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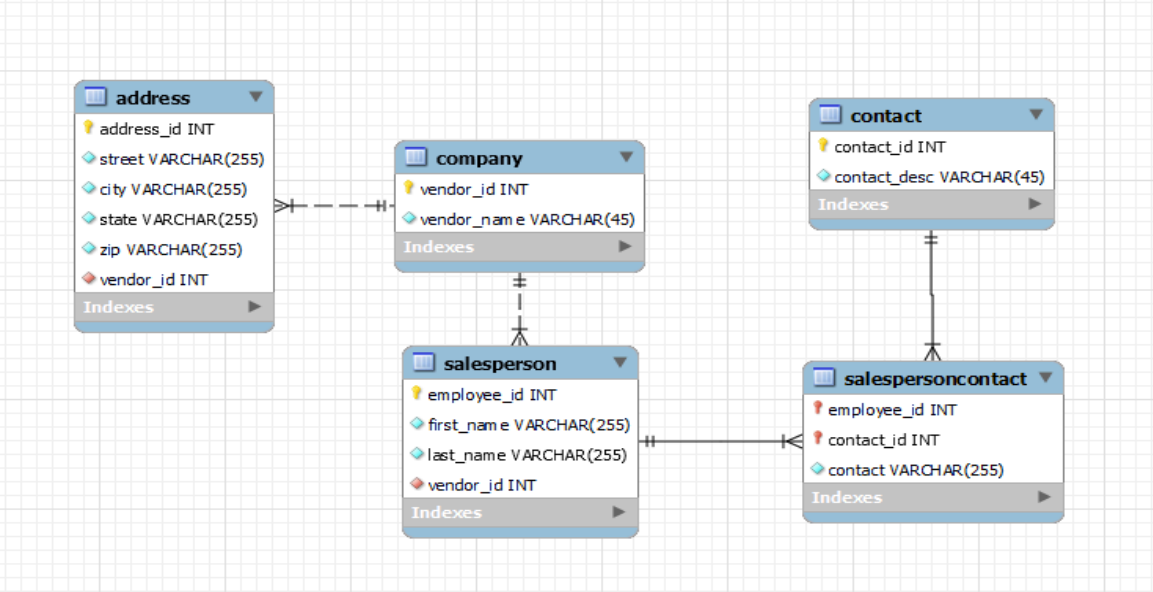
CSI-300: Database Management Systems
Due April 7th, 2024
Dr. Canovatchel

Products, Parts, and Vendors for Burlington Bikes

Project Overview

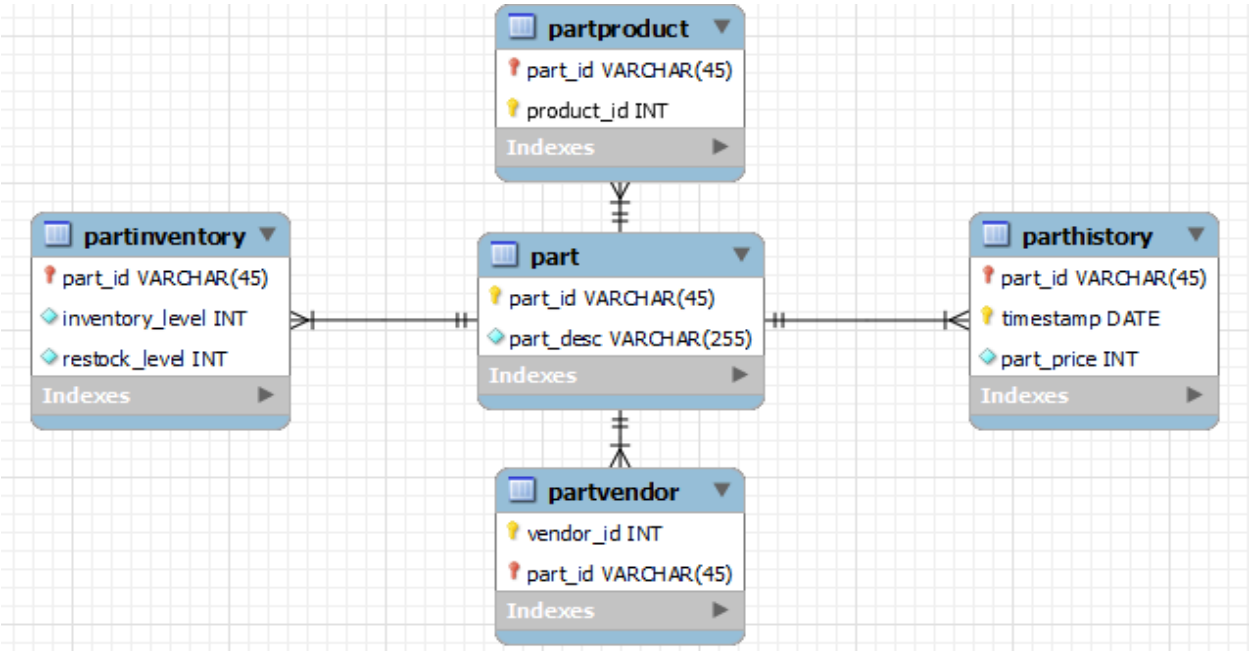
For this project, we were tasked with creating 3 databases for the parts, products, and vendors that go into making and selling bikes and bike parts. We then needed to link these databases through queries to get information out of them as we see fit. For example, being able to link parts to products and determine the profit margins (or lack thereof) on certain bikes.

