System Analysis Design Document

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1. Introduction

1.1. The Organization

The name of the organization chosen for this study is Cecille's N' Style Boutique, a small retail clothing store located in Davao City. The representative and owner of the business is Cecille B. Ilanga, who oversees daily operations including sales, employee management, and supplier coordination. The boutique specializes in trendy apparel and accessories for men and women, catering primarily to walk-in customers within the local area.

1.2. Organization Brief Description

Cecille's N' Style Boutique operates within the retail fashion industry, focusing on clothing and fashion accessories. The store caters to both walk-in customers and occasional bulk orders from loyal clients. The organizational structure is simple — with the Store Owner/Manager at the top, followed by a small staff of sales clerks who manage customer orders and handle transactions. The store manager is responsible for supervising operations, managing inventory, monitoring employee attendance, and overseeing financial reports. The sales clerks, on the other hand, assist customers with product inquiries, record sales transactions, and update order information. The boutique started as a small clothing stall and has since expanded into a full boutique, although operations remain primarily manual.

1.3. Current Business Process

At present, Cecille's N' Style Boutique operates with a semi-manual workflow that relies heavily on paper records and handwritten documentation. The following summarizes their current processes:

Sales and Ordering -

Customers select items for purchase with assistance from sales clerks. The sales clerks manually compute prices, record sales on paper receipts, and update the owner verbally regarding daily sales.

Inventory Management -

Stock monitoring is done manually by checking physical stock levels. Replenishment orders are made only when the owner notices shortages. No formal system tracks stock-ins, stock-outs, returns, or damaged items.

Human Resource (HR) and Payroll -

Employee records are stored in paper format, listing basic details such as names, contact numbers, and assigned roles. Payroll computations are done manually by the owner, often using estimated working hours without automated calculation of deductions or cash advances.

1.4. Identified Problems

Based on observation and interviews with the store owner, several operational problems were identified:

1. **Lack of a centralized record system** – Employee, customer, and product records are kept manually, leading to inconsistencies and delays in retrieval.
2. **Unmonitored inventory movement** – Stock-ins and stock-outs are not systematically tracked, leading to inaccurate inventory counts.
3. **Manual payroll computation** – Employee attendance, deductions, and cash advances are not integrated into a payroll system, causing frequent errors.
4. **No sales or supplier tracking system** – Sales are written on paper and supplier transactions are not recorded, making it difficult to trace orders or calculate profitability.
5. **Lack of data analytics** – The absence of automated reports makes it hard for management to make informed decisions on sales, staffing, or restocking.

2. Proposed System

The proposed system, Cecille's N' Style Boutique Management System, is designed to automate and streamline key operations within the boutique including Human Resource (HR), Payroll, Inventory, Sales Ordering, and Supplier Ordering modules. Each subsystem will handle specific organizational functions but remain interconnected through a shared database.

2.1

Events Table

HR System

Event	Trigger	Source	Use Case	Response	Destination
Create employee profile	New staff is hired	Store Owner/Manager	Create new employee's profile	Generates new employee record	Employee Database
Update employee profile	Change in staff info	Store Owner/Manager	Update old employee profile	Updates employee details	Employee Database
Check employee profile	Manager reviews staff record	Store Owner/Manager	View employee's profile	Displays employee record	Store Owner/Manager
Assign employee position	New employee role	Store Owner	Assign employee's position	Creates assigned position record	Employee Database

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Payroll System

Event	Trigger	Source	Use Case	Response	Destination

Create payroll	New payroll cycle	Store Owner	Create new employee payroll	Generates payroll record	Employees
Update payroll	Adjustments needed	Store Owner	Update employee payroll	Updates payroll info	Employees
Check payroll profile	Owner reviews staff pay	Store Owner	View employee payroll profile	Displays staff payroll details	Store Owner
Input number of leaves	Absence is filed	Store Owner	Record leaves	Updates employee payroll	Payroll System
Input cash advances	Employee request	Store Owner	Record cash advance	Updates employee payroll	Payroll System

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Inventory Management System

Stock In

Event	Trigger	Source	Use Case	Response	Destination
Input new inventory item	New stock arrives (new product type)	Owner	Add inventory item	Creates new product record	Inventory Database
Input item quantity	New batch of stock (restock)	Owner	Create new item's quantity	Creates stock-in record	Inventory Database
Direct purchase entry	Owner buys item directly	Owner	Manually enter purchase details	Adds new stock to inventory	Inventory Database
Supplier order arrival	Delivery for an existing P.O	Supplier	Match delivery details with P.O	Updates stock in and closes P.O	Inventory Database
Create purchase order	Need to order new stock	Owner	Create new P.O with item list, quantity, supplier details	Saves new purchase order	Purchase Order Records
Update purchase order	Supplier or order details change	Owner	Edit existing P.O	Saves updated purchases order	Purchase Order Records
View Purchase orders	Owner checks pending/completed orders	Owner	View P.O list	Displays P.O status	P.O Dashboard
Record Delivery	Supplier Delivers ordered items	Owner	Log delivery and compare with P.O	Confirms delivery and updates stock in	Inventory Database

Stock Out

Event	Trigger	Source	Use Case	Response	Destination

Record return	Returned item (customer/supplier)	Owner	Process return	Restock or mark damaged	Inventory Database
Record damages	Unsellable item	Store Clerk	Record damaged stock	Moves to damaged inventory	Inventory Database
Record adjustment	Lost/missing item	Store Owner	Net adjustment	Updates discrepancy record	Audit Reports

Other Inventory Functions

Event	Trigger	Source	Use Case	Response	Destination
Update inventory item	Item details change	Store Manager/ Owner	Update inventory item	Updates stock record	Inventory Database
Check inventory item	Verify stock details	Store Manager/ Owner	View inventory items	Displays item/product record	Store Manager
Update item quantity	Manual correction	Store Manager/ Owner	Update item quantity	Updates stock levels	Inventory Database
Low stock alerts	Item below threshold	System	Generate alert	Notifies Store Manager	Store Manager
Check inventory status	User request	Store Manager/ Owner	View overall inventory analytics	Displays inventory summary	Store Manager/Owner

Sales Management System

Event	Trigger	Source	Use Case	Response	Destination
Input item selected by customer	Item to sell	Store Manager	Create new item record	Creates record of sale item	Sales Database
Check Purchase Details	Verify purchase details	Store Manager	View Purchase Details	Displays Details	Store Manager/Owner
Input item price	New product price	Store Manager	Create new item price	Creates record of item price	Sales Database
Make customer order	Customer request	Sales Clerk	Finalize an order	Creates sales transaction	Customer
Print receipt	Completed order	Sales Clerk	Print order receipt	Generates printed receipt	Customer
Generate Transaction	Customer payment	Cashier	Record payment	Updates sales transaction	Sales Database
View Sales Report	User Request	Store Manager/ Owner	View Sales Performance	Displays sales report	Store manager/owner

2.2

Use Case List

This proposed study focuses on the management and operations of Cecille's Nstyle Boutique, specifically addressing the challenges in tracking and maintaining its inventory of clothing and accessories. The system aims to provide accurate monitoring of available stocks and ensure that restocking activities are well-documented to avoid shortages or overstocking.

This study also includes the processes of employee attendance and payroll management. It integrates employee records with payroll computations, automating salary calculations based on attendance, leaves, overtime, and other deductions. This reduces manual errors and ensures accurate and timely compensation for staff.

Furthermore, the study covers the organization's sales and ordering processes within the boutique. It replaces traditional paper-based methods with a more efficient, computerized system that manages customer transactions, product pricing, order finalization, and receipt generation. This ensures faster service, better transaction tracking, and improved customer satisfaction.

This proposed system covers the following business areas:

HR System:

Handles employee profiling and position assignments.

- Manage employee documents (contracts, IDs, certifications)
- Track employee status (probationary, regular, resigned, terminated)
- Create new employee profile (when staff is hired)
- Update employee profile (when details change)
- View employee profile (for verification/review)
- Assign employee's position (onboarding process)

Payroll System:

Connects staff attendance to automated payroll computation.

- Automate salary computation (based on day rate, absences, deductions)
- Create new employee payroll (at start of payroll cycle)
- Update employee payroll (adjustments, corrections)
- View employee payroll profile (salary details, computation history)
- Record leaves (absences, approved leave days)
- Record cash advances (salary loan or advance deductions)
- Generate payslip (print or email to employee)

Inventory Management System:

Tracks and monitors stock-in, stock-out, returns, damages, and supplier purchase orders.

Stock In

- Direct Purchase (manual entry: date, OR/Invoice, supplier, cost, quantity → add to inventory)
- Order from Supplier (with P.O. → match with delivery and OR/Invoice → add to inventory)
- Create new purchase order (list items, quantity, supplier details)
- Update purchase order (when supplier/order changes)
- View purchase orders (pending and completed)
- Print purchase order (to provide to supplier)
- Record delivery and match to P.O. (updates stock-in)

Stock Out

- Returns (customer return or supplier return)
- Net Adjustments (manual corrections, lost items, shrinkage)
- Damages (unsellable or defective stock moved to Damaged Inventory)

Other Inventory Functions

- Update inventory item (edit product details)
- View inventory items (list of products)
- Handle customer returns and exchanges (replace item or refund as policy allows)
- Generate low stock alerts (when quantity drops below threshold)
- Track shrinkage (losses from theft or errors)
- View inventory reports & analytics

Sales Management System:

Handles customer purchases, product pricing, and receipt generation.

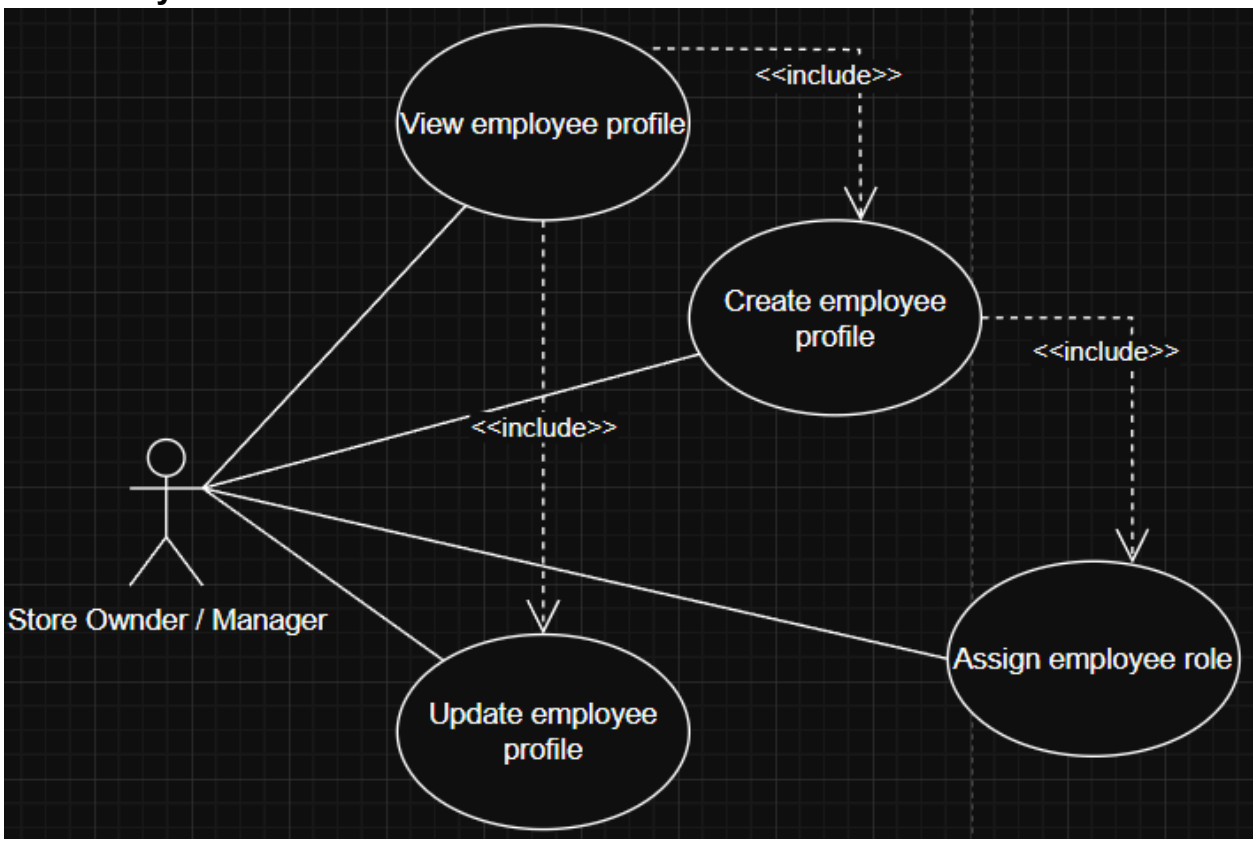
- Customer Select Item
- Input Product Price
- Input Product Quantity
- Finalize an order (customer purchase)
- Print order receipt (proof of transaction)

- Accept multiple payment methods (cash, card, e-wallet)

