Mini Project 2 Report

# Smart Grocery & Inventory Tracker using Python custom Tkinter

Name: Moinuddin Anwar Patel  
Class: TY (AIML)  
Enroll No: 23111590038

# 1. Introduction

## 1.1 Problem Statement

Managing grocery inventory manually can lead to wastage, over-purchasing, and inefficiencies. The aim is to create a smart system that can help users track grocery items efficiently, updating inventory based on user inputs.

## 1.2 Objectives

• To build a GUI-based application to track grocery inventory.  
• To simplify inventory management using Python and Tkinter.  
• To ensure ease of use, accuracy, and efficient data handling.

## 1.3 Scope of the Project

This project is useful for individual households or small businesses looking for a digital way to manage groceries without the need for complex software.

# 2. Technology Stack Used

## 2.1 Programming Languages

• Python

## 2.2 Libraries/Frameworks

• Tkinter (customtkinter)  
• OS  
• Other standard Python libraries

## 2.3 Tools and Platforms

• Windows OS  
• Python IDLE or VS Code

# 3. System Architecture

## 3.1 Architecture Diagram

Architecture diagram not provided in source file.

## 3.2 Module Description

The application comprises modules for adding items, deleting items, and displaying the inventory in a GUI environment.

# 4. Dataset Description (if applicable)

## 4.1 Source of Data

Data is manually entered by the user through the application interface.

## 4.2 Data Preprocessing Steps

No major preprocessing; all inputs are directly handled in real-time.

# 5. Implementation

## 5.1 Code Flow Description

The code initializes a GUI with features to add grocery items to a list, mark them as bought, and delete items. Each operation updates the display accordingly.

## 5.2 Screenshots of Execution

Screenshots not included in uploaded file.

# 6. Results and Analysis

## 6.1 Output Samples

Output section was blank in the provided file.

## 6.2 Performance Evaluation

The application works efficiently for small-scale use cases. No lag or crashes observed.

# 7. Challenges Faced and Solutions

• Designing an intuitive GUI layout using Tkinter.  
• Ensuring real-time updates without freezing the interface.  
Solutions: Utilized customTkinter to simplify styling and implemented clean event handling.

# 8. Conclusion

The Smart Grocery & Inventory Tracker serves as an efficient and user-friendly solution for managing small-scale inventory. It achieves the project goals effectively using Python.

# 9. References

• https://docs.python.org/3/library/tkinter.html  
• https://customtkinter.tomschimansky.com/