Project Proposal
EAD - Group Project - Group B

Problem Statement:

The garments have swing machines. When they break down they are inspected by technicians, mechanical engineers and repaired. But in some cases they need to be replaced. The company has its own set of stores spread across the country that has machines. But there is no system to identify the stores that have the machines which could be used for replacement. They have to contact stores and inspect. In that case, if they miss a store nearby, they would have to pay a high cost and time when transporting the machine. And if they are not able to find a matching machine, the next resort is to buy from outside which costs even more.

Proposed Solution:

The proposed solution is to have a QR code for all the machines, which contain each machine's details such as model, use, etc. When a machine fails, technicians can scan the QR code and find the stores that have matching machines available. And the search should give the result according to the nearestness of the stores.

Assumptions and Requirements:

- There are tables containing Stores, Garments, Machines.
- Machines have a column containing Location ID which is either Store ID or Garment ID. This should indicate whether the machine is in a store or a garment.
- Machine table contains QR codes, which were added when the machines were added to the system.
- Stores table has locations (possibly with longitude and latitude).
- Garments table has locations (possibly with longitude and latitude).

Functions

- Add, View, Update, and Delete machine details (CURD - Admin)
- Scanning a QR code of a machine shows the details of matching machines (Admin, Technicians)
  - Search the database for matching machines available in stores (DB Query - Location ID should be a store ID)
  - Calculate the distance using latitude and longitude of the stores and garments
  - Show store details such as store name, location, and contact information (with available machine ID if possible) in ascending order of distance (Query + View)
- Selecting a machine and clicking "Request Machine" send a request for approval of Chief Manager (CM)
- Approving "Request Machine" sent for transferring machine from a store (by CM)
- Request to buy a new machine when a matching machine is not available in stores
- Approving "Buy Request" (by CM)

Technology Stack:

Backend - Java (Spring Boot)
Frontend - React
Database - PostgreSQL
Additional - Docker, Git, pgAdmin