

Retail Store Management System — Software Requirements & Implementation Specifications

User Requirements

The store wants a system that lets customers place product orders and lets employees manage orders, product availability, user accounts, and their own work shifts. The system keeps a clean separation between people (as Persons) and their roles in the store (Customer, Employee), while allowing the same person to act in multiple roles.

Customers can browse the list of Products available in the store. Each product shows its name, model number, price, weight, and whether it is in stock. When creating an order, customers can add one or more products with a desired quantity. Items in an order are represented as Order line items (the ProductQuantity association) that link a single product with the chosen quantity. If a requested quantity exceeds availability (product not in stock), the system informs the user and asks to lower the quantity. Customers can review their existing Orders in their history, including the date the order was created and its status (e.g., Created, Processing, Ready, Completed, Cancelled).

The system shows the current status on the order page. Employees can update an order's status as it moves through fulfillment (e.g., from Created - Processing - Ready for pickup - Completed). Cancellation is allowed if the order cannot be fulfilled. The store does not ship items. Orders are picked up in-store. When the customer has picked up the order, the status changes to Completed.

A Person has common identifying data: name, optional middle name, surname, date of birth, age, and nationality. A person may act as: a Customer (places orders), an Employee (works shifts, manages orders), and can be both (overlapping roles). For example, when an employee shops while off duty, they also act as a customer. Employees hold one or more Roles (e.g., Cashier, Order Clerk, Manager). Roles include a name and specialization and control what parts of the system the employee can access.

Contact and identification for organizations and people are stored as Accounts: id, name, phone number, email, account number.

There are three account types: Company account – represents the store's corporate account and general contact identity. Employee account – owned by an Employee (one employee can own one or more employee accounts if needed). Customer account – owned by a Customer (one customer can own one or more customer accounts, e.g. personal and family). The system displays account contact data when needed (order confirmations, customer lookups, staff directory).

The system records each employee's shift start and shift end timestamps for attendance and scheduling. Managers can list active and past shifts and export reports for payroll/scheduling.

Diagram

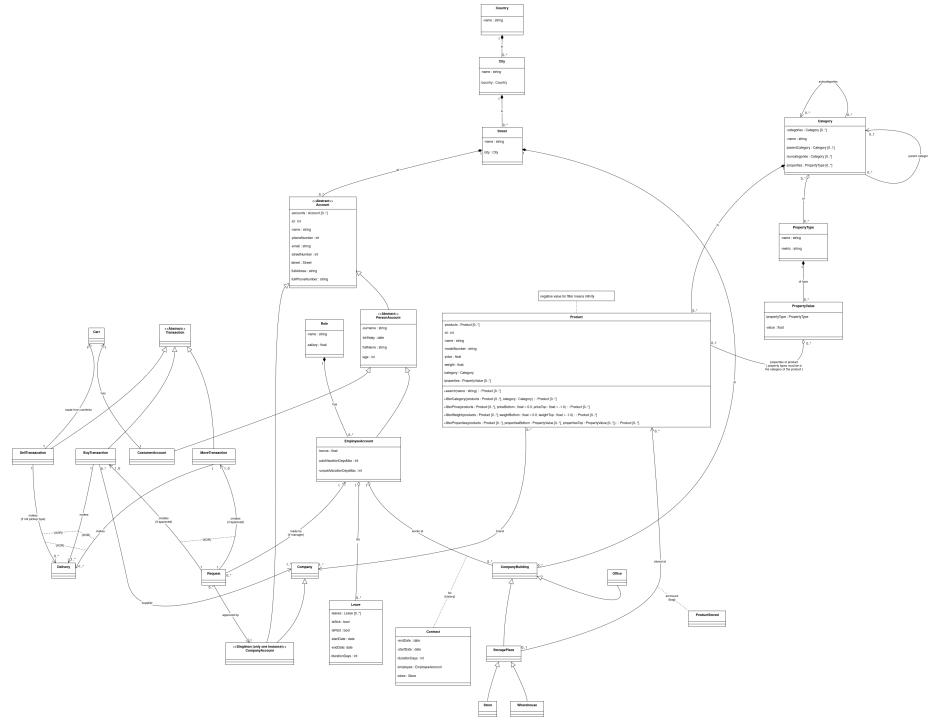


Figure 1: Diagram