Week6 Summary

General idea of this paper:

The author generally illustrated his thoughts about blueprint the future data banks. It should be protected from having to know how the data is organized in the machine. Activities of users of terminals and most application programs should remain unaffected when the internal representation of data is changed. To solve such problem, the author put forward a model based on n-ary relations and certain operations on relations are discussed to elaborate this system. This paper is the start point of today's widely-used relational database and it gave us intuition about how the idea of relational database was developed.

Details about the paper:

In the first part, the author compares the relational model and normal form and told us about the features of them. For relational models, some advantages of are mentioned, including it forms a sound basis for treating derivability, redundancy and consistency of relations. However, it is also accompanied with some disadvantages like limitations of present formatted data. For the data systems at that time, the variety of data representation characteristics can be changed without logically impairing some application programs. The author believed that the ordering dependence, indexing dependence and access path dependence need to be removed.

Then, the author brought forward his relational view of the data to solve the previous issues. The author gave examples to show how to simplify the database by implementing a relational database and how to transform the interrelationships of the non-simple domains. The author stated the advantages of the relational data bank in several aspects and gave examples of how the internal logic works.

In the last part, the author discussed about the redundancy and consistency. For operations, in order to make the database more powerful, the author talked about basic operations of relational data bank including permutation, projection, join, composition.

For redundancy, the author talked about it in two aspects including strong and weak redundancy. For consistency, we check whether the values stored in the data bank satisfies the constraints from time to time.

My Personal Thoughts:

This paper clearly explained the basic conceptions relational databases and gave us an overview of the advantages and simplicity of relational database. The people afterwards just use these concepts to create relational databases like MySQL and SQL SERVER. The relational databases have its own advantages and it is playing a dominate role in the backend development across these years. Nevertheless, NoSQL becoming increasing hot these days since more complicated data structures need to be processed. This drawback in relational database like limited of data formats is obvious. We need to learn theories about different types of databases to have a better understanding of them in order to realize the tradeoff between them.