECT allows you to query specific columns rather than the whole table.
LIMIT, BETWEEN, and WHERE clauses will not reduce the number of columns processed by BigQuery.
Reference:
https://cloud.google.com/bigquery/launch-checklist#architecture_design_and_development_checklist

NEW QUESTION 21
- (Exam Topic 5)
If a dataset contains rows with individual people and columns for year of birth, country, and income, how many of the columns are continuous and how many are categorical?

A. 1 continuous and 2 categorical
B. 3 categorical
C. 3 continuous
D. 2 continuous and 1 categorical

Answer: D

Explanation:
The columns can be grouped into two types—categorical and continuous columns:
A column is called categorical if its value can only be one of the categories in a finite set. For example, the native country of a person (U.S., India, Japan, etc.) or the education level (high school, college, etc.) are categorical columns.
A column is called continuous if its value can be any numerical value in a continuous range. For example, the capital gain of a person (e.g. $14,084) is a continuous column.
Year of birth and income are continuous columns. Country is a categorical column.
You could use bucketization to turn year of birth and/or income into categorical features, but the raw columns are continuous.
Reference: https://www.tensorflow.org/tutorials/wide#reading_the_census_data

NEW QUESTION 22
- (Exam Topic 5)
You are planning to use Google's Dataflow SDK to analyze customer data such as displayed below. Your project requirement is to extract only the customer name from the data source and then write to an output PCollection.
Tom,555 X street Tim,553 Y street Sam, 111 Z street
Which operation is best suited for the above data processing requirement?

A. ParDo
B. Sink API
C. Source API
D. Data extraction

Answer: A

Explanation:
In Google Cloud dataflow SDK, you can use the ParDo to extract only a customer name of each element in your PCollection.
Reference: https://cloud.google.com/dataflow/model/par-do

NEW QUESTION 23
- (Exam Topic 5)

What Dataflow concept determines when a Window's contents should be output based on certain criteria being met?

A. Sessions
B. OutputCriteria
C. Windows
D. Triggers

Answer: D

Explanation:
Triggers control when the elements for a specific key and window are output. As elements arrive, they are put into one or more windows by a Window transform and its associated WindowFn, and then passed to the associated Trigger to determine if the Windows contents should be output.
Reference:
https://cloud.google.com/dataflow/java-sdk/JavaDoc/com/google/cloud/dataflow/sdk/transforms/windowing/Tri

NEW QUESTION 24
- (Exam Topic 5)
When you design a Google Cloud Bigtable schema it is recommended that you .

A. Avoid schema designs that are based on NoSQL concepts
B. Create schema designs that are based on a relational database design
C. Avoid schema designs that require atomicity across rows
D. Create schema designs that require atomicity across rows

Answer: C

Explanation:
All operations are atomic at the row level. For example, if you update two rows in a table, it's possible that one row will be updated successfully and the other update will fail. Avoid schema designs that require atomicity across rows.
Reference: https://cloud.google.com/bigtable/docs/schema-design#row-keys

NEW QUESTION 26
- (Exam Topic 5)
Why do you need to split a machine learning dataset into training data and test data?

A. So you can try two different sets of features
B. To make sure your model is generalized for more than just the training data
C. To allow you to create unit tests in your code
D. So you can use one dataset for a wide model and one for a deep model

Answer: B

Explanation:
The flaw with evaluating a predictive model on training data is that it does not inform you on how well the model has generalized to new unseen data. A model that is selected for its accuracy on the training dataset rather than its accuracy on an unseen test dataset is very likely to have lower accuracy on an unseen test dataset. The reason is that the model is not as generalized. It has specialized to the structure in the training dataset. This is called overfitting.
Reference: https://machinelearningmastery.com/a-simple-intuition-for-overfitting/

NEW QUESTION 28
- (Exam Topic 5)
Which is the preferred method to use to avoid hotspotting in time series data in Bigtable?

A. Field promotion
B. Randomization
C. Salting
D. Hashing

Answer: A

Explanation:
By default, prefer field promotion. Field promotion avoids hotspotting in almost all cases, and it tends to make it easier to design a row key that facilitates queries.
Reference:
https://cloud.google.com/bigtable/docs/schema-design-time-series#ensure_that_your_row_key_avoids_hotspotti

NEW QUESTION 31
- (Exam Topic 5)
When you store data in Cloud Bigtable, what is the recommended minimum amount of stored data?

