

A Project Report On

Smartly Go

Submitted in partial fulfillment of the requirement for the
award of the degree

Bachelor of Computer Application
BCA

Academic Year 2025 - 26

Jenish Gohel
92300527156

Raj Rathod
92300527179

Yuvrajsinh Zala
92300527141

Internal Guide
Prof. Jignesh Kariya



Marwadi
University
Marwadi Chandarana Group



Faculty of Computer Applications (FCA)

Certificate

This is to certify that the project work entitled
Smartly Go
submitted in partial fulfillment of the requirement for
the award of the degree of
Bachelor of Computer Application
BCA
of the
Marwadi University
is a result of the bonafide work carried out by

Jenish Gohel (92300527156)

Raj Rathod (92300527179)

Yuvrajsinh Zala (92300527141)

during the academic year 2025-26

Faculty Guide

HOD

Dean

DECLARATION

We hereby declare that this project work entitled **SmartlyGo** is a record done by us.

We also declare that the matter embodied in this project is genuine work done by us and has not been submitted whether to this University or to any other University / Institute for the fulfillment of the requirement of any course of study.

Place : Marwadi University, Rajkot

Date : 19th August , 2025

Jenish Gohel (92300527156)

Signature : Jenish Gohel

Raj Rathod (92300527179)

Signature : Raj Rathod

Yuvrajsinh Zala (92300527141)

Signature : Yuvrajsinh Zala

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1. SYNOPSIS

This Project is all about to provide a modern, digital, and secure solution for managing daily transactions for small shopkeepers, business owners, and individuals.

Background / Problem Statement:

- Traditional *Khata books* are paper-based and commonly used for maintaining customer balances.
- This method is simple but has major drawbacks:
 - Messy and unorganized records
 - Difficult to track payments
 - High chances of errors

Proposed Solution:

- SmartlyGo replaces manual *Khata books* with a digital ledger system.
- Provides features such as:
 - Business registration
 - Customer management
 - Transaction recording
 - Real-time payment tracking
 - Inventory management
 - Reports and data visualization (charts)
 - Exporting invoices in PDF format
 - QR code generation
 - SMS notifications for customers

Technology Stack:

- **Frontend & GUI:** Python (PyQt5)
- **Database:** SQLite (for secure record storage)
- **Libraries Used:**
 - Matplotlib → Charts and data visualization
 - ReportLab → PDF generation
 - Twilio → SMS notifications

Key Benefits:

- Digital, secure, and user-friendly solution
- Saves time and reduces human errors
- Provides professional reports and analytics
- Acts as a complete business assistant rather than just a ledger

2.PREAMBLE

2.1 GENERAL INTRODUCTION

1.Importance of Book-keeping:

- Bookkeeping is an essential activity for all businesses, whether small or large.
- Traditionally, shopkeepers, wholesalers, and service providers maintained handwritten ledgers (Khata books) to track customer balances, payments, and dues.

2. Limitations of Traditional Khata Books:

- High chances of calculation mistakes
- Risk of loss or damage to records
- Lack of proper organization
- Difficulty in analyzing financial data

3. Role of Technology in Bookkeeping:

- Digital record-keeping has become a necessity with the growth of technology.
- Advantages of computerized bookkeeping:
 - Minimizes errors
 - Provides quick search and easy access to records
 - Generates instant reports
 - Performs automated calculations
 - Offers visual insights into transactions

4. Project Relevance (SmartlyGo – Digital Khata System):

- Aims to modernize the traditional Khata system with a complete digital solution.
- Core Features:
 - Customer management
 - Transaction management
 - Inventory management
- Designed to be simple, practical, and user-friendly.
- Suitable even for small shopkeepers with minimal technical knowledge.

Feature	Khatabook/OkCredit	Tally ERP	SmartlyGo(ProposedSystem)
Platform	Mobile (Android/iOS)	Desktop	Desktop (PyQt5)
Offline Support	Limited	Yes	Yes (SQLite database)
User Registration & Login	Yes	Yes	Yes (with bcrypt encryption)
Customer Ledger(Khata)	Yes	Yes	Yes (with detailed statements)
Inventory Management	Limited	Yes	Yes (products, stock, low alerts)
Report Generation (PDF/Excel/CSV)	Limited (PDF only)	Yes	Yes (multi-format exports)
Data Backup & Restore	Cloud Sync only	Yes	Yes (manual backup/restore)
QR Code Generation	No	No	Yes (product & payment QR)
Data Visualization (Charts)	No	Basic	Yes (Sales trend, balances, summary)
SMS Notifications	Yes (limited Free)	No	Yes (Twilio API integration)
Cost	Freemium	Paid	Open Source & Free

Table 2.1 Comparison of Existing Systems

2.2 Module Description :

1. User Management Module :

- Provides secure login and registration for businesses.
- Ensures that data is accessible only by authorized users.
- Stores shop details for personalized invoices and reports.

