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- 2. A Superkey is any set of fields that uniquely identifies all of the data in the table. It can be one field, or it can be multiple fields. A Candidate Key, like a Superkey, also identifies all of the data in the table, but the difference is that it uses the minimal amount of fields. A Primary Key, like a Candidate key, is the minimal amount of fields to identify a table, but it is designated by the system admin as the main identifier of the table, and most Database Management Systems will not allow to make a change that will make it non-unique or null.
- 3. There are many different classifications of data. Blocks of text are referred to as strings, numbers, for another example, can be an integer, which is only whole numbers, or a double, which is rounded to two decimal places. There are many others, with their own nuances of how they quantify and represent data. If I was running a company and wanted to keep track of employee information, I could have a table called "Employee". It could have a primary key in which each employee is given a number, which would be an integer. Then, I would need the employee's names, which would be in a column of strings. I could record how much I'm paying them with a column titled "WageUSD" to show, using a double, how many dollars they are getting paid. None of these would be nullable, since the primary key can't be nulled, and employees can't not have a name or a wage (unless you are ok with violating labor laws).
- 4a. The first rule is First Normal Form, which means that columns need to be atomic, which means that each column is its own, indivisible data. This means that every column is as simple as it can be, which makes it easier to understand the data, since it's uncluttered
- b. The second rule is What, not Where. It means that if you are referring to a certain data within the table, you refer to the content of the data, and not where in the table it is located. This is because the data in the table is mutable, and its position can change. This ensures that you don't depend on what you're referring to being in a certain place, and new data can be entered without disturbing the existing data.
- c. The last rule is that All of the rows in the table must be unique. This means that no two rows should be identical. This is crucial, not only because you have duplicate data, which uses up unnecessary memory, but it also can lead to other problems. If you have to update the data and you aren't very careful about how you do it, you can have two things that used to be identical, but now conflict.