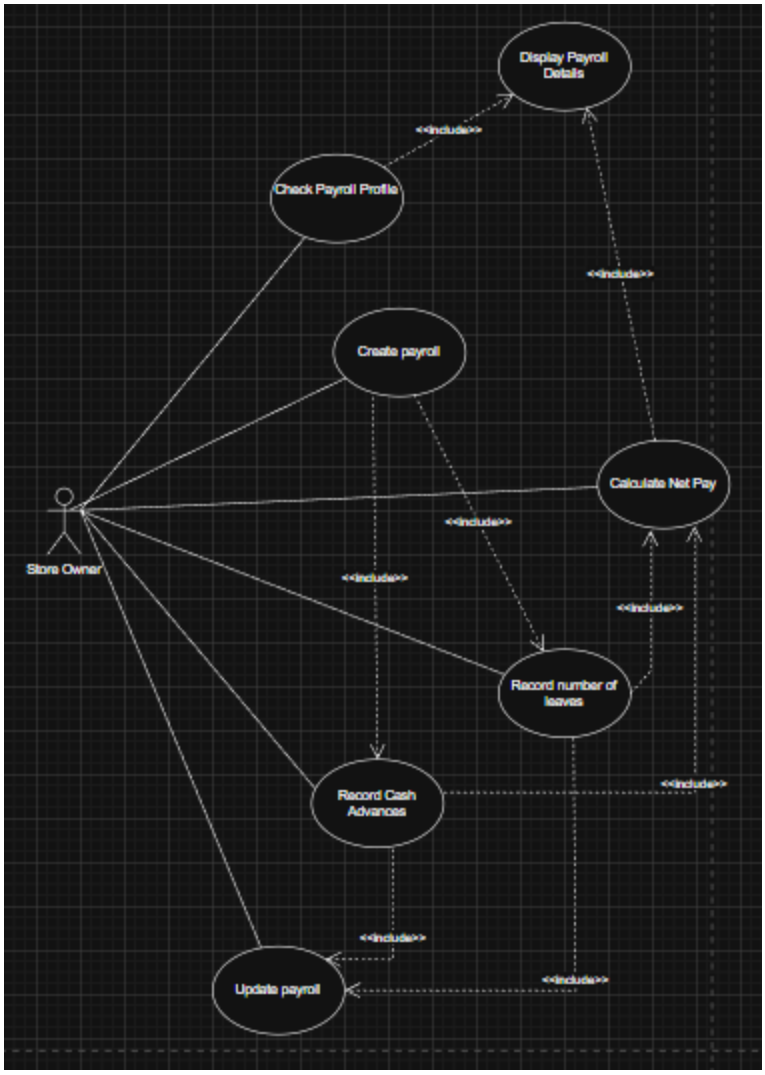
- View Sales Report

2.1 Use Case Diagrams

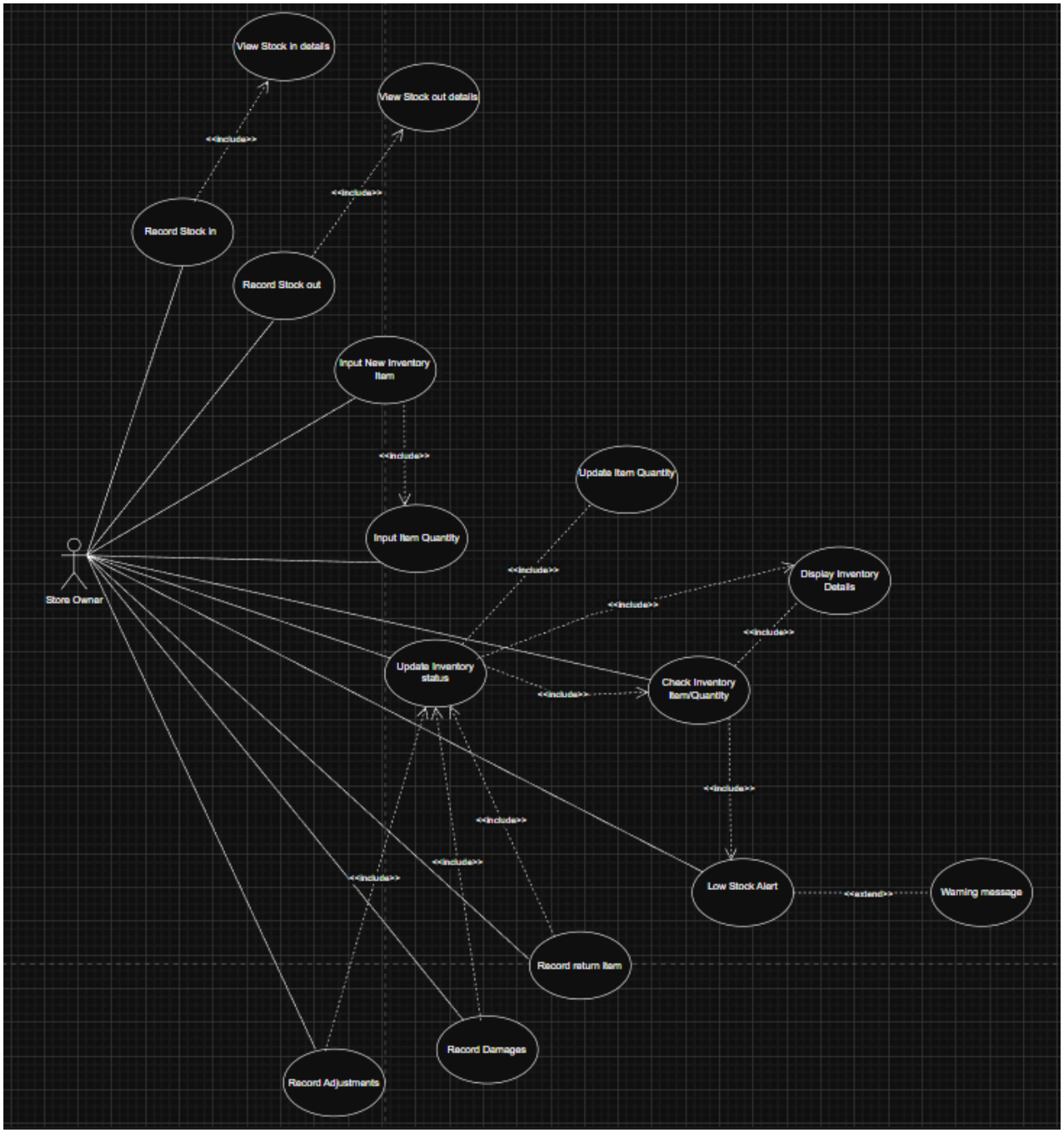
2.1.1 HR System



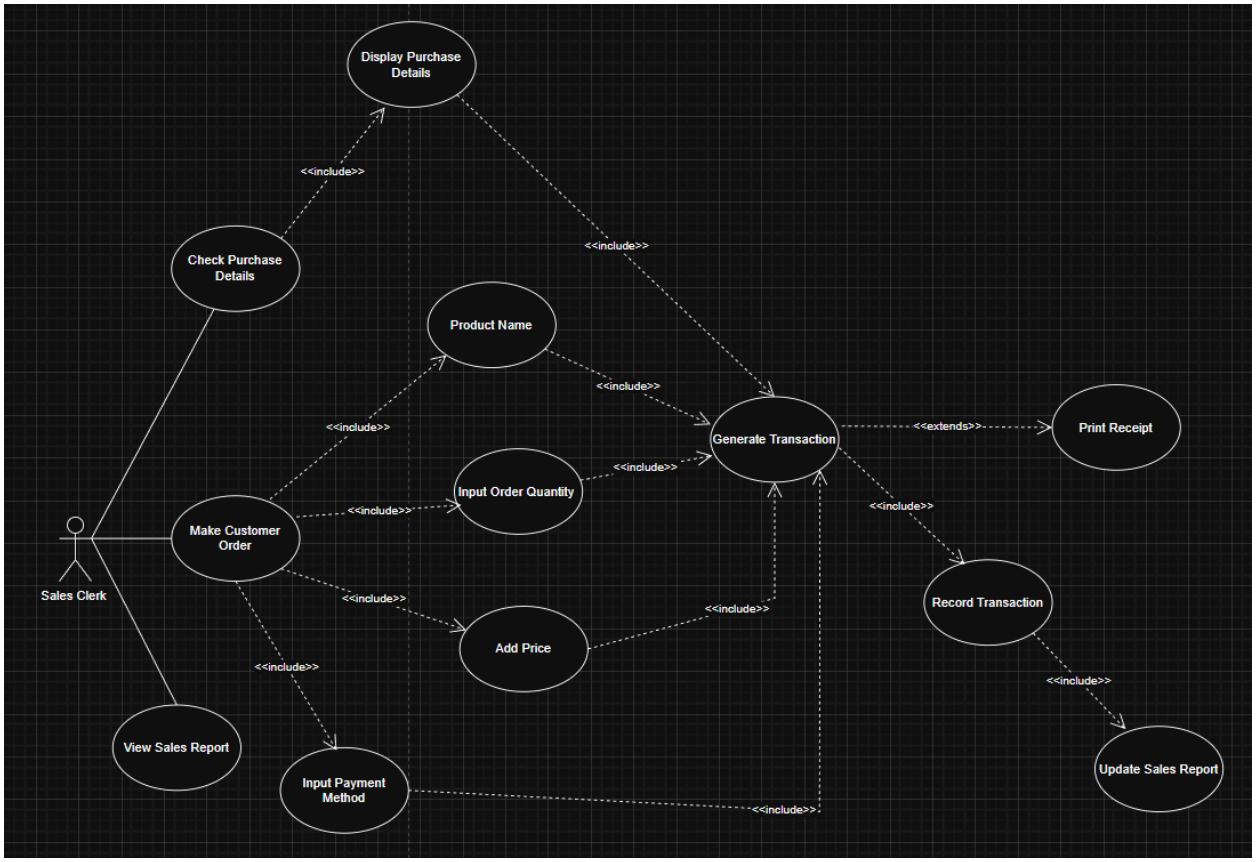
2.1.2 Payroll System



2.1.3 Inventory System



2.1.4 Sales Ordering/Management System


Display Purchase Details
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Check Purchase Details
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Product Name
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<<include>>
Generate Transaction
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Print Receipt
Input Order Quantity
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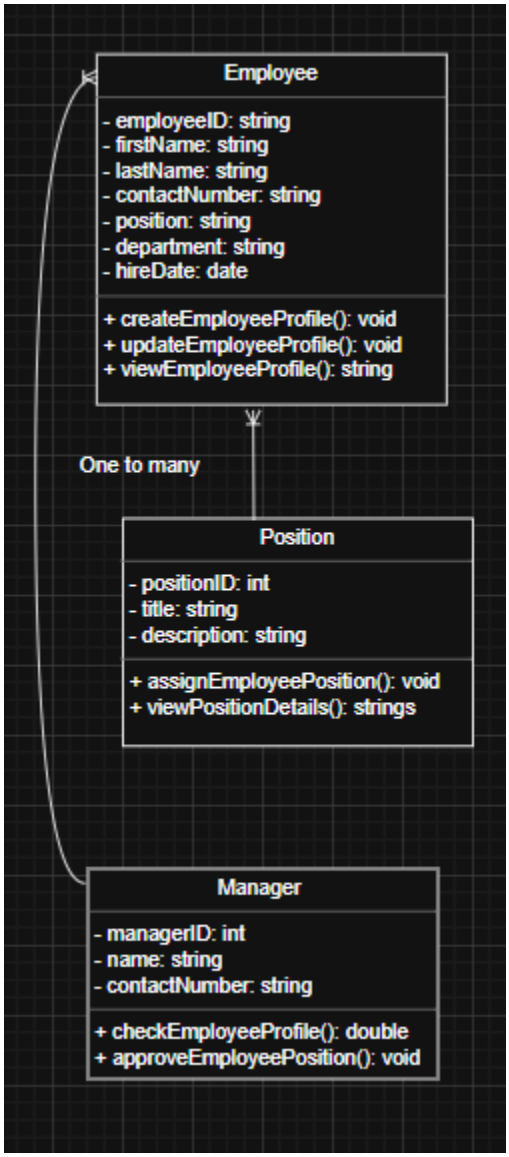
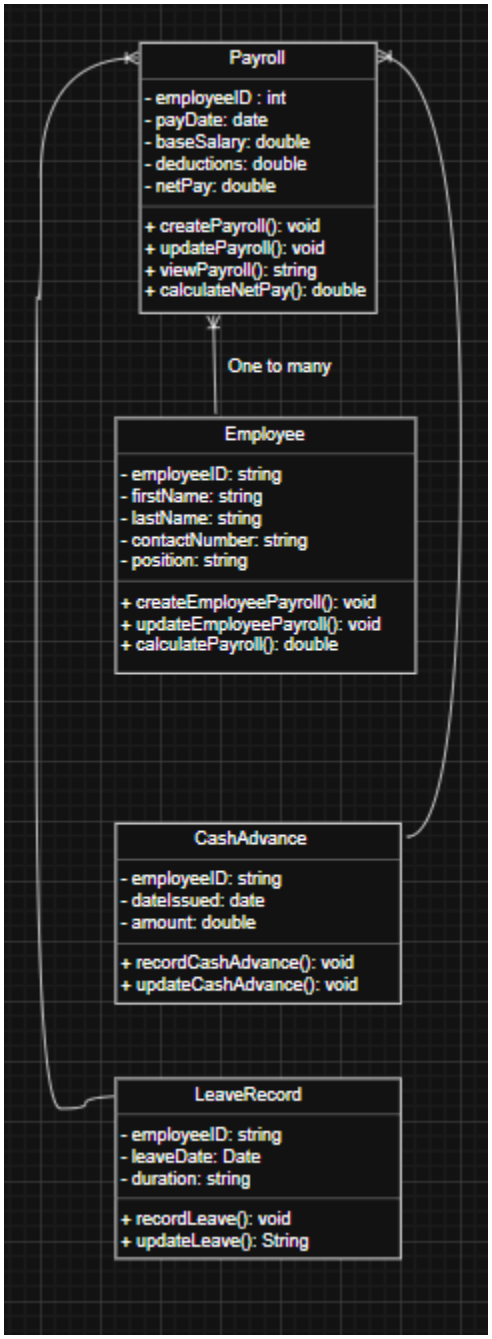
<<include>>
Make Customer Order
<<include>>
Sales Clerk
<<include>>
Add Price
<<include>>
Record Transaction
<<include>>
<<include>>
View Sales Report
Input Payment Method
<<include>>
Update Sales Report

