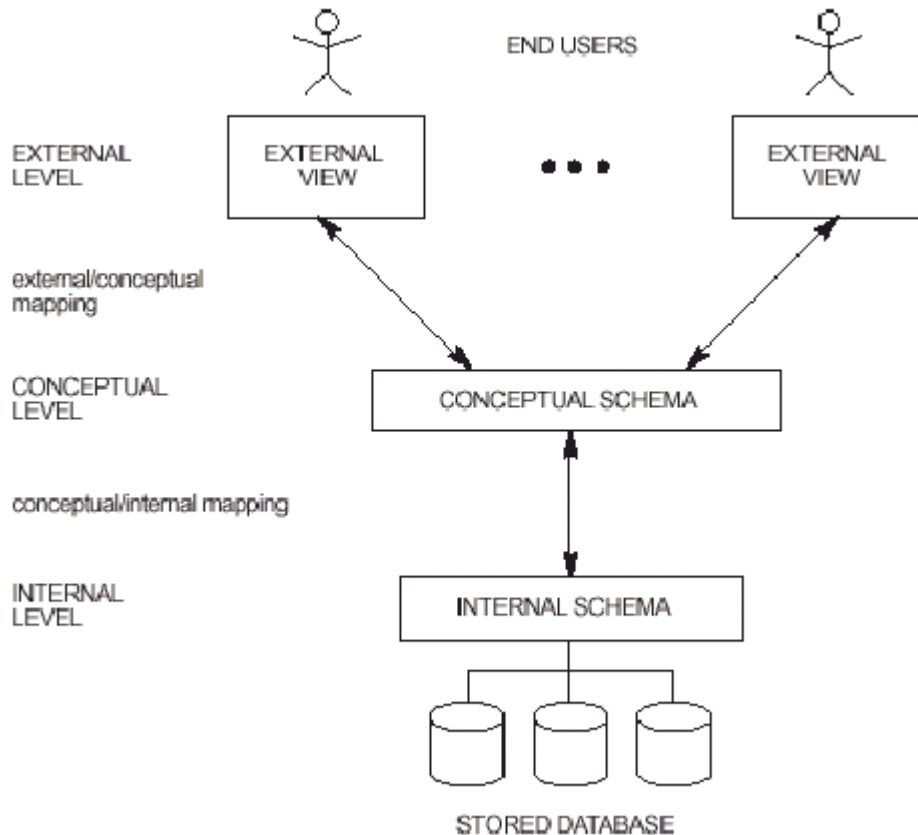


4. The Three Level Architecture

The three level architecture is used to explain how a VMS (Virtual Memory System) or a database works. Let's dive into each level and understand their roles.



External Level

The external level is the level that you, as a user, or your interfacing application has in terms of the view of the database. It's not just about the data going in, but also about the information coming out. Through SQL and features like views, we have control over what we can display to users or return to applications.

Conceptual Level

The conceptual level is what we do when we're creating our M model. This is where the universe of discourse is described. The description must be:

- ◆ Easily understood
- ◆ Complete
- ◆ Unambiguous

A data modelling language fulfills these needs.

Internal Level

The internal level and the actual physical data organisation is how the data is stored inside the database. In modern DBMS, we rarely have to be concerned about the actual way the file is stored. However, some DBMS give you the ability to choose different styles of saving the physical file storage to disc, such as:

- ◆ B-tree index
- ◆ Sequential hashing
- ◆ Sequential

In high-performance DBMS, where speed is crucial, you may choose particular table types or physical file storage types to give you the most efficient performance for that particular domain.

When we use SQL commands, specifically the Data Manipulation Language (DML) and the Data Definition Language (DDL), they will impact the internal and physical levels. For example, using an SQL command to add a column to a table would have an impact on the internal and physical level of the database.

Logical Layer

When we perceive a database in ADPMS (Advanced Database Management System), we're looking at the logical layer and thinking of it in our relational database form of tables with relationships between them.

See Also

[5. Conceptual Schema and Modelling](#)