

Project Description

Title: Shop Management System with GUI

Objective: To develop a desktop application for managing a shop's inventory and sales using Python. The application features a graphical user interface (GUI) built with Tkinter and integrates with a MySQL database to handle item inventory and sales transactions.

Components:

1. Database Integration:

- **Class:** Database
- **Purpose:** Manages interactions with the MySQL database.
- **Functions:**
 - `execute_query()`: Executes SQL queries (INSERT, UPDATE, DELETE).
 - `fetch_all()`: Fetches multiple rows from a query.
 - `fetch_one()`: Fetches a single row from a query.

2. Business Logic:

- **Class:** Shop
- **Purpose:** Contains methods for managing inventory and sales.
- **Functions:**
 - `add_item_to_inventory(name, price, stock)`: Adds a new item to the inventory.
 - `sell_item(name, quantity)`: Processes the sale of an item.
 - `view_sales_report()`: Generates a sales report.
 - `display_inventory()`: Displays current inventory.

3. Graphical User Interface (GUI):

- **Class:** ShopGUI
- **Purpose:** Provides a user-friendly interface for interacting with the shop management system.
- **Features:**
 - Add items to inventory.
 - Sell items.
 - View sales report.
 - Display inventory.
- **Widgets:**
 - `LabelFrame`: Groups related widgets.
 - `Label, Entry, Button, Text`: Various widgets used for user input and displaying information.

How It Works:

1. Initialization:

- Connects to the MySQL database.
- Sets up the Tkinter GUI with various frames and widgets.

2. User Interaction:

- Users can add items, sell items, view sales reports, and display inventory using the provided buttons and entry fields.
- Actions trigger methods in the `Shop` class, which interact with the database and update the GUI accordingly.

3. Database Operations:

- The `Database` class handles all SQL queries and database interactions.
- Inventory and sales data are stored and retrieved from the MySQL database.

Links for Learning:

- **Tkinter (GUI in Python):**

- [Tkinter Tutorial by Python Docs](#) – Official Python documentation for Tkinter.
- Tkinter GUI Programming by Example – A practical book with examples on Tkinter.
- GeeksforGeeks Tkinter Tutorial – A comprehensive guide and examples for Tkinter.

- **MySQL with Python:**

- [MySQL Connector/Python Developer Guide](#) – Official MySQL documentation for the Python connector.
- Real Python - Working with MySQL Databases – A tutorial on connecting and interacting with MySQL databases using Python.
- W3Schools MySQL Tutorial – A general tutorial on SQL, which is useful for understanding database queries.

This project integrates fundamental aspects of GUI development with Tkinter and database management using MySQL, offering a comprehensive experience in building and managing a desktop application.