SKILL LYNC

Point of Sale System in Java using NetBeans and MySQL

By
Jay S Londhe

Submitted to
Junie Denny
Project Guide

[February 25, 2023]

Introduction

The Point of Sale (POS) system is a software application designed to automate the process of sales transactions and inventory management. The purpose of this project is to create a POS system using Java and NetBeans IDE that will allow users to add products to the database, view order history, and make sales transactions. The system will be designed to be user-friendly and intuitive, with an easy-to-navigate graphical user interface (GUI) that will allow users to quickly and efficiently complete sales transactions.

Scope

The scope of this project is limited to the creation of a simple POS system that can add products to the database, view order history, and make sales transactions. The system will be designed to be scalable and easily customizable, so that it can be expanded upon and adapted to suit the needs of different businesses. However, this project does not aim to provide a comprehensive solution for all possible business scenarios and features. Rather, it serves as a starting point for businesses to build upon and customize based on their specific needs.

Features and Functionality

The Point of Sale system will have the following features and functionality:

- Home Page: A landing page that displays basic information about the system and allows users to navigate to other pages.
- Add Products Page: A page that allows users to add new products to the database, including the product name, price, quantity, and description.
- Order History Page: A page that displays a list of all previous sales transactions, including the date, time, and details of each transaction.
- Sales Transaction Page: A page that allows users to make a new sales transaction, select products from the database, and calculate the total cost of the transaction.

System Design

The Point of Sale system is designed as a client-server architecture, with a graphical user interface (GUI) for the client and a MySQL database as the server. The client-server model allows for easy scalability and maintenance, as well as better security and performance.

High-Level Architecture

The high-level architecture of the system consists of three main components:

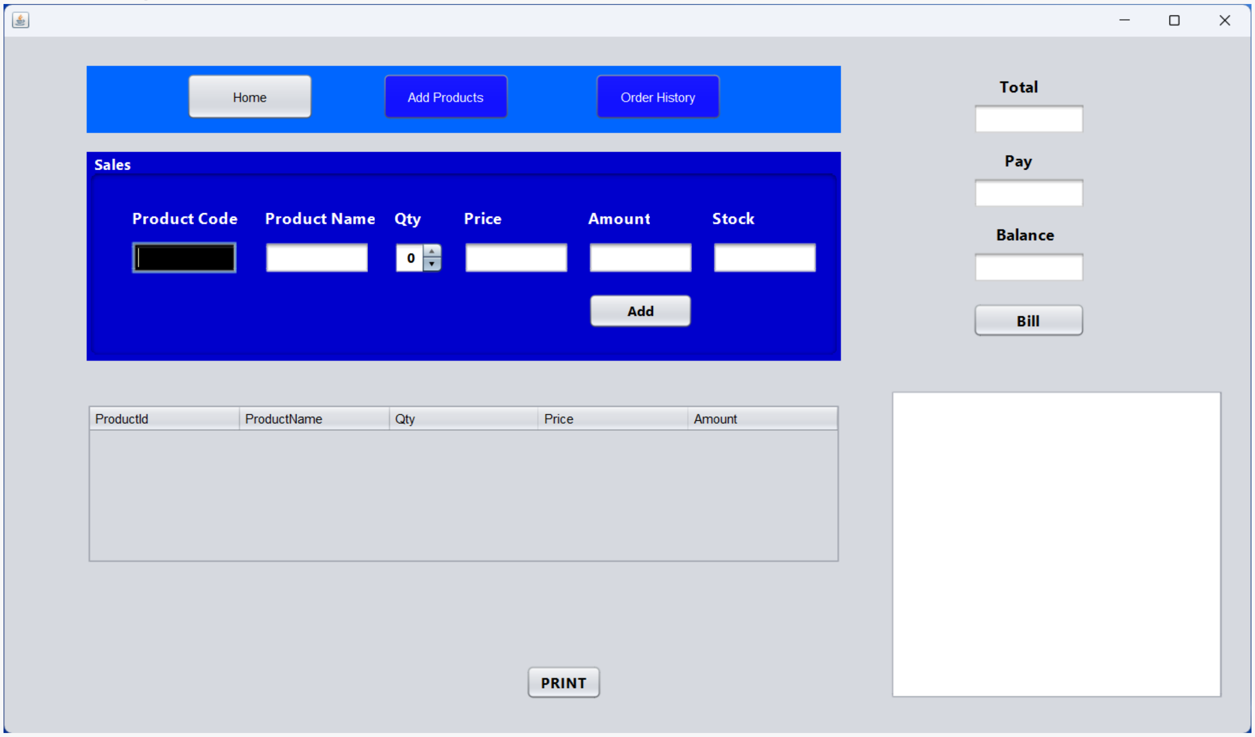
1. Client: The client is the graphical user interface (GUI) of the system, which allows users to interact with the system and perform various operations such as adding products, viewing order history, and making sales transactions. The client is built using Java and NetBeans IDE.
2. Application Server: The application server acts as the intermediary between the client and the database. It handles all the business logic of the system, such as validating user inputs, calculating total transaction cost, and updating the database. The application server is built using Java.
3. Database Server: The database server is a MySQL database that stores all the product information and transaction data. It is responsible for managing the data and ensuring data consistency and integrity. The database server is accessed using SQL queries.

