■ ShopEase: Digital Smart Shopping System for Offline Stores

■ Project Overview

Shopping in physical retail stores often involves long queues, waiting times, crowding, and manual billing, which causes exhaustion for customers and requires more staff for billing. Our proposed system — **ShopEase** — aims to make offline shopping faster, smarter, and hassle-free using a mobile app/web platform. This platform will allow customers in a city (starting with Hinjewadi, Pune) to scan or select items in-store, add them to a digital cart, and complete payment digitally, skipping queues and reducing crowding.

■ Core Objectives

• Reduce waiting time and crowd density in offline shops.

• Provide digital cart & payment system for physical stores.

• Integrate QR code scanning for automatic product entry.

• Give each shop a unique Shop ID + map-based navigation.

• Provide purchase history and digital receipts.

• Lower workforce dependency for billing counters.

■ System Features

➡■ Shop & User Registration

• Every shop has a unique Shop ID.

• Shop details (Name, Area, Category) stored in the database.

• Users select shop via ID or map navigation.

➡■ Product Selection

• Manual Dropdown: Choose category → Grocery, Fruits, Vegetables, Dry Fruits, etc.

• QR Scanning: Instantly add product details into cart by scanning the item.

➡■ Digital Cart System

• All selected products appear in the cart box.

• Users can edit/remove products before checkout.

➡■ Payment Integration

• Online payment (UPI, Cards, Wallets).

• Offline “Pay at Counter” option (if required).

• After payment → Digital Receipt generated.

➡■ Purchase History

• User can see past purchases, bills, and dates.

• Helps track monthly expenses.

➡■ Shop Navigation

• Built-in map feature to locate shops by Shop ID.

• Shops displayed on city map (e.g., Pune – Hinjewadi).

■ App vs Web

Mobile App (Customer Focused)

• Shop selection (ID or map).

• Scan QR / Manual product selection.

• Cart & Checkout.

• Payment integration.

• Purchase history.

Web App (Shop Admin Focused)

• Manage shop inventory.

• Generate product QR codes.

• Track daily sales analytics.

• Update product categories and prices.

■ Technology Stack

Frontend (Mobile)	**Flutter / React Native**
Frontend (Web)	React.js / Next.js
Backend	Node.js + Express
Database	Firebase / MongoDB / PostgreSQL
QR Scanning	ML Kit / ZXing
Payment Gateway	Razorpay / Paytm / Google Pay API
Map Navigation	Google Maps API

■ Expected Impact

• Reduce customer waiting time in queues by 60–70%.

• Reduce need for billing staff by 40%.

• Enhance customer satisfaction through fast checkout.

• Increase sales efficiency in offline retail.

• Create a scalable model adoptable in other cities beyond Pune.

■ Future Enhancements

• Loyalty rewards & cashback integration.

• Personalized shopping recommendations.

• Integration with delivery partners for hybrid offline-online model.

• Multilingual support for diverse customers.