Why Choose Retail Pulse?

Inventory Management

Track stock levels, categories, and get reorder alerts.

Sales & Profit Analysis

Visual dashboards for revenue and trends.

Expense Tracking

Monitor and control your business expenses efficiently.

Retail Pulse

Insightful Retail & Smarter Decisions.

Contents

- **Project Overview & Objectives**
  System purpose and business goals
- **Key Features**
  Authentication and core functionalities
- **Technical Implementation**
  Workflow and challenges faced
- **Future Scope**
  Planned enhancements and improvements

Project Overview

01

Platform

Fully functional web-based platform built using Python, MySQL, and Streamlit for comprehensive retail management

02

Versatility

Designed to serve any type of retailer or wholesaler across industries including groceries, electronics, fashion

03

Features

Multi-user authentication, CSV bulk uploads, and real-time analytics dashboards for modern business operations

Core System Objectives & Capabilities

Real-Time Monitoring

- Record sales and purchases instantly
- Monitor stock levels continuously
- Track inventory movements
- Generate live performance reports

Expense Management

- Track operational expenses
- Monitor rent and utilities
- Manage staff costs
- Generate expense reports

Multi-User Security

- Secure user authentication
- Individual data isolation
- Session management system
- Role-based access control

Technology Stack

Layer	Tool Used
Backend	Python (business logic & data handling)
Frontend	Streamlit (Python UI framework)
Database	MySQL
Deployment	Streamlit Cloud

Application Workflow

1

Registration

Users register with name, email, and secure password

2

Authentication

Secure login with automatic session management

3

Product Management

Add and manage product inventory

4

Transactions

Record purchases and sales data

5

Analytics Dashboard

View real-time insights and performance

Multi-User

Authentication

CSV

Bulk Upload

Real-Time

Analytics

Data Management

Comprehensive system for handling all retail operations with automated data processing and validation

- Manual form entry for individual transactions
- CSV file uploads for bulk data import
- Real-time data validation and error handling

Performance Analytics

Dynamic dashboards providing instant insights into business performance with customizable KPI tracking

- Sales and purchase trend analysis
- Stock level monitoring and alerts
- Expense tracking and budget analysis

