

## **When might it be appropriate to use a flat file database design rather than a relational one?**

Flat files typically text files that have all word processing and structure markup removed. A flat file features a table with a single record per line. The different columns in a record use a tab or comma to delimit the fields. The flat file database does not have multiple tables, unlike in a relational database. The information contained in flat files does not have associated paths or folders.

All the records are stored in one place, and the database can be set up with a number of standard office applications. The database is easy to understand, and it is easy to sort the records. Records can also be viewed or extracted with simple criteria.

Flat file databases store data in a single table structure, where a relational database uses multiple table structures. In a relational database, it's possible to cross-reference records between tables. Tables in both types of databases organize the records in rows, and each column contains a single piece of data in the record. Relational databases use indexes to find records quickly based on search criteria.

When you compose a sentence that describes the data you are storing, does a single noun describe the data? If so, then a flat file database might be appropriate. If your sentence describes two or more nouns, where they relate to each other, you should probably use a relational database.

It's largely a decision based on both the data itself and the needs of the system that is producing and/or consuming the data. It's not that there's a single rule that drives this. If the data itself is unstructured, you'd be better off with an unstructured mechanism for storing it. If the volume of data collection is high enough, unstructured storage can be preferred for initial data collection.

These days mostly flat files used for import / export files and short lists (like playlists) and configuration. With advent of NoSQL database and relational databases with JSON support, even unstructured data is being stored in a database. However, you do need at least a file with configuration data to tell you how to access the database.

A flat file is really only good for datasets that are small or that can be read and written sequentially if not small.