2.3 Design Class Diagram

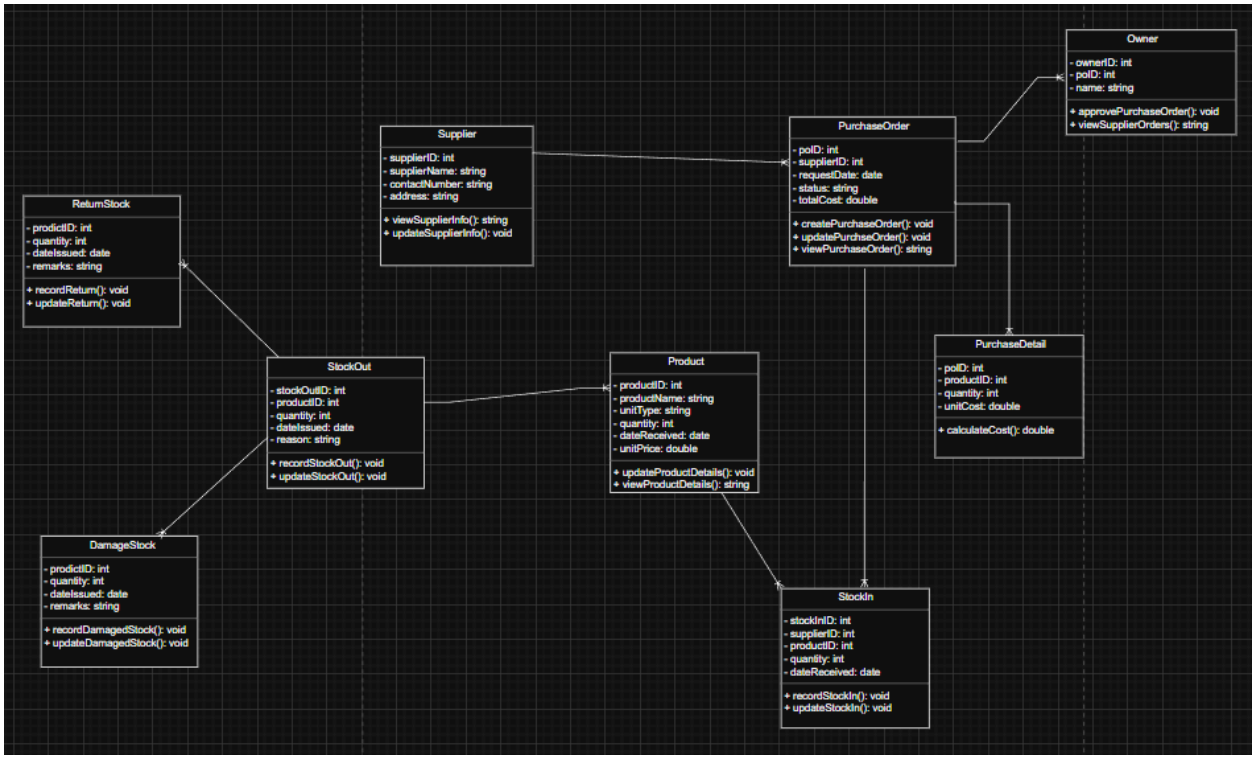
2.3.1 Hr System



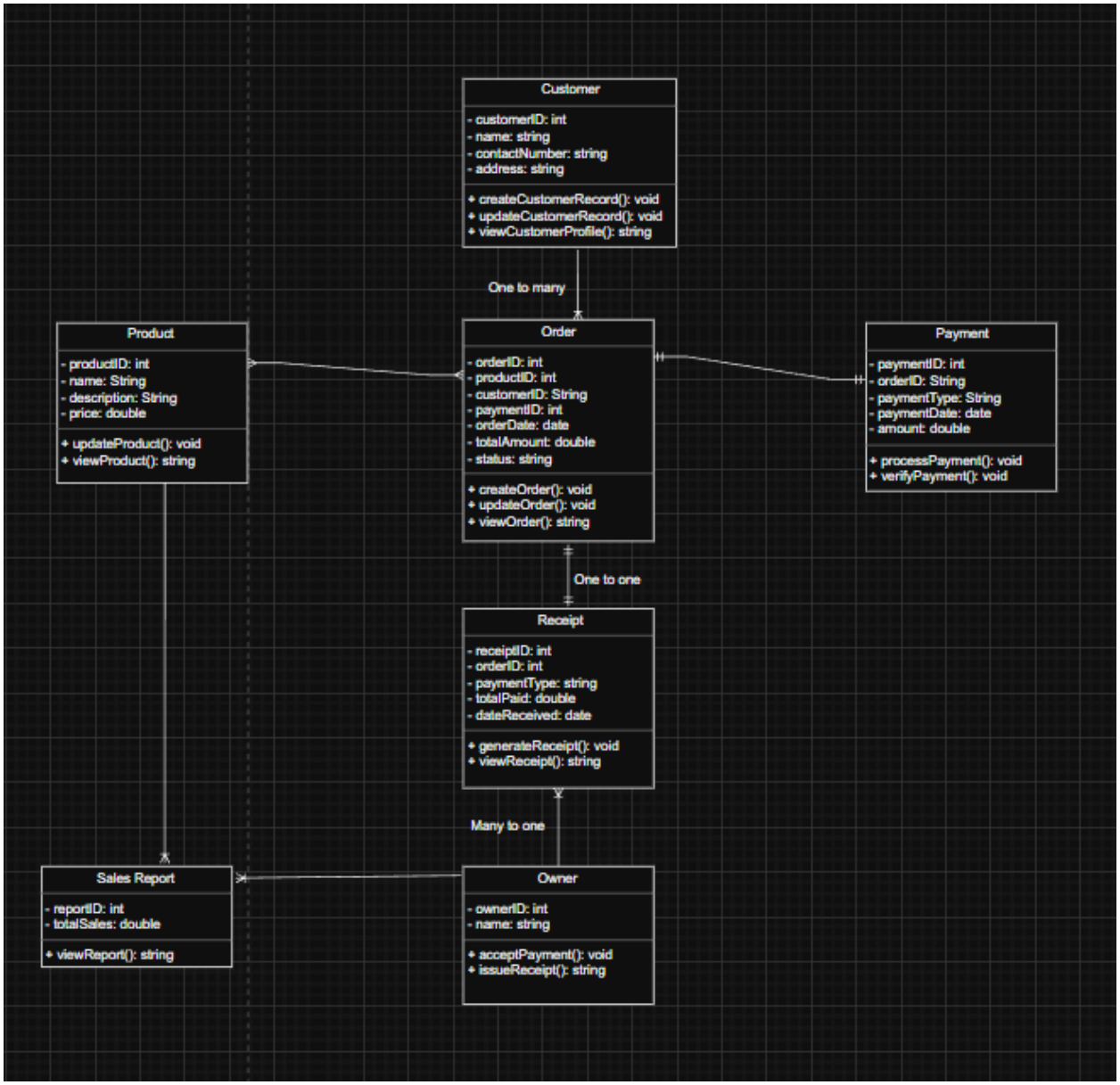
2.3.2 Payroll System



2.3.3 Inventory Management



2.3.4 Sales Management



3. Use Case Descriptions

CUSTOMER–CASHIER END:

Use Case Name	Customer Orders
Scenario	Customers purchase boutique items from the cashier.
Triggering Event	The cashier inputs the customer's selected products into the POS system.
Brief Description	The cashier processes the customer's purchase by entering the selected items into the point-of-sale system. The system computes the total cost, verifies each item's availability in the inventory, and generates a digital receipt. All transactions are automatically recorded to update both sales and inventory data for daily reporting.
Actors	Cashier
Related Use Case	Inventory Stock Availability
Preconditions	- Customers select available items for purchase. - Products and prices exist in the system inventory.
Postconditions	- Order details are recorded in the sales database. - Inventory updates reflect sold items. - Daily sales report is updated.
Flow of Activities	**Actor:** 1. The cashier attends to the customer and inputs selected items. 2. The cashier confirms quantities and reviews total cost. 3. The cashier processes payment. 4. The cashier prints or issues digital receipts. **System:** 2.1 System verifies product availability from inventory. 2.2 The system calculates total cost. 3.1 System records payment details. 4.1 The system updates daily sales and deducts sold items.
Exception Conditions	If an item is out of stock, the system alerts the cashier and removes it from the order list.

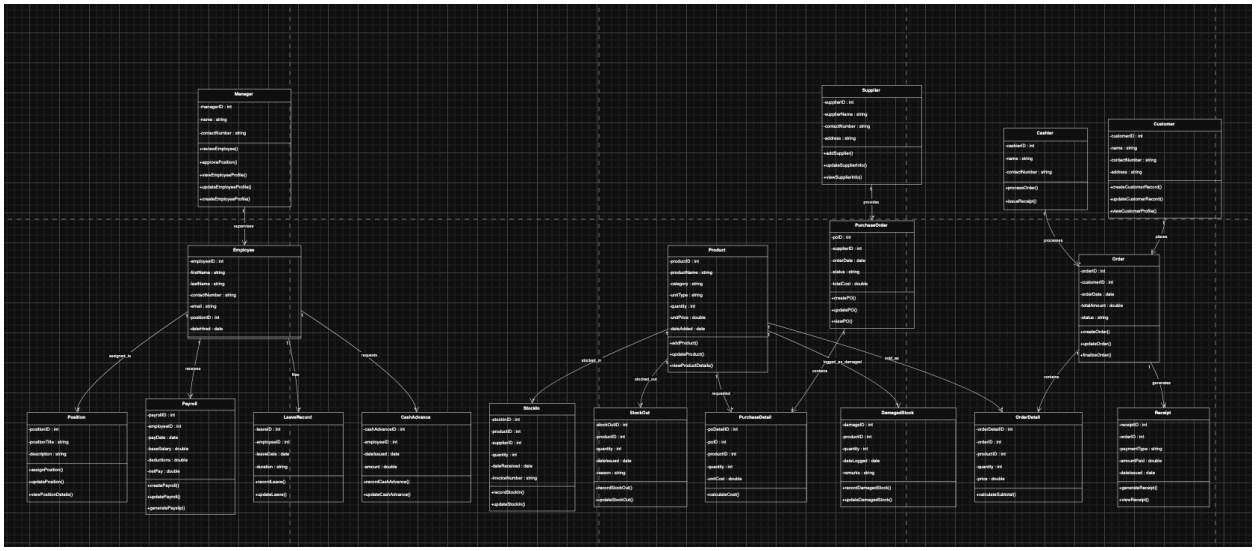
STAFF–SYSTEM END (INVENTORY):

Use Case Name	Inventory Stock Availability
Scenario	Store staff update the system regarding new stocks, damaged items, or stock deductions.
Triggering Event	Staff inputs stock updates into the inventory system.
Brief Description	The store owner or manager records stock-in from supplier deliveries, stock-out from sales, and adjustments due to returns or damages. The inventory module automatically synchronizes with sales and purchasing records for real-time tracking.
Actors	Store Owner / Manager
Related Use Case	Customer Orders
Preconditions	- Product records must exist in the system. - Staff must be authorized to perform stock updates.
Postconditions	- Inventory levels are updated accurately. - Low-stock alerts are triggered if thresholds are reached.
Flow of Activities	**Actor:** 1. Staff inputs new stock arrivals or supplier deliveries. 2. Staff records damaged, returned, or lost items. 3. Staff verifies updated stock levels. **System:** 1.1 System records new stock-in data. 2.1 The system deducts damaged or returned items. 3.1 System updates total stock count and triggers low-stock alerts.
Exception Conditions	If stock data mismatches occur, the system prompts for manual verification.

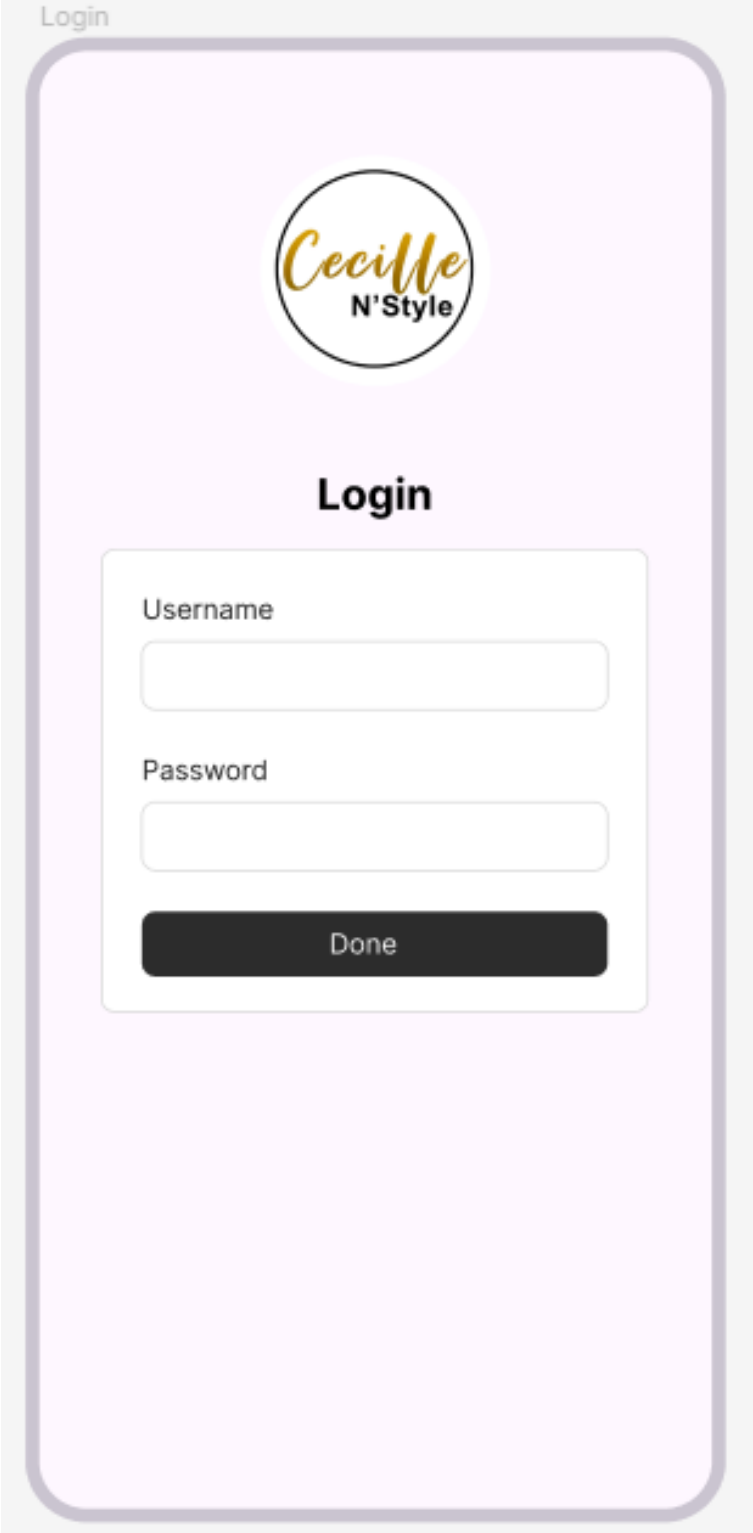
MANAGER–SYSTEM END:

Use Case Name	Manager Validation
Scenario	The store owner or manager reviews and validates sales, inventory, and payroll data.
Triggering Event	The manager logs into the system to review daily reports and operations.
Brief Description	The manager validates daily transactions, payroll computations, and inventory updates. Once validated, the system archives the data and generates performance and financial reports for review.
Actors	Store Owner / Manager
Related Use Cases	Inventory Stock Availability, Customer Orders, Payroll Updates
Preconditions	- Daily sales and stock data must be available in the system.
Postconditions	- Validated data is archived. - Reports are generated for review and export.
Flow of Activities	Actor: 1. Manager retrieves daily sales and inventory data. 2. The manager reviews stock movements and transactions. 3. The manager validates and saves the data. System: 1.1 System displays full data records. 2.1 System checks data integrity. 3.1 System archives validated data and generates reports.
Exception Conditions	None.