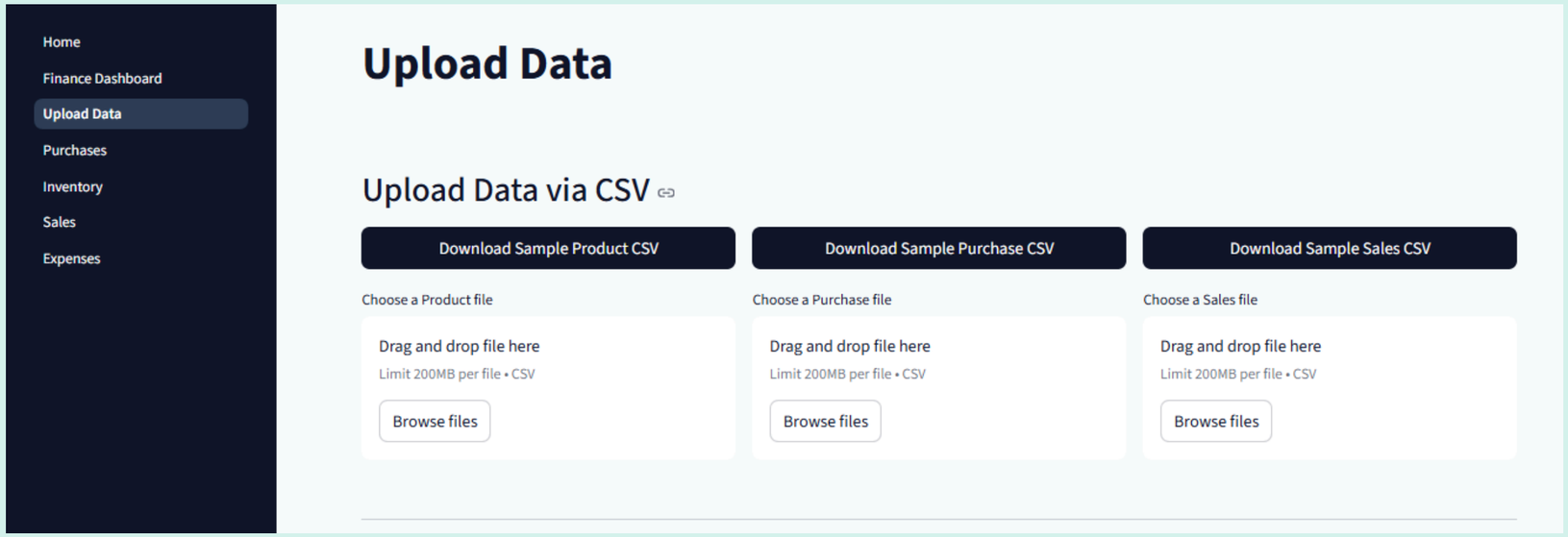
Security Features

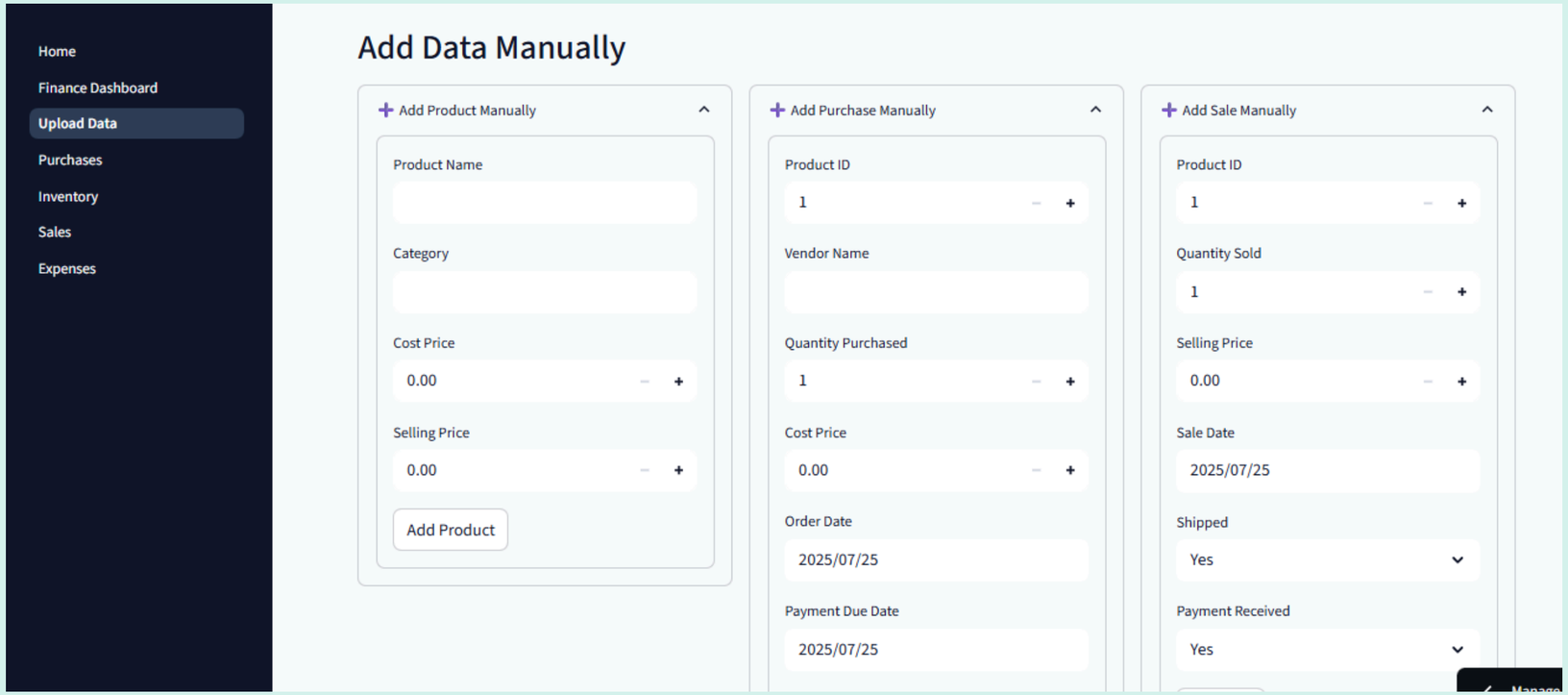
Robust security framework ensuring data protection and user privacy with session-based access control

- User-specific data isolation and protection
- Automatic session logout on refresh
- Secure authentication and password management