2. Customer Management Module :

- Lets the user add, edit, delete, and search customer records.
- Maintains contact details, outstanding balance, and payment history.
- Simplifies customer tracking by linking transactions with individual accounts.

3. Transaction Management Module :

- Handles credit (amount taken) and debit (amount paid) entries.
- Maintains date, description, and transaction type.
- Automatically updates outstanding balances to avoid manual errors.

4. Inventory Module :

- Manages product details like name, price, quantity, barcode, and category.
- Helps shopkeepers monitor stock levels and restock items in time.
- Prevents confusion about product availability and pricing.

5. Reports & Visualization Module :

- Generates detailed financial reports that can be exported in CSV or PDF formats.
- Uses charts and graphs (via Matplotlib) for visual representation of income/expenses
- Provides insights into customer behavior and business growth.

6. Settings & Personalization Module :

- Allows customization such as dark mode, themes, and currency selection.
- Offers integration with SMS/notifications for customer payment reminders.
- Improves overall usability and user experience.

3. TECHNICAL DESCRIPTION

3.1 Hardware Requirements :

Since the project is developed as a desktop-based application, it does not require very high-end hardware. A standard computer or laptop is enough to run the system smoothly.

- **Processor:** Intel i3 / AMD Ryzen 3 or higher
- **RAM:** Minimum 4 GB (8 GB recommended for better performance)
- **Storage:** At least 500 MB free space for program files and database
- **Display:** Minimum 1366×768 resolution
- **Optional Devices:** Barcode Scanner and Printer (for faster product entry and invoice printing)

Processor	Intel i3 / AMD Ryzen 3 or higher
RAM	Minimum 4 GB (8 GB recommended for better performance)
Storage	At least 500 MB free space for program files and database
Display	Minimum 1366×768 resolution
Optional Devices	Barcode Scanner and Printer (for faster product entry and invoice printing)

Table 3.1 Hardware Configuration

3.2 Software Requirements :

The software stack has been chosen to be open-source and widely used so that the system is cost-effective and easily customizable.

- **Operating System:** Windows 10 / 11 (compatible with Linux & macOS as well)
- **Programming Language:** Python 3.10+
- **GUI Framework:** PyQt5
- **Database:** SQLite3 (lightweight and serverless)
- **Libraries/Packages:**
 - Matplotlib (for charts and visualization)
 - ReportLab (for generating PDF invoices)
 - Pandas (for data handling and CSV export)
- **IDE/Editor:** VS Code / PyCharm (or any Python-supported IDE)

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Table 3.2 Software Configuration

