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9/10/17

Database Management Lab 2

2. Explain the distinctions among the terms primary key, candidate key, and superkey.

The primary key in a database is a special database table column designated to uniquely identify all table records. Its main features are to contain a unique value for each row of data and be unable to contain null values. A candidate key in a database is a column in a table that can uniquely identify any database record without referring to any other data. A primary key is a special type of candidate key, and there can be multiple candidate keys in a single table. A superkey is a combination of columns that uniquely identifies any row within a Relational Database Management System table. A candidate key is a closely related concept where the superkey is reduced to the minimum number of columns required to uniquely identify each row.

3. Write a short essay on data types. Select a topic for which you might create a table. Name the table and list its fields (columns). For each field, give its data type and whether or not it is nullable.

If I were to make a table that would rank all of my favorite shows, I would name the table "Jake's Favorite TV Shows." Its fields would be the ranking of the show, the name of the show, the year it was released, the amount of episodes, the length of each episode, and a short description of the show. For the fields of the ranking of the show, the year it was released, and the amount of episodes the data type would be an int, which is a number from 1 to 2,147,483,647. For the field of name of the show field, the length of each episode, and a short description of the show, the data type would be a string, which is a collection of characters and numbers. Other data types are float, which is a number with a decimal point, and a Boolean, which is either true or false. There are no nullable fields in my table.

4. Explain the following relational "rules" with examples and reasons why they are important. a. The "First normal form" rule b. The "access rows by content only" rule c. The "all rows must be unique" rule

The First normal form rule states that the data is in a database table that stores information in rows and columns where one or more columns, called the primary key, uniquely identify each row. In addition, each column contains atomic values without repeating groups of columns. This is important because it is an essential property of a relation in a relational database. It eliminates repeating groups in individual tables, creates a separate table for each set of related data, and identifies each set of related data with a primary key. The "access rows by content only" rule states that there are no order to the columns. Instead, the rows are only accessed as a result of their content. This is important because it disallows "pointers" to rows. Finally, the "all rows must be unique" rule states that two tables cannot be identical in all column values at once. This is important because it prevents duplicate data.