Practical Synopsis

Submitted by

Siddhant Bhadauriya

Sap ID:1000026503,

Abhishek Kumar

Sap ID:1000025058

Shashank Bhardwaj

Sap ID:1000024713

Riya Namdev

Sap ID:1000025850

Submitted to

Prakirti Raghuvanshi

Assistant Professor

School Of Computing

DIT UNIVERSITY, DEHRADUN, INDIA

November, 2024

Certificate of Completion

This is to certify that **Siddhant Bhadauriya(1000026503)**, **Abhishek Kumar(1000025058), Shashank Bhardwaj(1000024713), Riya Namdev(1000028550)** of Department of computer science, School of Computing has successfully completed a project on the topic **Stock Control System** under the guidance of **Mr. Anuj Kumar** for the academic year and session **2024-25** in partial fulfilment of the requirement for the award of the Degree **Master in Computer Application** Acknowledgement

This acknowledgment section recognizes the contributions of individuals and groups who supported you during your project work, from your supervisor to peers and family. Feel free to tailor it with specific names or additional details relevant to your project!.

Supervisor

Signature

Head of Department

Signature & Seal

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to all those who have contributed to the successful completion of this **Stock system control** mini project. This project has been a valuable learning experience, and it would not have been possible without the support and guidance of several individuals.

I would also like to extend my heartfelt thanks to the **Mrs. Prakirti Raghuvanshi** of [Department of computer science] for providing the necessary resources and a conducive learning environment. Their expertise in the field of computer science and programming has played a significant role in shaping the foundation of this project.

A special thanks to my teammate for their collaboration, suggestions, and moral support. Their insights and discussions helped me refine the design and implementation of the system. We shared ideas and solved problems together, making this project a truly collaborative effort.

I also appreciate the support of my family, whose encouragement and patience have been invaluable during the development of this project. They have always been a source of motivation for me to pursue my goals and strive for excellence.

Finally, I would like to acknowledge all the resources, tutorials, and reference materials from online platforms and documentation that provided critical information for completing this project. Without these resources, many aspects of the development would not have been possible.

Thank you all for your contributions and support.

This acknowledgment section recognizes the contributions of individuals and groups who supported you during your project work, from your supervisor to peers and family. Feel free to tailor it with specific names or additional details relevant to your project!

Table of Contents

1 Project Title

SCS (Stock Control System)

2 Domain

An **SCS (Stock Control System)** with a robust database serves as a foundational tool for businesses across various sectors. This domain encompasses the seamless management of products, assets, and resources to optimize operations, enhance productivity, and ensure accurate tracking of Stock. Whether you're operating in the retail, manufacturing, logistics, or any other industry that deals with Stock, this system is essential for maintaining control and visibility over your stock.

3 Problem Statement

- **Stock Inefficiency**: Inefficient Stock management practices, such as overstocking or understocking, can lead to financial losses and operational disruptions. The system helps optimize Stock levels to prevent these issues.
- **Inaccurate Data**: Manual record-keeping is prone to errors and can result in inaccurate Stock data. An Stock Control System with a database ensures data accuracy through automation and real-time updates.
- **Lack of Visibility**: Without a centralized system, businesses may lack visibility into their Stock across multiple locations or channels. This system provides a consolidated view of Stock, improving control and decision-making.
- **Missed Sales Opportunities**: Stockouts can result in missed sales opportunities, and overstocking t i e s up capital unnecessarily. The system helps strike the right balance to prevent these problems.
- **Increased Costs**: Carrying excess Stock incurs storage costs, and inefficient procurement practices can lead to higher purchasing costs. Effective Stock management reduces these costs

4 Project Description

Develop a user-friendly Stock Organizer System with a robust database for businesses across industries.

4.1 Scope of the Work

The scope of the "**Stock Control System with Database**" project is to design, develop, and implement a comprehensive Stock management system for businesses across various industries. This system will enable organizations to efficiently control, monitor, and optimize their Stock using a centralized database

System Development: Creating a user-friendly and intuitive software application to manage Stock effectively.

Database Design : Designing a robust and scalable database to store and retrieve Stock data.

Integration: Ensuring seamless integration with other business systems, such as accounting software and e-commerce platforms.

Reporting and Analytics: Implementing reporting and analytics features to provide valuable insights into Stock performance.

User Training: Providing training and support to users for the successful adoption of the system.

Documentation: Creating comprehensive documentation for system usage, maintenance, and Troubleshooting.

