Robert Coords

Database Management

Professor Labouseur

Lab 2 Questions

2. A superkey is any set of columns in a table that, when combined, can uniquely identify any row in that table. The candidate key is the superkey with the smallest number of columns. The primary key is the candidate key chosen as the primary means of identifying unique rows within a table.
3. Data types are the types of data that are stored within a database (such as Strings, characters, reals, or integers). A table I created that shows the uses of data types within a database is the Marist Student Database Table. The fields within the table are named "CWID", "First Name", "Last Name", "Degree", "Major", and "Age". Data in the "CWID" field has a type of character. A CWID must have a length of 8 characters and the field is not nullable. Data in the "First Name" and "Last Name" columns both have a type of text and neither can be null. The "Age" field has a data type integer and cannot be null. The "Major" field has a data type of text of text and can be null. Finally, data in the "Degree" field has a data type of text and cannot be null.
4.
    a. The "first normal form" rule says that the table's columns must be organized in such a way that it is easiest to manipulate and retrieve the data stored within. An example of this can be seen in a table that lists the children of a specific individual. The correct way to organize this table would not be to list all the

children associated with an individual in one field and associating it with that individual's name. A better way would be to list each child in a separate row and associate each child's name with the name of the individual associated with them. This rule is important because it makes data retrieval and manipulation easier.

b. The "what, not where" rule states that data in a table cannot be found using its location in the table. Data can only be requested using by using a key. This rule is important because the location of specific rows in a table may change. An example of this relational rule can be seen when trying to find the name of the customer with cid c001 in the Customers table. To find the name of this customer, a user would ask for the customer with cid c001, instead of asking for the customer in the first row (where cid c001 is located in the screenshot of the CAP2 database).

c. The "all rows must be unique" rule says that each row in every table should have a primary key for accessing the data within that row. To distinguish the separate rows and allow the data in that row to be easily accessed, each key needs to be unique. An example of this rule can be seen in the "cid" field of the customer table of the CAP2 database. Every cid within the table is unique, allowing someone who executes a query on a specific cid within the table to only retrieve the information related to that cid. This rule is important because it allows for accurate data retrieval from a table within a database.