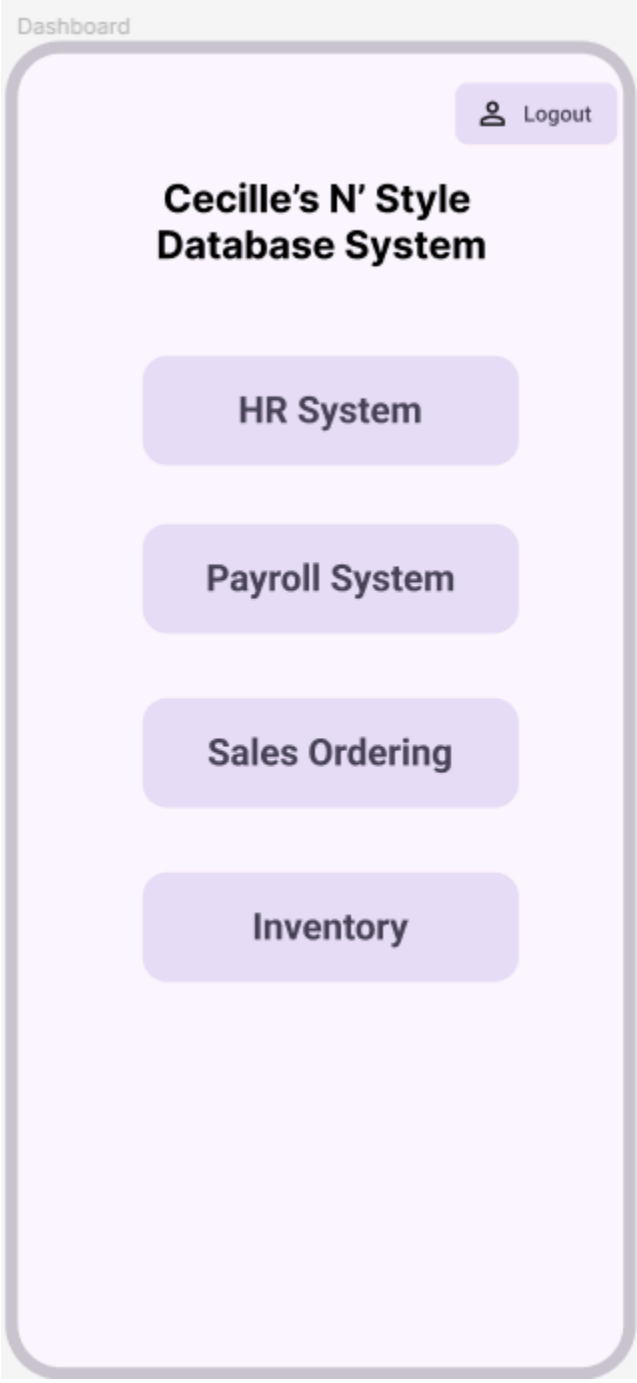
4. Domain Class Diagram



5. UI Interface (Log In Screen)

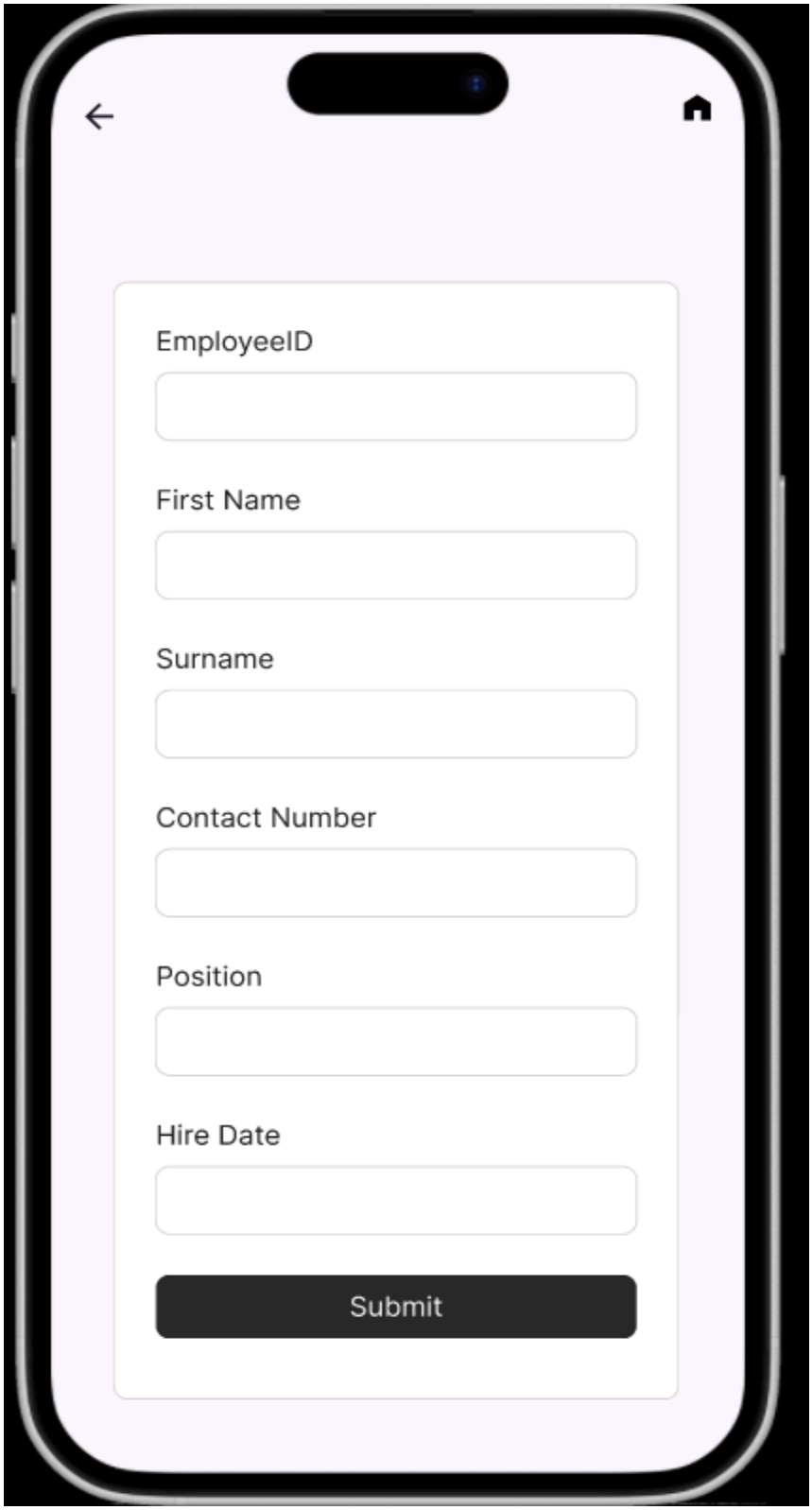


DASHBOARD (HOME)