4. SYSTEM DESIGN AND DEVELOPMENT

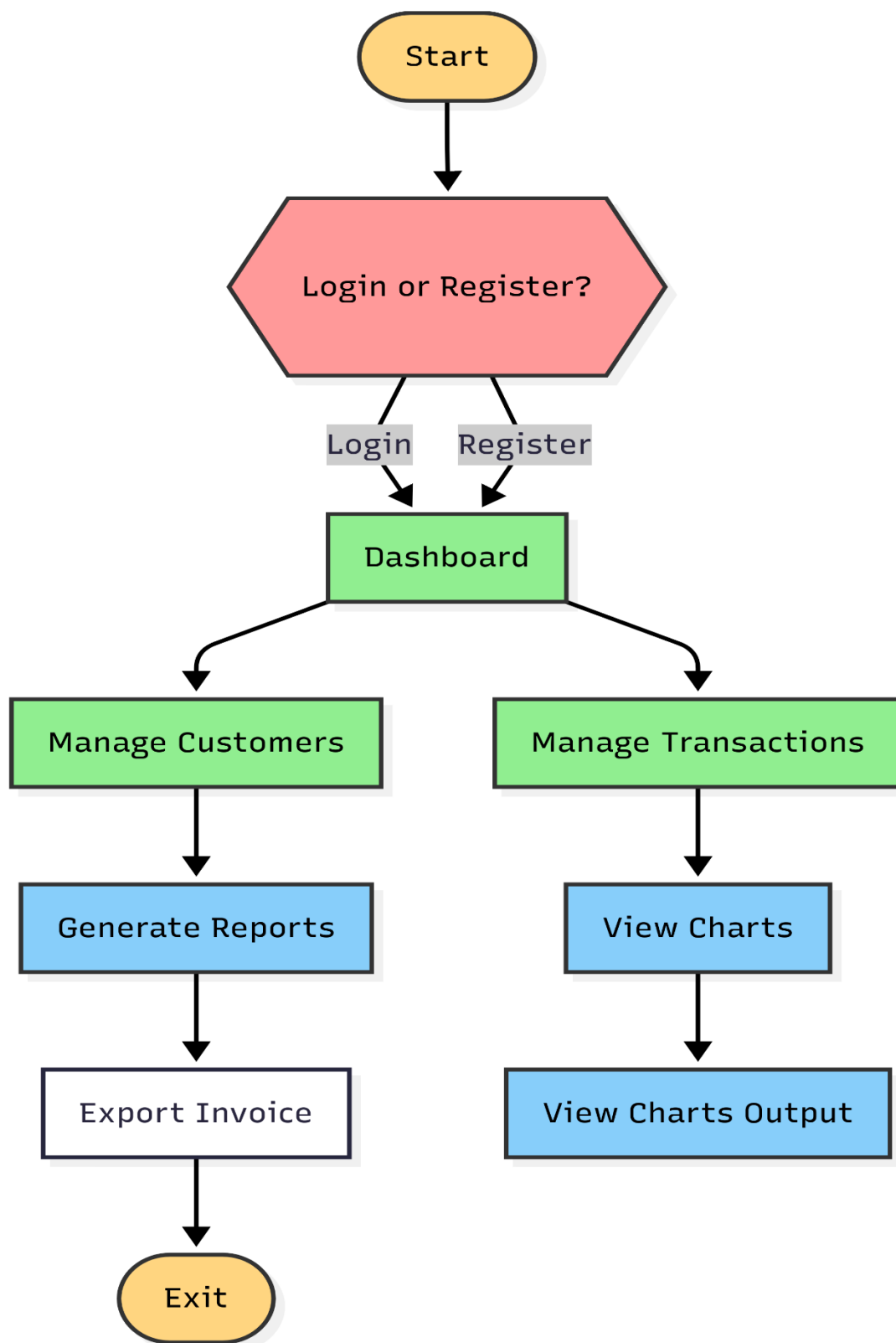


Figure 4.1 Flow Chart

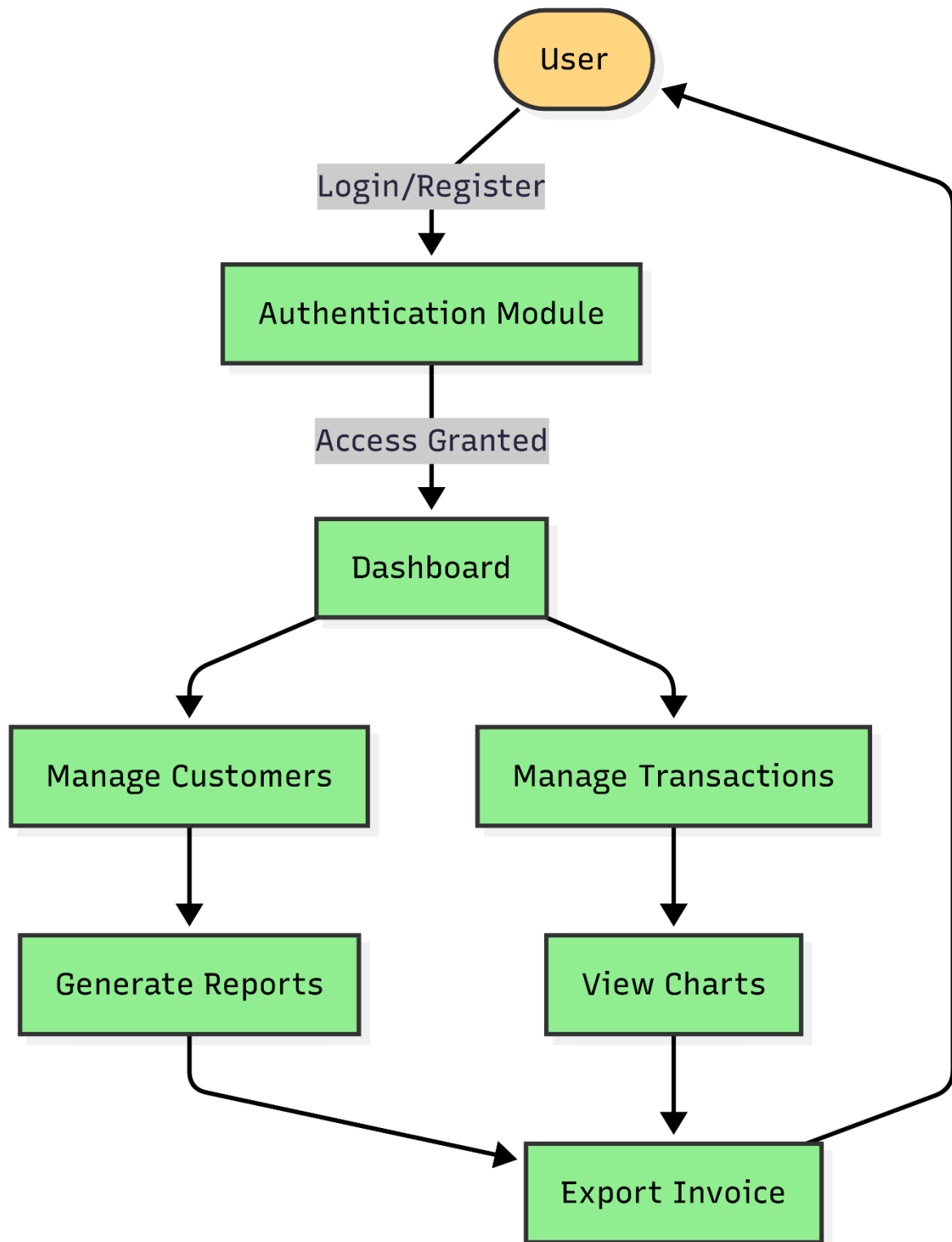


Figure 4.2 Dataflow Diagram

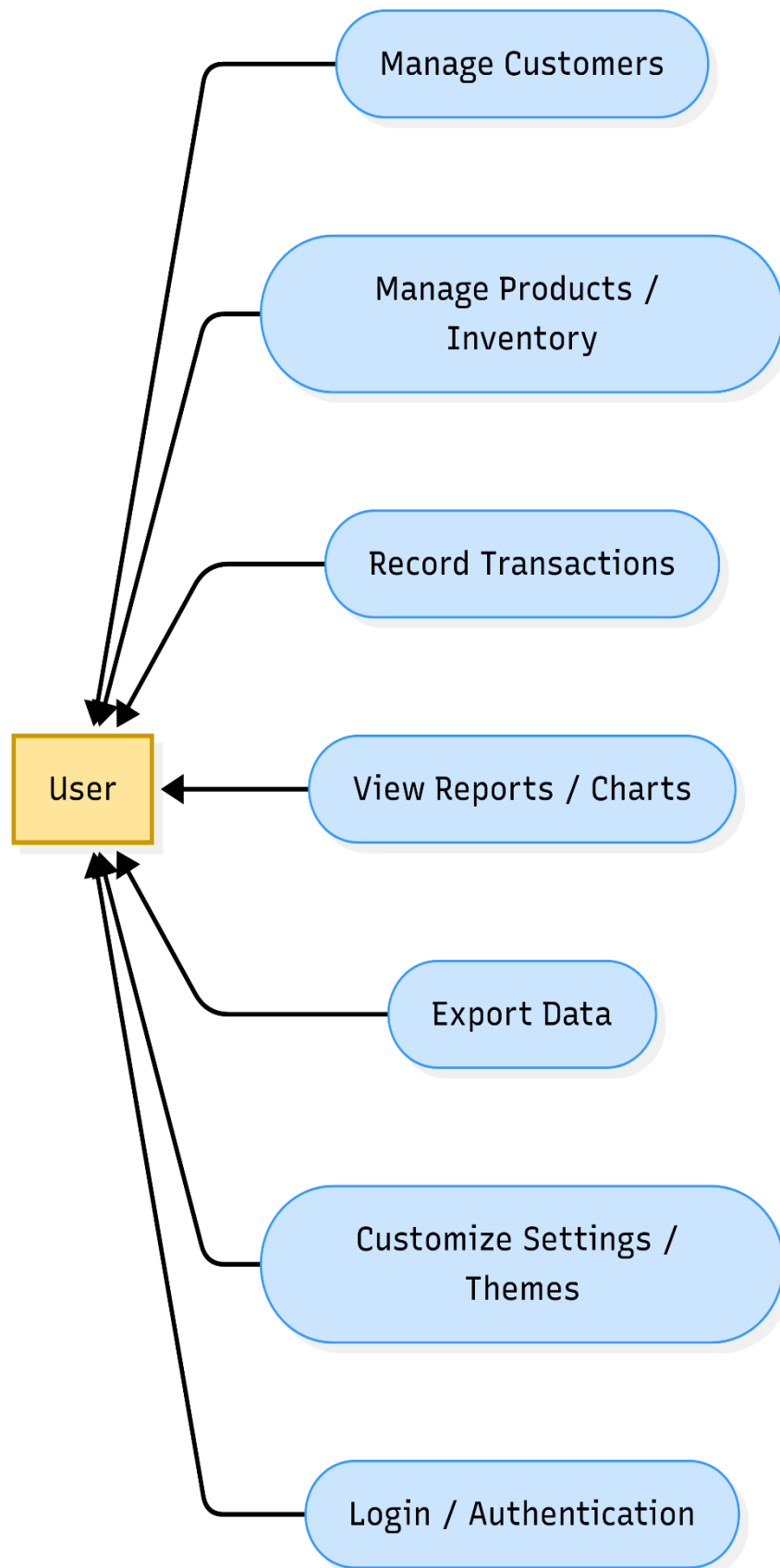


Figure 4.3 Use Case Diagram

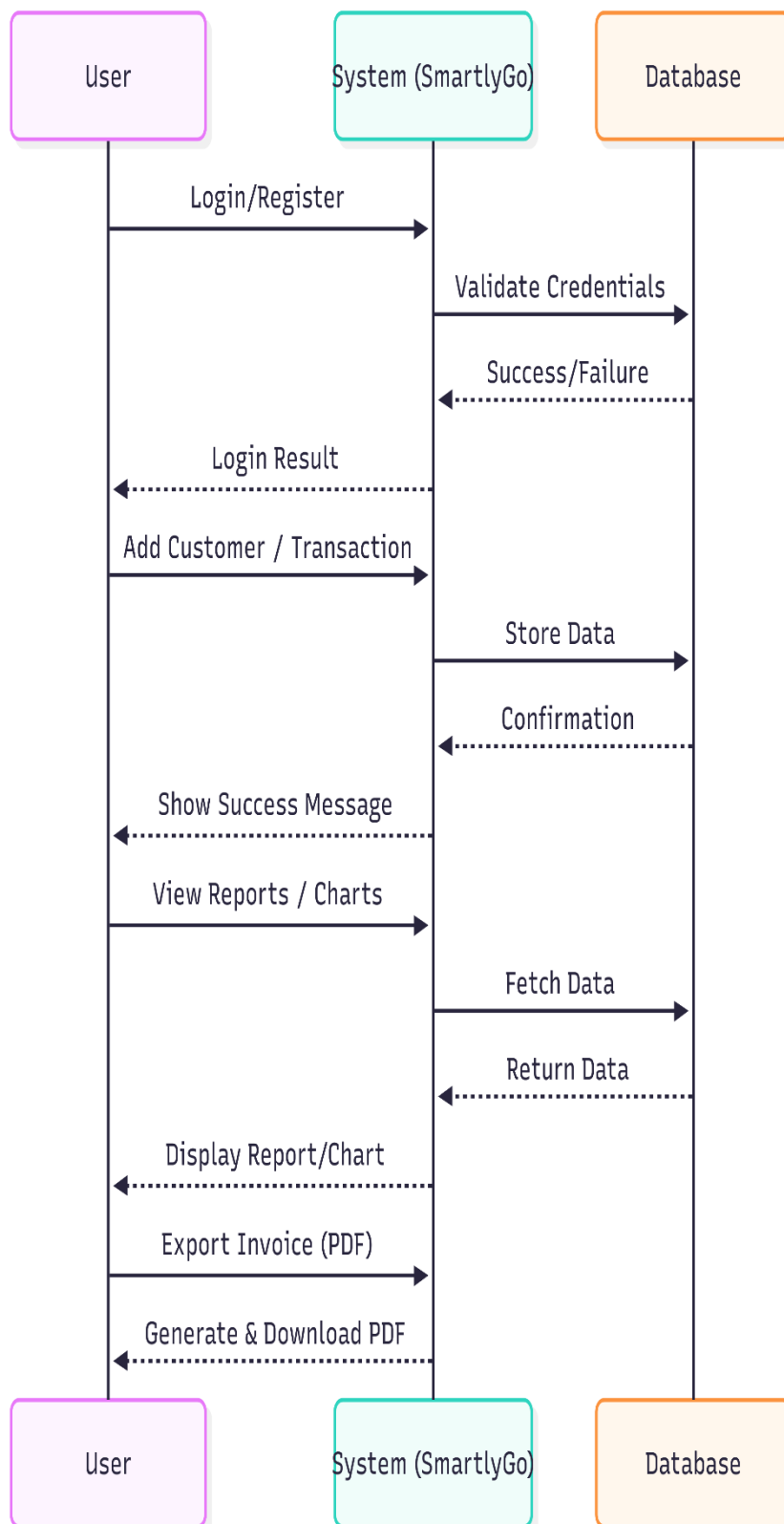


