# Clothing Point of Sale System

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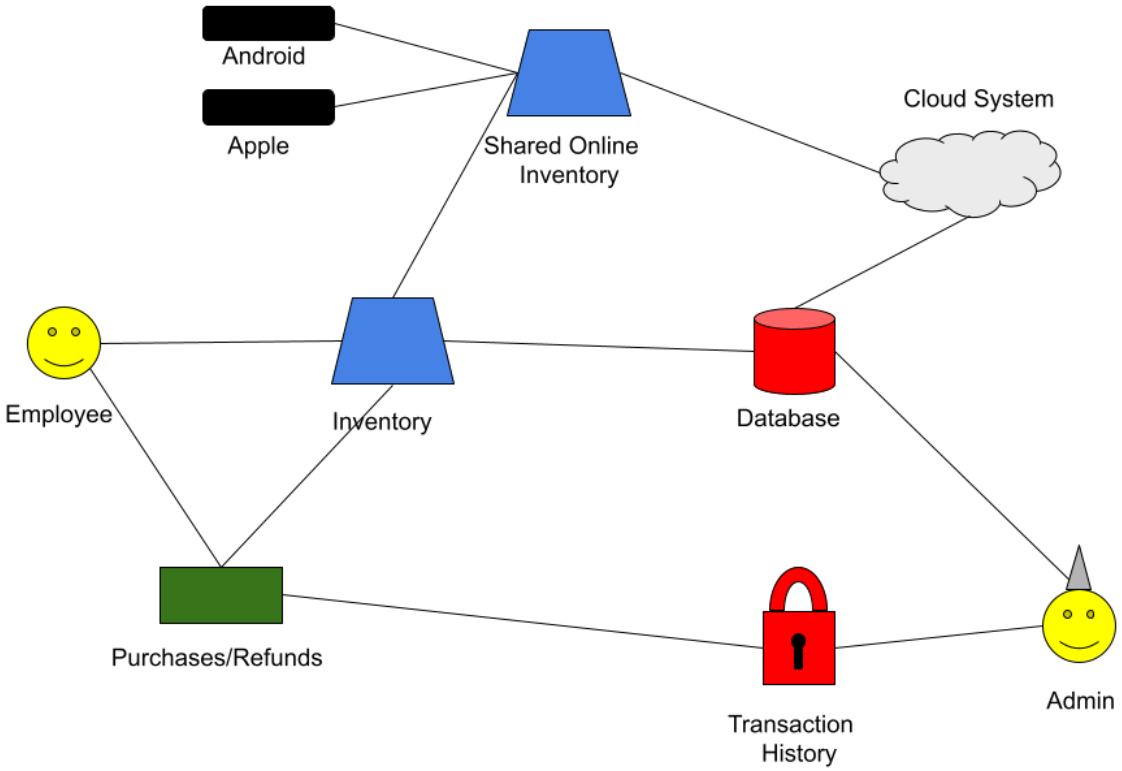
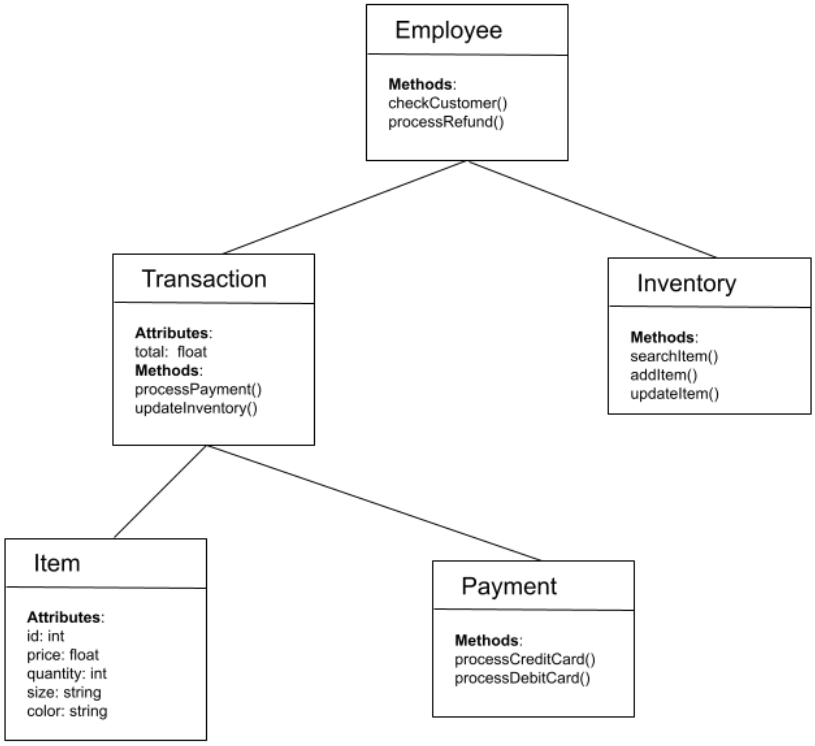
# System Description

The Point of Sale System is a strong solution designed to make smooth sale processes and manage inventory in a competent manner. It supports various payment methods, including credit card and debit card to ensure accuracy in transaction totals and inventory updates. Employees can easily process refunds and returns, and the system allows for ideal inventory management, including adding new items and searching by various criteria. This will be compatible with Apple and Android devices, the system guarantees accessibility and flexibility, while data is securely stored in a database with cloud backup. All in all, it empowers employees to deliver exceptional customer service while optimizing store operations.