A. 500 TB
B. 1 GB
C. 1 TB
D. 500 GB

Answer: C

Explanation:
Cloud Bigtable is not a relational database. It does not support SQL queries, joins, or multi-row transactions. It is not a good solution for less than 1 TB of data.
Reference: https://cloud.google.com/bigtable/docs/overview#title_short_and_other_storage_options

NEW QUESTION 32
- (Exam Topic 5)
What are two of the benefits of using denormalized data structures in BigQuery?

A. Reduces the amount of data processed, reduces the amount of storage required
B. Increases query speed, makes queries simpler
C. Reduces the amount of storage required, increases query speed
D. Reduces the amount of data processed, increases query speed

Answer: B

Explanation:
Denormalization increases query speed for tables with billions of rows because BigQuery's performance degrades when doing JOINs on large tables, but with a denormalized data
structure, you don't have to use JOINs, since all of the data has been combined into one table. Denormalization also makes queries simpler because you do not have to use JOIN clauses.
Denormalization increases the amount of data processed and the amount of storage required because it creates redundant data.
Reference:
https://cloud.google.com/solutions/bigquery-data-warehouse#denormalizing_data

NEW QUESTION 35
- (Exam Topic 5)
Which of the following are feature engineering techniques? (Select 2 answers)

A. Hidden feature layers
B. Feature prioritization
C. Crossed feature columns
D. Bucketization of a continuous feature

Answer: CD

Explanation:
Selecting and crafting the right set of feature columns is key to learning an effective model.
Bucketization is a process of dividing the entire range of a continuous feature into a set of consecutive bins/buckets, and then converting the original numerical feature into a bucket ID (as a categorical feature) depending on which bucket that value falls into.
Using each base feature column separately may not be enough to explain the data. To learn the differences between different feature combinations, we can add crossed feature columns to the model.
Reference: https://www.tensorflow.org/tutorials/wide#selecting_and_engineering_features_for_the_model

NEW QUESTION 38
- (Exam Topic 5)
Which of these are examples of a value in a sparse vector? (Select 2 answers.)

A. [0, 5, 0, 0, 0, 0]
B. [0, 0, 0, 1, 0, 0, 1]
C. [0, 1]
D. [1, 0, 0, 0, 0, 0, 0]

Answer: CD

Explanation:
Categorical features in linear models are typically translated into a sparse vector in which each possible value has a corresponding index or id. For example, if there are only three possible eye colors you can represent 'eye_color' as a length 3 vector: 'brown' would become [1, 0, 0], 'blue' would become [0, 1, 0] and 'green' would become [0, 0, 1]. These vectors are called "sparse" because they may be very long, with many zeros, when the set of possible values is very large (such as all English words).
[0, 0, 0, 1, 0, 0, 1] is not a sparse vector because it has two 1s in it. A sparse vector contains only a single 1. [0, 5, 0, 0, 0, 0] is not a sparse vector because it has a 5 in it. Sparse vectors only contain 0s and 1s. Reference: https://www.tensorflow.org/tutorials/linear#feature_columns_and_transformations

NEW QUESTION 41
- (Exam Topic 5)
Which role must be assigned to a service account used by the virtual machines in a Dataproc cluster so they can execute jobs?

A. Dataproc Worker
B. Dataproc Viewer
C. Dataproc Runner
D. Dataproc Editor

Answer: A

Explanation:
Service accounts used with Cloud Dataproc must have Dataproc/Dataproc Worker role (or have all the permissions granted by Dataproc Worker role).
Reference: https://cloud.google.com/dataproc/docs/concepts/service-accounts#important_notes

NEW QUESTION 45
- (Exam Topic 5)
When a Cloud Bigtable node fails, is lost.

A. all data

B. no data
C. the last transaction
D. the time dimension

Answer: B

Explanation:
A Cloud Bigtable table is sharded into blocks of contiguous rows, called tablets, to help balance the workload of queries. Tablets are stored on Colossus, Google's file system, in SSTable format. Each tablet is associated with a specific Cloud Bigtable node.
Data is never stored in Cloud Bigtable nodes themselves; each node has pointers to a set of tablets that are stored on Colossus. As a result:
Rebalancing tablets from one node to another is very fast, because the actual data is not copied. Cloud
Bigtable simply updates the pointers for each node.
Recovery from the failure of a Cloud Bigtable node is very fast, because only metadata needs to be migrated to the replacement node.
When a Cloud Bigtable node fails, no data is lost Reference: https://cloud.google.com/bigtable/docs/overview

NEW QUESTION 48
- (Exam Topic 5)
Which of the following statements about Legacy SQL and Standard SQL is not true?