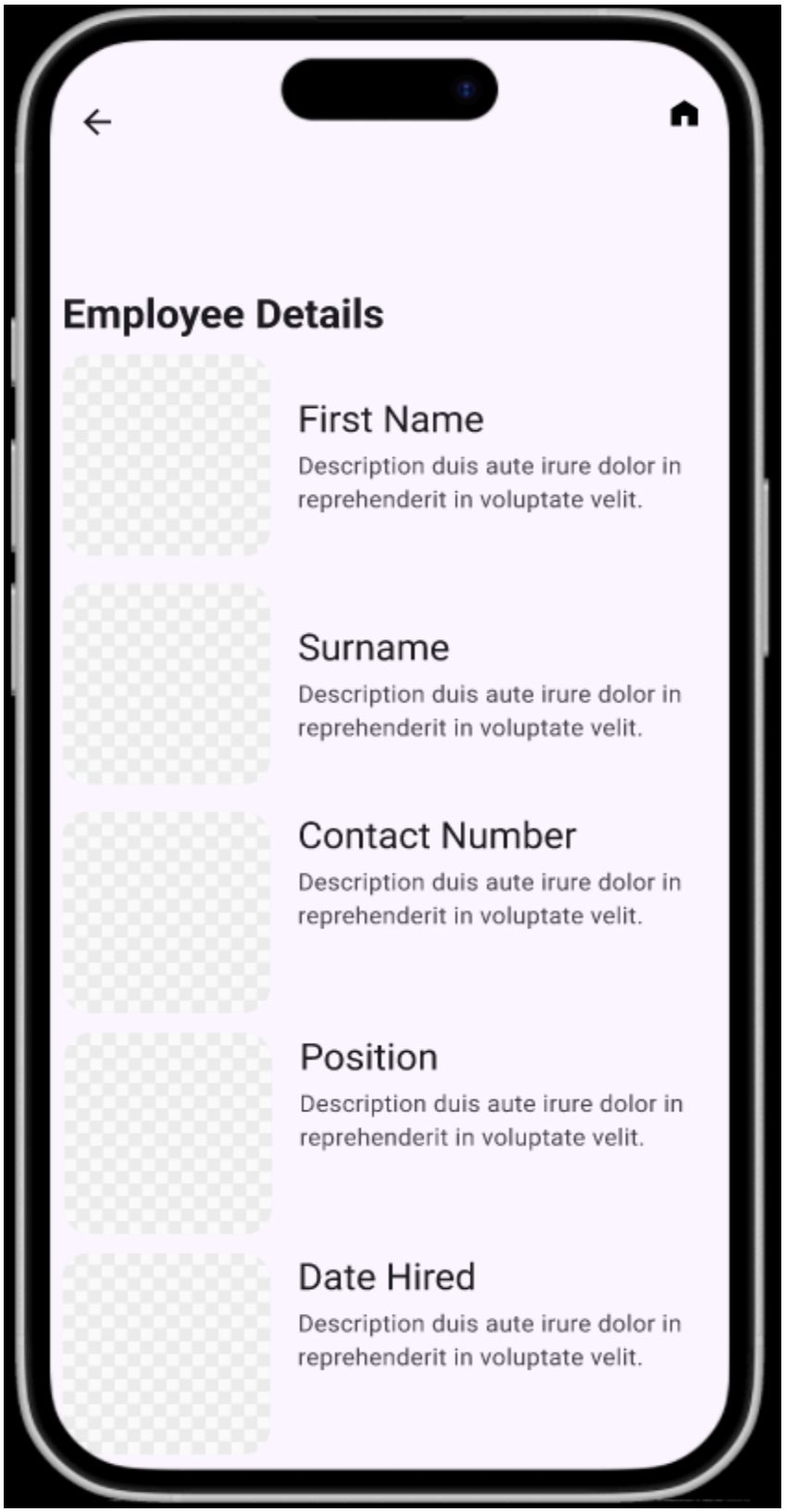


HR SYSTEM VIEW

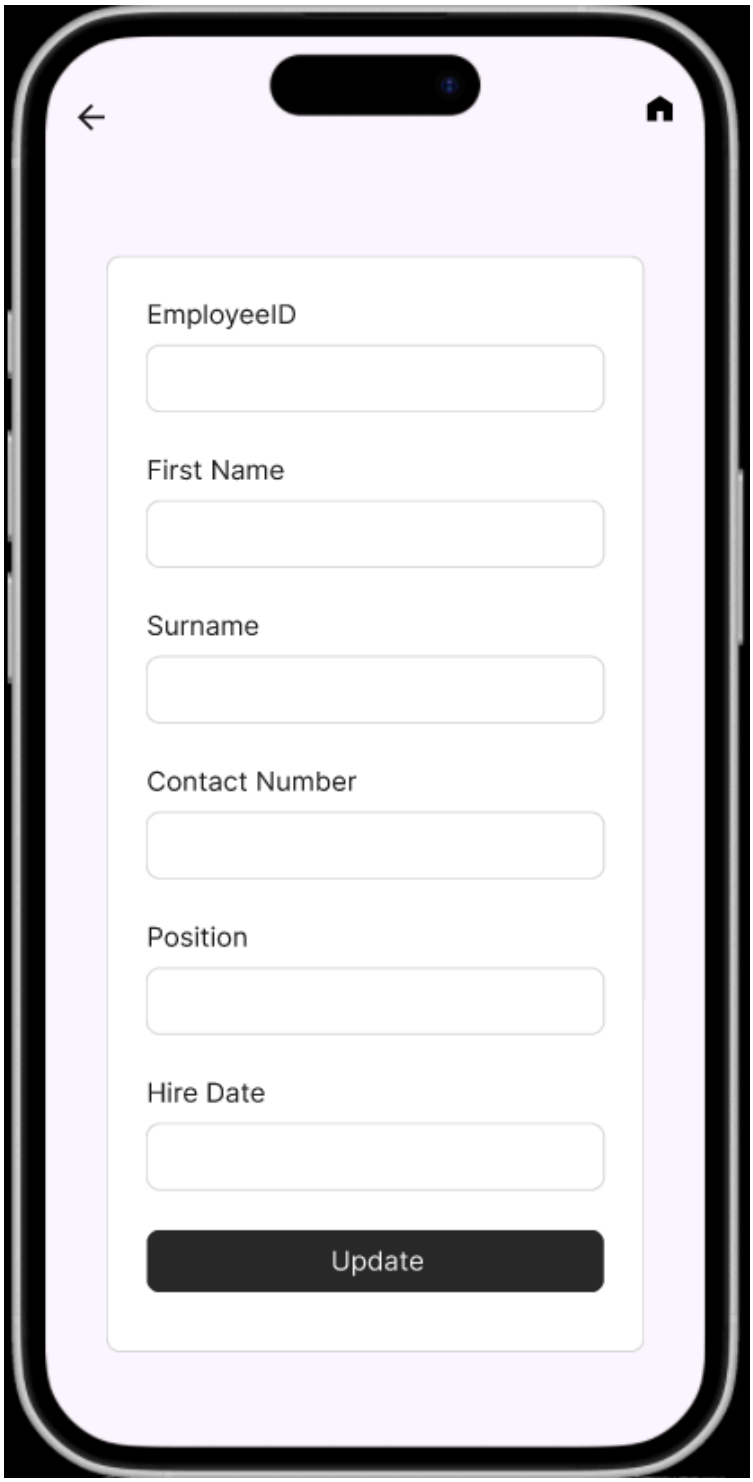
CREATE EMPLOYEE



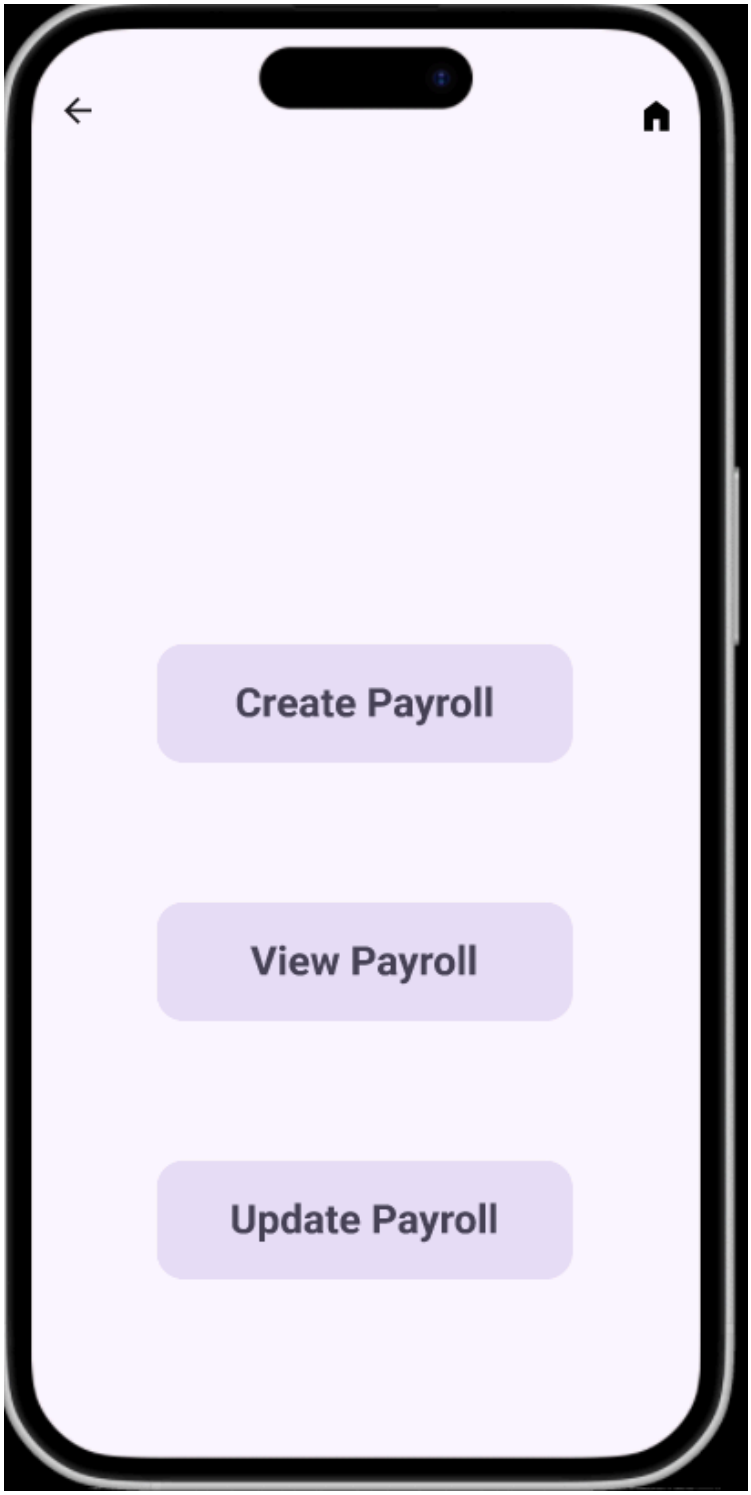
VIEWEMPLOYEE



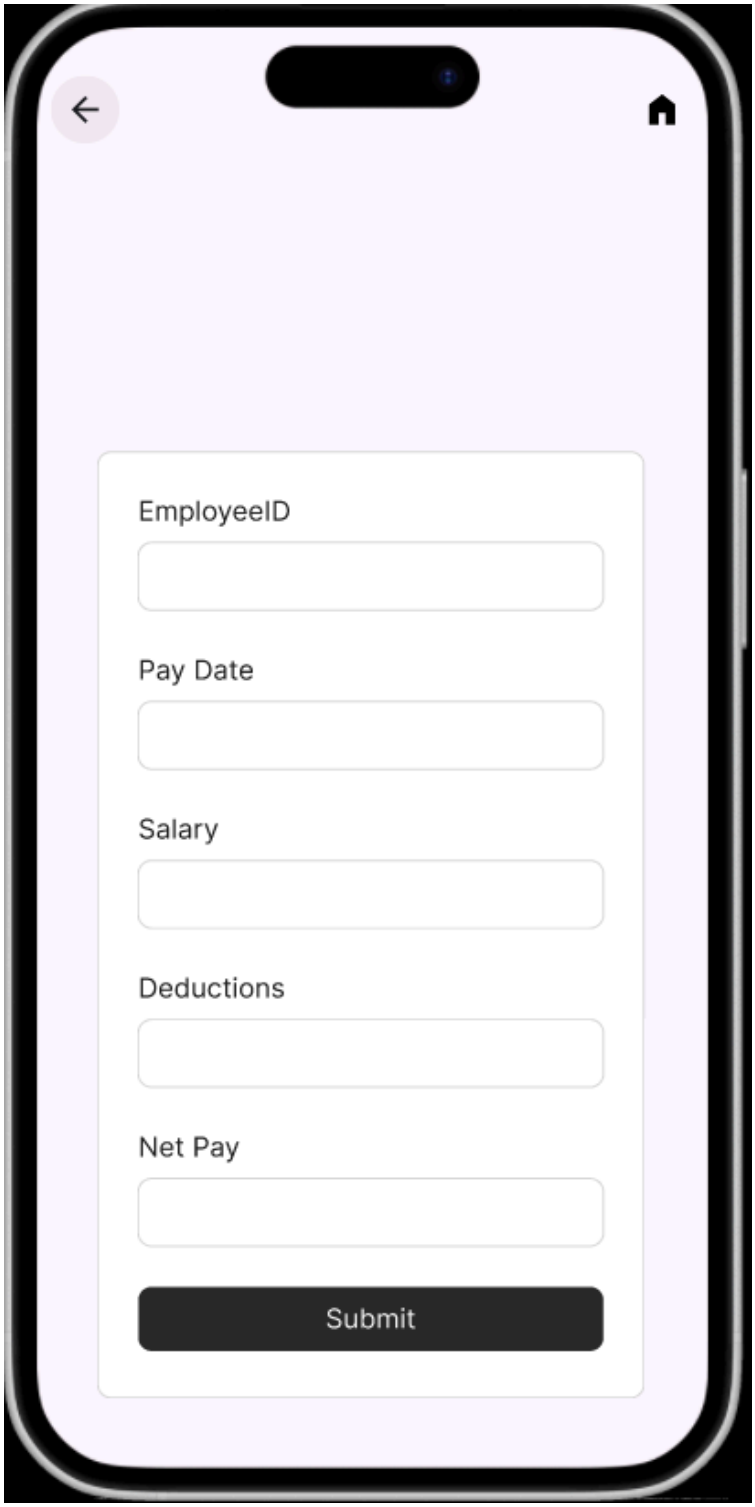
UPDATEEMPLOYEE



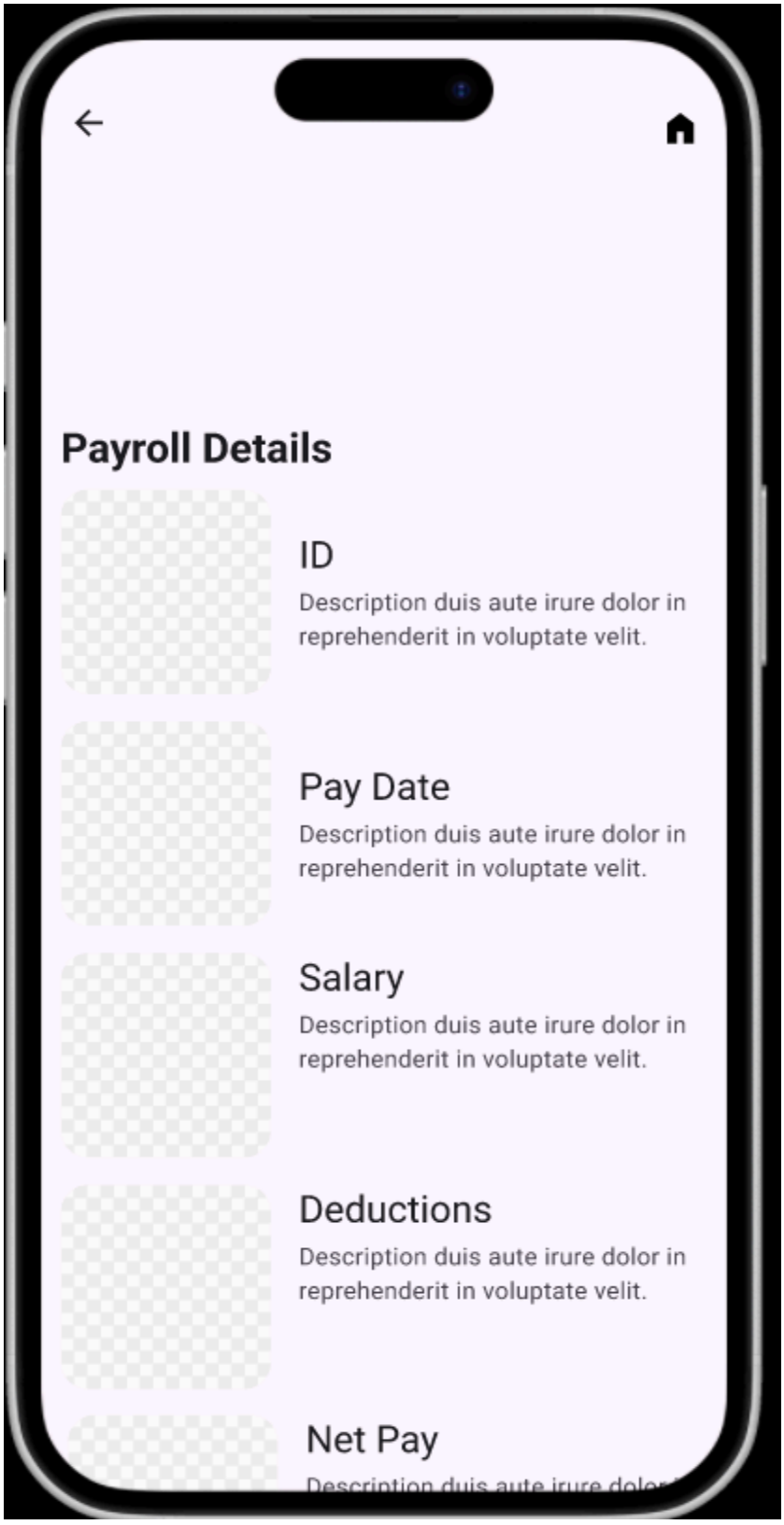
PAYROLL SYSTEM VIEW



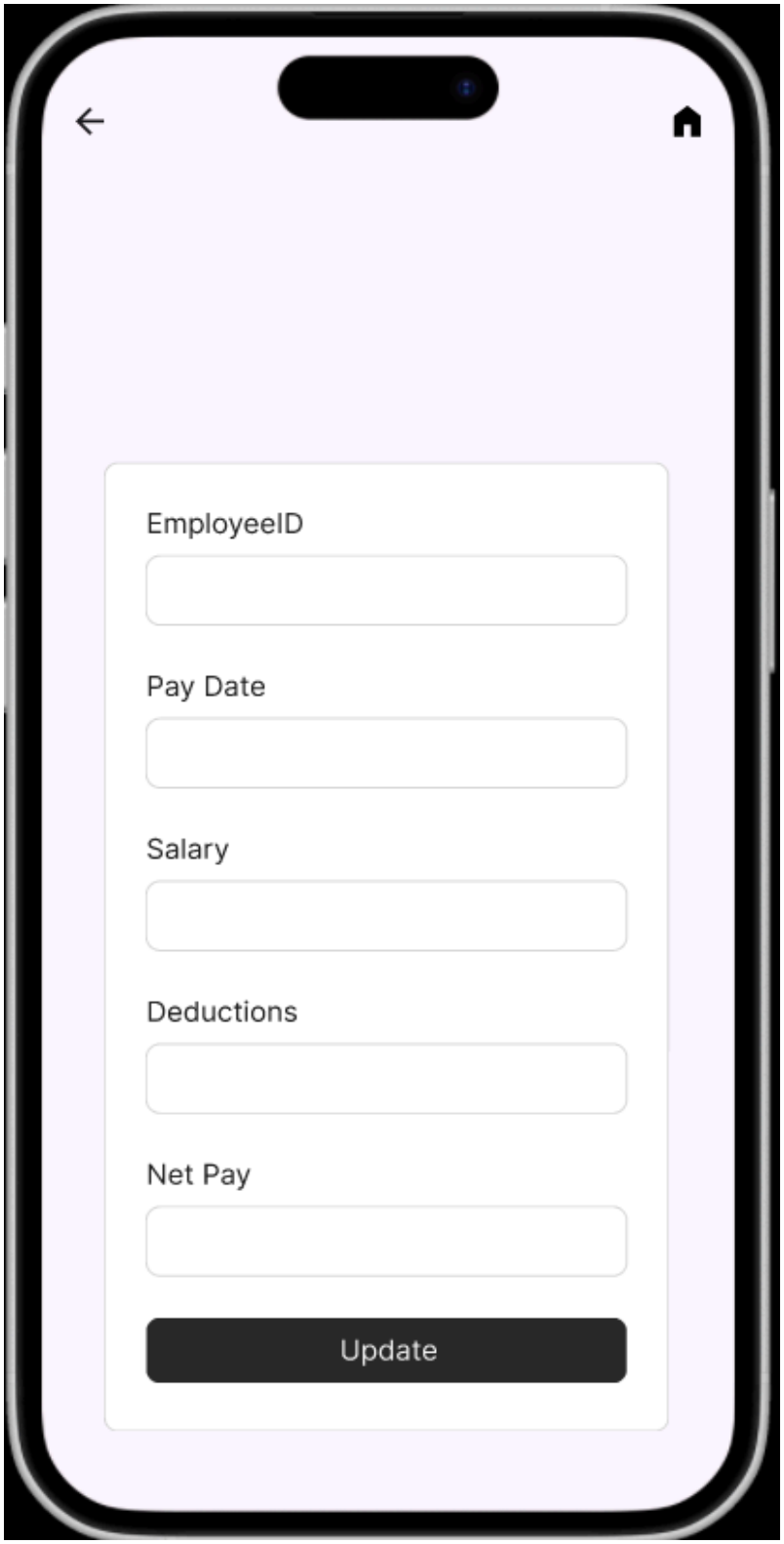
