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1. Tabular data that is represented by rows and columns in a database is referred to as? 1 / 1 point

- ○ Semi-structured data
- ◉ Structured data
- ○ Unstructured data

Correct
Structured data is typically tabular data that is represented by rows and columns in a database.

2. True or False? 1 / 1 point

A key-value store is similar to a relational table except that each row can have any number of columns.

- ◉ True
- ○ False

Correct
A key-value store is similar to a relational table, except that each row can have any number of columns.

3. Unstructured Data can be made up of which of the following? 1 / 1 point

Select all options that apply.

- ☐ Tables
- ☑ Binary data

Correct
Not all data is structured or even semi-structured. For example, audio and video files, and binary data files might not have a specific structure. They're referred to as unstructured data.

- ☑ Images

Correct
Not all data is structured or even semi-structured. For example, audio and video files, and binary data files might not have a specific structure. They're referred to as unstructured data.

- ☑ Video files

Correct
Not all data is structured or even semi-structured. For example, audio and video files, and binary data files might not have a specific structure. They're referred to as unstructured data.

4. Structured data is typically stored in which of the following? 1 / 1 point

- ○ Azure Cosmos DB
- ○ Azure Blob storage
- ◉ SQL Server or Azure SQL Database

Correct
Structured data is typically stored in a relational database such as SQL Server or Azure SQL Database.

5. True or False? 1 / 1 point

The process of splitting data into a large number of narrow, well-defined tables with references from one table to another is referred to as normalization?

- ◉ True
- ○ False

Correct
The result of the normalization process is that your data is split into a large number of narrow, well-defined tables (a narrow table is a table with few columns), with references from one table to another.

6. A transaction is defined as a sequence of operations that are atomic and the transactional database must adhere to the ACID properties. In this context, what does ACID stands for? 1 / 1 point

Select all options that apply.

- [x] Durability

Correct
Atomicity guarantees that each transaction is treated as a single unit, which either succeeds completely, or fails completely.

Consistency ensures that a transaction can only take the data in the database from one valid state to another.

Isolation ensures that concurrent execution of transactions leaves the database in the same state that would have been obtained if the transactions were executed sequentially.

Durability guarantees that once a transaction has been committed, it will remain committed even if there's a system failure such as a power outage or crash.

- [ ] Autonomous
- [ ] Independence
- [x] Consistency

Correct
Atomicity guarantees that each transaction is treated as a single unit, which either succeeds completely, or fails completely.

Consistency ensures that a transaction can only take the data in the database from one valid state to another.

Isolation ensures that concurrent execution of transactions leaves the database in the same state that would have been obtained if the transactions were executed sequentially.

Durability guarantees that once a transaction has been committed, it will remain committed even if there's a system failure such as a power outage or crash.

- [x] Atomicity

Correct
Atomicity guarantees that each transaction is treated as a single unit, which either succeeds completely or fails completely.

Consistency ensures that a transaction can only take the data in the database from one valid state to another.

Isolation ensures that concurrent execution of transactions leaves the database in the same state that would have been obtained if the transactions were executed sequentially.

Durability guarantees that once a transaction has been committed, it will remain committed even if there's a system failure such as a power outage or crash.

- [ ] Domain
- [x] Isolation

Correct
Atomicity guarantees that each transaction is treated as a single unit, which either succeeds completely or fails completely.

Consistency ensures that a transaction can only take the data in the database from one valid state to another.

Isolation ensures that concurrent execution of transactions leaves the database in the same state that would have been obtained if the transactions were executed sequentially.

Durability guarantees that once a transaction has been committed, it will remain committed even if there's a system failure such as a power outage or crash.

- [ ] Concurrency

7. Which of the following are advantages of Batch Processing? 1 / 1 point

Select all options that apply.

- [x] Large volumes of data can be processed at a convenient time.

Correct
Advantages of batch processing include: Large volumes of data can be processed at a convenient time. It can be scheduled to run at a time when computers or systems might otherwise be idle, such as overnight, or during off-peak hours.

- [x] It can be scheduled to run at a time when computers or systems might otherwise be idle.

Correct
Advantages of batch processing include: Large volumes of data can be processed at a convenient time. It can be scheduled to run at a time when computers or systems might otherwise be idle, such as overnight, or during off-peak hours.

- [ ] It allows for the analysis of data in real-time,

8. True or False? **1 / 1 point**

Batch processing is suitable for handling large datasets efficiently while Stream processing is intended for individual records or micro-batches consisting of few records.

- (•) True
- ( ) False

Correct
Batch processing is suitable for handling large datasets efficiently. Stream processing is intended for individual records or micro-batches consisting of few records.

9. Which of the following is an example of a streaming dataset? **0 / 1 point**

- (•) Sales data for the past month.
- ( ) Data from sensors and devices.
- ( ) List of employees working for a company.

Incorrect
Historical Data would generally be input through individual transactions or as part of a Batch process.