Furniture Inventory Management System with Billing Feature with PDF

1. Introduction

The Inventory Management System is a Python application designed to manage products in a store or warehouse efficiently. The system reads inventory data from a CSV dataset (sourced from Kaggle), allows searching and updating of inventory, and supports billing functionality for purchases.

2. Tools and Technologies Used

- Programming Language: Python 3.x

- Libraries:

- pandas (for handling datasets)

-canvas (for styling PDF)

- datetime (for timestamps in billing)

- tabulate (for neat display of bills, optional)

- Dataset Source: Kaggle (Sample Furniture Inventory Dataset)

- IDE: VS Code / Jupyter Notebook / PyCharm

3. Dataset Description

The dataset used is a CSV file containing inventory records with the following columns:

- Product ID

- Product Name

- Category

- Quantity Available

- Price Per Unit

4. Key Functionalities

- Load inventory from CSV

- Display inventory

- Search product by name or ID

- Update inventory after sale

- Generate customer bill in pdf (with product details, total price, timestamp)

5. Code Overview

The Inventory Management System is developed using Python and follows a modular structure for maintainability and scalability. The application begins by loading product data from a CSV file using the pandas library. Users can view available inventory, search for products by name or ID, and add items to a virtual cart.

The system ensures that stock availability is checked before processing any addition to the cart. Upon checkout, the application generates a formatted bill displaying the list of purchased items, their quantities, unit prices, and total cost, along with a timestamp.

Key functions include:

- display_inventory(): Shows current stock.

- add_data(new_product):Add the product to add in inventory

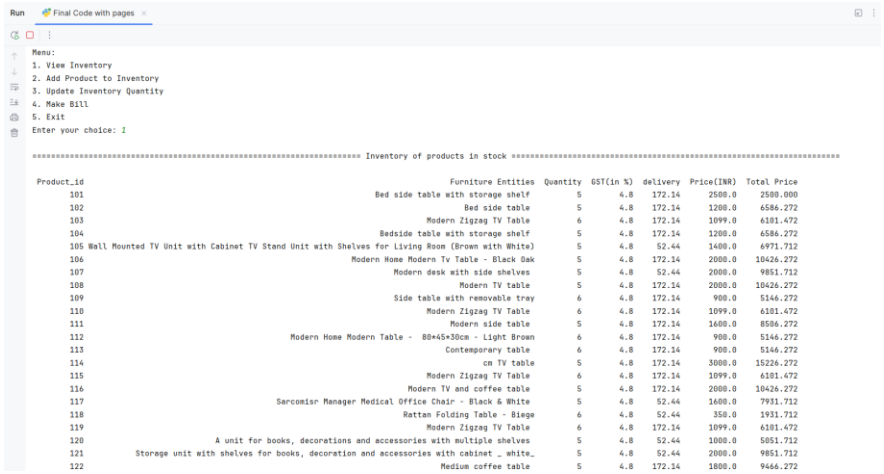
- add_to_cart(product_id, quantity): Adds selected items to the cart and updates inventory.

- update_inventory(product_id, quantity): Update the products price and all

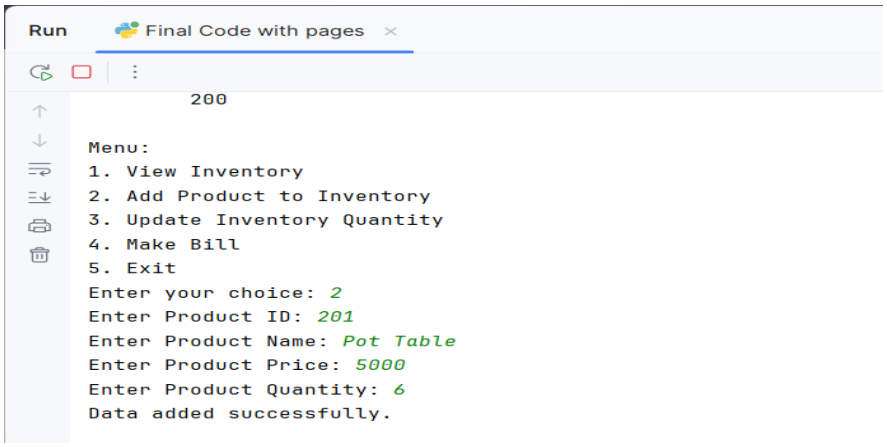
- bill_making(): Prints the final bill with itemized details.

The code is designed for terminal use but can be extended with a GUI using Tkinter or integrated into a web app using Flask or Django. This system offers a basic but practical simulation of inventory operations in small retail settings.

