**CSI 300: Project 2 – Inventory Database Design**

**Introduction**

You will design a three-part inventory database. The first part involves designing a database for vendors who supply parts to New England Bikes. The second part involves designing a parts database that holds data about the parts used to build the products that New England Bikes sells on its website. The third step in the process requires a product database to support the company’s sales on its website. The data for these three databases sits on Canvas in the same module where you found these instructions. You can use the data as a means to identifying the attributes you need to use and from there, identify the entities you need in each database. There are Excel spreadsheets with all of the data you will need for this project

What makes this a unique design process is the need to link all three of the databases. You need to design these databases so that from a query of the products database a query can return the parts that go into the product and the vendors who provide the parts.

**Decisions and Design**

These databases are not going to deal in pictures or video, only simple text input. At a minimum, it should allow the data input for part numbers, part descriptions, etc. Examining the data set provided will give you a good understanding of what you need to design for these databases. Along with the data, there are documents that explain the assumptions about the needs and functioning of each database. A key requirement of this project is that your design and implementation be:

- efficient

- normalized (in third normal form)

- follow best practices as described by Churcher

What does it mean for your models to be efficient? It means that they should work almost as well for a vendor with millions of parts as it does for a vendor that supplies only one part. In other words, you should create data models that could scale in the real world.

**Data Input and Implementation**

You should fill all three databases with the data provided. You will need sample queries to demonstrate that your databases are integrated and work. These queries should exemplify *every* feature about these databases. For example, you should have a sample SELECT statement that shows a vendor’s parts and the product the parts support. You should have some sample INSERT statements for a new product or new vendor, etc.

Please note that for the quantity values of any database, you are free to determine how much is already in stock. The stipulated maximum or minimum that must be on hand is not optional. The data does not include anything about prior prices for the parts database and the products database. Use your knowledge of SQL to create and insert data into the appropriate tables about prior prices.

You also should have a SQL query file that can recreate your database and its tables. Particular

attention should be paid to the CREATE TABLE statements. The constraints imposed on table

columns should be logical. Your query file should also fill your tables with sample data.

**Final Report**

You will need to hand in the following:

- A SQL query file that can recreate your database, its tables, and fill them with sample

Data

- Another SQL query file with sample SQL statements for each of the features that each

of your database supports and comments explaining each one

- A short report (about two pages) that explains how your database data for each model

works, which also includes a diagram (ERD) of your data model

**Grading Criteria**

**Database Designs (15 points)**

- Did you design your database/tables using the design principles we have

learned from the Churcher book? (ex. is there unnecessary repetition?)

- Are your tables in third normal form?

- Is your design efficient?

- Did you implement all of the features required by this document?

**SQL (5 points)**

- Did your SQL work? (Could I recreate your project - were there any errors?)

- Did you properly use SQL syntax?

- Was your SQL of a clean style? (comments, PEP-8, etc.)

- Did it meet the criteria laid out in this document? (Anything missing?)

Did you create all of the sample queries?)

**Report (5 points)**

- Did your report coherently explain your project?

- Does your report meet the requirements outlined in this document? (don’t

forget the diagram!)