A. Standard SQL is the preferred query language for BigQuery.
B. If you write a query in Legacy SQL, it might generate an error if you try to run it with Standard SQL.
C. One difference between the two query languages is how you specify fully-qualified table names (i.
D. table names that include their associated project name).
E. You need to set a query language for each dataset and the default is Standard SQL.

Answer: D

Explanation:
You do not set a query language for each dataset. It is set each time you run a query and the default query language is Legacy SQL.
Standard SQL has been the preferred query language since BigQuery 2.0 was released.
In legacy SQL, to query a table with a project-qualified name, you use a colon, :, as a separator. In standard SQL, you use a period, ., instead.
Due to the differences in syntax between the two query languages (such as with project-qualified table names), if you write a query in Legacy SQL, it might generate an error if you try to run it with Standard SQL.
Reference:
https://cloud.google.com/bigquery/docs/reference/standard-sql/migrating-from-legacy-sql

NEW QUESTION 51
- (Exam Topic 5)
The CUSTOM tier for Cloud Machine Learning Engine allows you to specify the number of which types of cluster nodes?

A. Workers
B. Masters, workers, and parameter servers
C. Workers and parameter servers
D. Parameter servers

Answer: C

Explanation:
The CUSTOM tier is not a set tier, but rather enables you to use your own cluster specification. When you use this tier, set values to configure your processing cluster according to these guidelines:
You must set TrainingInput.masterType to specify the type of machine to use for your master node. You may set TrainingInput.workerCount to specify the number of workers to use.
You may set TrainingInput.parameterServerCount to specify the number of parameter servers to use.
You can specify the type of machine for the master node, but you can't specify more than one master node. Reference: https://cloud.google.com/ml-engine/docs/training-overview#job_configuration_parameters

NEW QUESTION 54
- (Exam Topic 6)
You use a dataset in BigQuery for analysis. You want to provide third-party companies with access to the same dataset. You need to keep the costs of data sharing low and ensure that the data is current. Which solution should you choose?

A. Create an authorized view on the BigQuery table to control data access, and provide third-party companies with access to that view.
B. Use Cloud Scheduler to export the data on a regular basis to Cloud Storage, and provide third-party companies with access to the bucket.
C. Create a separate dataset in BigQuery that contains the relevant data to share, and provide third-party companies with access to the new dataset.
D. Create a Cloud Dataflow job that reads the data in frequent time intervals, and writes it to the relevant BigQuery dataset or Cloud Storage bucket for third-party companies to use.

Answer: B

NEW QUESTION 57
- (Exam Topic 6)
You need to set access to BigQuery for different departments within your company. Your solution should comply with the following requirements:
- Each department should have access only to their data.
- Each department will have one or more leads who need to be able to create and update tables and provide them to their team.
- Each department has data analysts who need to be able to query but not modify data. How should you set access to the data in BigQuery?

A. Create a dataset for each departmen
B. Assign the department leads the role of OWNER, and assign the data analysts the role of WRITER on their dataset.

C. Create a dataset for each departmen
D. Assign the department leads the role of WRITER, and assign the data analysts the role of READER on their dataset.
E. Create a table for each departmen
F. Assign the department leads the role of Owner, and assign the data analysts the role of Editor on the project the table is in.
G. Create a table for each departmen
H. Assign the department leads the role of Editor, and assign the data analysts the role of Viewer on the project the table is in.

Answer: D

NEW QUESTION 58
- (Exam Topic 6)
You are migrating a table to BigQuery and are deeding on the data model. Your table stores information related to purchases made across several store locations and includes information like the time of the transaction, items purchased, the store ID and the city and state in which the store is located You frequently query this table to see how many of each item were sold over the past 30 days and to look at purchasing trends by state city and individual store. You want to model this table to minimize query time and cost. What should you do?

