

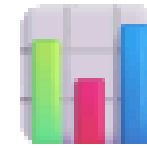


## Why Choose Retail Pulse?



### **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

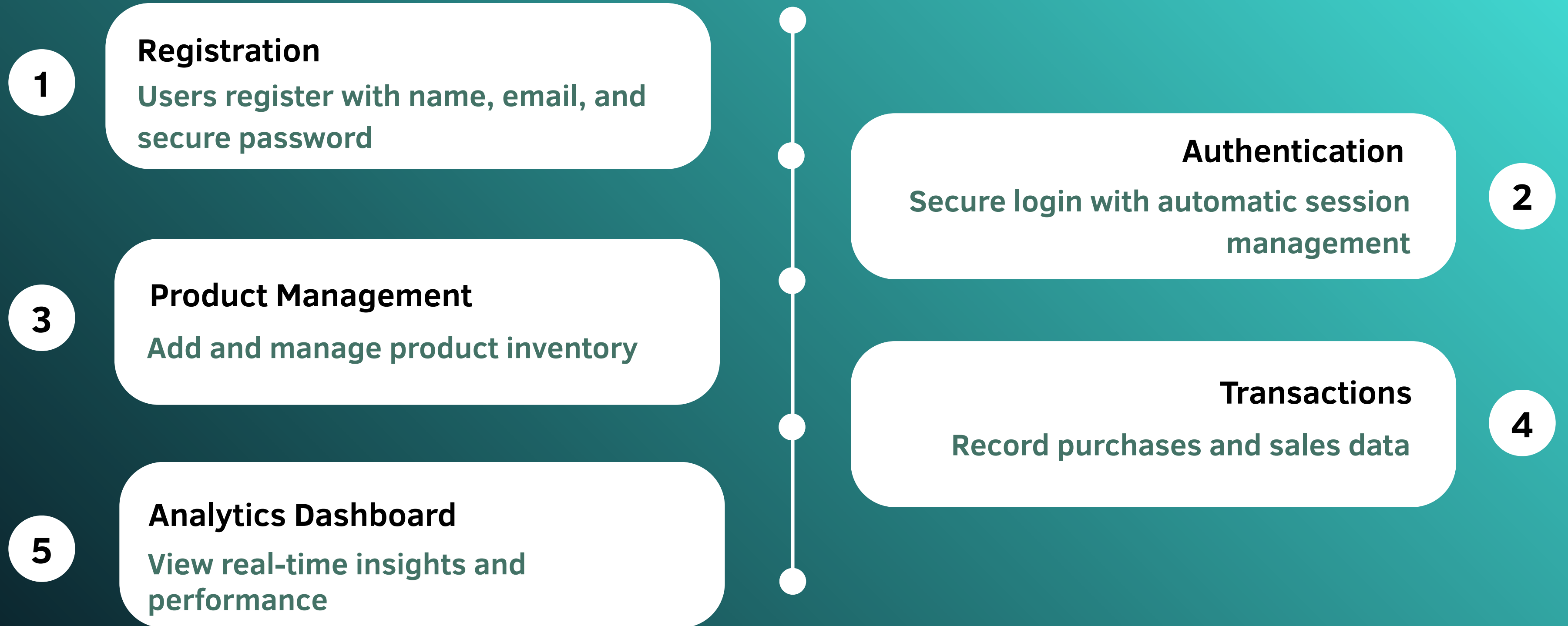
# Technology Stack

**Layer**

**Tool Used**

<b>Backend</b>	Python (business logic & data handling)
<b>Frontend</b>	Streamlit (Python UI framework)
<b>Database</b>	MySQL
<b>Deployment</b>	Streamlit Cloud

# Application Workflow





# Multi-User

Authentication

## 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

# CSV

Bulk Upload

## 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

# Real-Time

Analytics

## 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

The screenshot shows the 'Upload Data' page of a financial management application. On the left is a dark sidebar with navigation links: Home, Finance Dashboard, Upload Data (highlighted), Purchases, Inventory, Sales, and Expenses. The main content area is titled 'Upload Data' and features a sub-section 'Upload Data via CSV' with a double-headed arrow icon. Below this are three buttons: 'Download Sample Product CSV', 'Download Sample Purchase CSV', and 'Download Sample Sales CSV'. Each button corresponds to a file upload area. The 'Product' area is active, showing a 'Choose a Product file' prompt, a 'Drag and drop file here' instruction, a 'Limit 200MB per file • CSV' note, and a 'Browse files' button. Similar sections for 'Purchase' and 'Sales' are visible but inactive.