CREATE PAYROLL



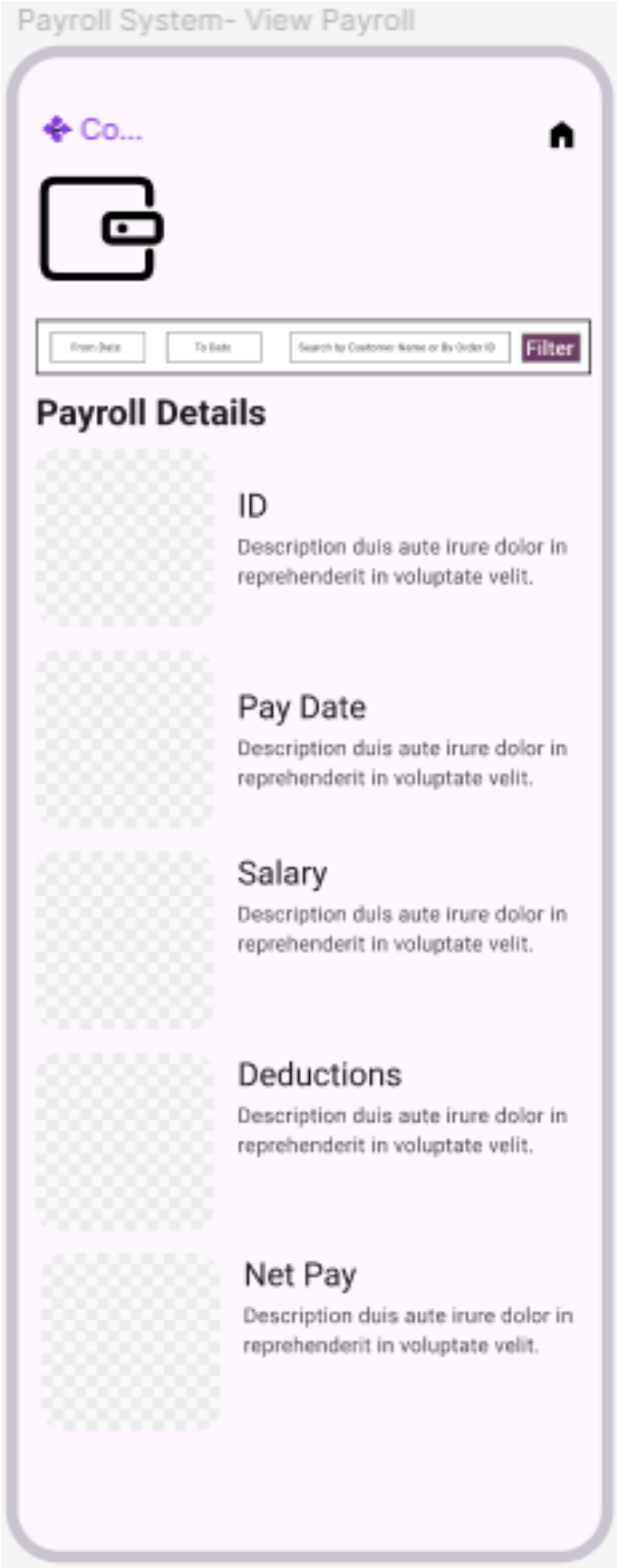
VIEW PAYROLL



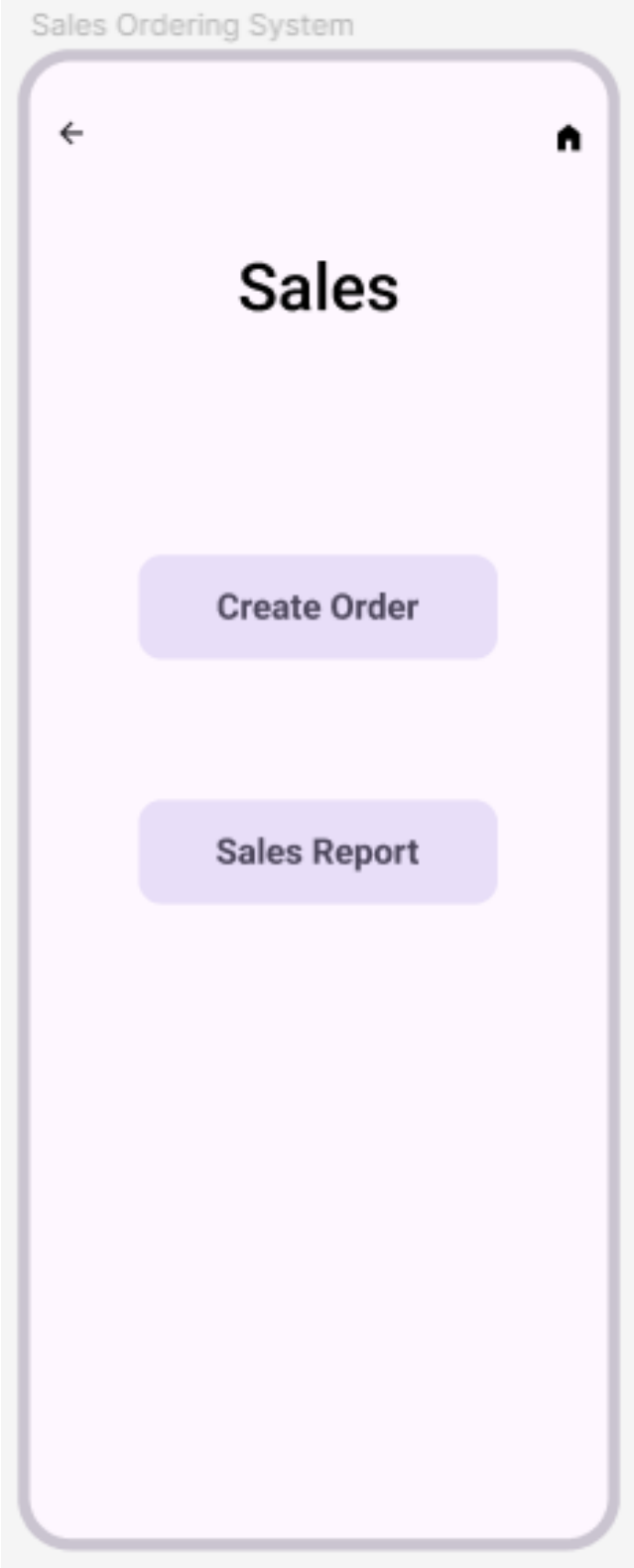
UPDATE PAYROLL



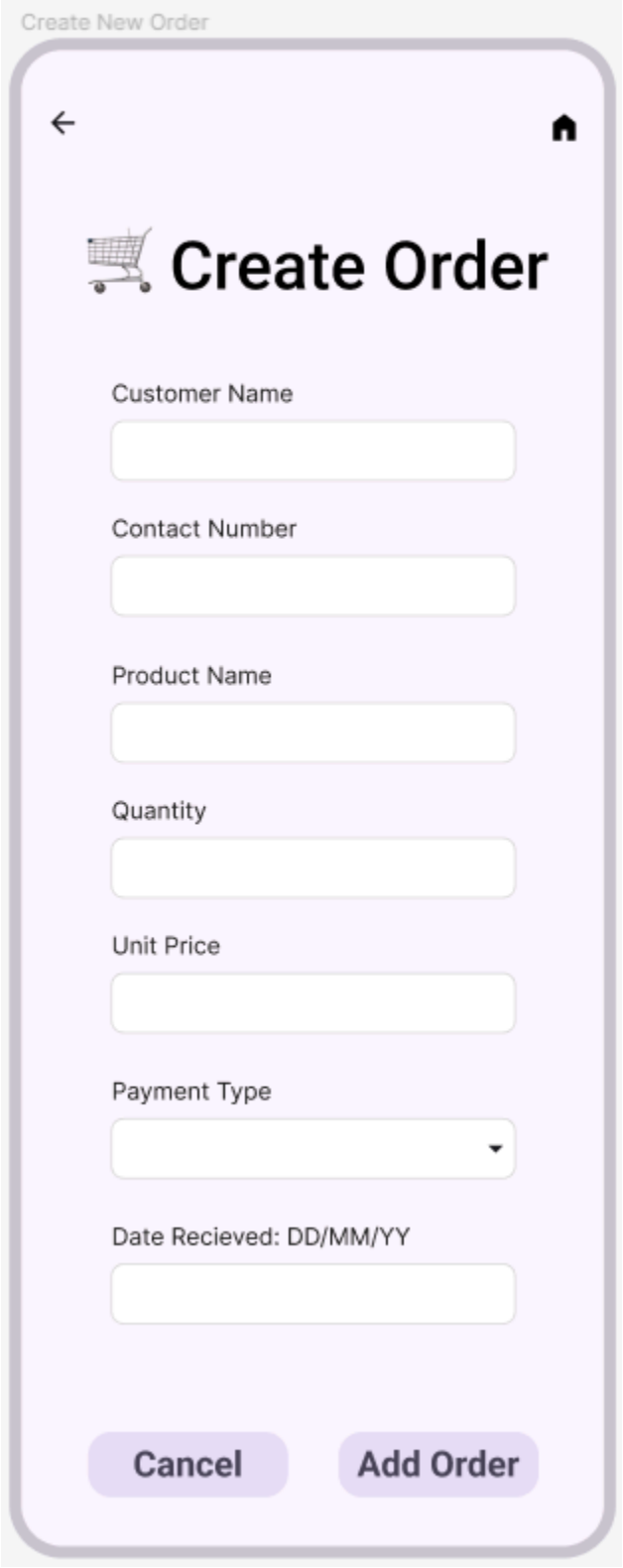
View Payroll Details



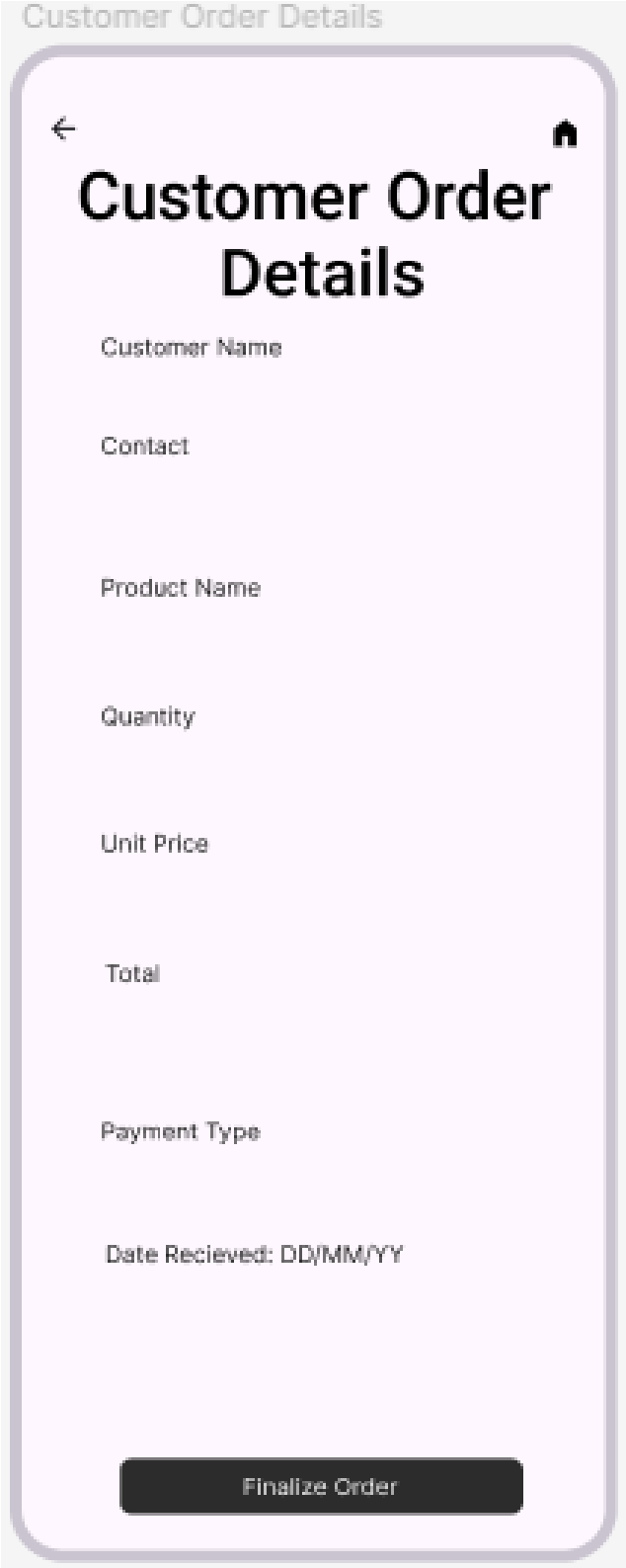
SALES MANAGEMENT VIEW



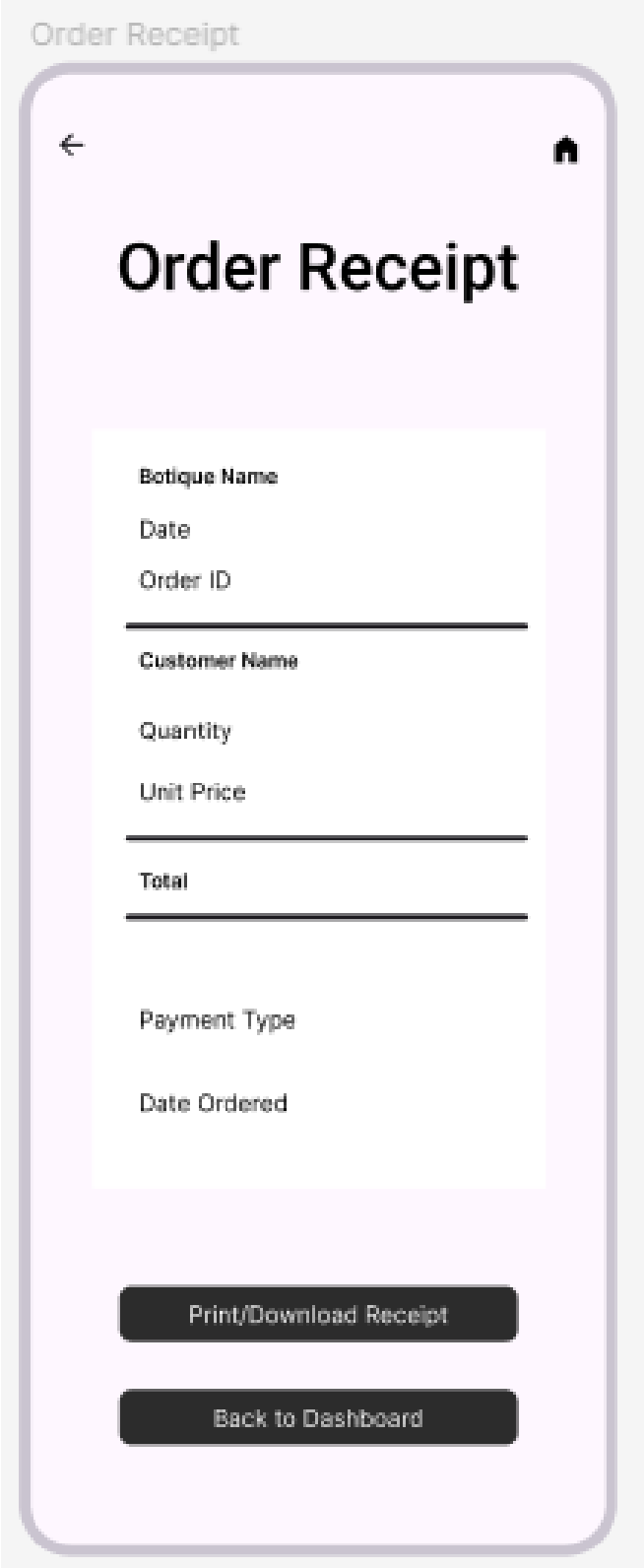
