

Spring 2022 courses

db Test 1

Questions from Quiz 1-3

- **What is GitHub?**
- **How does the MooCall sensor operate?** / Add Note: MooCall is a database application that we discussed in class. Its purpose is to notify farmers when a cow is likely to calve.
- **Which data items should be stored in the database?**
- **What is not part of the 3V definition of Big Data?** / exchange TRUE and FALSE answers
- **What are the properties of SQL** / change to "what are the database language properties of SQL"

Feedback: To remember (not as acronyms but as language abilities): DDL - e.g. CREATE TABLE, DML - e.g. INSERT INTO, DQL - e.g. SELECT, DCL - e.g. GRANT (not in SQLite). The others are made up terms.

- **Match database architecture layer and example application**
- **Which information is NOT stored in the database dictionary?**

Feedback: The database dictionary is only for meta data, usually in the form of tables that themselves contain administrative information - e.g. access rights for database files. The dictionary is not an actual "dictionary" of words or terms, it does not contain technical terms, or glossary definitions. It can be inspected and monitored but it is primarily for the internal purpose of the RDBMS.

- **Which of these are measures employed by data centers to "go green"?**
- **Greater abstraction means less control** / Change to "Less complexity means more control" - Answer is still TRUE
- **The security measures to protect data centers from unauthorized access are severe because servers are expensive**

Entering sqlite3 at the prompt opens SQLite to a transient database

TRUE

Feedback: You can test this by starting SQLite without loading a .db file, creating a table, and leaving the program. There are actually other ways of storing tables outside of SQLite (e.g. with .dump).

Which of these are the database language properties of SQLite?

TRUE:

- DDL (Data Definition)
- DML (Data Manipulation)
- DQL (Data Query)

FALSE:

- DCL (Data Control)

Feedback: SQLite has no user management, and no "control" to speak of, because it has a totally different architecture (no client-server) and no concurrency. For large, industry-strength DBMS like MySQL or PostgreSQL, DCL relates to user management commands like GRANT (rights).

Match pros and cons of SQLite

PROS	CONS
Very lightweight	No concurrency
Zero configuration	No user management
No library dependencies	Security - no data access control
Highly portable	Limited data types

Feedback: see [Introduction to SQLite \(mindmap\)](#). This mindmap does not give an explanation (or even a source) of these properties, just a listing.

Match cloud service and IT aspect served by it

IaaS	PaaS	SaaS
Storage	Operating System	Applications
Servers	Middleware	Application data
System administrators	Developers	End customers

Order the three cloud architectures according to decreasing control

Tip: more "control" means greater ability of the organization buying the cloud service from a provider, to control the IT

- 1. SaaS (Software as a Service)
- 2. PaaS (Platform as a Service)
- 3. IaaS (Infrastructure as a Service)

Use case diagrams (in UML) are used to describe systems

TRUE

The Internet is the World-Wide Web

FALSE

In research communication, "limitations" means "bias"

Tip: the disclaimer in the last DataCamp chapter on "Cloud deployment" was an example of this type of communication

TRUE

What are "meta data"?

TRUE:

- Data about data, like database access information

FALSE:

- Data definitions, like table names
- Data design issues
- Data queries

Database virtualization means splitting servers up across different geographical locations

TRUE

Author: Marcus Birkenkrahe

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