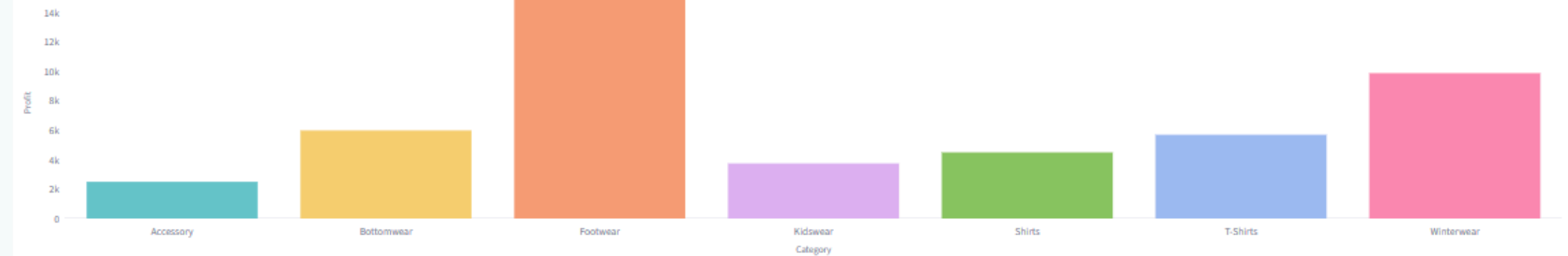
The screenshot shows the 'Add Data Manually' page of the same application. The sidebar is identical. The main content area is titled 'Add Data Manually' and contains three panels: 'Add Product Manually', 'Add Purchase Manually', and 'Add Sale Manually'. The 'Add Product Manually' panel is active and contains the following fields: 'Product Name' (text input), 'Category' (text input), 'Cost Price' (numeric input with a value of 0.00 and +/- buttons), and 'Selling Price' (numeric input with a value of 0.00 and +/- buttons). An 'Add Product' button is at the bottom. The 'Add Purchase Manually' panel contains: 'Product ID' (numeric input with a value of 1 and +/- buttons), 'Vendor Name' (text input), 'Quantity Purchased' (numeric input with a value of 1 and +/- buttons), 'Cost Price' (numeric input with a value of 0.00 and +/- buttons), 'Order Date' (date input with a value of 2025/07/25), and 'Payment Due Date' (date input with a value of 2025/07/25). The 'Add Sale Manually' panel contains: 'Product ID' (numeric input with a value of 1 and +/- buttons), 'Quantity Sold' (numeric input with a value of 1 and +/- buttons), 'Selling Price' (numeric input with a value of 0.00 and +/- buttons), 'Sale Date' (date input with a value of 2025/07/25), 'Shipped' (dropdown menu with 'Yes' selected), and 'Payment Received' (dropdown menu with 'Yes' selected). A 'Manage' button is partially visible at the bottom right.



# Analytics Dashboard

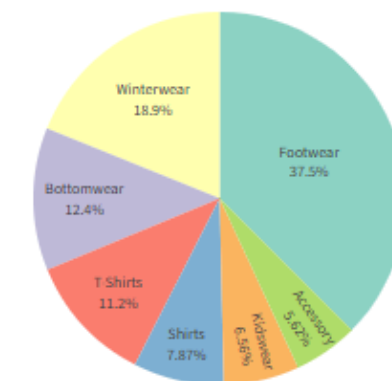
- Real-time sales and purchase tracking
- Interactive charts and performance metrics
- Customizable KPI monitoring and reporting

Category-wise Profitability

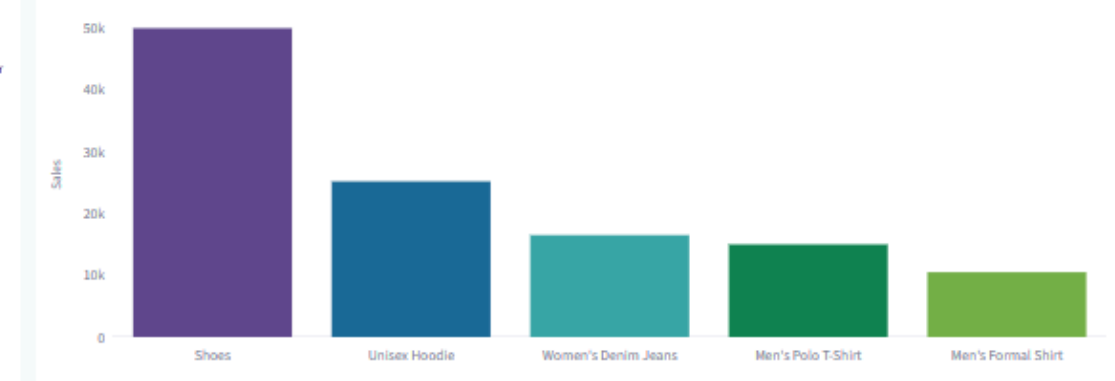


Sales Breakdown

Category-wise Sales



Top 5 Products by Sales



Home

Finance Dashboard

Upload Data

Purchases

Inventory

Sales

Expenses



Total Sales

₹ 133,450.00



Total Products

7



Total Expenses

₹ 134,750.00



COGS

₹ 86,100.00



Gross Profit

₹ 47,350.00



Accounts Receivable

₹ 89,500.00

Ratio Analysis

# Expense Tracking

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

[Home](#)[Finance Dashboard](#)[Upload Data](#)[Purchases](#)[Inventory](#)[Sales](#)[Expenses](#)