A. Partition by transaction time; cluster by state first, then city then store ID
B. Partition by transaction tome cluster by store ID first, then city, then stale
C. Top-level cluster by stale first, then city then store
D. Top-level cluster by store ID first, then city then state.

Answer: C

NEW QUESTION 59
- (Exam Topic 6)
You need to migrate a 2TB relational database to Google Cloud Platform. You do not have the resources to significantly refactor the application that uses this database and cost to operate is of primary concern.
Which service do you select for storing and serving your data?

A. Cloud Spanner
B. Cloud Bigtable
C. Cloud Firestore
D. Cloud SQL

Answer: D

NEW QUESTION 62
- (Exam Topic 6)
You need ads data to serve Al models and historical data tor analytics longtail and outlier data points need to be identified You want to cleanse the data n near-reel time before running it through Al models What should you do?

A. Use BigQuery to ingest prepare and then analyze the data and then run queries to create views
B. Use Cloud Storage as a data warehouse shell scripts tor processing, and BigQuery to create views tor desired datasets
C. Use Dataflow to identity longtail and outber data points programmatically with BigQuery as a sink
D. Use Cloud Composer to identify longtail and outlier data points, and then output a usable dataset to BigQuery

Answer: A

NEW QUESTION 63
- (Exam Topic 6)
You store historic data in Cloud Storage. You need to perform analytics on the historic data. You want to use a solution to detect invalid data entries and perform data transformations that will not require programming or knowledge of SQL.
What should you do?

A. Use Cloud Dataflow with Beam to detect errors and perform transformations.
B. Use Cloud Dataprep with recipes to detect errors and perform transformations.
C. Use Cloud Dataproc with a Hadoop job to detect errors and perform transformations.
D. Use federated tables in BigQuery with queries to detect errors and perform transformations.

Answer: B

NEW QUESTION 68
- (Exam Topic 6)
You use BigQuery as your centralized analytics platform. New data is loaded every day, and an ETL pipeline modifies the original data and prepares it for the final users. This ETL pipeline is regularly modified and can generate errors, but sometimes the errors are detected only after 2 weeks. You need to provide a method to recover from these errors, and your backups should be optimized for storage costs. How should you organize your data in BigQuery and store your backups?

A. Organize your data in a single table, export, and compress and store the BigQuery data in Cloud Storage.
B. Organize your data in separate tables for each month, and export, compress, and store the data in Cloud Storage.
C. Organize your data in separate tables for each month, and duplicate your data on a separate dataset in BigQuery.
D. Organize your data in separate tables for each month, and use snapshot decorators to restore the table to a time prior to the corruption.

Answer: D

NEW QUESTION 73
- (Exam Topic 6)
You architect a system to analyze seismic data. Your extract, transform, and load (ETL) process runs as a series of MapReduce jobs on an Apache Hadoop

cluster. The ETL process takes days to process a data set because some steps are computationally expensive. Then you discover that a sensor calibration step has been omitted. How should you change your ETL process to carry out sensor calibration systematically in the future?

A. Modify the transformMapReduce jobs to apply sensor calibration before they do anything else.
B. Introduce a new MapReduce job to apply sensor calibration to raw data, and ensure all other MapReduce jobs are chained after this.
C. Add sensor calibration data to the output of the ETL process, and document that all users need to apply sensor calibration themselves.
D. Develop an algorithm through simulation to predict variance of data output from the last MapReduce job based on calibration factors, and apply the correction to all data.

Answer: A

NEW QUESTION 77
- (Exam Topic 6)
Government regulations in the banking industry mandate the protection of client's personally identifiable information (PII). Your company requires PII to be access controlled encrypted and compliant with major data protection standards In addition to using Cloud Data Loss Prevention (Cloud DIP) you want to follow Google-recommended practices and use service accounts to control access to PII. What should you do?

A. Assign the required identity and Access Management (IAM) roles to every employee, and create a single service account to access protect resources
B. Use one service account to access a Cloud SQL database and use separate service accounts for each human user
C. Use Cloud Storage to comply with major data protection standard
D. Use one service account shared by all users
E. Use Cloud Storage to comply with major data protection standard
F. Use multiple service accounts attached to IAM groups to grant the appropriate access to each group

Answer: D

NEW QUESTION 81
- (Exam Topic 6)
You are building a teal-lime prediction engine that streams files, which may contain Pll (personal identifiable information) data, into Cloud Storage and eventually into BigQuery You want to ensure that the sensitive data is masked but still maintains referential Integrity, because names and emails are often used as join keys How should you use the Cloud Data Loss Prevention API (DLP API) to ensure that the Pll data is not accessible by unauthorized individuals?