Figure 4.4 Sequential Diagram

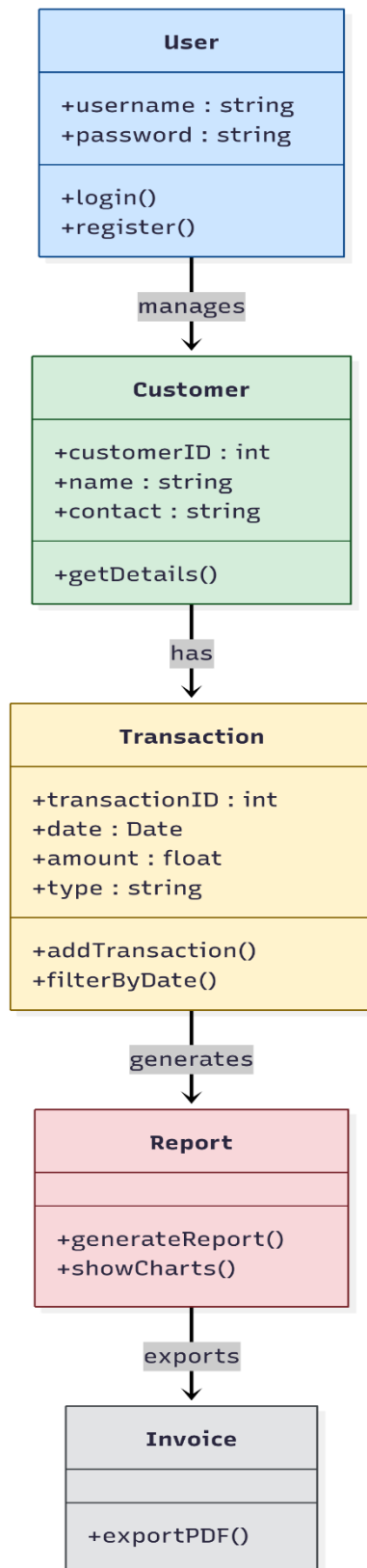


Figure 4.5 Class Diagram

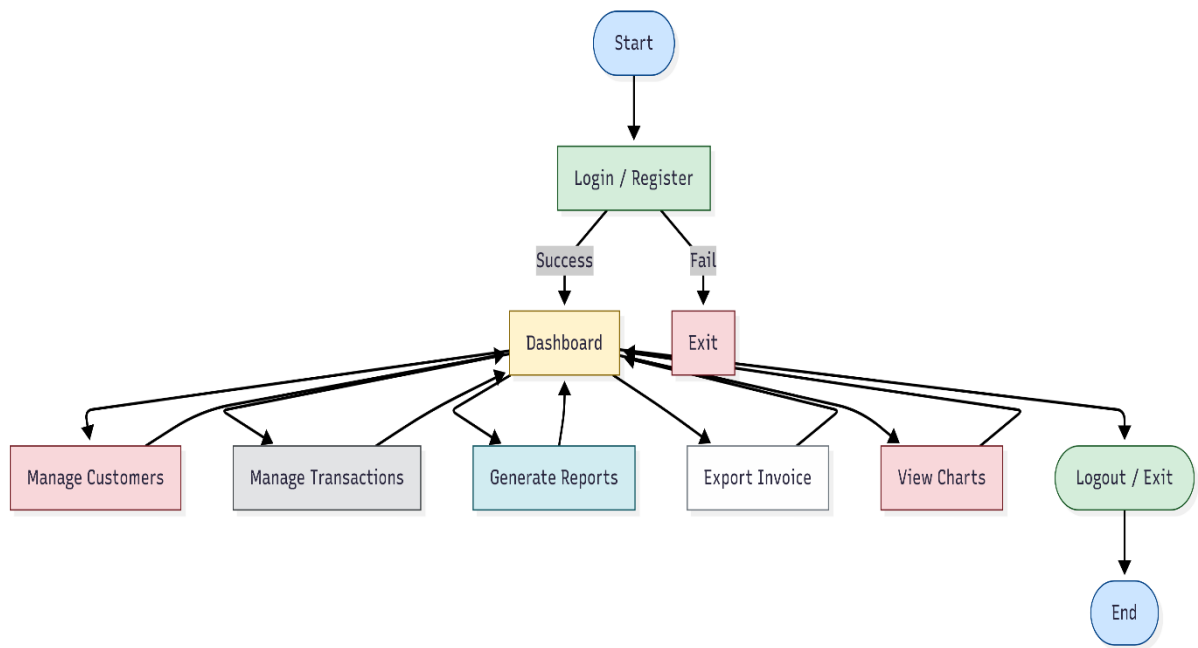


Figure 4.6 Activity Diagram

4.7 Database Design

4.7.1 Main Tables:

1. Users

- Stores registered users and business details.

Fields:

- id (primary key)
- username (user login)
- password (hashed password)
- business_name
- phone
- address

2. Settings

- Stores user-specific application preferences.

Fields:

- user_id (primary key, foreign key to Users)
- currency
- sms_notifications (0 or 1)
- dark_mode (0 or 1)

3. Customers

- Stores customers' information and balances.

Fields:

- id (primary key)
- user_id (foreign key to Users)
- name
- phone
- email
- address
- balance

4. Products

- Stores inventory products.

