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2020/01/21

Databases & Data Modeling

Assignment 02

**Database Constraints**

**Introduction**

Databases are a very useful in all sorts of fields of work. However, they must be designed in a way that is easily accessed and used. Abstraction is a principle that makes this process easier by making easier ways to do more complex processes. Other methods of making databases more user friendly are discussed below.

**Database Constraints**

Database constraints are important in order to keep your data consistent. The constraints prevent discrepancies in the formatting and type of data in your columns. Its is characteristic of a good database to look consistent. Some examples of constraints are primary keys, foreign keys and check constraints. All of these and more can be added to a column to keep the data consistent.

**Abstraction Layer**

An abstraction layer is a way of hiding the implementation details of a particular set of functionality. This is essentially allowing the user to complete tasks without fully understanding what is happening behind the scenes. By using abstraction more advanced developers can build tools for less advanced users to still complete tasks.

**ERD & Meta-Data Worksheets**

An entity relationship diagram (ERD) is a chart that shows the relationship between tables in a database. The purpose of an ERD to visualize the connection between tables. A meta-data worksheet shows the different constraints necessary when constructing a table. Each column can be given different constraints depending on its purpose in the table.

**Designing a Database**

When designing a database it is important to keep in mind the data that will eventually be entered into it. Typically the first step is to create an ERD to visualize the different tables and their relationships. Then, for each table create a meta-data worksheet and break down the constraints for each column. These charts will help when actually creating the database. Finally, write a SQL script to create the database, create the tables, and enter the correct constraints.

**Conclusion**

Database are vital in order to store and analyze data. In order to do so the data must be organized and styled in a way that is consistent and easy to follow. Looking at the bigger picture, it becomes clear how important style is.