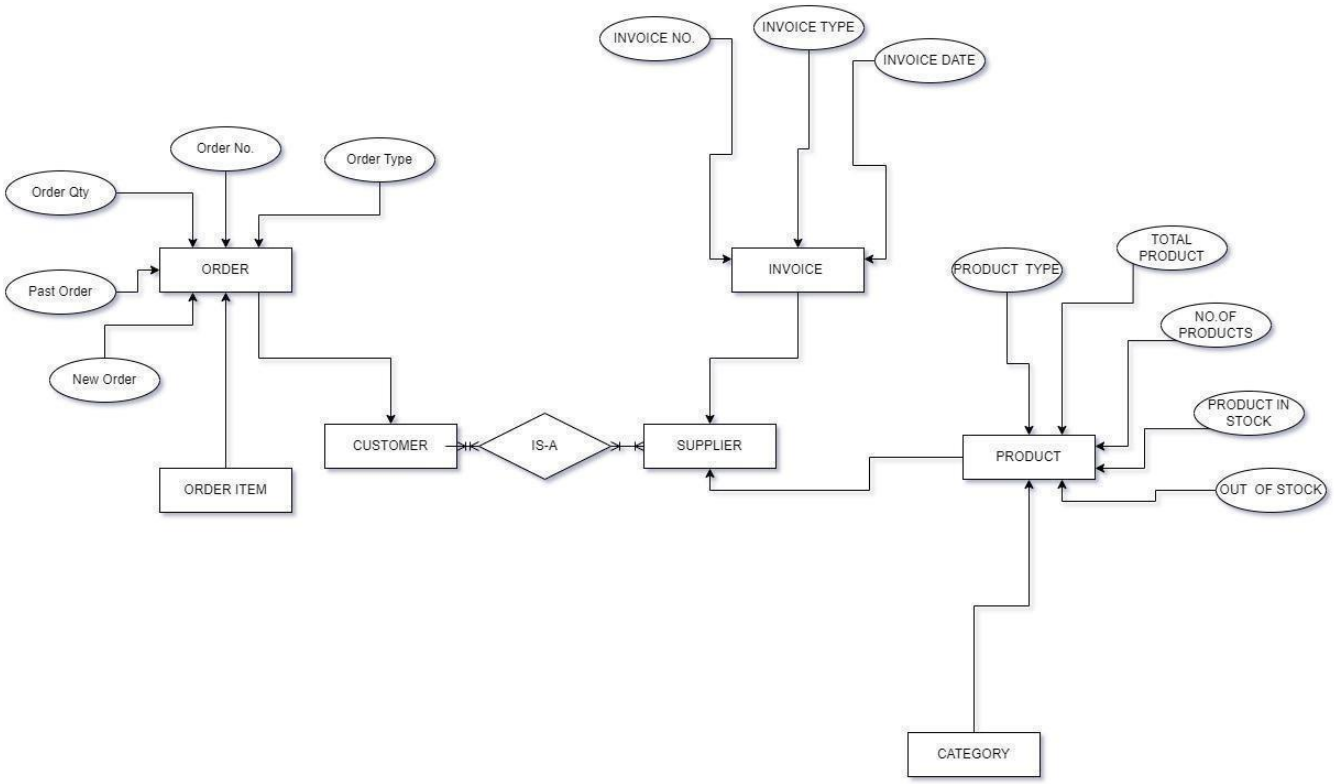
4.2 Project Modules

1) **Admin**
    - Manage Stock Window
    - Manage supplier Window
    - Manage Billing Window
    - Manage Product Category window
    - Manage Dashboard Window
    - Manage Employee Window
    - Manage Sales Window
2) **Employee**
    - Access to Billing Window Only

5 Implementation Methodology

In implementing an **Stock Control system** with a database using **Python and Tkinter**, the process involves gathering requirements, designing a database schema, creating a user-friendly GUI with Tkinter, developing the backend logic for database interactions, implementing core functionalities, and thorough testing. Event handling ensures smooth user interactions, and documentation guides users and developers. Deployment prepares the system for use, and ongoing maintenance and support ensure its reliability. User training ensures effective utilization of the system, with an emphasis on code organization, data security, and GUI design for robustness and user-friendliness.

E-R DIAGRAM



6 Technologies to be used

5.1 Software Platform

a) Python With Tkinter library

b) DB Browser(SQLite)

5.2 Hardware Platform

- Processor :- Intel i3 10th gen and above
- RAM :- 1 Gb
- ROM :- 500MB

5.3 Tools

- Visual Studio Code 1.67.2.0
- .Py to .Exe

6 Advantages of this Project

- **Efficient Stock Management** Businesses can optimize their Stock, reduce overstock and understock situations, and minimize carrying costs, leading to cost savings and increased profitability.

