

ACID Properties

Set up

Complete the database and App Setup activities.

Note the App task is optional but may give you some ideas for your IA.

Video Task

Watch the video and complete the questions/tasks:

1. What does ACID stand for?

A	
C	
I	
D	

2. Which ACID property(ies) do **constraints** help to guarantee? Explain your answer.

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3. In terms of ensuring a reliable and trustworthy database, describe the property of **atomicity**.

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4. If any part of a transaction results in an error, what will the database do to ensure **consistency** and **atomicity**?

5. If all aspects of a transaction are error free, what action will the database take?

6. Research Question:

SQL is divided into subsets of commands. These subsets have their own names, such as:

SUBSET	PURPOSE
Data Definition Language (DDL)	Defines database structures
Data Manipulation Language (DML)	Manipulates Data
Transaction Control Language (TCL)	Manages transactions

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For each of the following SQL command terms, determine which subset it belongs to:

Term	DDL / DML / TCL
BEGIN TRANSACTION	
COMMIT	
ROLLBACK	
CREATE	
ALTER	
INSERT	
UPDATE	
DELETE	

**take a little time to consider the answers. Can you see why they are so?*

7. Pessimistic locking is a **concurrency control strategy** used to help guarantee the ACID property of isolation by preventing *multiple transactions from simultaneously modifying the same data*.

Is there such a thing as optimistic locking? How does it differ from pessimistic locking?

8. Which type of SCHEMA has the least amount of detail but is essential in helping database designers agree on the fundamental design of a database before adding more detail?

9. State one difference between logical schema and physical schema:

APP TASK - *Optional but highly recommended*

Watch the video for the App Task and see if you can complete the challenges.