## Expense Management

+ Add Expense

Upload Expenses from CSV

Sample Format:

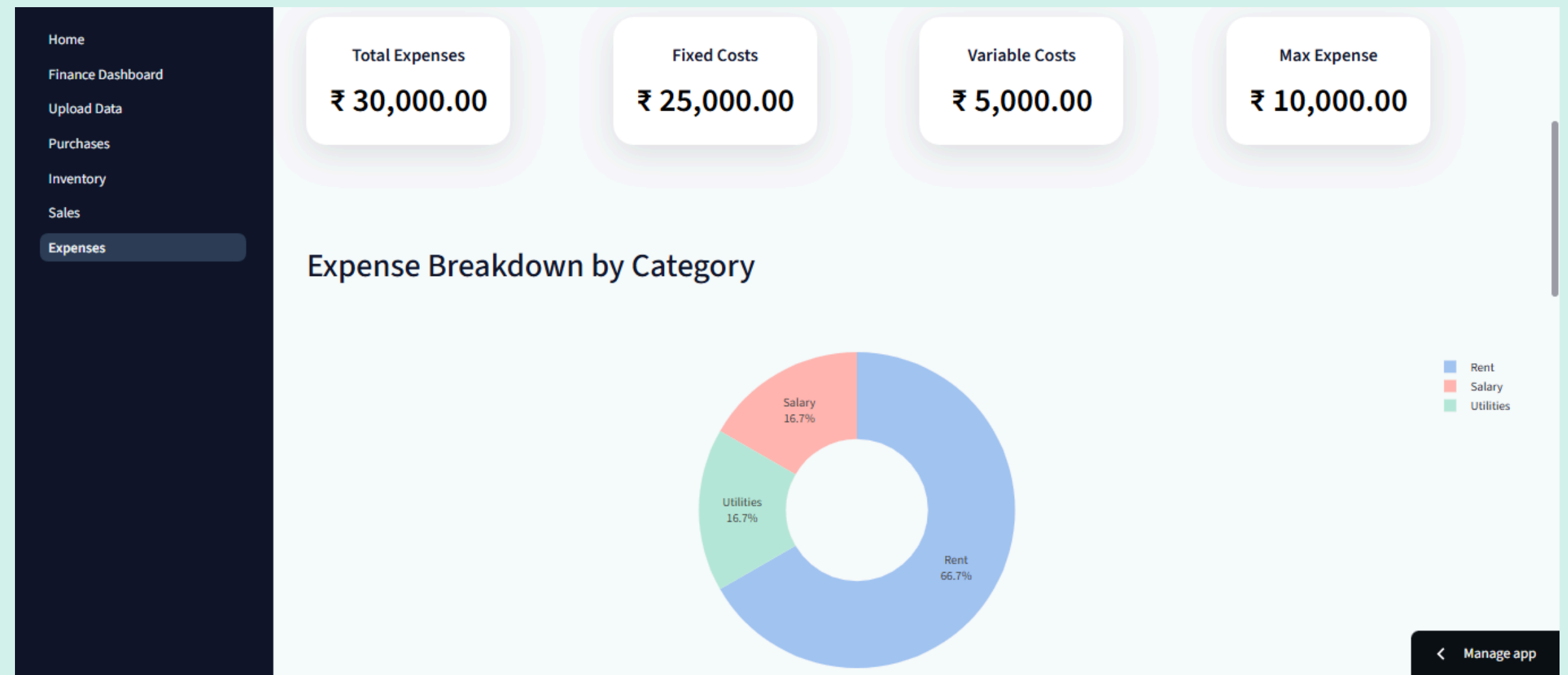
	date	category	expense_type	amount	description
0	2025-07-01	Marketing	Variable	5000	Social Media Campaign

Upload a CSV file

Drag and drop file here

Limit 200MB per file • CSV

Browse files



# Technical Challenges vs Solutions

## Challenges

Building dynamic dashboards with user-specific data filtering

Managing relational database dependencies effectively

Creating secure session management with automatic logout

## Solutions

Implemented real-time data filtering and instant updates

Designed optimized relational database architecture

Built session-aware security with refresh protection

# Future Enhancements

## Security

### **Enhanced Authentication & Recovery**

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

## Operations

### **Business Process Automation**

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

## Intelligence

### **AI Integration**

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

# **THANK YOU**

**Retail Pulse - Insightful Retail & Smarter  
Decisions.**

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