
Warehouse Management System
Group 14:
- Xander Corcoran: Demo backend
- Dominick Loyola: ER and Relational Model
- Shree Ruparel: Mission statement and Problem
- Jayne Srinivas: Demo frontend and Future Plans
- Carson Botas: Solution and Overview of Business

Mission statement:

To streamline inventory and supply chain operations by building a data-driven warehouse management system that ensures accuracy, reduces costs, and boosts efficiency.

The Problem

Manual or disjointed warehouse systems lead to:

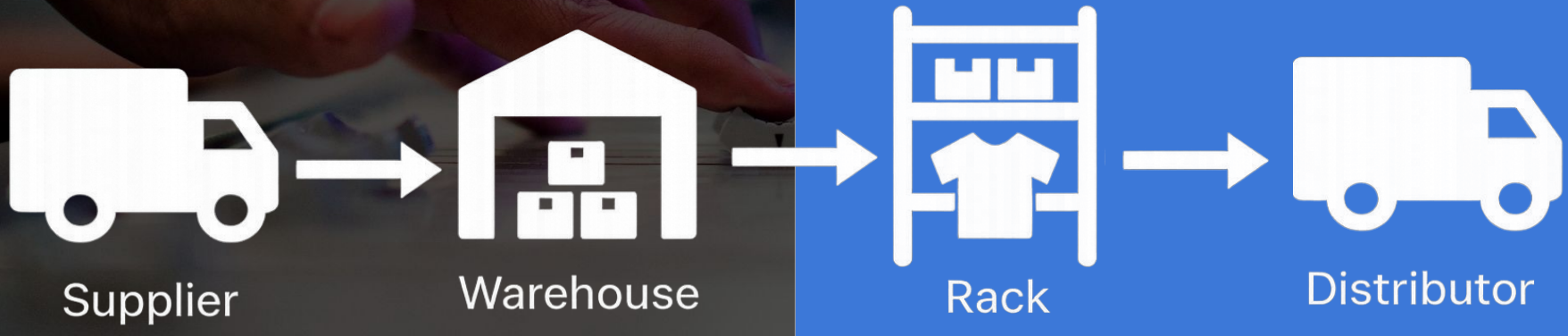
- Inventory inaccuracies
- Delayed shipments
- Miscommunication between suppliers/distributors

Inaccurate inventory causes delays, lost revenue, and frustrated customers. Our system approaches this problem by keeping operations accurate and reliable.

The Solution

Our system connects suppliers, warehouses, racks, and distributors in one smooth flow.

Everything is tracked with precision, reducing errors and giving real-time inventory visibility.



Overview of Business

Our warehouse management system simulates a regional clothing distribution network with clearly defined roles and relationships.

Business Rules:

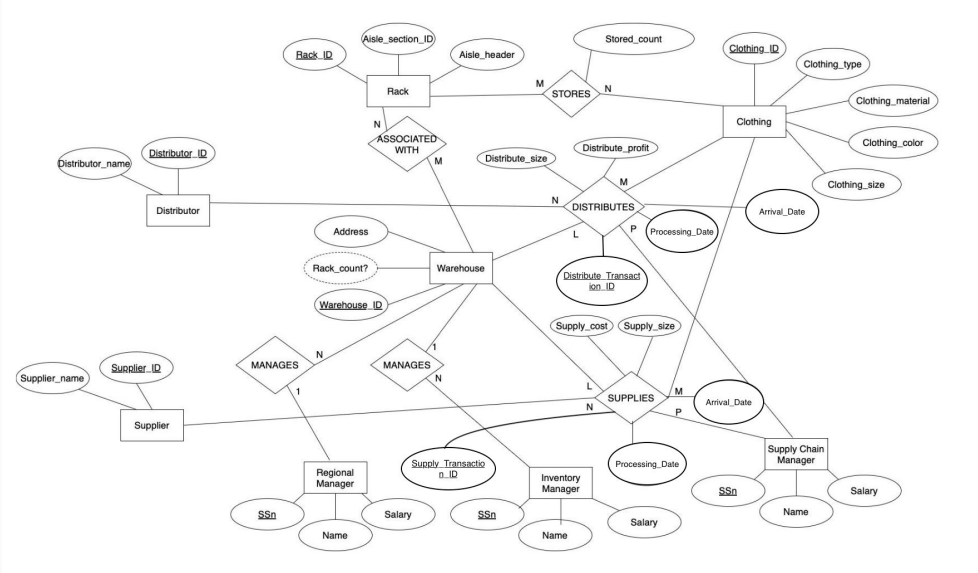
- Suppliers provide clothing to warehouses through a Supply transaction. (Tracked by a Supply Chain Manager.)
- Warehouses store clothing in Racks, on a unique Aisle section and Warehouse.
- Inventory Managers oversee clothing items inside the warehouse.
- Regional Managers are linked and supervise multiple warehouses.
- Distributors receive clothing from warehouses via Distribute transaction. (managed by a Supply Chain Manager.)
- Every transaction (supply or distribute) includes processing and arrival dates, item counts, and cost or profit details.

