# Database Denormalization

Database normalization is the process of constructing a database with data organized in a specific pattern that allows for flexibility and robustness by eliminating redundancies in the data as well as providing added protection for the data in the database because of the format. The format includes creating tables and establishing relationships within the database.

Database denormalization is an optimization technique that is applied to a database by including redundant data to one or more tables. A benefit of denormalization is that it can help to avoid costly join operations in relational databases. The process of denormalization is done after normalization has been established.

Advantages of Denormalization:

1. Denormalization allows for simpler queries and joins.
2. Denormalization allows for faster read/retrieval times of data.
3. Denormalization avoids some possible bugs brought on by large query searches.

Disadvantages of Denormalization:

1. Denormalizaton can cause slower write times.
2. Denormalization causes more database complexity (redundancy).
3. Denormalization potentially introduces data inconsistency.
4. Denormalization can require more storage (RAM)