CIA triade

Confidentiality as it relates to database systems are measures undertaken to ensure confidentiality and privacy. They are designed to prevent sensitive information from reaching the wrong people, while making sure that the right people can in fact get it. The access must be restricted to those authorized to view the data in question thus ensure there are no vulnerabilities. Also it refers how data is categorized according to the amount and type of damage that could be done should it fall into unintended hands. More or less stringent measures can then be implemented according to those categories ensure there is no breach in security.

Integrity as it relates to database systems involves maintaining the consistency, accuracy, and trustworthiness of data over its entire life cycle. The data must not be changed in transit, and steps must be taken to ensure that data cannot be altered by unauthorized people. These measures include file permissions and user [access controls](http://searchsecurity.techtarget.com/definition/access-control).

Availability as it relates to database systems is best ensured by rigorously maintaining all [hardware](http://searchnetworking.techtarget.com/definition/hardware), performing hardware repairs immediately when needed and maintaining a correctly functioning operating system environment that is free of software conflicts. It’s also important to keep current with all necessary system [upgrades](http://searchmobilecomputing.techtarget.com/definition/upgrade).  Providing adequate communication [bandwidth](http://searchenterprisewan.techtarget.com/definition/bandwidth) and preventing the occurrence of privileged access are equally important.