



# SmartShop – An Online Retail Inventory & Order Management System

---



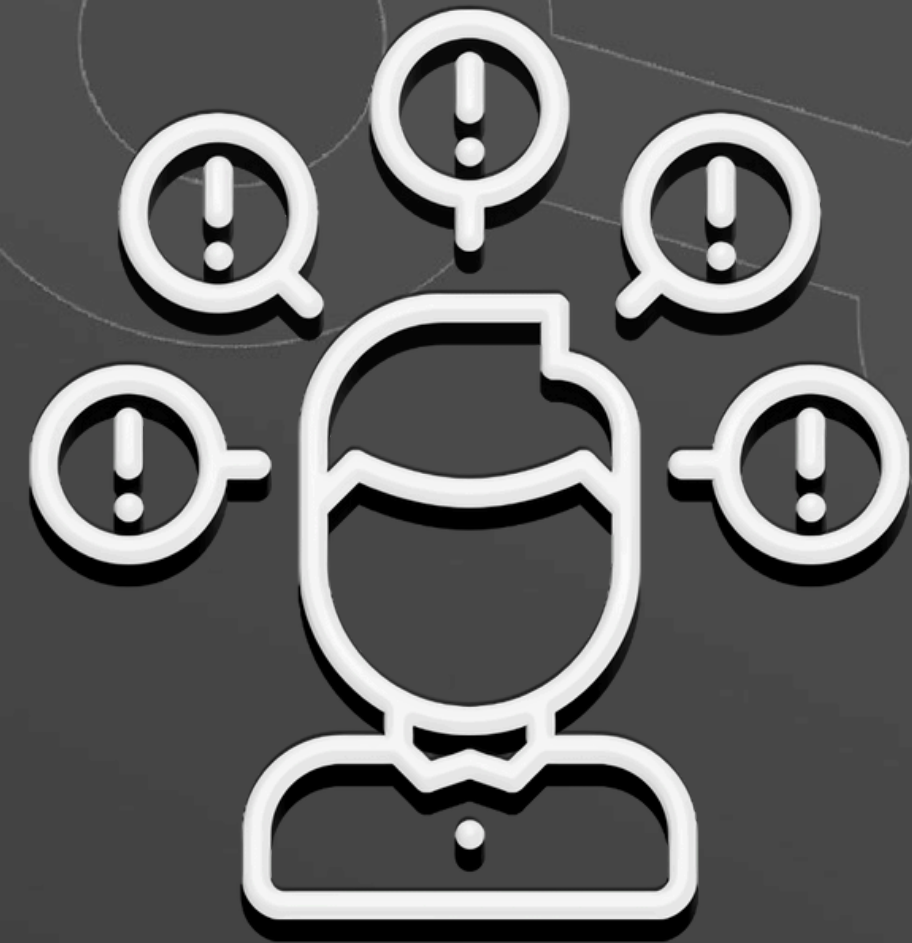
## Business Introduction

**SmartShop** is a Python-based application designed for small to medium-sized retail businesses. It provides a unified platform to manage product inventories, process customer orders, and generate sales reports. This project offers a comprehensive learning experience by applying fundamental Python concepts—from basic data types to control structures and functional programming—within a practical, real-life scenario.

## -- PROBLEM STATEMENT --

Retail businesses often struggle with manual inventory management and order processing, which can lead to errors, overselling, or inefficient workflows. SmartShop addresses these challenges by:

- Automating inventory tracking: Maintain real-time stock levels.
- Streamlining order processing: Validate orders against available stock.
- Simplifying reporting: Generate receipts and sales summaries using formatted output.





# Objectives for the Project

- Develop a command-line interface (CLI) that allows business owners to add, update, and view product information.
- Process customer orders by verifying inventory, calculating totals, and confirming orders.
- Generate formatted reports (invoices, sales summaries) that provide actionable insights.
- Demonstrate mastery of key Python topics including data types, collections, control structures, and functions.



# Implementation Overview

## A. Inventory Management Module

- Add/Update Products: Use dictionaries to store and modify product information.
- Stock Validation: Employ if/elif/else to check if orders can be fulfilled.

## B. Order Processing Module

- Order Entry: Accept orders via the CLI.
- Total Calculation: Use functions and arithmetic operations (with integers and floats) to calculate order totals.
- Order Confirmation: Generate formatted receipts using strings and print formatting.

## C. Reporting Module

- Sales Reports: Iterate over completed orders to generate summaries.
- Conditional Alerts: Use Boolean flags to track if orders are processed, and trigger notifications when stock runs low