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1. Which of the following are examples of digital data? Check all that apply. **1 / 1 point**

- [ ] A song played live by an orchestra
- [ ] A printed schedule of the agenda for a full-day business meeting
- [x] A recording on a smartphone of a song played live by a solo guitarist

Correct
Correct. Smartphone recordings are stored in a digital format and can be considered digital data.

- [x] A PDF with biographies of the presenters at a full-day business meeting

Correct
Correct. The PDF is in a digital format and can be considered digital data.

- [ ] A cassette tape recording of a song played live by an orchestra (Hint: You may need to use the link and read the description of how a cassette stores data.)
- [x] A downloaded recording of a song played in a studio by a solo guitarist

Correct
Correct. Even if the original recording was made using an analog recorder, the fact that it can be downloaded means it must be stored in a digital format and can be considered digital data.

2. Which of the following are benefits of organizing data? Check all that apply. **1 / 1 point**

- [ ] Choosing a random piece of data
- [ ] Deleting all the data
- [ ] Copying the entire data contents to another storage area
- [x] Faster counting of records that fits a particular category

Correct
Correct. If you can group data by types, then it becomes a simple matter to count how many records of each type exists in the data.

- [x] Easier lookups for particular information within the data

Correct
Correct. Rather than needing to check each piece of information to see if it's one you want, organization could allow you to skip large portions of the data and more quickly locate what you want.

3. Why is the DML (Data Manipulation Language) category needed in a good database system? **1 / 1 point**

- ( ) Collecting data
- (•) Keeping the current values in a database system up to date
- ( ) Displaying data
- ( ) Organizing places for different types of data

Correct
Correct. The DML category provides a means to store and update data.

4. Which list of SQL statements below are DQL (Data Query Language) or Data Retrieval statements? **1 / 1 point**

- ( ) GRANT, REVOKE
- ( ) INSERT, UPDATE, DELETE
- (•) SELECT
- ( ) CREATE, ALTER, DROP

Correct
Correct. Note that some writers include **SELECT** with the DML category of statements, but we prefer the emphasis of giving **SELECT** its own category.

5. Which list of SQL statements below are DDL (Data Definition Language) statements? **1 / 1 point**

- (●) CREATE, ALTER, DROP
- ( ) SELECT
- ( ) GRANT, REVOKE
- ( ) INSERT, UPDATE, DELETE

Correct
Correct. These statements define databases and tables.

6. Why have relational databases and SQL been so successful for the last 35 years or more? Choose *two*. **1 / 1 point**

- [x] SQL—so closely tied to relational databases—is easy to learn and use, and so we have had an explosion of analysts, programmers and application tools that can use SQL.

Correct
Correct. SQL is powerful but simple.

- [ ] SQL is isolated from other languages for greater protection from hackers and other privacy threats
- [x] The mathematical rigor that spawned the beginning of RDBMSs supplied a strong, robust foundation for many different database systems and applications.

Correct
Correct. E.F. Codd's concept allows access to data from many starting points, provide significant flexibility.

- [ ] The details of how SQL is implemented within a program is strongly tied to how the user will use SQL and evident in the user experience, providing a vast array of dialects that can be tailored to an industry's needs.

7. Which of the following applications would best be supported by an operational database? Check all that apply. **1 / 1 point**

- [ ] A government census, taken once every 10 years.
- [ ] Reports on rentals and movie ratings made by all customers of a movie rental business over the last five years.
- [x] A bicycle assembly plant, identifying assembly parts that need to be ordered to replenish supplies as bicycles are produced.

Correct
Correct. This is a classic operational DB problem, where the database's primary function is to maintain counts that are needed to support the ongoing process.

- [x] A school enrollment program, scheduling which students go in which sections of which classes.

Correct
Correct. This is an operational database problem, as its primary purpose is to keep track of the total scheduling activity itself. Analysis of some of the details of the schedule can be done, but this is not the primary use of the database needed here.

8. Which are true statements about how operational and analytic database systems are different? Check all that apply. **1 / 1 point**

- [ ] Operational databases tend to store more data than analytic databases do.
- [x] Operational databases are more likely to receive frequent lookup or search commands than analytic databases are.

Correct
Correct. Operational databases are typically used to track and report current status, requiring only a lookup or search command, rather than more complicated manipulations and filtering to find patterns, which is what analytic databases are typically used for.

- [x] Operational databases are more likely to receive frequent DML commands than analytic databases are.

Correct
Correct. Operational databases need the most current information, so DML commands will be issued to them frequently, often continuously and one record at a time. Analytic databases are more likely to receive bulk updates, far less frequently.

- [ ] Operational databases are more commonly used to discover how operations within a company can be improved based on past performances than analytic database are.