Vendors



This database was rather straightforward in its design, by virtue of being mostly independent from the others. We have a table for the vendors identification (id and name) and connect it to a table for their address. We make these separate tables because one company could have multiple locations or share one with another. From there, we have salespersons from each company who need to be associated with a company as well as being given contact information. The linking to companies is simple, by simply giving them a vendor_id as a foreign key, but the contact information is slightly different. Each salesperson can have 2 contacts: a phone number and an email address -though both are not required. As such, we make an intermediary table with the actual contact text (~~~@gmail.com or xxx-xxx-xxxx) and link that to both the employee and a contact type/description.

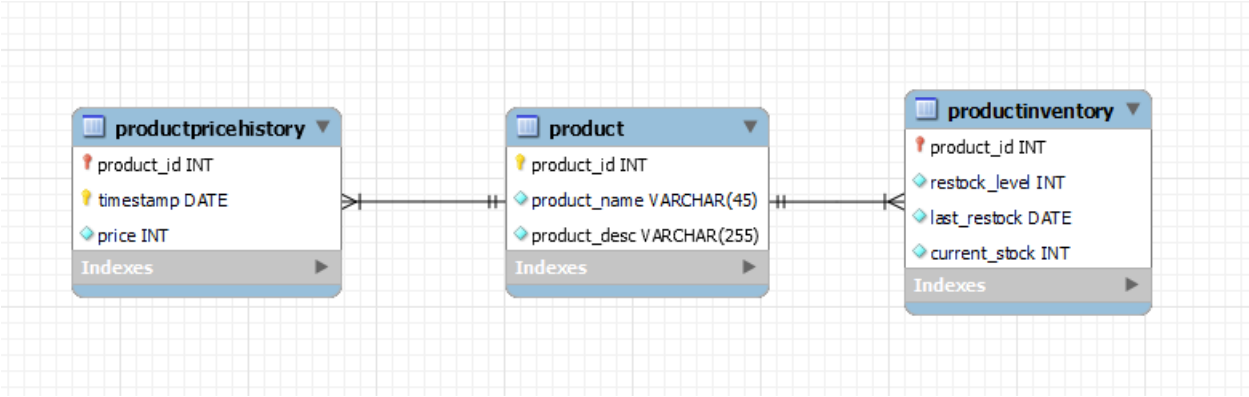
Parts



For our parts database, we have a table for parts identification (part: part_id, part_desc) that links to a history table for the price change to parts over time as well as an inventory of parts containing information about the inventory levels and restocking threshold.

Since the parts are what are connected to vendors and to products, we have another 2 tables that contain the respective vendor_ids and product_ids, giving us the ability to join the databases together.

Products



Finally, our most simple database, Products, simply holds tables similar to those in the parts database. We have a table for updates to product prices over time, as well as the inventory of any given product.

Given this structure, we can link to our parts (and by extension, our vendors) to receive information about what products are made from what parts, the salespeople to contact when restocking, or any other information we would need.