Communication Protocol

The communication between the client, application server, and database server is achieved using the Java Database Connectivity (JDBC) API. JDBC is a Java API that allows Java applications to interact with databases using SQL queries. The client sends requests to the application server, which then retrieves or updates the data from the database server using JDBC.

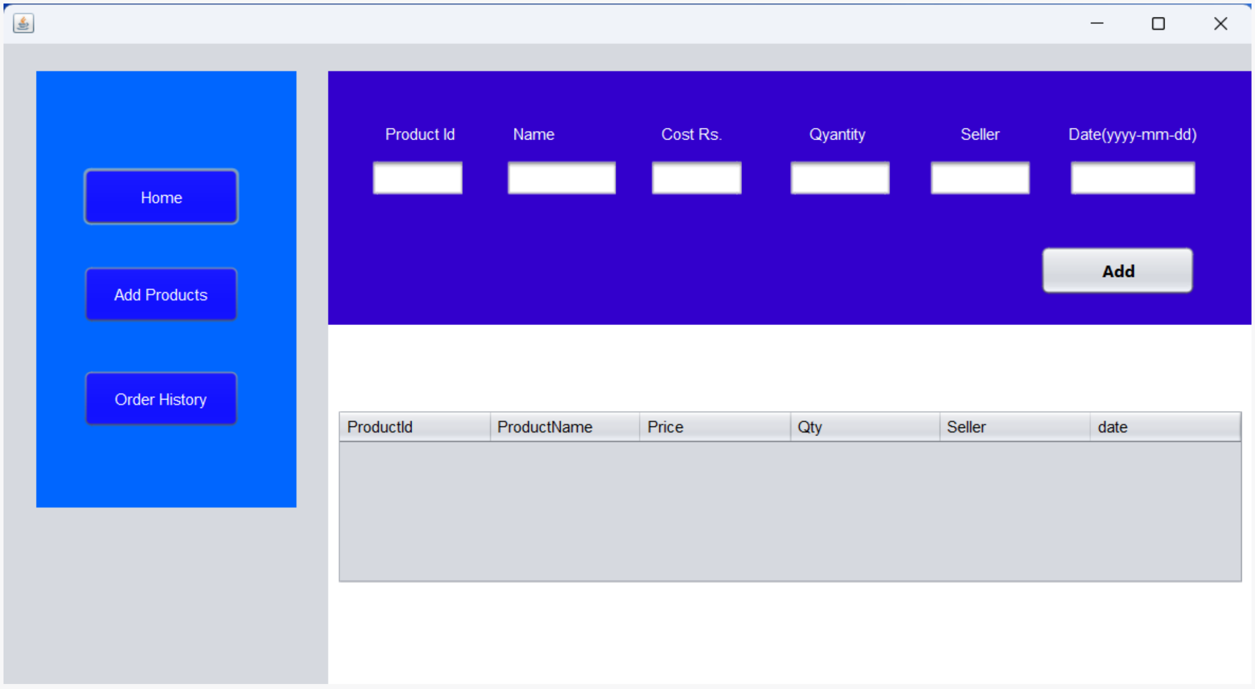
Project Flow

Home Page



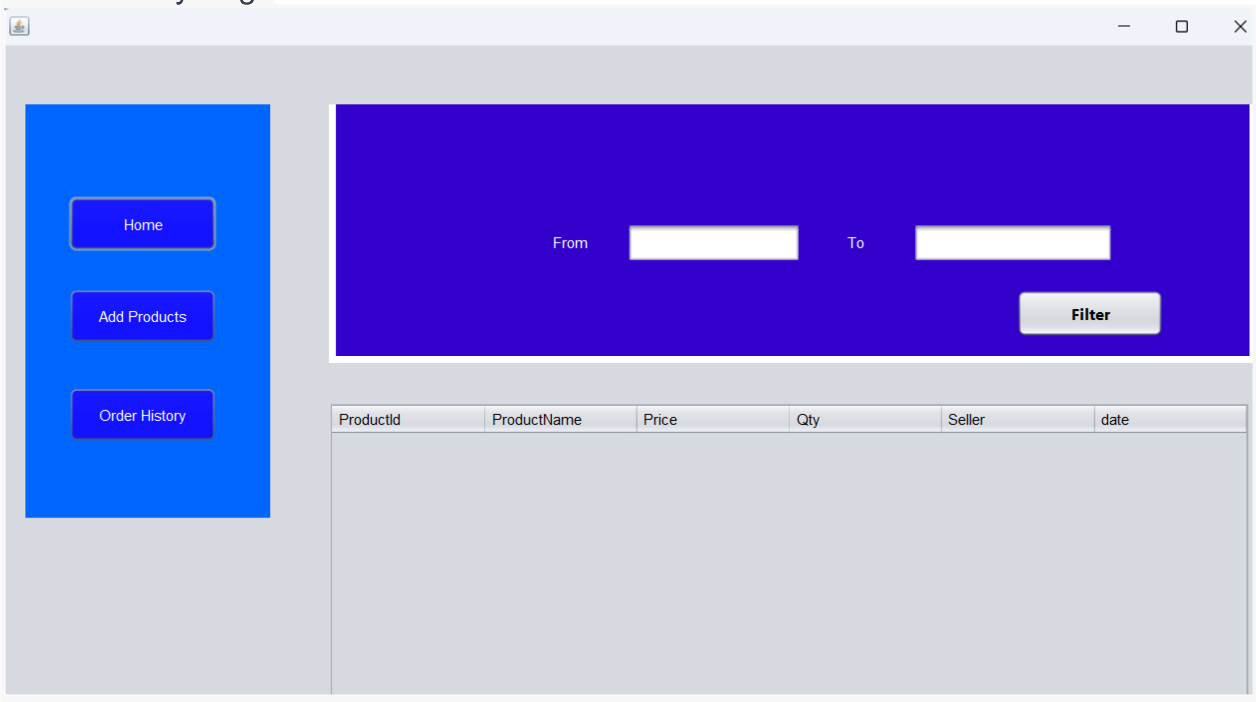
ProductId	ProductName	Qty	Price	Amount

Add Products Page



ProductId	ProductName	Price	Qty	Seller	date

Order History Page



ProductId	ProductName	Price	Qty	Seller	date

The Point of Sale system consists of three main components: the Home Page, the Add Products Page, and the Order History Page. The flow of data starts with the Home Page, where the user can choose to either add new products or view previous orders. If the user selects the Add Products option, they are taken to the Add Products Page where they can enter details about the new product. Once the user has entered the details and clicks the Save button, the data is stored in the MySQL database. If the user selects the Order History option, they are taken to the Order History Page where they can view a list of previous orders. The system retrieves this data from the MySQL database and displays it on the Order History Page.

Conclusion

In conclusion, the Point of Sale system developed in Java using NetBeans and MySQL is a functional and user-friendly software application that allows businesses to manage their sales transactions and inventory more efficiently. The system includes features such as adding new products, viewing order history, and making sales transactions, and it is designed to be scalable and easily customizable to meet the needs of different businesses.

The system was designed with a client-server architecture, with the client built using Java and NetBeans IDE, and the server using MySQL as the database. The system was thoroughly tested and validated before being deployed to a production environment.

Overall, the Point of Sale system represents a significant improvement over traditional manual sales transaction and inventory management methods, and it has the potential to improve efficiency, reduce errors, and increase profitability for businesses of all sizes.

Future Work

While the Point of Sale system is functional and meets the requirements specified in the project scope, there is always room for improvement and further development. Some possible areas for future work include:

Integration with other systems, such as e-commerce platforms or accounting software.
Adding additional features and functionality, such as support for multiple payment methods or user authentication.
Improving the user interface to make it more intuitive and user-friendly.
Enhancing the security of the system, such as implementing encryption or access control mechanisms.
By continuing to develop and improve upon the Point of Sale system, businesses can continue to reap the benefits of automated sales transaction and inventory management, and stay competitive in today's fast-paced and ever-changing business environment.