Entity Relationship Model

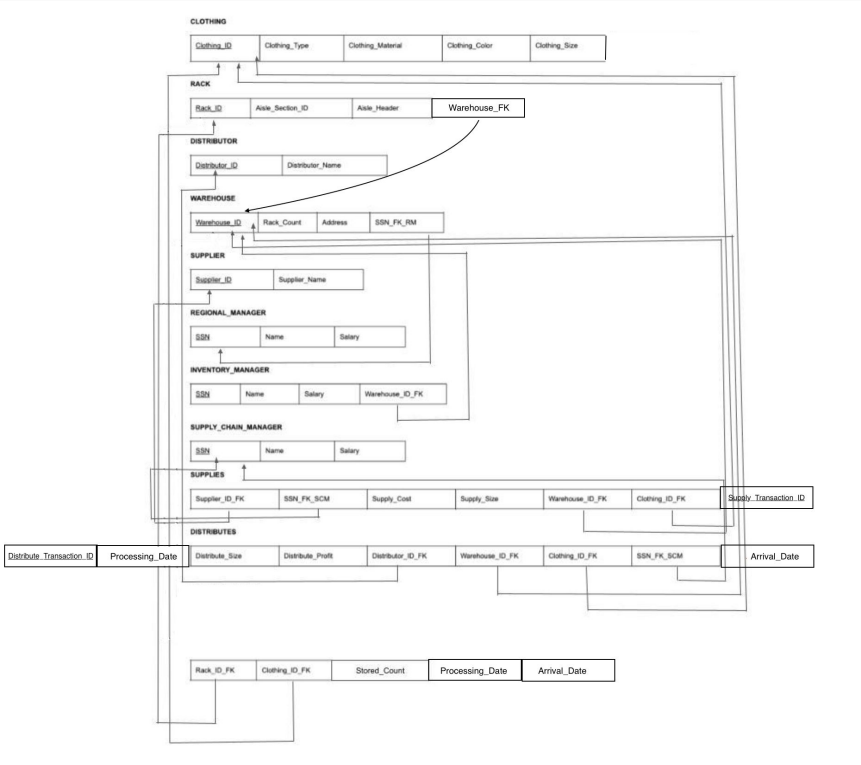
With our ER Model, it provides an overview on how the supply chain operates in our system.

We can see how entities connect (i.e. supplier supplying products to distributor).

The model is more than a map… it's our blueprint for our performance to be efficient and to serve the customers effectively!



Relational Model



The Relational model illustrates the key points the warehouse will experience…

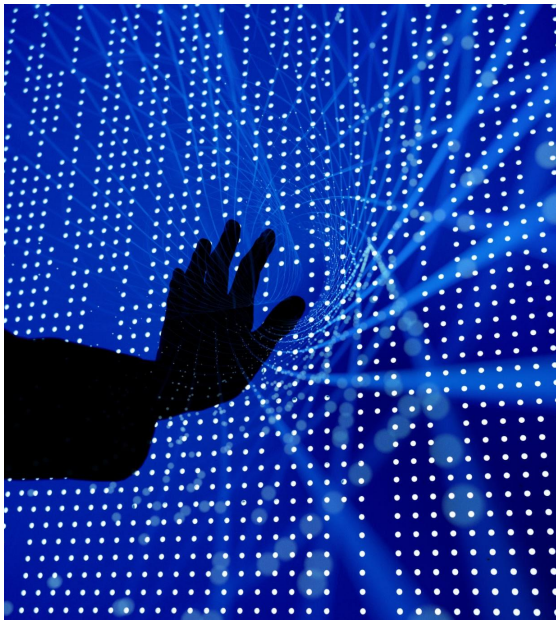
- Relationships with foreign keys like the Warehouse_ID, Supplier_ID, and Clothing_ID link different tables together
- The model supports tracking and management as we have Inventory tracking, Manager accountability, and Transaction tracking
- Flow for our clothing going from Suppliers -> Warehouses -> Rack -> Distributors -> Stores

With this model, it ensures that the clothes are not delayed or overstocked at the warehouse, making the operations quite efficient!