# Software Architecture Overview




*Architecture Diagram of all major components*




*UML Class Diagram*

*Description of Classes*

**Employee:** This represents the employee at the clothing store. They are responsible for checking out customers(credit, debit, or cash) and processing refunds (cash only). They further are associated with the inventory and are responsible for searching, adding, and ensuring that the inventory is updated after all transactions

**Transaction:** The transaction class represents all the steps within a transaction. Some of these steps include purchasing and returning. It is associated with the Item, Employee, and Payment classes by calculating the total cost, updating inventory, and processing refunds. The transaction history is secure and can only be accessed by administrators.

**Item:** This class represents the items which are for sale in the store. Each item is set with unique attributes such as item ID, price, quantity, size, and color. These items are either scanned using a barcode or manually entered by the employee. This class is essential for the sales process and inventory management.

**Inventory:** This class represents the store’s inventory and provides functionalities to search items(by ID, name, or date added), add new items, and update item attributes. The inventory's transaction history and sales numbers are stored within a database, which is backed up in a cloud system and synchronized across different stores.

**Payment:** This class will handle the processing of credit or debit card transactions. It ensures that the payments are processed securely and efficiently.

*Description of Attributes*

**Transaction:**

**total:** This attribute is used to calculate the total amount for the item including sales tax.

**Item:**

**id:** This attribute is used to provide an item ID number which is unique to each specific item

**price:** This attribute is used to set a price for each item

**quantity:** This attribute specifies how many of each item is left in stock

**size:** This attribute is used to mark what size each item is

**color:** This attribute is used to represent what color every item is

*Description of Operations*

**Employee:**

**checkCustomer():** This method is used by the employee to check out the customer

**processRefund():** This method is used by the employee to process a refund for a customer

**Transaction:**

**processPayment():** This method is used to process a payment by a customer

**updateInventory():** This method is used to update the inventory of the items that are purchased

**Inventory:**

**searchItem():** This method is used to search an item in the inventory

**addItem():** This method is used to add an item to the inventory

**updateItem():** This method is used to update an item in the inventory

**Payment:**

**processCreditCard:** This method is used to process a purchase made by credit card

**processDebitCard:** This method is used to process a purchase made by debit card

# Development Plan and Timeline

1 → 2 → 3 → 4 → 5

## 1 PLANNING & REQUIREMENTS

Duration: 2 weeks

**TASKS:**

- Define project scope, objectives, and success criteria.
- Gather requirements from stakeholders, including store managers and employees.
- Conduct market research and competitor analysis.

**Team Responsibilities:**

- Project Manager: Oversees planning phase and ensures alignment with stakeholder expectations.
- Business Analyst: Facilitates requirements gathering sessions and documents business needs.

## 2 SYSTEM DESIGN

Duration: 3 weeks

**TASKS:**

- Design system architecture, including frontend, backend, and database components.
- Create wireframes and UI/UX designs for the point of sale interface.
- Define data models for inventory management and transaction processing.

**Team Responsibilities:**

- System Architect: Leads the design phase, defines system components and interactions.
- UI/UX Designer: Designs user interfaces and prototypes based on gathered requirements and industry standards.

## 3 DEVELOPMENT

Duration: 6 weeks

**TASKS:**

- Implement frontend interfaces for sales transactions, inventory management, and employee functions.
- Develop backend systems for transaction processing, inventory updates, and database management.
- Integrate external payment processors for credit card and debit card transactions.

**Team Responsibilities:**

- Frontend Developers: Implement user interfaces and barcode scanning functionality.
- Backend Developers: Develop backend systems and integrate with external services.

## 4 TESTING

Duration: 4 weeks

**TASKS:**

- Conduct unit testing for frontend and backend components.
- Perform integration testing to ensure seamless communication between modules.
- Implement user acceptance testing with store employees to validate system functionality.

**Team Responsibilities:**

- Quality Assurance Engineer: Develops test plans, conducts testing, and reports bugs to the development team for resolution.
- Frontend and Backend Developers: Collaborate with QA engineer to address and fix identified issues.

## 5 LAUNCH

Duration: 2 weeks

**TASKS:**

- Deploy the system to production environment.
- Provide training sessions for store employees on system usage, including sales transactions, inventory management, and refund processing.
- Establish backup and recovery procedures for data stored in the centralized database.

**Team Responsibilities:**

- Deployment and Training Specialist: Manages deployment process, conducts training sessions, and ensures data backup procedures are in place.