

SPARKBOOKS: A SMART BILLING AND INVENTORY MANAGEMENT SYSTEM

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ABSTRACT

Managing daily operations in small businesses and medical stores becomes challenging when relying on manual processes. This paper presents SparkBooks, a web-based billing and inventory management system designed to automate and simplify business operations. The system enables GST invoice generation, real-time inventory tracking, customer and supplier management, and financial reporting through an integrated platform. It is developed using PHP, MySQL, HTML, CSS, and JavaScript, ensuring a responsive and efficient user experience. By automating billing and stock management, the system minimises human errors, improves operational efficiency, and enhances decision-making capabilities. The proposed solution is cost-effective and suitable for small and medium-sized enterprises, providing a scalable approach to modern business management.

KEYWORDS: Billing Software, Inventory Management, GST Invoice, SaaS, Pharmacy System, Web Application, Real-Time Tracking

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I. INTRODUCTION

In the current digital era, efficient billing and inventory management systems are essential for the smooth functioning of retail businesses, particularly in medical stores. Despite technological advancements, many small businesses still rely on manual or semi-digital methods, which often result in inaccuracies and inefficiencies.

Manual billing systems are prone to calculation errors, incorrect tax application, and difficulties in maintaining records. Additionally, a lack of real-time inventory tracking leads to stock mismanagement, affecting both customer satisfaction and profitability. These challenges highlight the need for an automated and reliable system.

SparkBooks is developed as a practical solution to address these issues. It provides a centralised web-based platform that integrates billing, inventory, and reporting, enabling businesses to operate more efficiently and accurately.

II. PROBLEM STATEMENT

Small businesses and medical stores encounter several operational challenges due to traditional management systems:

- Manual billing leads to calculation errors and incorrect GST application
- Absence of real-time inventory tracking results in stock shortages or overstocking
- Difficulty in maintaining customer and supplier records
- Lack of proper financial reporting and business insights

Inefficient handling of daily transactions

These issues necessitate the development of a system that can automate and streamline business processes.

III. PROPOSED SYSTEM

- The proposed system, SparkBooks, is a web-based application that automates billing and inventory management processes. It provides an integrated environment that enables users to perform all business-related operations efficiently.
- Key features of the system include:
 - GST Invoice Generation: Automatic tax calculation and invoice creation
 - Customer and Supplier Management: Efficient storage and retrieval of data
 - Real-Time Inventory Tracking: Automatic stock updates after each transaction
 - Sales and Purchase Reports: Detailed reporting for analysis and decision-making
 - Web Accessibility: Access from any device with internet connectivity
- The system is designed to be cost-effective, user-friendly, and scalable.

IV. SYSTEM ARCHITECTURE

- SparkBooks follows a three-tier architecture consisting of frontend, backend, and database layers.
- Frontend Layer: Developed using HTML, CSS, and JavaScript, providing an interactive and responsive user interface
- Backend Layer: Implemented using PHP to handle business logic, authentication, and processing
- Database Layer: MySQL is used to store and manage data such as invoices, products, customers, and suppliers
- The user interacts with the system through a web interface, and the backend processes requests while communicating with the database.

V. MODULES OF THE SYSTEM

The system is divided into multiple modules to ensure efficient operation:

- User Authentication Module: Manages login and security
- Billing Module: Generates invoices and handles transactions
- Inventory Module: Tracks stock levels and updates inventory
- Customer Management Module: Maintains customer records and transaction history
- Reports Module: Provides sales, purchase, and financial reports
- Admin Dashboard: Displays overall system status and analytics

VI. DATABASE DESIGN

The system uses a relational database structure with the following key tables:

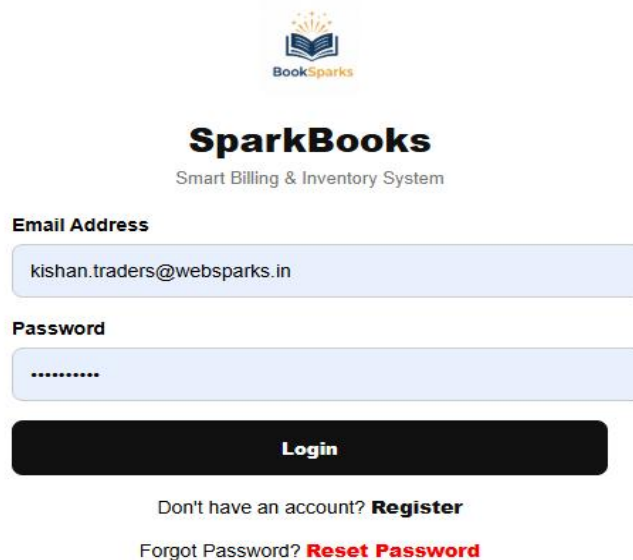
- **Invoices Table:** Stores invoice details, including date, amount, and tax
- **Customers Table:** Contains customer information and transaction history
- **Products Table:** Maintains product details and stock levels
- **Suppliers Table:** Stores supplier information and purchase records.

The relationships between these tables ensure data consistency and efficient information retrieval.

VII. IMPLEMENTATION AND WORKING

The system operates through a simple and efficient workflow:

- **User logs into the system**



BookSparks
Smart Billing & Inventory System

Email Address
kishan.traders@websparks.in

Password
.....

Login

Don't have an account? **Register**

Forgot Password? **Reset Password**

Fig 1- LOGIN PAGE

- **Products and inventory are added or updated**
- **User selects products and generates an invoice**
- **System automatically calculates totals and GST**
- **Invoice is saved, and stock is updated in real-time**

This automated workflow reduces manual effort and improves operational accuracy.

VIII. RESULTS AND DISCUSSION

The implementation of SparkBooks has significantly improved business operations. The system reduces billing time and minimises human errors through automated calculations. Real-time inventory tracking helps prevent stock shortages and overstocking. Additionally, the reporting module provides valuable insights into sales and financial performance, enabling better decision-making.

IX. LIMITATIONS

Despite its advantages, the system has certain limitations:

- Lack of a dedicated mobile application
- Limited advanced automation features
- Dependence on internet connectivity

X. COMPARISON WITH EXISTING SYSTEMS

SparkBooks distinguishes itself from traditional billing systems and existing software solutions by offering a combination of affordability, simplicity, and real-time functionality tailored for small businesses and medical stores.

Unlike manual systems, which are prone to errors and lack real-time tracking, SparkBooks provides automated GST billing and instant inventory updates. Compared to conventional desktop-based billing software, the proposed system is web-based, allowing users to access their data from anywhere without installation.

Additionally, many existing solutions are either complex or expensive for small business owners. SparkBooks addresses this gap by providing an easy-to-use interface and cost-effective pricing model, making it accessible to small and medium enterprises.

▪ **Key differentiating factors include:**

- **Web-Based Accessibility:** No installation required; accessible from any device
- **Cost-Effective Solution:** Affordable pricing suitable for small businesses
- **Real-Time Inventory Updates:** Automatic stock adjustment during transactions
- **User-Friendly Interface:** Designed for non-technical users
- **Integrated System:** Combines billing, inventory, and reporting in one platform

XI. FUTURE SCOPE

The system can be further enhanced with the following improvements:

- Development of a mobile application for better accessibility
 - Integration of barcode scanning for faster billing
- Implementation of AI-based analytics for demand forecasting
 - Cloud-based backup and multi-user scalability

XII. CONCLUSION

SparkBooks provides an effective solution for managing billing and inventory in small businesses and medical stores. By automating key processes and providing real-time insights, the system enhances efficiency, accuracy, and decision-making. It serves as a scalable and practical solution for modern business operations.

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