

# DBMS Architecture

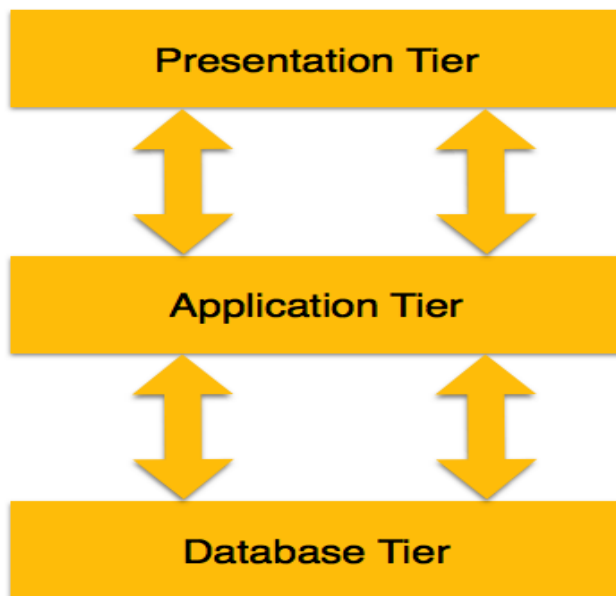
The design of a Database Management System highly depends on its architecture. It can be centralized or decentralized or hierarchical. DBMS architecture can be seen as single tier or multi tier. n-tier architecture divides the whole system into related but independent n modules, which can be independently modified, altered, changed or replaced.

In 1-tier architecture, DBMS is the only entity where user directly sits on DBMS and uses it. Any changes done here will directly be done on DBMS itself. It does not provide handy tools for end users and preferably database designer and programmers use single tier architecture.

If the architecture of DBMS is 2-tier then must have some application, which uses the DBMS. Programmers use 2-tier architecture where they access DBMS by means of application. Here application tier is entirely independent of database in term of operation, design and programming.

3-tier architecture

Most widely used architecture is 3-tier architecture. 3-tier architecture separates it tier from each other on basis of users. It is described as follows:



*[Image: 3-tier DBMS architecture]*

- **Database (Data) Tier:** At this tier, only database resides. Database along with its query processing languages sits in layer-3 of 3-tier architecture. It also contains all relations and their constraints.
- **Application (Middle) Tier:** At this tier the application server and program, which access database, resides. For a user this application tier works as abstracted view of database. Users are unaware of any existence of database beyond application. For database-tier, application tier is the user of it. Database tier is not aware of any other user beyond application tier. This tier works as mediator between the two.
- **User (Presentation) Tier:** An end user sits on this tier. From a users aspect this tier is everything. He/she doesn't know about any existence or form of database beyond this layer. At this layer multiple views of database can be provided by the application. All views are generated by applications, which resides in application tier.

Multiple tier database architecture is highly modifiable as almost all its components are independent and can be changed independently.

Source:

[http://www.tutorialspoint.com/dbms/dbms\\_architecture.htm](http://www.tutorialspoint.com/dbms/dbms_architecture.htm)