

Warehouse Management System

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PROBLEM

Effectively managing a database system is essential in a business's day-to-day processes and can quickly become large and complex. With the rise of online shopping, companies manage petabytes of data to keep up with the demand. Being able to organize and search through large quantities of data is extremely important in today's economy for businesses to continuously upkeep their inventory for their customers. In the case of Ukay Delivery, their company's application is over 10 years old and were in need of an efficient, modern application. Their program was unable to keep up with the millions of entities within their database and became computationally expensive to continue running.

CURRENT SYSTEM

Our current system is the first iteration and aims to improve the internal workings of Ukay Delivery's in-house application by optimizing the order process and functions. The current application allows users to input a row of data into a database from the application and display the updated changes in real time. Currently, only login information can be retrieved from the data to allow access for users into the warehouse database system. Pages can be dynamically changed with the corresponding table's information displayed as well as go back to the menu to view other tables, such as Shipments and Invoices. Invoices can be generated from quotes after it has been approved by an administrator user and the quote will automatically be deleted from the database.

REQUIREMENTS

The goal for the application we developed was to create a new program with modern languages to improve efficiency as well as implement utilities for receiving and shipping items from Ukay Delivery warehouse. Orders must be able to be marked as "Shipped" and let administrator users view more details about it in a "Detailed View" panel. Items that are being received can be added to the database by adding the product's information as a new object into one of the inventory tables. These are the main functions that Ukay Delivery uses when processing shipments in their warehouse, but they require information from other tables to, such as an invoice needing items from the Inventory table. Creating these tables was necessary to complete the shipping and receiving functionalities so less information would be repeated in each table.

As a team we decided that this iteration of the project should have the following requirements:

- Developed using a modern coding language.
- Implement "Shipping" and "Receiving" functions.
- Connect the code to a database.
- Implement some form of a login system
- Create comprehensive charts to reference

IMPLEMENTATION

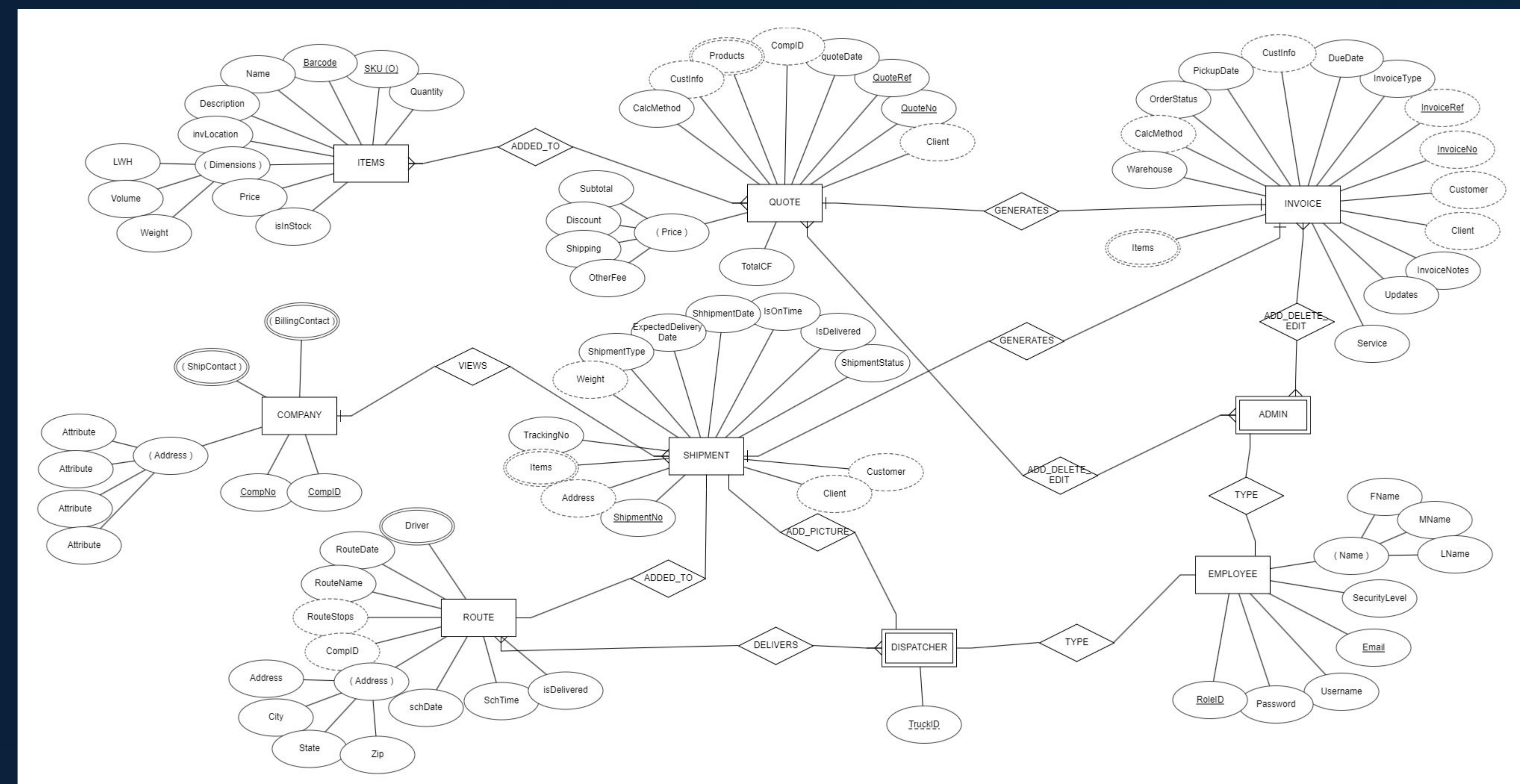
We created our application in the C# language, with the front-end being developed in the Windows Forms App. We had the code retrieve information by the users and store said information into the corresponding table in the connected database. The database itself was coded in PostgreSQL, using the SQL language. For the charts and diagrams, we used ERDplus as the best way to create comprehensive models



SUMMARY

This project had many features that we decided on and against. We ended bringing in the features that we decided were going to be the most impactful for the company and our colleagues who would take this project from us. We created the Shipping and Receiving functions to already get started on some basic use for this database, as well as a dummy login system that can be used in order to keep track of who enters and can see what information.

SYSTEM DESIGN



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