Vishal Maru

Dr. Bukralia

IT 340: Extra-Credit Assignment

Building Databases: First Steps

April 15, 2018

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Data is something that changes its meaning depending on who is looking at it. An end user, programmer, or designer would view the same kind of data in a very dissimilar way because they have different perspective on what their goal is when it comes to using the data. This dissimilarity in views can give birth to a database design which can lead to failures in an organization’s goals. Which means the data is not efficient anymore and the end-user needs are obviously not met. The only solution for this problem is a data model. Data modeling unifies the views of database designers, programmers, and end-users. Proper communication is made and the complexities are decreased by bringing in the picture, more easily understood abstractions which define entities, attributes, and relationships. A very commonly used example to describe a data model is that it is like a blueprint for building a house. Data model is a communication tool that will give an overall view of the database. The most important thing that it does is that it organizes data for various users in a way where everyone is satisfied with the result and it does not negatively affect someone else’s interaction or project with the same database. It also is an abstraction as already mentioned for the creation of a good database.

When database designers think about defining the entities, relationships, and attributes that will be used in future to build a data model, gaining a thorough understanding about the nature of the data that is present in an organization and how it is used is the best place to start. But the data itself does tell us much about itself. So, to make the data meaningful, it should reflect appropriately defined business rules. All the abstraction and organization of data can be done in the most efficient way which would benefit the end-user and the organization only by considering and implementing the business rules. Basically, a business rule is a brief, precise, and unambiguous description of a policy, procedure, or principle. Business rules should describe main and distinguishing characteristics of the data. To create and enforce actions within that organization, business rules must be derived from a detailed description of an organization’s operations. Any operation that is done in an organization can be turned into a business rule and implemented to manipulate data in the database in however way required. One most important things while making a business rule is that it should be very easy to understand by everyone in the organization. Which means that everyone can a single and unified view of the rules.

To bring a unique and unified view when I am trying to translate business rules into data model components I read and understand the business rules thoroughly. Which give me the understanding of how I want to use my data, which in turn tells me how and where I need to store it. I create entities based on my requirements and put attributes in them based on how want the entity to interact with other entities. After I have made entities, I create relationships between them, again using the business rules. Once the relationship is done I decide what keys are going to be of what type and if I need the key to be in the entity in the first place. So, basically, I start by looking at and understanding the business rules. Then I create and define, entities, the attributes they would contain, and the relationships each entity would have with the other entities.

Conclusion here is that there are many different perspectives in an organization when it comes to interacting with data, and so a basic and unique view and method of intermingling with data should be created. Which is possible using data models. Data modeling is done using the business rules which can be obtained in many ways from an organization. Business rules are a very essential part of data modeling and are the first step that I use and everyone should too when it comes to building a database.