Edward Lam

What's denormalization? How does it work?

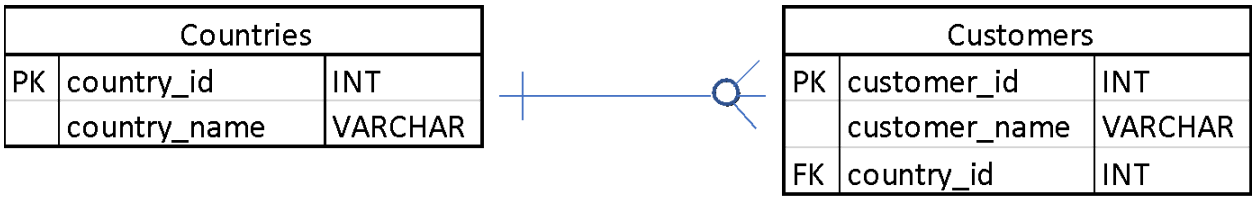
Denormalization is a technique used on a previously normalized database, by adding the duplicate data to one or more tables, which can avoid costly joins in a relational database, speed up read oriented data retrieval performance in a relational database.

Advantage	Disadvantage
Minimizing the need for joins,number of tables and foreign keys in relation	Data might be inconsistent
Simpler queries	Enhanced Complexity in different perspective except implementation
Faster reading performance, thanks to less joins	Slower update performance

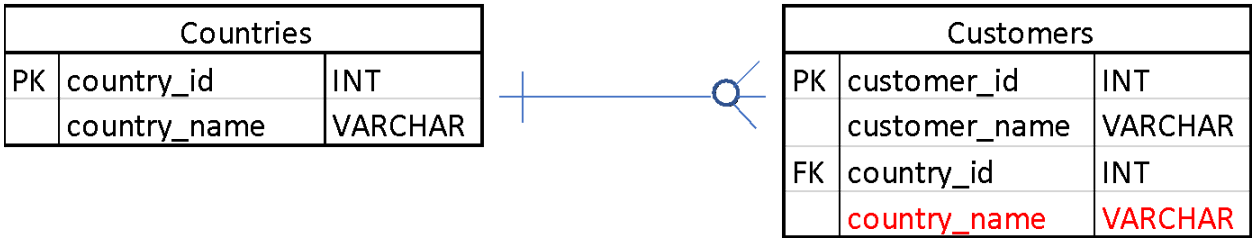
Let's take an example:

There are two tables in the database: countries and customers. One of the company's needs is to research customers and countries from the point of view of sales effectiveness. Therefore joins are regularly performed between the tables: customers and countries. To limit the frequent joining of these two tables, an additional column could be added to the customer table – the country name.

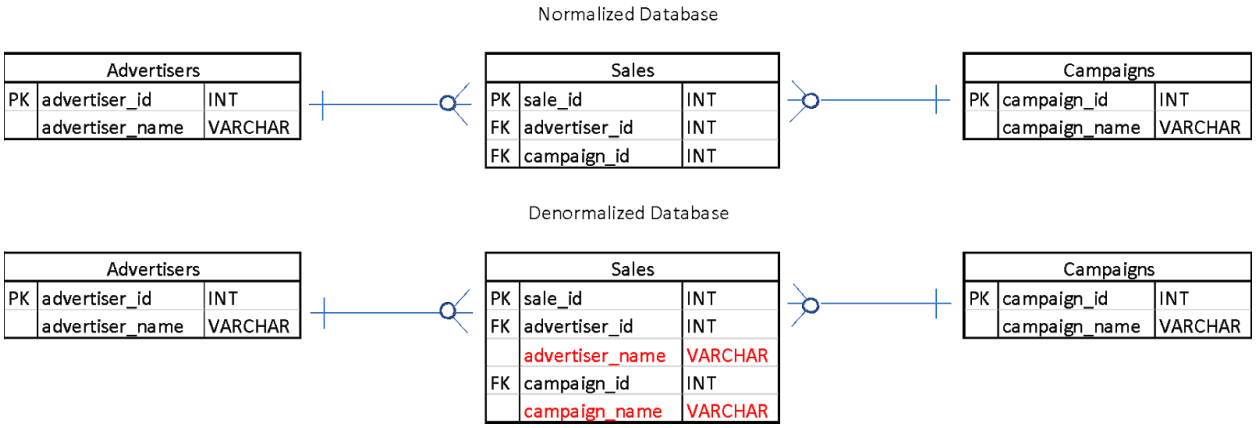
Normalized Database



Denormalized Database



Let’s assume that there is a frequent need to extract data from multiple tables. With proper definition of business needs, it is possible to create a table that will reduce the processing size and time of regular joins.



Suppose a business wants to regularly extract sales details data such as campaigns or advertisers with full names. For this purpose it is possible to create a table that will contain all the necessary data in the sales table. Businesses can retrieve the necessary data in such table without the need to join multiple tables on a regular basis.

Reference:
https://dsstream.com/what-is-database-denormalization/
https://www.xenonstack.com/insights/data-denormalization#:~:text=In%20computing%2C%20denormalization%20is%20the,data%20or%20by%20grouping%20it.