- **Data-Driven Decision-Making** The system provides valuable insights through reporting and analytics, enabling data-driven decisions regarding Stock, sales, and trends.

- **Streamlined Operations** Users can manage products, quantities, suppliers, and categories seamlessly, improving overall operational efficiency.

- **Improved Customer Satisfaction** Accurate and timely order fulfillment reduces Stockouts, ensuring customer orders are met promptly and enhancing customer satisfaction.

- **Enhanced Security** Robust security measures protect sensitive Stock data, ensuring data integrity and compliance.

- **User-Friendly Interface** The Tkinter-based GUI offers an intuitive and user-friendly experience, reducing the learning curve for users.

- **Integration Capabilities** Integration with other business systems, such as accounting and e-commerce platforms, maintains data consistency and eliminates manual data entry.

1) <u>Beneficiaries/Users</u>

- **Business Owners and Managers** They gain better control over their Stock, leading to improved profitability, reduced operational costs, and informed decision-making.

- **Stock Managers** They can efficiently manage Stock, track stock levels, and generate reports, simplifying their responsibilities and optimizing stock.

- **Sales and Customer Service** Teams Timely and accurate order fulfillment ensures customer satisfaction, which is vital for these teams

- **End Users Employees** across various departments can access and utilize the system according to their roles, enhancing their productivity and efficiency in managing Stock-related tasks.

7 Future Scope and further enhancement of the Project

- **Mobile App Integration:** Develop a mobile app version of the system to enable users to access and manage Stock on-the-go, with features such as barcode scanning using smartphone cameras.

- **Inventory Forecasting:** Implement advanced algorithms and machine learning models to predict future Stock needs based on historical data, seasonality, and market trends.

- **Multi-Location Support:** Extend the system to handle multiple warehouses or retail outlets with centralized control, allowing for easy Stock transfers and inter-location management.

- **Supplier Portal:** Create a portal for suppliers to directly update product availability, lead times, and prices, enhancing transparency and collaboration in the supply chain.

- **Advanced Reporting:** Integrate advanced data visualization tools and dashboards for real-time, interactive reports and analytics, enabling users to gain deeper insights into Stock performance.

- **Automated Reordering:** Implement automated reorder points and purchase order generation based on predefined criteria, reducing manual intervention in procurement processes.

- **Inventory Valuation:** Add features for calculating Stock valuation using methods such as FIFO (First-In, First-Out) or LIFO (Last-In, First-Out) to assist with financial reporting.

- **User Customization:** Allow users to customize their dashboard and reports according to their preferences, providing a personalized experience.

- **Alerts and Notifications:** Enhance the notification system to send alerts via email or SMS for critical Stock events, such as Stockouts, expirations, or unusual sales patterns.

- **Cloud-Based Solution:** Migrate the system to a cloud-based architecture for scalability, remoteaccess, and enhanced security.

- **Voice and AI Integration:** Implement voice recognition and artificial intelligence capabilities forvoice commands and natural language queries, improving user interaction.

- **Inventory History Tracking:** Maintain a comprehensive history of Stock changes, allowingusers to view historical data and track Stock trends over time.

- **Enhanced Security:** Continuously update and improve security measures to safeguard againstevolving cybersecurity threats and vulnerabilities.

8 Conclusion

- The window-based Stock Control system with a robust database represents a transformative asset for businesses. Its user-friendly interface enhances efficiency, streamlining data input, tracking, and retrieval to reduce errors and save time. Real-time updates ensure precise Stock management, optimizing stock levels and order fulfillment. The system's data accuracy and reporting features empower informed decision-making, yielding cost control and improved strategic planning. Scalable and secure, it adapts to business growth while safeguarding sensitive data. This solution fosters cost savings, customer satisfaction, and compliance, ultimately enhancing competitiveness and long-term success in today's dynamic business landscape.

