Guidelines for Normalizing the Online Food Ordering Database

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**Guidelines for Normalizing the Online Food Ordering Database**

Redundancy from a relation or group of relations is minimized through the process of normalization. Insertion, deletion, and update abnormalities could result from relational redundancy. Therefore, it helps to reduce relational redundancy. Redundancy in database tables is removed or reduced using normal forms.

**Transition Between First and Second Normalized Form**

A relation violates the first normal form if it has composite or multi-valued attributes, or it is in the first normal form if neither of these attributes is present. If all of the attributes in a relation are solitary valued attributes, the connection is said to be in first normal form. Avoid utilizing several fields in a single table to contain comparable data. To monitor client information that may come from two owned properties of the same client, a real estate database, for instance, would have fields for property1 and property2.

**Guidelines for the Second Normalized Form**

A relation must be in the first normal form and be free of any partial dependencies in order to be in the second normal form. If a relation has No Partial Dependency, which means that no non-prime attribute, an attribute that is not included in any candidate key, is reliant on any suitable subset of any candidate key in the table, then the relation is in 2NF.

Records in a table should only depend on the primary key. Consider the location of a property in a real estate transaction. Address data was necessary for the Property table, Contract, Escrow, Accounts, and Collections tables, which all store addresses. Store the Property address in a distinct Address table, such as the one below, rather than as a separate entry in each of these tables.

**Transition Into 3NF**

If a relation is both in second normal form and the third normal form, there is no transitive dependency for non-prime characteristics. A relation is said to be in 3NF if at least one of the following conditions is true. Records in the table shouldn't have values in them that aren't part of their corresponding keys. In general, consider putting a group of fields in a distinct table anytime their contents may be pertinent to more than one item in the table.

**Database Before Normalization**

**Diagram

Description automatically generated**

**Database After Normalization**

Diagram

Description automatically generated**Database Before Normalization**

**Diagram

Description automatically generatedDatabase After Normalization**

**References**

Rouse, M., &amp; Vaughan, J. (2019, September 11). What is database normalization? SearchDataManagement. Retrieved November 1, 2022, from <https://www.techtarget.com/searchdatamanagement/definition/normalization>

Chapple, M. (2022, February 23). The basics of database normalization. Lifewire. Retrieved November 1, 2022, from <https://www.lifewire.com/database-normalization-basics-1019735>