Fields:

- id (primary key)
- user_id (foreign key to Users)
- name
- price
- quantity
- category
- barcode

5. Transactions

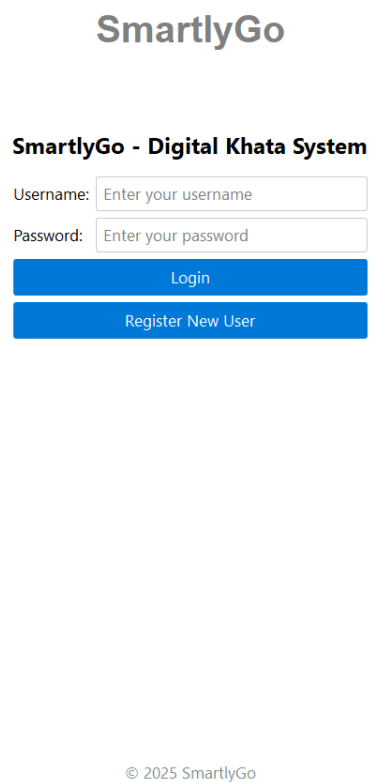
- Tracks all debit and credit transactions.

Fields:

- id (primary key)
- user_id (foreign key to Users)
- customer_id (foreign key to Customers)
- amount
- type (credit or debit)
- date
- description

4.8 Screen Design & Coding

4.8.1 Code : [Smartly go.py](https://github.com/SmartlyGo/py)



The image shows a web page for 'SmartlyGo - Digital Khata System'. At the top, the text 'SmartlyGo' is displayed in a large, bold, grey font. Below it, the title 'SmartlyGo - Digital Khata System' is shown in a smaller, bold, black font. The login section contains two input fields: 'Username:' with the placeholder text 'Enter your username' and 'Password:' with the placeholder text 'Enter your password'. Below these fields are two blue buttons: 'Login' and 'Register New User'. At the bottom of the page, there is a copyright notice: '© 2025 SmartlyGo'.

SmartlyGo

SmartlyGo - Digital Khata System

Username:

Password:

Login

Register New User

© 2025 SmartlyGo

Figure 4.8.2 Login Page

Welcome, raj!

Toggle Dark Mode

Log Out

Business Overview

Total Customers

2

Pending Payments

₹150.00

Recent Transactions

2

Inventory Items

0

Quick Actions

Add Customer

Add Transaction

Add Product

Recent Transactions

	Date	Customer	Type	Amount	Description
1	2025-08-18	jenish	debit	50.0	milk
2	2025-08-18	yuvraj	debit	100.0	chips and biscuits

Figure 4.8.3 Dashboard

LoginDashboardKhata ManagementInventoryReportsVisualizationSettings

Customer Management

Search customers...

Add Customer

yuvraj (Bal: ₹-100.00)

Name: yuvraj

Phone: 8765432112

Email: yuvi321@gmail.com

Address: sethnagar , madhapar

Current Balance: ₹-100.00

Transactions

	ID	Date	Type	Amount	Balance	Description
1	2	2025-08-18	debit	₹100.00	₹-100.00	chips and biscuits