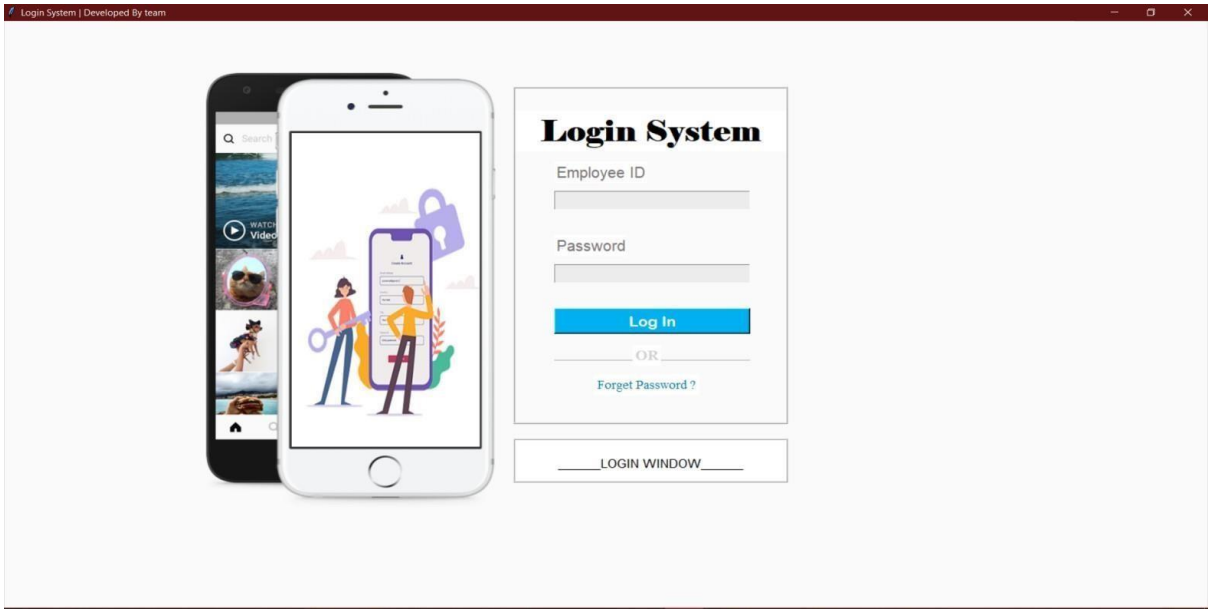
9 References

- https://www.geeksforgeeks.org/python-programming-language/
- https://www.youtube.com/

