Data Management and Governance Practical

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1.

Advantages	Disadvantages
Performance improvement	Complex debugging and maintenance
Reusability	Database server load
security	Lack of server load
Centralized business logic	Portability issues
Reduced network traffic	Harder for large businesses

2.

(a) Stored Routine :

A stored routine is a reusable block of SQL stored in the database.
The term includes both stored procedures and functions.

(b) Trigger :

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3.

Business logic encapsulation means keeping important rules, validations, and processes inside the database, instead of writing them only in the application code.

This is usually done using:

- Stored Procedures

- Triggers

- Constraints

- Functions

4.

An active database is a DBMS that can automatically react to ECA model such as:

- Event: INSERT, UPDATE, DELETE

- Condition: A rule or validation

- Action: Code executed when the condition is true

5.

a) BEFORE Trigger vs AFTER Trigger

BEFORE Trigger

- Executes before the INSERT/UPDATE/DELETE operation.

- Used for validation, data correction, or enforcing rules.

- Can modify NEW values before they are inserted/updated.

- Can block the operation using SIGNAL.

- Ensures invalid data never enters the table.

AFTER Trigger

- Executes after the INSERT/UPDATE/DELETE operation.

- Used for logging, auditing, or cascading actions.

- Cannot modify NEW values because the change is already committed.

- Cannot block the main operation (too late).

- Ideal for operations that depend on the final saved data.

b) Provide a realistic example scenario where each type is appropriate.

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