A. Create a pseudonym by replacing the Pll data with cryptogenic tokens, and store the non-tokenized data in a locked-down button.
B. Redact all Pll data, and store a version of the unredacted data in a locked-down bucket
C. Scan every table in BigQuery, and mask the data it finds that has Pll
D. Create a pseudonym by replacing Pll data with a cryptographic format-preserving token

Answer: A

NEW QUESTION 85
- (Exam Topic 6)
You are updating the code for a subscriber to a Put/Sub feed. You are concerned that upon deployment the subscriber may erroneously acknowledge messages, leading to message loss. You subscriber is not set up to retain acknowledged messages. What should you do to ensure that you can recover from errors after deployment?

A. Use Cloud Build for your deployment if an error occurs after deployment, use a Seek operation to locate a tmestamp logged by Cloud Build at the start of the deployment
B. Create a Pub/Sub snapshot before deploying new subscriber cod
C. Use a Seek operation to re-deliver messages that became available after the snapshot was created
D. Set up the Pub/Sub emulator on your local machine Validate the behavior of your new subscriber togs before deploying it to production
E. Enable dead-lettering on the Pub/Sub topic to capture messages that aren't successful acknowledged if an error occurs after deployment, re-deliver any messages captured by the dead-letter queue

Answer: B

NEW QUESTION 90
- (Exam Topic 6)
An aerospace company uses a proprietary data format to store its night data. You need to connect this new data source to BigQuery and stream the data into BigQuery. You want to efficiency import the data into BigQuery where consuming as few resources as possible. What should you do?

A. Use a standard Dataflow pipeline to store the raw data in BigQuery and then transform the format later when the data is used.
B. Write a shell script that triggers a Cloud Function that performs periodic ETL batch jobs on the new data source
C. Use Apache Hive to write a Dataproc job that streams the data into BigQuery in CSV format
D. Use an Apache Beam custom connector to write a Dataflow pipeline that streams the data into BigQuery in Avro format

Answer: D

NEW QUESTION 95
- (Exam Topic 6)
You have a data pipeline that writes data to Cloud Bigtable using well-designed row keys. You want to monitor your pipeline to determine when to increase the size of you Cloud Bigtable cluster. Which two actions can you take to accomplish this? Choose 2 answers.

A. Review Key Visualizer metric
B. Increase the size of the Cloud Bigtable cluster when the Read pressure index is above 100.
C. Review Key Visualizer metric
D. Increase the size of the Cloud Bigtable cluster when the Write pressure index is above 100.
E. Monitor the latency of write operation
F. Increase the size of the Cloud Bigtable cluster when there is a sustained increase in write latency.

G. Monitor storage utilizatio
H. Increase the size of the Cloud Bigtable cluster when utilization increases above 70% of max capacity.
I. Monitor latency of read operation
J. Increase the size of the Cloud Bigtable cluster of read operations take longer than 100 ms.

Answer: AC

NEW QUESTION 98
- (Exam Topic 6)
You are deploying MariaDB SQL databases on GCE VM Instances and need to configure monitoring and alerting. You want to collect metrics including network connections, disk IO and replication status from MariaDB with minimal development effort and use StackDriver for dashboards and alerts.
What should you do?

A. Install the OpenCensus Agent and create a custom metric collection application with a StackDriver exporter.
B. Place the MariaDB instances in an Instance Group with a Health Check.
C. Install the StackDriver Logging Agent and configure fluentd in_tail plugin to read MariaDB logs.
D. Install the StackDriver Agent and configure the MySQL plugin.

Answer: C

NEW QUESTION 100
- (Exam Topic 6)
You are migrating an application that tracks library books and information about each book, such as author or year published, from an on-premises data warehouse to BigQuery In your current relational database, the author information is kept in a separate table and joined to the book information on a common key Based on Google's recommended practice for schema design, how would you structure the data to ensure optimal speed of queries about the author of each book that has been borrowed?