Annexure D

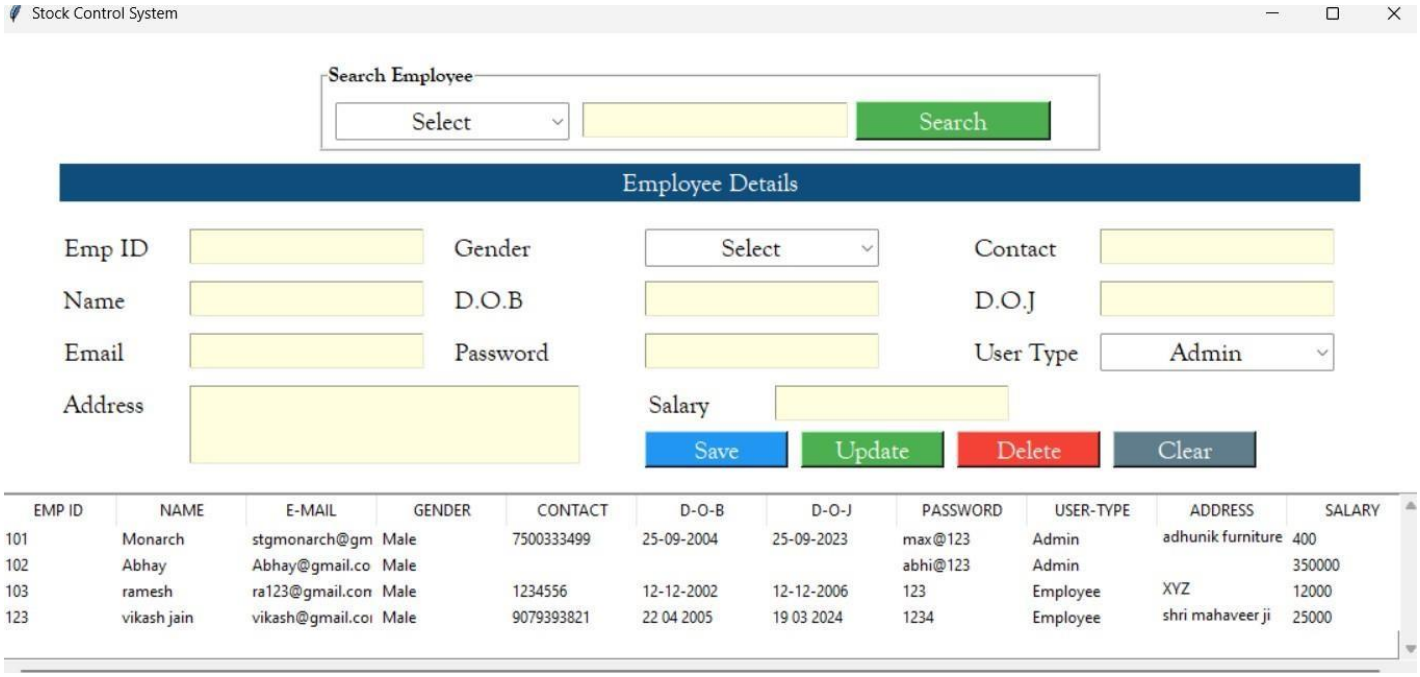
Screen Shots

LOGIN WINDOW:

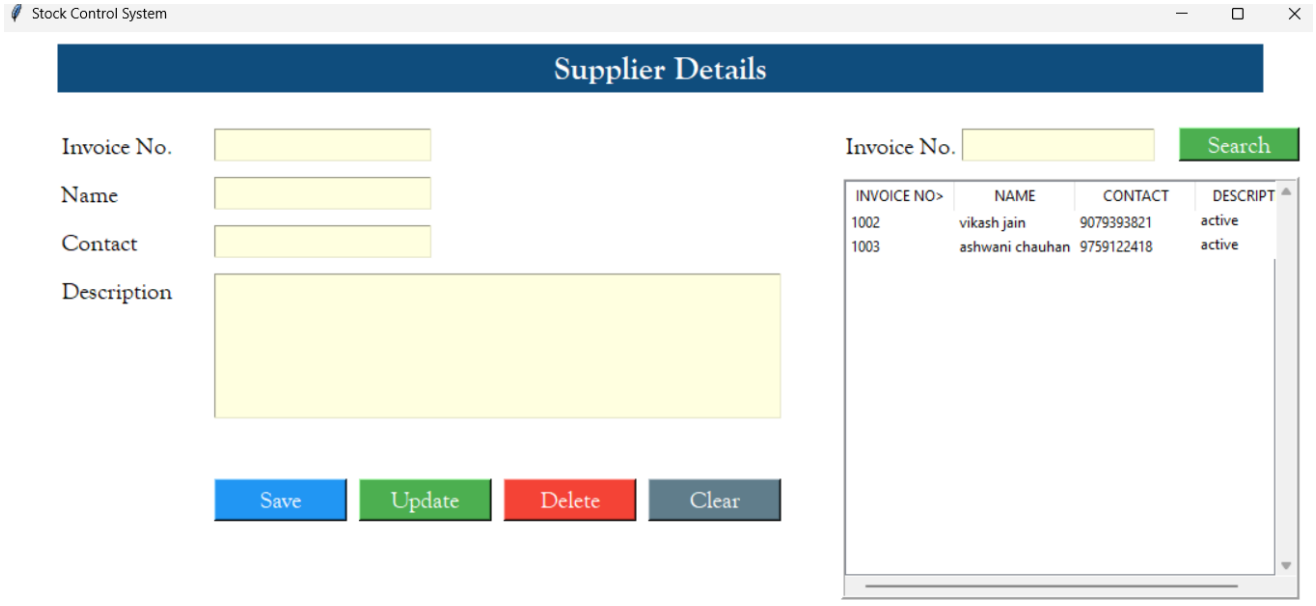


SMART DASHBOARD:

EMPLOYEE WINDOW:

