Week 2 Quiz

1. According to this week's videos, which of the following statements about batch and streaming ingestion is true?

   - Batch ingestion is a more modern approach that has emerged with new technologies, while stream ingestion is the traditional method of processing data as events are generated.
   - Batch ingestion can only be used with time-bound data, while streaming ingestion can only be used with size-bound data.
   - Batch ingestion processes data in real-time as it is generated, while streaming ingestion processes data in large chunks at scheduled intervals.
   - Batch ingestion involves imposing boundaries on a continuous stream of data and ingesting all the data within those boundaries as a single unit, while streaming ingestion involves ingesting events individually as they are generated.

2. Consider the following three use cases:

   - **Use case A**: A business analyst wants to analyze sales data once a month.
   - **Use case B**: A supply-chain manager needs new log updates from the transactional database once a minute.
   - **Use case C**: A software engineer needs processed data from IoT sensors within milliseconds after it is generated to build a customer-facing analytics dashboard.

   What is the most appropriate way to order these use cases along the continuum of data ingestion frequencies (i.e. label the use cases as batch, micro-batch, and streaming)?

   - Use case A: streaming
     Use case B: batch
     Use case C: micro-batch
   - Use case A: micro-batch
     Use case B: batch
     Use case C: streaming
   - Use case A: micro-batch
     Use case B: streaming
     Use case C: batch
   - Use case A: batch

     Use case B: micro-batch

     Use case C: streaming

3. Which of the following statements is/are true about the Extract-Transform-Load (ETL) ingestion pattern? Select all that apply.
    - No information gets lost in the process.
    - You don't have to decide up front how you want to use the data.
    - You transform data before loading it into the target storage destination.
    - Transformation is performed in an intermediate staging area.
    - You can end up with what's known as a data swamp.

4. Which of the following scenarios is/are appropriate for the Extract-Transform-Load (ETL)ingestion pattern? Select all that apply.
    - Quickly providing large amounts of raw transactional data to an analyst who would like to explore the data.
    - Migrating data from a legacy system to a target database, where the data in the legacy system is not in a format that's compatible with the structure of the target database.
    - Loading data into a target system, where the end users requested that the data be free of errors, duplicates, and inconsistencies.

5. What does REST in REST API stand for?
    - Representational State Transform
    - Representational Symbol Transfer
    - Representational Symbol Transform
    - Representational State Transfer

6. How can you send requests to REST APIs?
    - Using the CREATE, READ, UPDATE, and DELETE operations
    - Using the SEND, RESPOND, CONNECT, and AUTHORIZE operations
    - Using the SELECT, ADD, REMOVE, and PATCH methods
    - Using the POST, PUT, GET, and DELETE HTTP methods

7. Which of the following statements accurately describes Kafka topics and Kafka partitions?
    - Events are split up and routed into topics, where each topic has one or more partitions.
    - Kafka topics and Kafka partitions are interchangeable terms.
    - A Kafka topic is an ordered immutable sequence of Kafka partitions.
    - Events are split up into Kafka partitions, where each partition has one or more Kafka topics.

8. Which of the following statements about Amazon Kinesis Data Streams and Apache Kafka is true?
    - The parallel to a Kafka topic is a Kinesis shard. The parallel to a Kafka partition is a Kinesis stream.
    - The parallel to a Kafka broker is a Kinesis stream. The parallel to a Kafka cluster is a Kinesis shard.
    - The parallel to a Kafka topic is a Kinesis stream. The parallel to a Kafka partition is a Kinesis shard.
    - The parallel to a Kafka cluster is a Kinesis stream. The parallel to a Kafka topic is a Kinesis shard.

9. True or False: Once a consumer reads a message from a Kafka topic, the message is deleted immediately.
    - True
    - False