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CS 425

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SQL Assignment 4

**Using SQL 1 and SQL 2 files:**

**1. Redesign the entities so that all relations are at least in 3rd normal form or BNF form.  Draw an ERD for the newly designed entities and in your own words explain the impact of normalization on performance (speed of locating data).**

Normalization affects resources like memory and CPU speed. When creating queries, the database must load everything into memory. Hence, JOIN statements can make queries grow at worst case O(N2). Normalization cuts this memory demand since you have smaller tables with common comparable keys, which takes more specialized joins or CONSTRAINTs. Since joins will take less memory, that means queries take less time to load, which make the database faster for more complex queries.

**2. If you noticed that your product related relations are heavily used in our on-line shopping cart and it is time to update the database/application to support 2 million queries/sec. Redesign the your relations so the above requirement is achieved.   In your own words (really your own not your friends) explain the impact of your new design.**

This design follows the benefits mentioned above. Additionally, it makes the data more succinct and user-friendly for reading which allows the user to select more in less time. This also allows for better development since multivalued columns no longer exist and are rarely used/returned in this instance – this prevents lossless or redundant data.