Delroy Mathieson

2. A key is defined in a data table and is used to access or sequence through data quickly. Keys can be singular or a combination of multiple fields for a database. There can many different key types however, the three major key types are primary, candidate and superkey. A primary key is a key in a relational database that is unique for all data within the database. A super key is a field or set of fields used, every row will be unique. A super key is a super set of a candidate key and is a combination of attributes that are each unique and can be used to identify a database. A candidate key is a minimum use of a super key and contains the fewest number columns, refined and gets what you know quickly and efficiently, also known as minimal super key. Candidate keys may only have one primary key but can contain many fields that can be used as a primary key.

3. Data types define the kind of value a column can hold. Values within a database need to have a data type or be classified as nullable. If I were creating a database for my rental service I would need to have an organized, efficient database. The title of my database would be the name of my service or the department I'm creating a database for. The columns would be named, ID, customer name, rental date, amount paid. The ID column would be a unique identifier for the customer, this data type needs to be an integer so the data cannot be nullable. The second column would be the customer name, it would give a description of every customer's name, this is another data field that cannot be nullable. The rental date would include the date and time that the customer would want to use my service. This data also cannot be nullable because a date and time needs to be chosen to make a reservation. The last and final column would be the amount

paid, this data column can be null because it does not need a data type. This database would help me have an organized database for my customers.

4. (a) The First normal form sets basic rules for organizing a database. 1NF places related data items within a table, define the data items required, ensure that there is no repeated data and one primary key. For instance, all the columns relating to a customer name would go into the Name table or all columns relating to their orders in the order table. This allows for every column in a table to be unique and with no duplicate data.

(b) The access rows by content only rule allows for data within a database to be retrieved based on the information in the columns. This allows only for content within the data to be searched.

(c) The All rows must be unique rule states that all rows must be unique, and is used to organize duplicate tables. This rule stops multiple tables from being replicated leaving an organized and singular database.