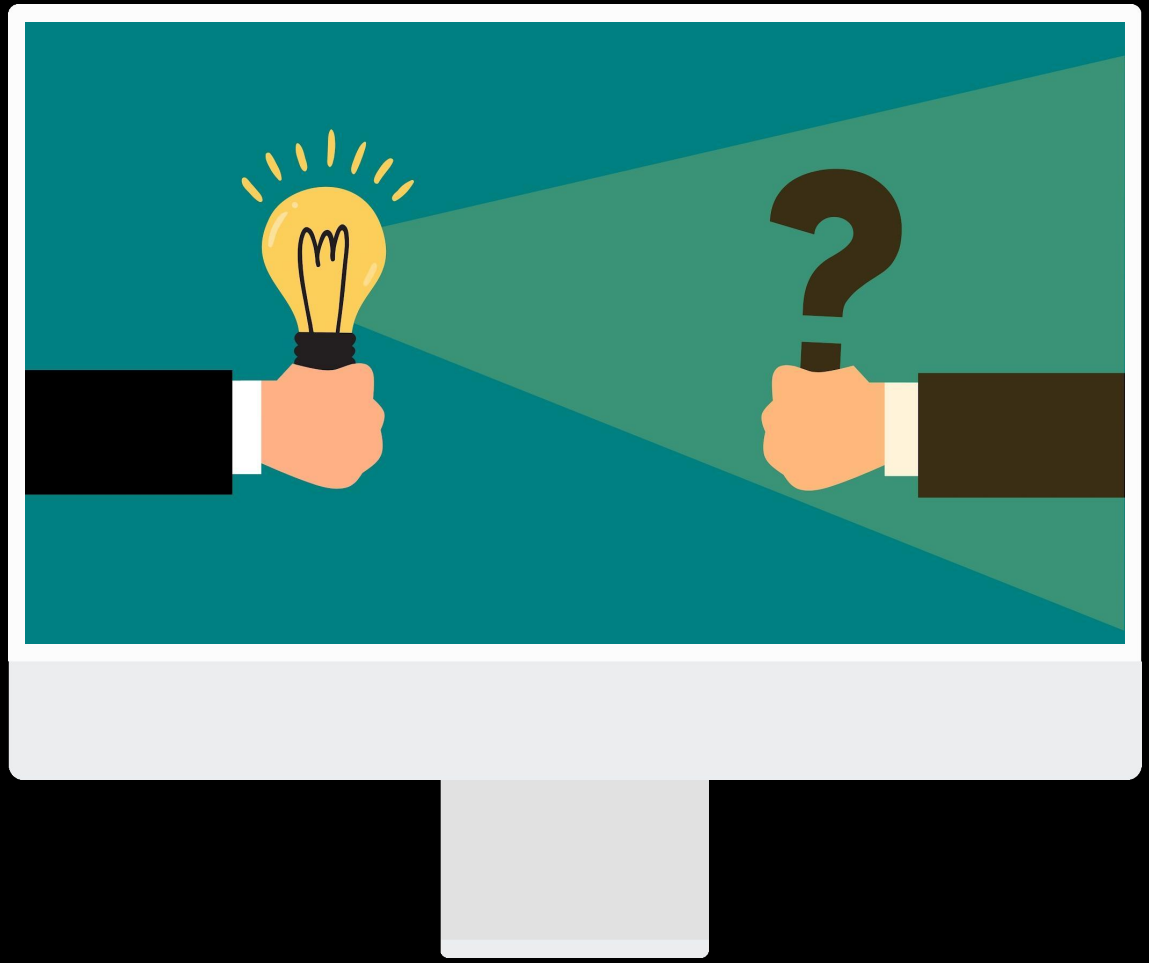
Demo

Future Plans

- Input Validation & Data Encryption of Employee Information
- Authentication System (User Login Page)
  & Access Control (Based on type of Manager)
- Real-Time Inventory Tracking (RFID)



Q&A



THANK YOU!