A. Keep the schema the same, maintain the different tables for the book and each of the attributes, and query as you are doing today
B. Create a table that is wide and includes a column for each attribute, including the author's first name, last name, date of birth, etc
C. Create a table that includes information about the books and authors, but nest the author fields inside the author column
D. Keep the schema the same, create a view that joins all of the tables, and always query the view

Answer: C

NEW QUESTION 101
- (Exam Topic 6)
As your organization expands its usage of GCP, many teams have started to create their own projects. Projects are further multiplied to accommodate different stages of deployments and target audiences. Each project requires unique access control configurations. The central IT team needs to have access to all projects. Furthermore, data from Cloud Storage buckets and BigQuery datasets must be shared for use in other projects in an ad hoc way. You want to simplify access control management by minimizing the number of policies. Which two steps should you take? Choose 2 answers.

A. Use Cloud Deployment Manager to automate access provision.
B. Introduce resource hierarchy to leverage access control policy inheritance.
C. Create distinct groups for various teams, and specify groups in Cloud IAM policies.
D. Only use service accounts when sharing data for Cloud Storage buckets and BigQuery datasets.
E. For each Cloud Storage bucket or BigQuery dataset, decide which projects need acces
F. Find all the active members who have access to these projects, and create a Cloud IAM policy to grant access to all these users.

Answer: AC

NEW QUESTION 105
- (Exam Topic 6)
You are implementing several batch jobs that must be executed on a schedule. These jobs have many interdependent steps that must be executed in a specific order. Portions of the jobs involve executing shell scripts, running Hadoop jobs, and running queries in BigQuery. The jobs are expected to run for many minutes up to several hours. If the steps fail, they must be retried a fixed number of times. Which service should you use to manage the execution of these jobs?

A. Cloud Scheduler
B. Cloud Dataflow
C. Cloud Functions
D. Cloud Composer

Answer: A

NEW QUESTION 109
- (Exam Topic 6)
Your team is responsible for developing and maintaining ETLs in your company. One of your Dataflow jobs is failing because of some errors in the input data, and you need to improve reliability of the pipeline (incl. being able to reprocess all failing data).
What should you do?

A. Add a filtering step to skip these types of errors in the future, extract erroneous rows from logs.
B. Add a try… catch block to your DoFn that transforms the data, extract erroneous rows from logs.
C. Add a try… catch block to your DoFn that transforms the data, write erroneous rows to PubSub directly from the DoFn.
D. Add a try… catch block to your DoFn that transforms the data, use a sideOutput to create a PCollectionthat can be stored to PubSub later.

Answer: C

NEW QUESTION 113

- (Exam Topic 6)
Government regulations in your industry mandate that you have to maintain an auditable record of access to certain types of datA. Assuming that all expiring logs will be archived correctly, where should you store data that is subject to that mandate?

A. Encrypted on Cloud Storage with user-supplied encryption key
B. A separate decryption key will be given to each authorized user.
C. In a BigQuery dataset that is viewable only by authorized personnel, with the Data Access log used to provide the auditability.
D. In Cloud SQL, with separate database user names to each use
E. The Cloud SQL Admin activity logs will be used to provide the auditability.
F. In a bucket on Cloud Storage that is accessible only by an AppEngine service that collects user information and logs the access before providing a link to the bucket.

Answer: B

NEW QUESTION 114
- (Exam Topic 6)
You work for a bank. You have a labelled dataset that contains information on already granted loan application and whether these applications have been defaulted. You have been asked to train a model to predict default rates for credit applicants.
What should you do?

A. Increase the size of the dataset by collecting additional data.
B. Train a linear regression to predict a credit default risk score.
C. Remove the bias from the data and collect applications that have been declined loans.
D. Match loan applicants with their social profiles to enable feature engineering.

Answer: B

NEW QUESTION 119
- (Exam Topic 6)
You are using BigQuery and Data Studio to design a customer-facing dashboard that displays large quantities of aggregated data. You expect a high volume of concurrent users. You need to optimize tie dashboard to provide quick visualizations with minimal latency. What should you do?

A. Use BigQuery BI Engine with materialized views
B. Use BigQuery BI Engine with streaming data.
C. Use BigQuery Bl Engine with authorized views
D. Use BigQuery Bl Engine with logical reviews

Answer: B

NEW QUESTION 122
- (Exam Topic 6)
You are building an application to share financial market data with consumers, who will receive data feeds. Data is collected from the markets in real time.
Consumers will receive the data in the following ways:
- Real-time event stream
- ANSI SQL access to real-time stream and historical data
- Batch historical exports

Which solution should you use?