CREATE ORDER



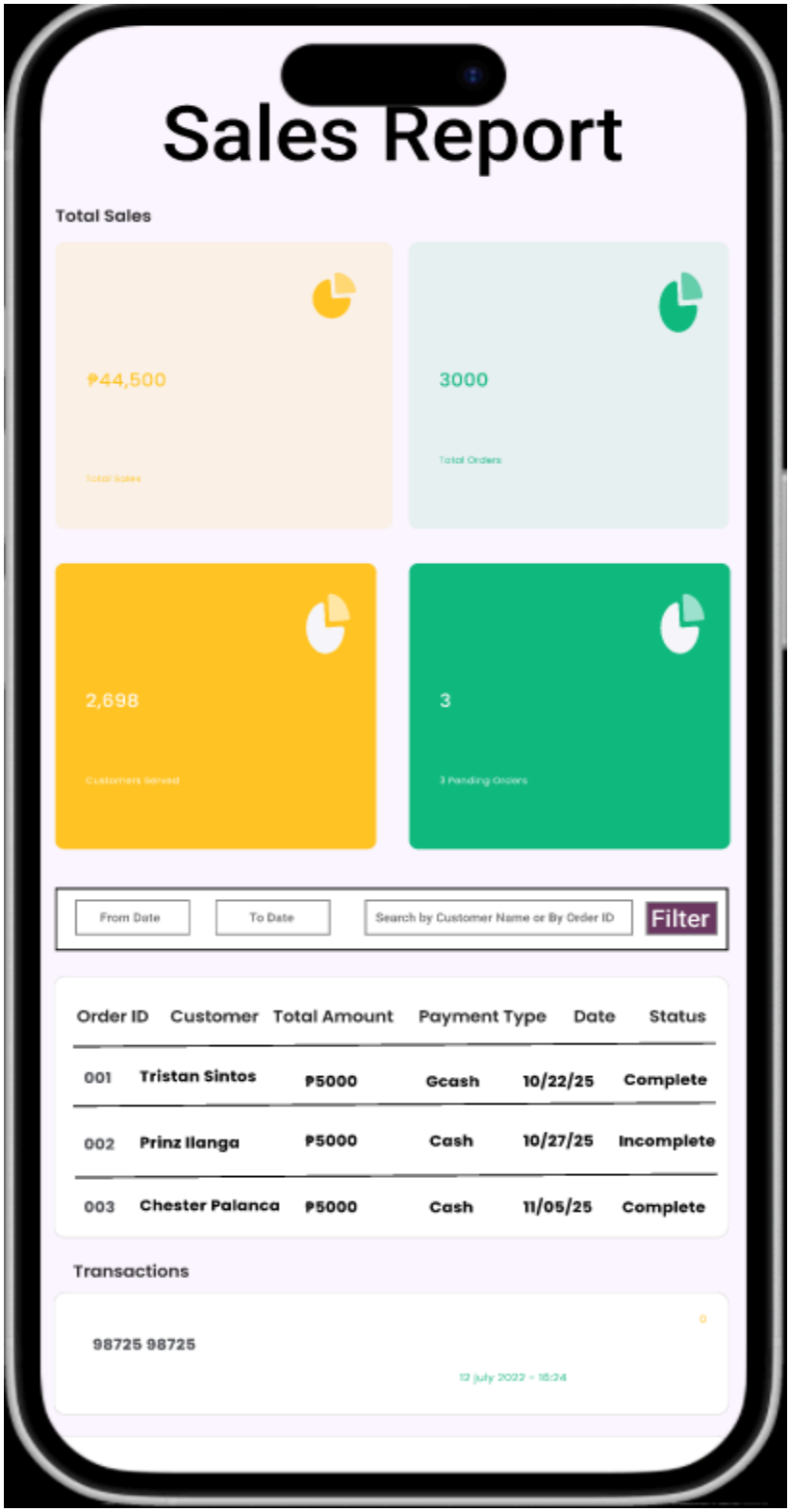
Customer Order Details



Order Receipt

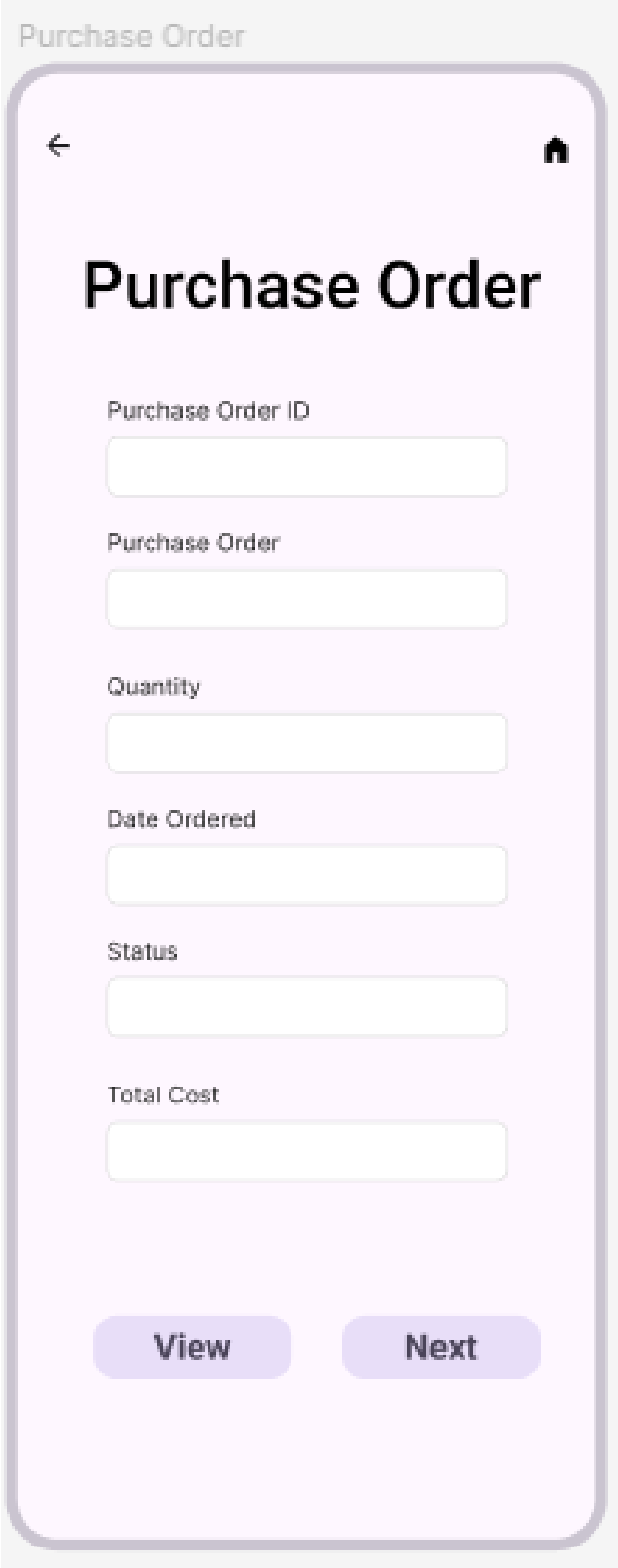


SALES REPORT

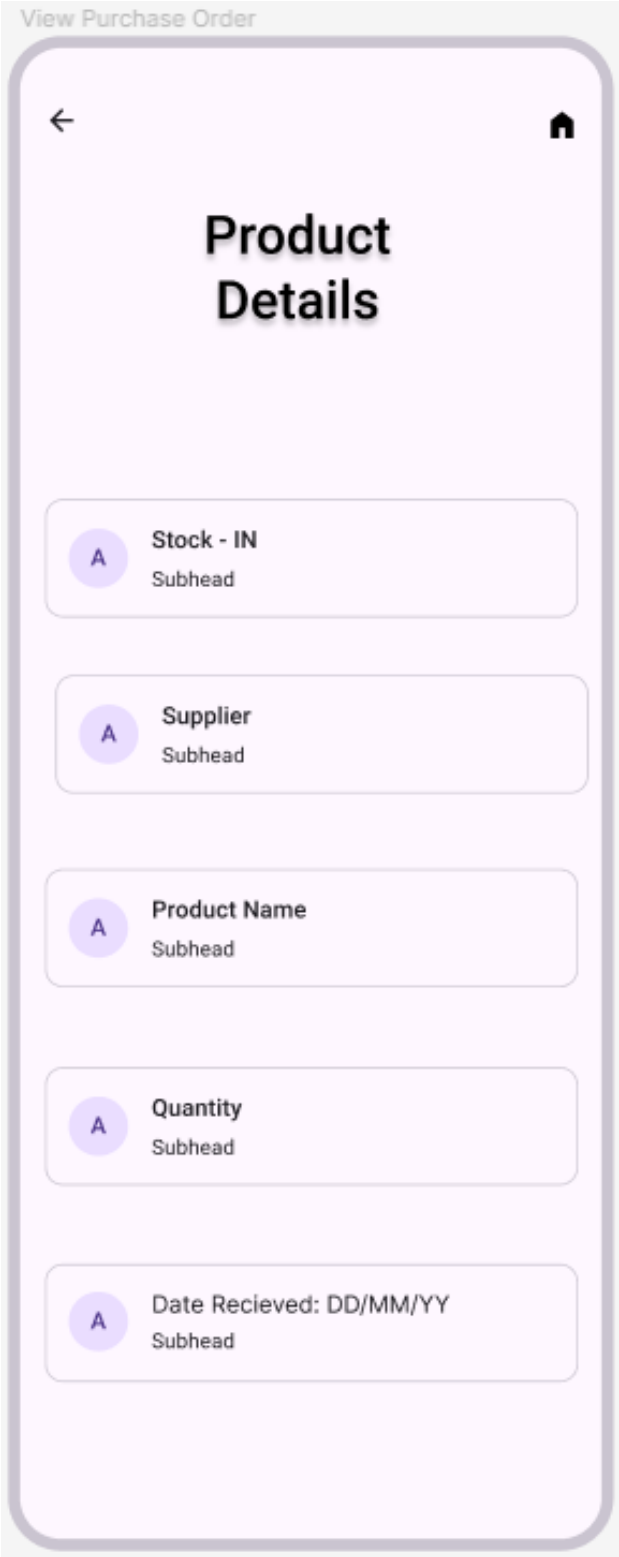


INVENTORY VIEW

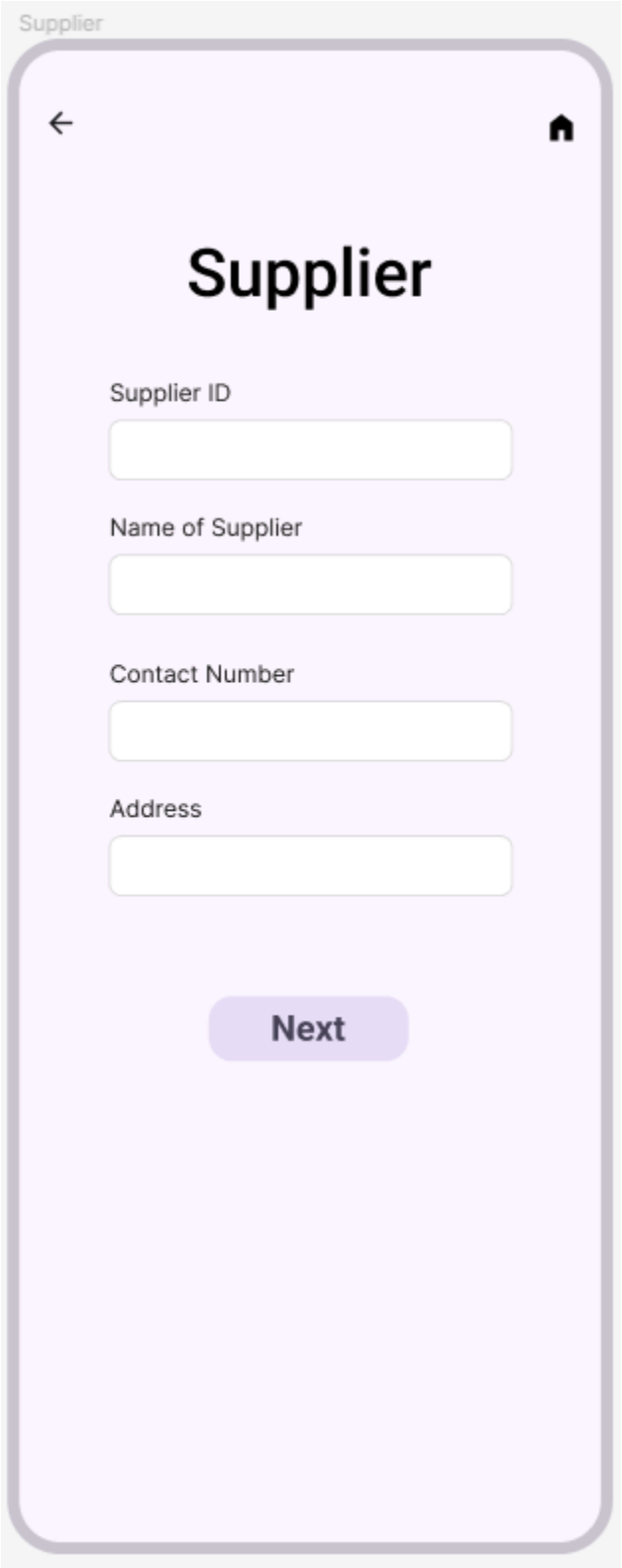
INVENTORY STOCK-IN



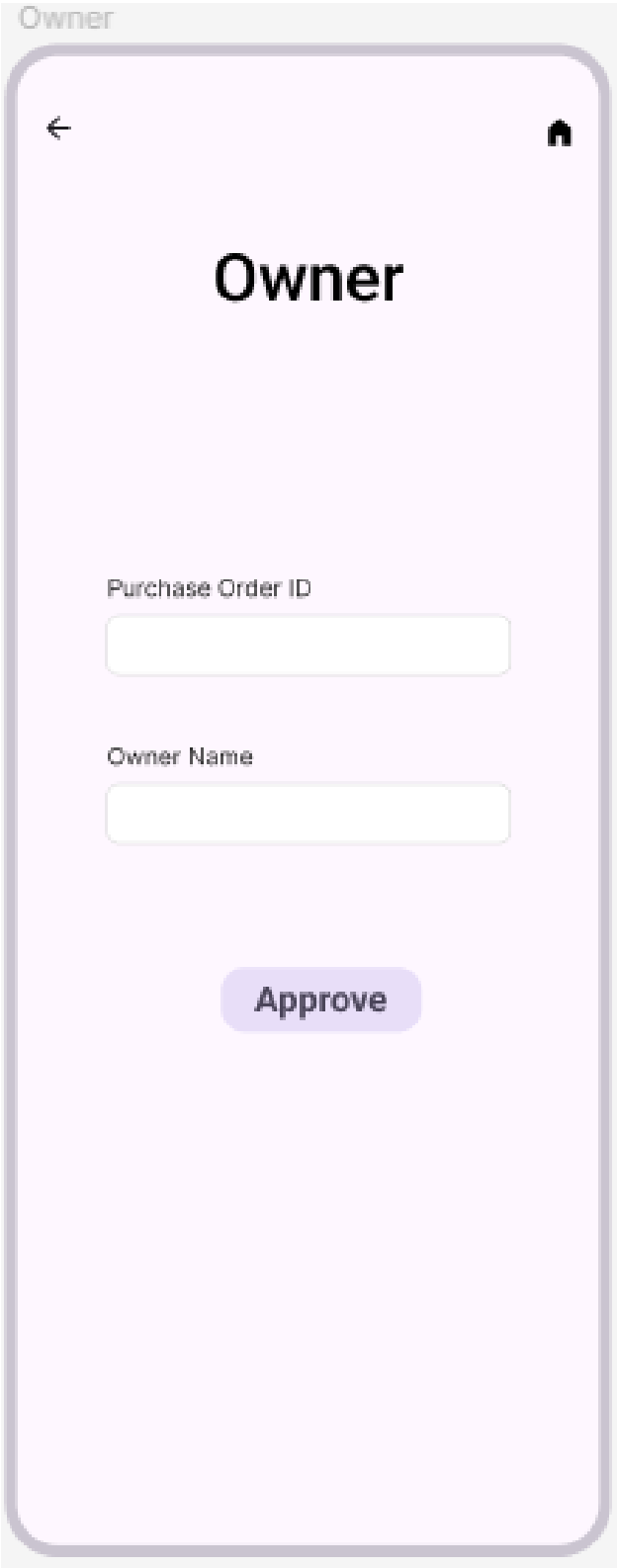