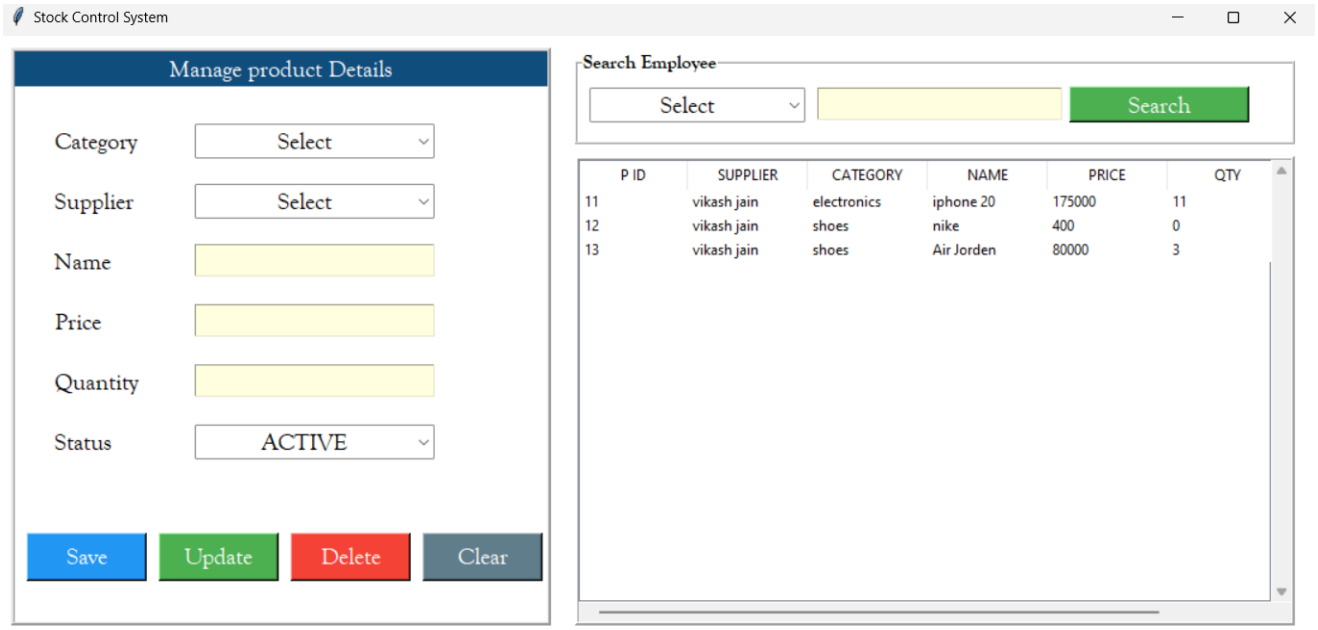


\SUPPLIER WINDOW:

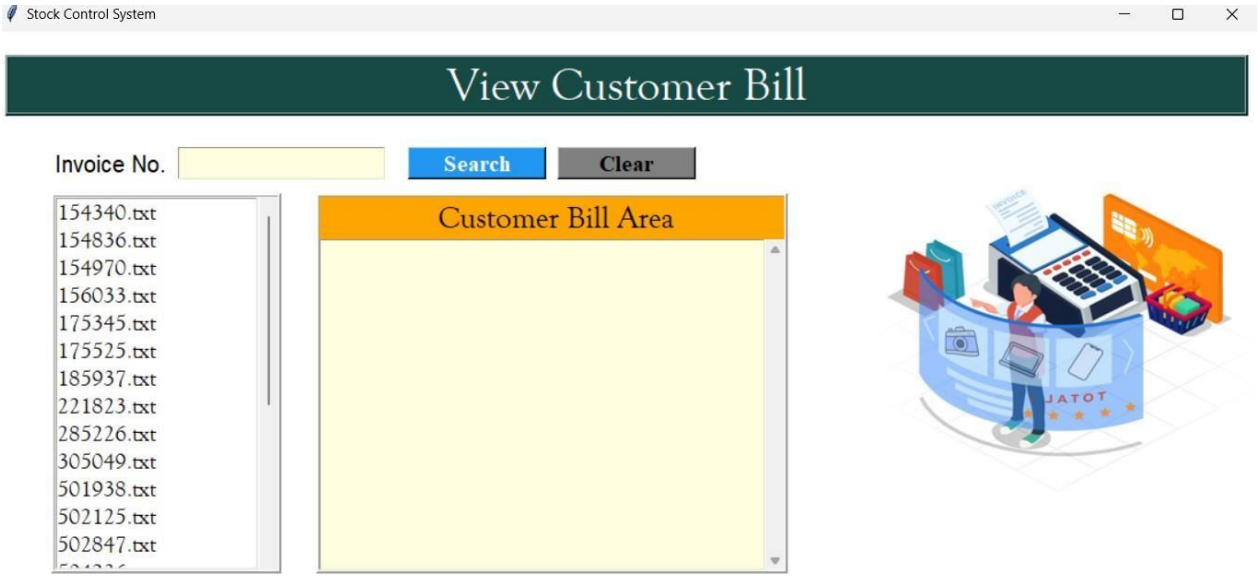


CATEGORY WINDOW:

PRODUCT WINDOW:



SALES WINDOW:



BILLING WINDOW AND PRODUCT CART: