Relational Database Management Systems

Today we will be talking about data and what a Relational Database Management System is.

Data is everywhere. Most of the world runs on relational databases and data is used all around us. For example if you go to Amazon.com and search their vast amounts of data and products; you are querying or asking questions of their database to filter it down to what you are looking for. The church has huge stores of data that it uses as well for example family history, church organizations, etc. The financial world relies of billions of transactions that are stored in databases, banks, companies, clients, customer, vendors, orders from all sorts of retail transactions all rely on databases. Companies can also make decisions regarding their next moves by querying this data, seeing trends, patterns, and then plan accordingly. We are surrounded by data and it is growing every day. We need people who can organize this data in a useful way so it can be used productively.

Databases are more then just stores of data. They are highly organized files that allow for data to be input, organized and retrieved efficiently. The data is placed into tables where it can be sorted and filtered in flexible ways. That's what we will be doing in this class, we will learn how, to not only search and manipulate these tables of data, but learn how to create and organize them so they are super efficient and work properly so the right data can be retrieved to become useful information.

Relational Database Management Systems. So how do we begin to create these files? We need a RDBMS or Relational Database Management Systems. We can create, and manipulate our database as well as control the hardware that stores the data with these systems. The RDBMS can let you:

- Create the Structure and the Rules for the data
- Store, Manipulate, and Sort Data
- Create users with different levels of access to the data or giving them roles
- Create backups of data and secure the data

Some of the most popular database management systems include MySQL which is the most common, followed by Microsoft's SQL Server, then Oracle and Microsoft's Access could even be included here. There are many more, but those are some of the more common ones. There are also application tools such as phpMyAdmin and MySQL Workbench that are visual tools for database development. MySQL WorkBench is what we will be using in this course. In order for WorkBench to run you need a connection to a database server so MySQL Community Server provides this connection for us. And the MySQL Workbench is the graphical user interface for creating the databases.