Add Credit

Add Debit

Print Statement

Figure 4.8.4 Khata Management

Login
Dashboard
Khata Management
Inventory
Reports
Visualization
Settings

Product Management

Search products...
All Categories
Add Product

	ID	Name	Price	Quantity	Category	Barcode
1	1	lays	₹20.00	50		24121

Edit Product
Delete Product
Generate QR
Payment QR

Low Stock Items

Name	Price	Quantity	Category
------	-------	----------	----------

Figure 4.8.5 Inventory

Login
Dashboard
Khata Management
Inventory
Reports
Visualization
Settings

Report Controls

Report Type: Daily Sales

From: 18-07-2025 To: 18-08-2025

Customer: All Customers

Generate Report

--- Daily Sales Report (2025-07-18 to 2025-08-18) ---

Date	Sales	Returns/Debits
2025-08-17	₹ 0.00	₹ 276.00

Export Options

Export to PDF
Export to Excel
Export to CSV
Print Report

Figure 4.8.6 Reports

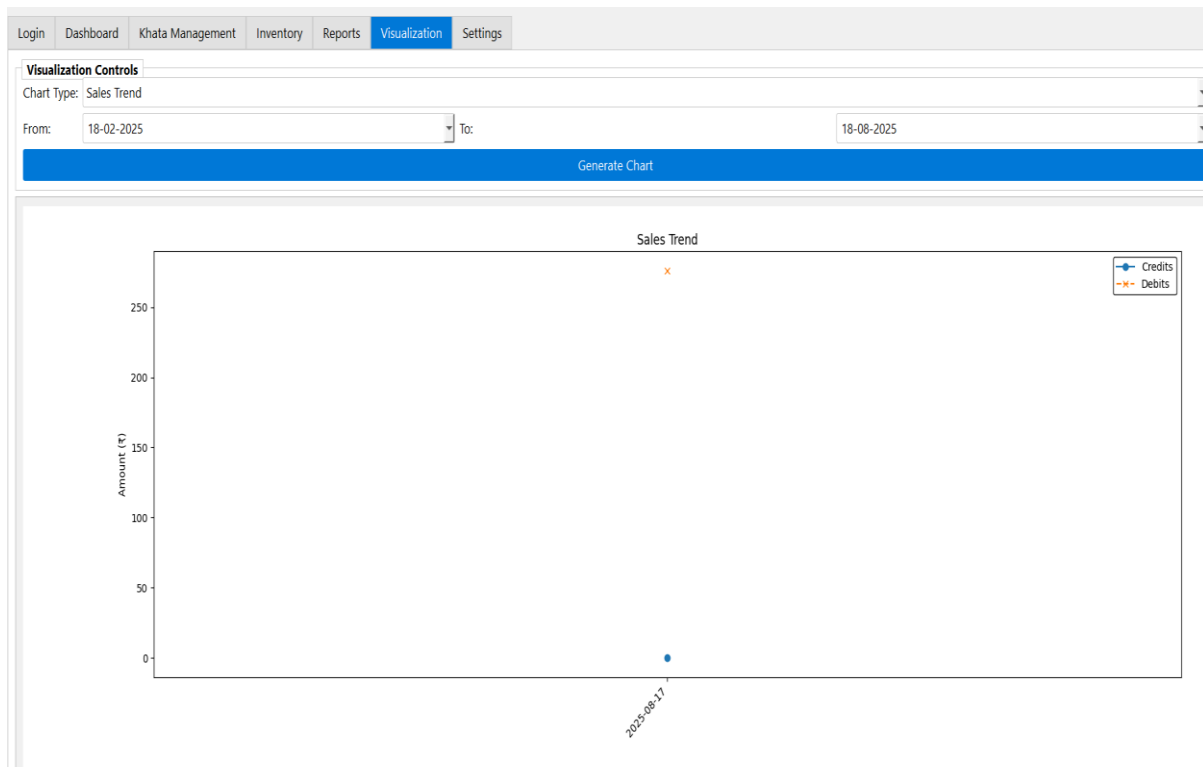


Figure 4.8.7 Visualizations

The screenshot shows the 'Settings' section. It is divided into three main sections: 'User Settings', 'Application Settings', and 'Data Management'. 'User Settings' includes fields for 'Business Name' (emi), 'Phone' (78566758), 'Address' (rgsrfdsfv), and 'Business Logo' with a 'Browse...' button. 'Application Settings' includes 'Currency' (₹ (Rupee)) and 'Enable SMS Notifications' (unchecked). 'Data Management' includes 'Backup Data' and 'Restore Data' buttons. A 'Save Settings' button is located between the Application and Data Management sections.

Figure 4.8.8 Settings

5.CONCLUSION

The development of *SmartlyGo – Digital Khata System* has demonstrated how traditional bookkeeping methods can be effectively transformed into a secure and user-friendly digital platform. The system integrates customer management, transaction tracking, and inventory handling in a single application, supported with advanced features such as QR code generation, report export in multiple formats (PDF, Excel, CSV), and interactive visualizations.

The project ensures data security through encrypted authentication, while also providing data safety mechanisms like backup and restore. Its modular design covers essential business needs, including customer statements, low-stock alerts, and financial summaries, thereby reducing manual effort and improving accuracy.

Overall, SmartlyGo successfully meets its objectives of simplifying financial record-keeping, providing real-time insights, and enhancing efficiency for small businesses, shopkeepers, freelancers, and startups. The project not only highlights the practical application of software engineering principles but also paves the way for further improvements such as cloud integration, mobile app development, and AI-based financial predictions.

6. Learning During Project

1. Technical Skills Acquired:

- In-depth exploration of Python programming.
- Hands-on experience with essential libraries:
 - **PyQt5** → for creating interactive graphical interfaces.
 - **SQLite** → for efficient data management.

2. Debugging and Problem-Solving:

- Gained practical experience in debugging and bug fixing.
- Learned to analyze real-world issues collaboratively.
- Developed critical thinking and problem-solving skills.
- Emphasized the importance of clean and maintainable code.

3. Use of AI Tools for Productivity:

- Leveraged AI for:
 - Code suggestions
 - Refactoring
 - Generating boilerplate code
- Result: More focus on complex logic, design, and advanced features.
- Improved both development speed and application quality.

4. Teamwork and Collaboration:

- Enhanced collaborative problem-solving abilities.
- Strengthened skills in working as a team during real-world challenges.

5. Software Development Practices:

- Improved understanding of the Software Development Life Cycle (SDLC).
- Importance of planning, thorough testing, and continuous learning was highlighted.

6. Overall Outcome:

- Strengthened technical expertise and practical application development skills.
- Learned to build efficient, reliable, and user-centric software solutions.

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