CS425: Project Phase - 2
Shipping Company Database

CS 425
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I. Introduction

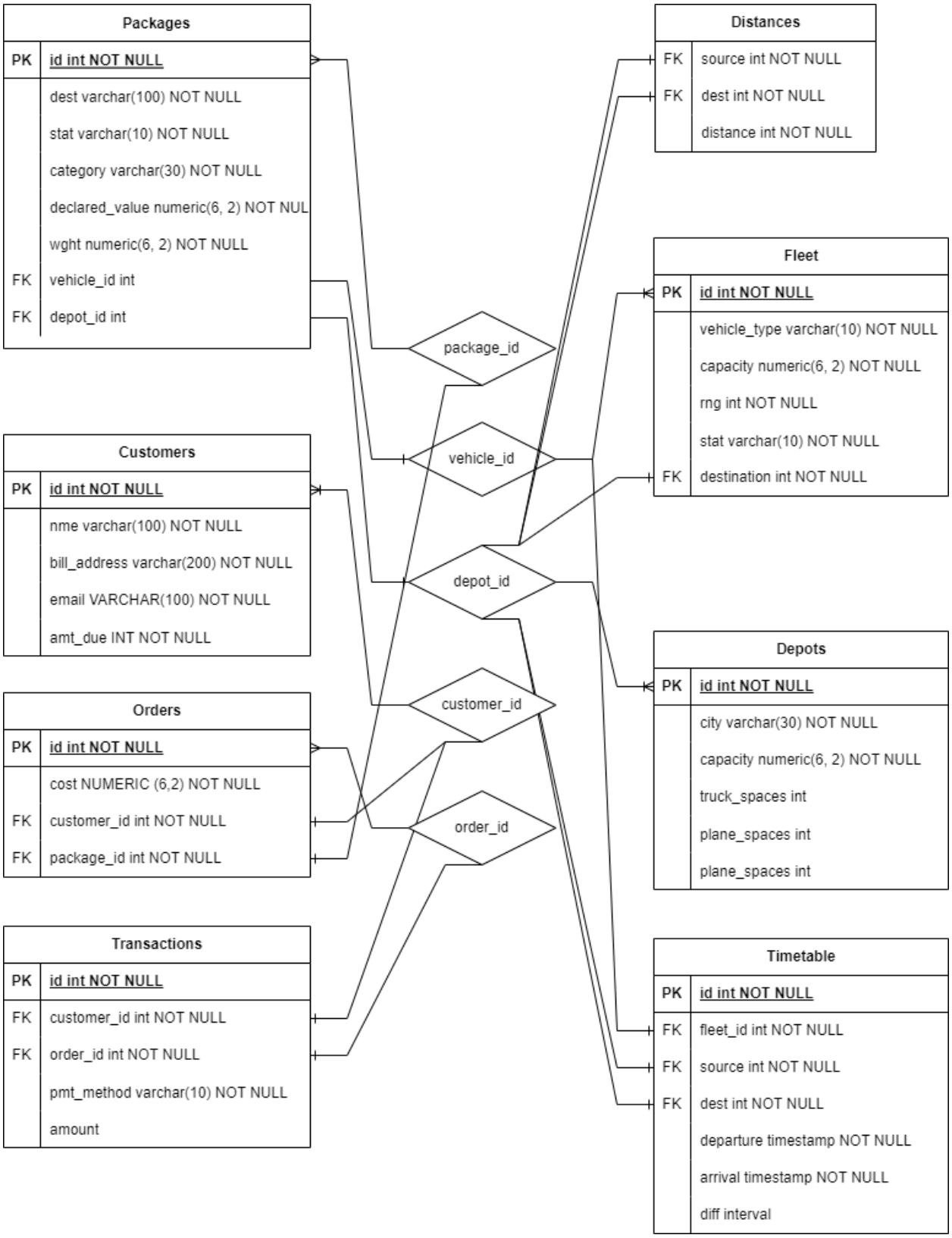
Our project's topic is based on a shipping company database. We aim to build a management system, with its database management system being customized for a long-distance shipping company. Our system contains a detailed framework that handles packages, manages fleet, oversees depot operations, tracks orders, manages customer accounts, and handles transactions. By integrating our system, our project aims to have efficiency and reliability when it comes to logistics management. This document highlights the relevant documentation which relates to the idea of our project.

II. Entity-Relation Model

Overview

This Entity-Relation (ER) model describes how the tables will be arranged in the database. This is a graphical representation of the tables in the database schema. The most important tables here are the Packages, Fleet, and Depots table, as those track the packages being shipped, the vehicles used to ship them, and all the shipping depots where packages are transferred or delivered to local subsidiaries. These three tables are linked together using the Timetable, which determines what vehicles in the Fleet will be traveling to which Depots. From there, we can decide which vehicles to assign packages to. The Distances table is used to help determine which depots are within range for our vehicles during route planning. The Customers table keeps track of all the people and businesses that ship packages. The Orders table associates packages with customers, and the Transactions table tracks when those customers have paid for their packages.

ER Model Upload



Source Code File

The ER model diagram was created using draw.io. The source file is available in the GitHub repository under the drawio folder. (Please see Section IV for the GitHub repository link.)

III. Project Overview

Our system's company database is targeted for long-distance shipping companies such as DHL, UPS, FedEx, and more. In our system, the packages are stored in our database with relations to other related tables along with their specific orders. For the sake of simplicity, it will handle the shipping of packages between depots. Local depots or its subsidiaries will manage the delivery of the individual packages utilizing their own systems, alternatively, they may utilize the services or USPS. Our system will record data such as the packages and their related information, fleet, depots, orders, customers, transactions, and timetable. Regarding its functionality, the system should support various internal operations including receiving the package, assigning the package, delivering the package, adjusting the timetable, getting fleet data, getting depots within vehicle range, searching for the best path of travel and getting package location. Other actions may include reporting missing packages and paying bills which can be reported by the user. Additionally, customers should be able to manually register, or be registered when a package is received. We also intend to have internal users be mandatory registered by administrators.

IV. GitHub Repository

Our project's codebase along with relevant documentation and deliverables are found in our team's GitHub repository. It can be accessed through this link:

https://github.com/cptlobster/cs425

The repository has been structured to provide the codebase, documentation, ER model, and related files.The repository ensures the project's development and collaboration from our team members.

V. Conclusion

In conclusion, our project's topic regarding a shipping company database involves a database which is designed to optimize a management system for a long-distance database. Through efficiently managing packages, depots, involved fleets, orders, customers, and transactions, our design aims to enhance efficiency and customer satisfaction.