

Database Management System was the first class we took to learn about database development.

In this class we revisited the basic concepts of database as well as learnt how to create relational databases, write SQL statements and queries to extract information to create and analyze tables.

The above artifact is a snapshot of one of our normalization exercises. Database normalization is the process of restructuring a relational database in accordance with a sequence of normal forms.

Normalization is in order to reduce redundancy of the data and also to improve data integrity.

Normalization also involves organizing the columns or attributes and tables or relations of a database to ensure that their dependencies are properly enforced by database integrity

constraints. The way to do proper normalization is done by applying formal rules by a process of creating new database design or by improving and existing database design.

In this class, we spent half of the semester in normalization, because it is very important to know how to normalize a database and make the database efficient. I personally took a while to

understand and be able to normalize. There are 3 steps in normalization: we first normalize into

the First Normal Form (1NF), then the Second Normal Form (2NF) and then the Third Normal Form (3NF). The first normal form can have columns in a table that can not hold more than one

values. To get a table to be in second normal form, it must first be in first normal form and the non-prime columns can not be dependent on the proper subset of any candidate key of the table.

A non-prime column or attribute is an attribute that is not a part of any candidate key. Finally, in

the third step is built upon the first and second normal forms where all the column reference in referenced data which are not dependent on the primary key are removed.

If we do not normalize a database we come across three types of anomalies, the insertion, update and delete anomaly. An update anomaly is a data inconsistency that results from data redundancy and a partial update. An insertion anomaly occurs when certain attributes cannot be inserted into

the database without the presence of other attributes. A deletion anomaly exists when certain attributes are lost because of the deletion of other attributes. In order to have an efficient and effective database, we should know how to properly normalize it. Therefore, I chose this artifact from this class instead of the ones that involved writing SQL statements and queries.

After we were able to normalize the database, we then wrote SQL queries in Access. It was quick and easy to learn and work with SQL statements and this class helped a lot in making it easier for us for the next database class. I think this normalization assignment was one of my best works in class. I struggled with a lot of normalization assignments and eventually after a lot of practice, I was able to do it correctly in the first try. The knowledge of normalization helped me with relational databases in the long run and made me more interested in working with databases.