Midterm Sprint - Database

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Normalization:

Normalization is a process used to organize a database into structured tables while minimizing redundancy and dependency. Each table in the database adheres to the rules of the First Normal Form (1NF), Second Normal Form (2NF), and Third Normal Form (3NF).

Customers Tables:

This table adheres to the rules of the 3NF database structure. Firstly the table is in the 1NF because each cell contains a single value with no repeating data. With the 2NF since all non-key attributes depend entirely on the primary key, customer_id. Lastly, it meets the 3NF as there are transitive dependencies, meaning all non-key attributes only relate to the primary keys.

Movies Table:

This table also adheres to the rules of the 3NF database structure. Firstly the table is in the 1NF because each cell contains a single value with no repeating data. With the 2NF since all non-key attributes depend entirely on the primary key, movie_id. Lastly, it meets 3NF by ensuring that all non-key attributes, like genre and director, only rely on the primary key.

Rental Tables:

This table also adheres to the rules of the 3NF database structure. Firstly, it is in the 1NF because each cell contains a single value, with no repeating groups of data. It meets the 2NF because all of the non-key attributes, such as the rental date and return date, are fully dependent on the primary key, rental_id. Furthermore, the table is 3NF as all non-key attributes depend on the primary key.