A. Cloud Dataflow, Cloud SQL, Cloud Spanner
B. Cloud Pub/Sub, Cloud Storage, BigQuery
C. Cloud Dataproc, Cloud Dataflow, BigQuery
D. Cloud Pub/Sub, Cloud Dataproc, Cloud SQL

Answer: A

NEW QUESTION 126
- (Exam Topic 6)
You need to create a near real-time inventory dashboard that reads the main inventory tables in your BigQuery data warehouse. Historical inventory data is stored as inventory balances by item and location. You have several thousand updates to inventory every hour. You want to maximize performance of the dashboard and ensure that the data is accurate. What should you do?

A. Leverage BigQuery UPDATE statements to update the inventory balances as they are changing.
B. Partition the inventory balance table by item to reduce the amount of data scanned with each inventory update.
C. Use the BigQuery streaming the stream changes into a daily inventory movement tabl
D. Calculate balances in a view that joins it to the historical inventory balance tabl
E. Update the inventory balance table nightly.
F. Use the BigQuery bulk loader to batch load inventory changes into a daily inventory movement table.Calculate balances in a view that joins it to the historical inventory balance tabl
G. Update the inventory balance table nightly.

Answer: A

NEW QUESTION 127
- (Exam Topic 6)
You want to rebuild your batch pipeline for structured data on Google Cloud You are using PySpark to conduct data transformations at scale, but your pipelines are taking over twelve hours to run To expedite development and pipeline run time, you want to use a serverless tool and SQL syntax You have already moved your raw data into Cloud Storage How should you build the pipeline on Google Cloud while meeting speed and processing requirements?

A. Convert your PySpark commands into SparkSQL queries to transform the data; and then run your pipeline on Dataproc to write the data into BigQuery
B. Ingest your data into Cloud SQL, convert your PySpark commands into SparkSQL queries to transform the data, and then use federated queries from BigQuery for machine learning.
C. Ingest your data into BigQuery from Cloud Storage, convert your PySpark commands into BigQuery SQL queries to transform the data, and then write the transformations to a new table
D. Use Apache Beam Python SDK to build the transformation pipelines, and write the data into BigQuery

Answer: A

NEW QUESTION 129
- (Exam Topic 6)
You are designing storage for 20 TB of text files as part of deploying a data pipeline on Google Cloud. Your input data is in CSV format. You want to minimize the cost of querying aggregate values for multiple users who will query the data in Cloud Storage with multiple engines. Which storage service and schema design should you use?

A. Use Cloud Bigtable for storag
B. Install the HBase shell on a Compute Engine instance to query the Cloud Bigtable data.
C. Use Cloud Bigtable for storag
D. Link as permanent tables in BigQuery for query.
E. Use Cloud Storage for storag
F. Link as permanent tables in BigQuery for query.
G. Use Cloud Storage for storag
H. Link as temporary tables in BigQuery for query.

Answer: A

NEW QUESTION 132
- (Exam Topic 6)
You want to optimize your queries for cost and performance. How should you structure your data?

A. Partition table data by create_date, location_id and device_version
B. Partition table data by create_date cluster table data by location_Id and device_version
C. Cluster table data by create_date location_id and device_version
D. Cluster table data by create_date partition by locationed and device_version

Answer: B

NEW QUESTION 135
- (Exam Topic 6)
You work for a large financial institution that is planning to use Dialogflow to create a chatbot for the company's mobile app You have reviewed old chat logs and lagged each conversation for intent based on each customer's stated intention for contacting customer service About 70% of customer requests are simple requests that are solved within 10 intents The remaining 30% of inquiries require much longer, more complicated requests Which intents should you automate first?

A. Automate the 10 intents that cover 70% of the requests so that live agents can handle more complicated requests
B. Automate the more complicated requests first because those require more of the agents' time
C. Automate a blend of the shortest and longest intents to be representative of all intents
D. Automate intents in places where common words such as "payment" appear only once so the software isn't confused

Answer: A

NEW QUESTION 137
- (Exam Topic 6)
A data scientist has created a BigQuery ML model and asks you to create an ML pipeline to serve predictions. You have a REST API application with the requirement to serve predictions for an individual user ID with latency under 100 milliseconds. You use the following query to generate predictions: SELECT predicted_label, user_id FROM ML.PREDICT (MODEL ‘dataset.model’, table user_features). How should you create the ML pipeline?