Data Management

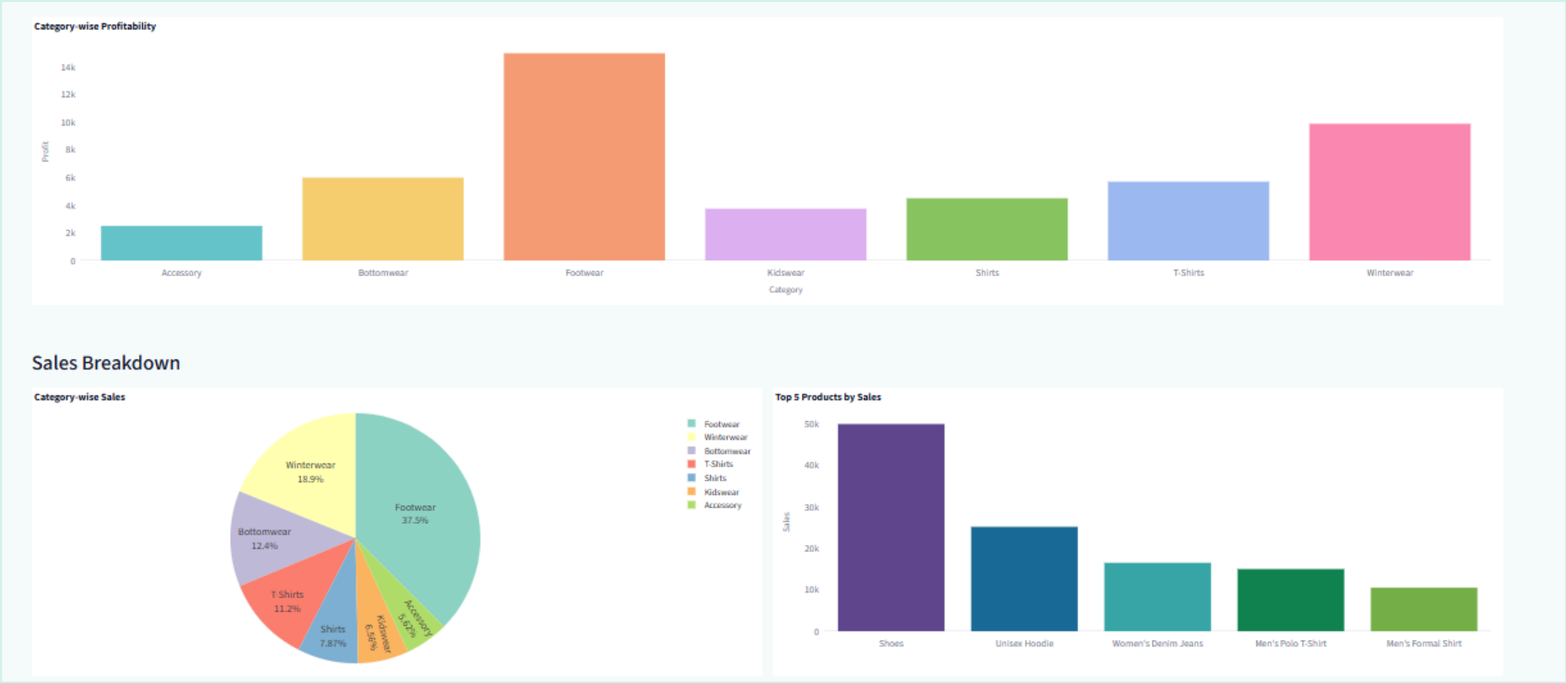
- Manual product and transaction entry
- CSV file upload with validation
- Automated data processing and storage

