

**Class:** INFX563

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**Exercise:** Dimensional Design

For this dimensional design, I redesigned my original individual ERD for the diabetes system to contain a fact table and multiple dimension tables. I created a star schema to show the relationship between the fact table and the dimensions tables.

**Consider what fact and dimension tables you will need, along with any hierarchies.**

I created a fact table that contains multiple numerical measures, or “facts,” that occur for the combination of keys that define each record. The facts are Blood\_Sugar\_Count\_When\_Fasting, Blood\_Sugar\_Count\_After\_Eating, Weight\_Change, and Blood\_Pressure\_Level

As far as dimension tables, this new design contains six-dimension tables. A date dimension table to track historical data. A treatment dimension table that contains info regarding specific treatments. A nutrition dimension table to monitor blood sugar control and weight management under a diet. A physical training dimension table to watch blood sugar and weight gained or lost based on physical activities. A research dimension table to track patterns in a person with diabetes based on new drugs or insulins. A patient dimension table to report initial diabetic attributes.

The date dimension comprises multiple hierarchies’ attributes such as: year, day, month, and quarter.

The location entity contains multiple hierarchies’ attributes such as: city, state, county, and zip.

**What types of questions will you be able to answer with your new design?**

With the new design, the fact table answers through the numeric facts multiple observations that are associated by the treatment from a doctor, by the research done in this field, by the diet specific for diabetes, and by physical activities specific for diabetes when monitoring an individual who is managing his/her diabetes.

Also, the dimension tables contain descriptive information to make sense of their purposes quickly. For instance, the date dimension includes date or time specific attributes, so users can promptly ask or report on dates. Furthermore, the patient dimension table contains characteristics pertinent to a person with diabetes. Reports can be done based on whether the user was a juvenile when diagnosed, user’s ethnicity, user’s starting weight and average blood sugar.

**What are the advantages of this type of design?**

The benefits of the fact-dimension are that it is easily understood by not only technical users and business users, but also by anyone intended to use this system to manage his/her diabetes. Also, it allows for high-performance access as users will be able to get the quick results needed from the fact table.