View Purchase Order Details



Supplier Details

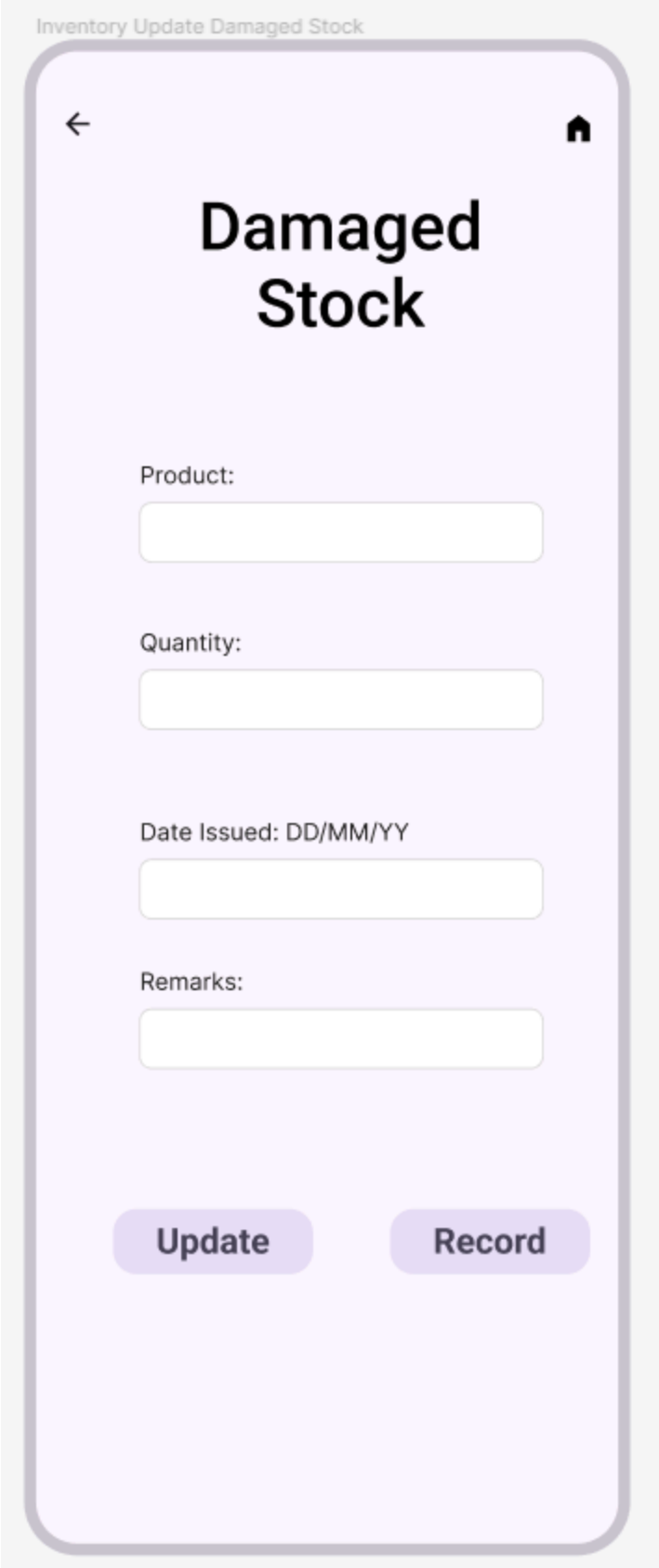
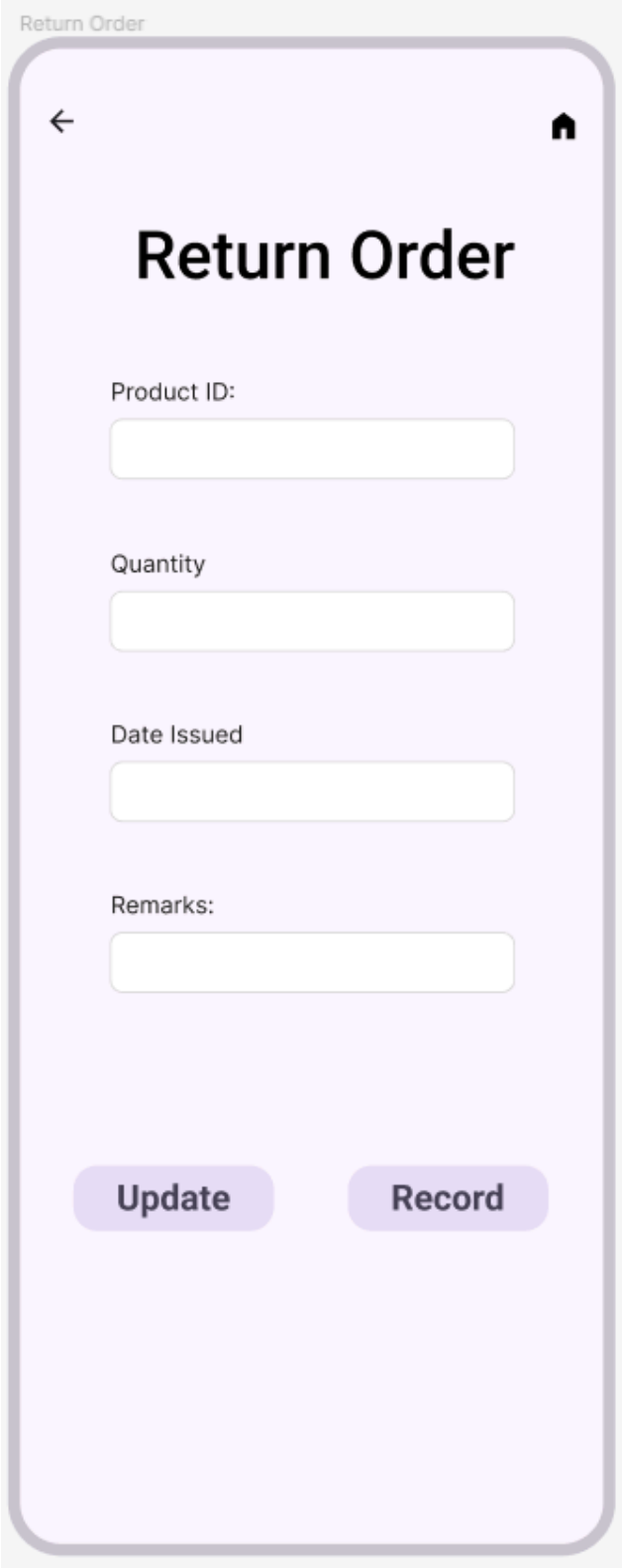


Owner Approval



Approved Order

Damaged Stock View


Inventory Update Damaged Stock
Damaged Stock
Product:
Quantity:
Date Issued: DD/MM/YY
Remarks:
Update
Record

Returned Item View