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Intro to DB

Assignment 2

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An abstraction layer is essentially a stored code that allows a person to reference that code and run it very quickly and easily without needing to rewrite it all out. This can be done by creating a VIEW in SQL. Within that view, code can be written out to perform a specific search query, or can be referenced in a web application.

The purposes of an ERD (Entity Relationship Diagram) and a Metadata Worksheet is to properly visualize all the needs of a database. An ERD allows for an easy visual representation of data within a database. There are blocks to represent tables and then columns listed within those blocks to represent columns. Lines are drawn in between the tables to show relationships between them. And the Metadata worksheet allows for accurate labeling of constraints before working it into code. This allows for more organized approaches to setting constraints on tables. Both approaches are useful for the visualization process before jumping into code.

The steps involved with creating databases are as follows, preplanning, visualization, implementation, testing, and iteration. The first step is preplanning, in this step the needs of the database are listed out into tables and columns and grouped accordingly. Next would be to establish the constraints of all columns in the database, in order to make sure that data can’t be inserted if it doesn't match the needs of the individual column. This is also where the data schema is established so there are no issues down the line. Next up is visualization, this is where the tables are organized in a visual graph and relationships can be made between columns and tables as needed. From there is where the coding actually begins and with the ERD and metadata worksheet used as a reference; the tables are coded into the database with as much explicit detail as possible. Setting up all the constraints properly will allow for cleaner data manipulation down the line. Then testing the code to ensure it works properly under all circumstances. And finally iteration, nothing will be perfect the first time, so allowing for edits within the code through ALTER functions will allow for flexibility in the database as needed.