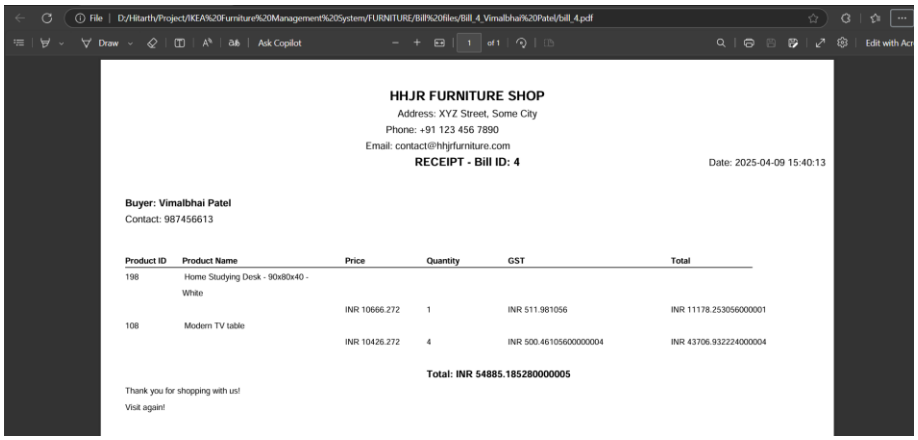
6. Output Example



```
Menu:
1. View Inventory
2. Add Product to Inventory
3. Update Inventory Quantity
4. Make Bill
5. Exit
Enter your choice: 1

========== Inventory of products in stock ==========

 Product_id                                                    Furniture Entities  Quantity  GST(in %)  delivery  Price(INR)  Total Price
        101                                  Bed side table with storage shelf         5        4.8    172.14      2500.0     2500.000
        102                                                     Bed side table         5        4.8    172.14      1200.0     6586.272
        103                                                  Modern Zigzag TV Table        6        4.8    172.14      1099.0     6101.472
        104                                                Bedside table with storage shelf        5        4.8    172.14      1200.0     6586.272
        105 Wall Mounted TV Unit with Cabinet TV Stand Unit with Shelves for Living Room (Brown with White)        5        4.8     52.44      1400.0     6971.712
        106                                  Modern Home Modern Tv Table - Black Oak         5        4.8    172.14      2000.0    10426.272
        107                                               Modern desk with side shelves         5        4.8     52.44      2000.0     9851.712
        108                                                     Modern TV table         5        4.8    172.14      2000.0    10426.272
        109                                               Side table with removable tray        6        4.8    172.14       900.0     5146.272
        110                                                  Modern Zigzag TV Table        6        4.8    172.14      1099.0     6101.472
        111                                                     Modern side table         5        4.8    172.14      1600.0     8586.272
        112                                  Modern Home Modern Table -  80*45*30cm - Light Brown        6        4.8    172.14       900.0     5146.272
        113                                                   Contemporary table         6        4.8    172.14       900.0     5146.272
        114                                                          cn TV table         5        4.8    172.14      3000.0    15226.272
        115                                                  Modern Zigzag TV Table        6        4.8    172.14      1099.0     6101.472
        116                                                 Modern TV and coffee table         5        4.8    172.14      2000.0    10426.272
        117                                  Sarcomisr Manager Medical Office Chair - Black & White         5        4.8     52.44      1600.0     7931.712
        118                                                  Rattan Folding Table - Biege        6        4.8     52.44       350.0     1931.712
        119                                                  Modern Zigzag TV Table        6        4.8    172.14      1099.0     6101.472
        120                          A unit for books, decorations and accessories with multiple shelves         5        4.8     52.44      1000.0     5051.712
        121          Storage unit with shelves for books, decoration and accessories with cabinet _ white_         5        4.8     52.44      2000.0     9851.712
        122                                                     Medium coffee table         5        4.8    172.14      1800.0     9466.272
```



```
Run   Final Code with pages

          200

Menu:
1. View Inventory
2. Add Product to Inventory
3. Update Inventory Quantity
4. Make Bill
5. Exit
Enter your choice: 2
Enter Product ID: 201
Enter Product Name: Pot Table
Enter Product Price: 5000
Enter Product Quantity: 6
Data added successfully.
```



HHJR FURNITURE SHOP

Address: XYZ Street, Some City

Phone: +91 123 456 7890

Email: contact@hhjrfurniture.com

RECEIPT - Bill ID: 4

Date: 2025-04-09 15:40:13

Buyer: Vimalbhai Patel

Contact: 987456613

Product ID	Product Name	Price	Quantity	GST	Total
198	Home Studying Desk - 90x80x40 - White	INR 10666.272	1	INR 511.981056	INR 11178.253056000001
108	Modern TV table	INR 10426.272	4	INR 500.46105600000004	INR 43706.932224000004

Total: INR 54885.185280000005

Thank you for shopping with us!

Visit again!

7. Conclusion

This Python-based Inventory Management System is a simple but powerful tool for managing stock and automating billing. It can be extended with features like GUI (using Tkinter), database integration (SQLite/MySQL), and user authentication.