Course Project Stage 2 – Michael Landis

**Introduction**

For the course project, I have decided to create a retail management system, based on my background working at Salty Dog selling T-Shirts. The main focus is going to be on tracking the transactions by employees and customers while storing the amount of inventory the location currently holds. I chose this not only because of my background and experience working at the store but also because I had noticed nuances while working that could be fixed and created more efficiently. The system will also contain the number of hours worked by employees in a given week alone. For now, I will limit the system to only contain information from a given week, where after the week it can be exported and saved for management to look over later. I believe this gives enough flexibility and complexity to be beneficial to a company like Salty Dog that is not exactly involved in using new and updated database systems. All the information in the database will contain information for real shirts and products sold, placeholders for real employees to not disclose any information about them, and real store locations and typical stock numbers for a given week along with enough transactions to simulate a full week.

**Functionality**

**Basics**

The system will be able to pull, update, and delete (based on authority) any transaction, employee, store, or item and return its respective attributes. These functionalities will be beneficial to the consumer by showing transactions during a period, showing who sold these items, how many were sold, along with the number of items in stock, and helping with making sure every location has enough stock for the day. Entities can be queried from the system based on the ER diagram presented later.

The system will have accessibility constraints for each user, as employees do not need to view other employees' hours or pay, but managers need to see this information. The warehouse is going to gain the most utility as the system is going to assist them in distributing products amongst all of the store locations.

**Advanced**

The system will be able to calculate the number of items that need to go to each store location. The warehouse holds the majority of the stock, so the warehouse will have this functionality that will be at the click of a button. There will be a base number of each item a store should have at the beginning and middle of the day (the warehouse takes trips to the store two times a day). The system will return a list of each store and the products that each store needs, respectively. There will also be options to change these base numbers if the company or store is in a busy season, like during the summer.

The system will also be able to take the transactions during a day and produce a report, which will emphasize which shirts need to be printed based on the quantity remaining in the warehouse and how quickly they are being sold in the stores. For example, if the store sells 50 units of a single shirt and the warehouse has below 100 units remaining, the system will be able to alert the print shop that these shirts should be moved to the front of the line for production. This functionality is based on an issue that appeared multiple times last summer.

**ER Diagram**

A diagram of a flowchart

Description automatically generated