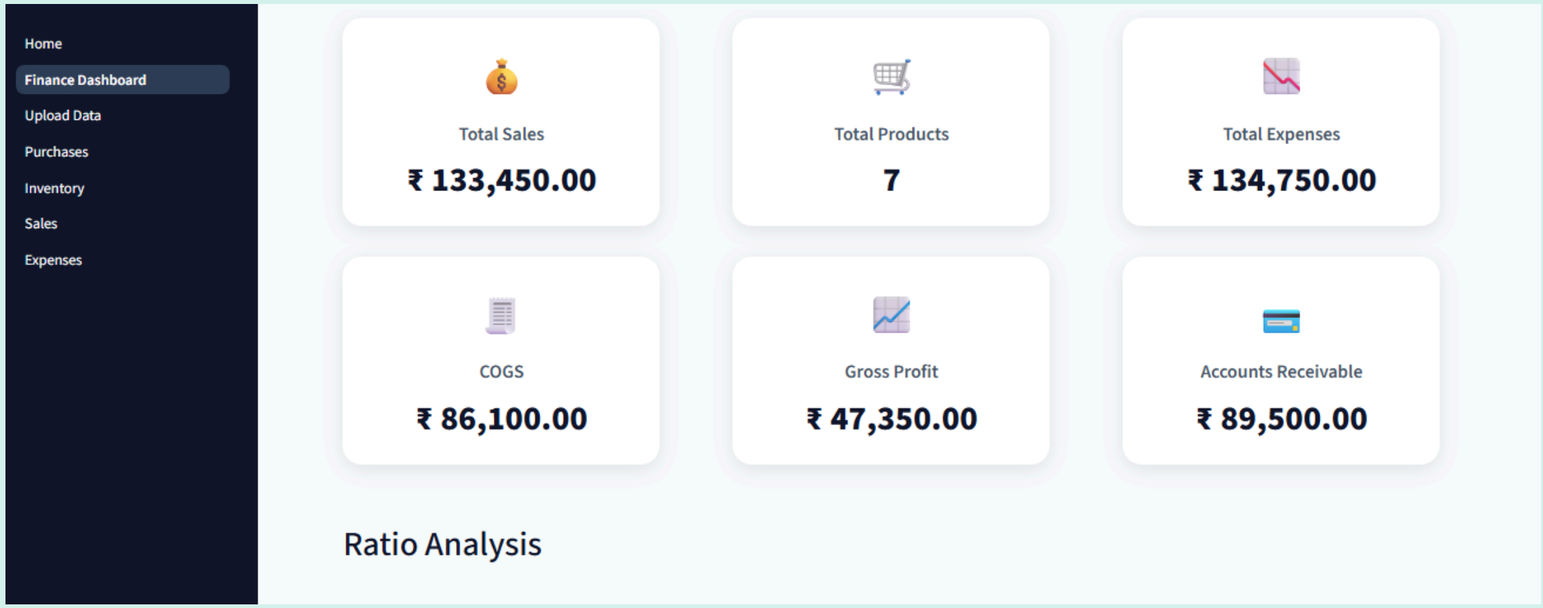




Analytics Dashboard

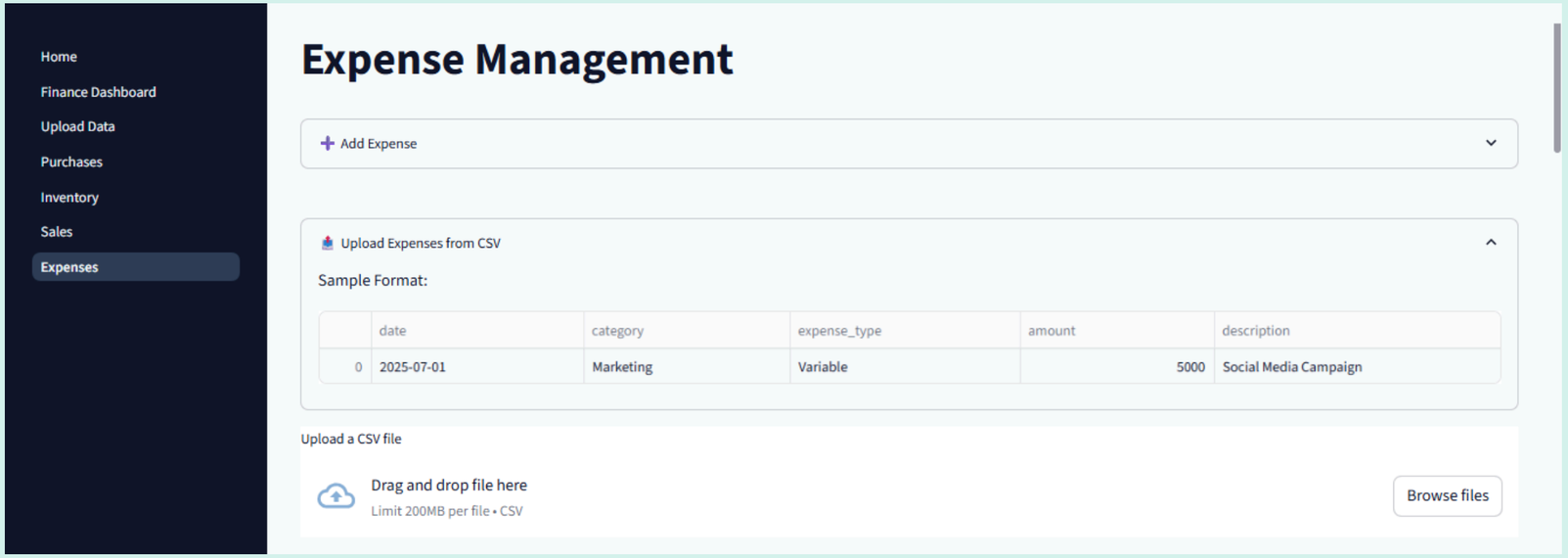
- Real-time sales and purchase tracking
- Interactive charts and performance metrics
- Customizable KPI monitoring and reporting





Expense Tracking

- Operational expense monitoring and categorization
- Key Metrics and visualisation insights
- Detailed expense reporting and insights



Technical Challenges vs Solutions

Challenges	Solutions
Building dynamic dashboards with user-specific data filtering	Implemented real-time data filtering and instant updates
Managing relational database dependencies effectively	Designed optimized relational database architecture
Creating secure session management with automatic logout	Built session-aware security with refresh protection

Future Enhancements

Security

Operations

Intelligence

Enhanced Authentication & Recovery

Password recovery system, advanced user management, and improved security protocols for business operations

Business Process Automation

Invoice generation, return management, PDF/Excel report exports, and mobile-optimized interface

AI Integration

AI-powered forecasting, POS integration, and barcode support systems

THANK YOU

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