A. Add a WHERE clause to the query, and grant the BigQuery Data Viewer role to the application service account.
B. Create an Authorized View with the provided quer
C. Share the dataset that contains the view with the application service account.
D. Create a Cloud Dataflow pipeline using BigQueryIO to read results from the quer
E. Grant the Dataflow Worker role to the application service account.
F. Create a Cloud Dataflow pipeline using BigQueryIO to read predictions for all users from the query.Write the results to Cloud Bigtable using BigtableI
G. Grant the Bigtable Reader role to the application service account so that the application can read predictions for individual users from Cloud Bigtable.

Answer: D

NEW QUESTION 140
- (Exam Topic 6)
You are collecting loT sensor data from millions of devices across the world and storing the data in BigQuery. Your access pattern is based on recent data tittered by location_id and device_version with the following query:

```
SELECT
    MAX(temperature)
FROM
    acme_iot_data.sensors
WHERE
    create_date > DATE_SUB(CURRENT_DATE(), INTERVAL 7 day)
    AND location_id = "SW1W9TQ"
    AND device_version = "202007r3"
```

You want to optimize your queries for cost and performance. How should you structure your data?

A. Partition table data by create_date, location_id and device_version
B. Partition table data by create_date cluster table data by tocation_id and device_version
C. Cluster table data by create_date location_id and device_version
D. Cluster table data by create_date, partition by location and device_version

Answer: C

NEW QUESTION 141
- (Exam Topic 6)
Your company is implementing a data warehouse using BigQuery, and you have been tasked with designing the data model You move your on-premises sales data warehouse with a star data schema to BigQuery but notice performance issues when querying the data of the past 30 days Based on Google's recommended practices, what should you do to speed up the query without increasing storage costs?

A. Denormalize the data
B. Shard the data by customer ID
C. Materialize the dimensional data in views
D. Partition the data by transaction date

Answer: C

NEW QUESTION 146
- (Exam Topic 6)
You are implementing security best practices on your data pipeline. Currently, you are manually executing
jobs as the Project Owner. You want to automate these jobs by taking nightly batch files containing non-public information from Google Cloud Storage, processing them with a Spark Scala job on a Google Cloud Dataproc cluster, and depositing the results into Google BigQuery.
How should you securely run this workload?

A. Restrict the Google Cloud Storage bucket so only you can see the files
B. Grant the Project Owner role to a service account, and run the job with it
C. Use a service account with the ability to read the batch files and to write to BigQuery
D. Use a user account with the Project Viewer role on the Cloud Dataproc cluster to read the batch files and write to BigQuery

Answer: B

NEW QUESTION 147
- (Exam Topic 6)
A shipping company has live package-tracking data that is sent to an Apache Kafka stream in real time. This is then loaded into BigQuery. Analysts in your company want to query the tracking data in BigQuery to analyze geospatial trends in the lifecycle of a package. The table was originally created with ingest-date partitioning. Over time, the query processing time has increased. You need to implement a change that would improve query performance in BigQuery. What should you do?

A. Implement clustering in BigQuery on the ingest date column.
B. Implement clustering in BigQuery on the package-tracking ID column.
C. Tier older data onto Cloud Storage files, and leverage extended tables.
D. Re-create the table using data partitioning on the package delivery date.

Answer: A

NEW QUESTION 151
- (Exam Topic 6)
You are designing storage for two relational tables that are part of a 10-TB database on Google Cloud. You want to support transactions that scale horizontally. You also want to optimize data for range queries on nonkey columns. What should you do?

A. Use Cloud SQL for storag
B. Add secondary indexes to support query patterns.
C. Use Cloud SQL for storag
D. Use Cloud Dataflow to transform data to support query patterns.
E. Use Cloud Spanner for storag
F. Add secondary indexes to support query patterns.
G. Use Cloud Spanner for storag
H. Use Cloud Dataflow to transform data to support query patterns.

Answer: D

Explanation:

Reference: https://cloud.google.com/solutions/data-lifecycle-cloud-platform

NEW QUESTION 155

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Relate Links

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