

INTELLI BOOKS

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Abstract: *Intelli Books is a web-based smart accounting and GST management system designed to simplify financial operations for small and medium-scale businesses. Traditional bookkeeping methods are often manual, time-consuming, and prone to errors, making it difficult to maintain accurate financial records. The proposed system aims to digitize and automate essential accounting activities such as invoice generation, expense tracking, inventory management, and GST reporting. The system is developed using modern web technologies such as React, TypeScript, and Tailwind CSS for the frontend, while Supabase is used for backend services including authentication, database management, and secure data storage. Intelli Books provides a centralized dashboard that enables users to monitor financial activities, manage transactions, and generate reports efficiently..*

Keywords: GST Accounting Software, Invoice Generation, Billing System, Tax Calculation, GST Filing, Expense Tracking, User Authentication, Financial Management

I. INTRODUCTION

The Intelli Books project is a web-based GST accounting software designed to simplify financial management for small and medium-sized businesses. This system enables users to generate invoices, track income and expenses, calculate GST, and maintain accurate financial records in a structured manner. It also provides secure user authentication to ensure data privacy and integrity.

The application offers real-time data management, allowing users to monitor their financial status and generate reports whenever required. By integrating features such as billing, GST calculation, and expense tracking into a single platform, the system reduces manual effort and improves accuracy.

II. RELATED WORK

Several approaches have been developed for accounting and billing management systems. Traditional methods rely on manual bookkeeping or spreadsheet-based tools, which are simple but prone to errors and inefficiencies when handling large volumes of financial data. Rule-based systems introduce predefined workflows for invoicing, expense tracking, and reporting, improving organization but lacking flexibility for dynamic business requirements. Web-based and cloud-based accounting platforms provide centralized access, automation, and real-time data handling; however, they may face challenges related to data security, scalability, and customization for small businesses. Therefore, there is a need for a lightweight, integrated solution that ensures secure authentication, efficient financial tracking, scalable architecture, and user-friendly design. This forms the primary motivation behind the development of the Mini Zoho Books

III. METHODOLOGY

[1] Data Collection and Preparation

The data used in this system is collected from small businesses and simulated financial records to represent real-world accounting and billing scenarios. The dataset includes transaction details such as invoice number, customer information, product/service details, amount, tax, payment status, and transaction date. Each record represents an



individual financial activity processed within the platform. Key parameters influencing financial management include invoice category, payment status, transaction type (income/expense), due dates, and customer details. These features are essential for tracking, managing, and analyzing financial operations efficiently. To ensure data quality, preprocessing steps such as removal of incomplete or duplicate records, normalization of numerical values (e.g., currency formats), and encoding of categorical attributes (e.g., payment status, invoice type, and transaction category) were applied. The data is structured to support efficient storage, retrieval, and processing within the system. Additionally, simulated data is generated to represent different financial scenarios such as bulk transactions, pending payments, overdue invoices, and completed payments.

[2] Feature Engineering and Financial Data Modelling

Feature engineering is applied to enhance the efficiency and accuracy of financial management and analysis within the system. Important features such as total invoice amount, tax calculations, payment due duration, and outstanding balance are derived to better understand financial performance. Categorical attributes like transaction type (income/expense), payment status, invoice category, and customer type are encoded to ensure compatibility with system logic and reporting modules. Derived features such as overdue duration, monthly revenue trends, expense distribution, and payment completion rate help in identifying financial patterns and improving decision-making. A structured financial data model is designed to define the lifecycle of transactions, including stages such as invoice creation, verification, payment processing, and closure. This ensures consistency, accuracy, and transparency in financial operations within the Mini Zoho Books system.

[3] Financial Workflow and System Implementation

The system is implemented using a role-based architecture to manage different types of users such as administrators and business users. Each role is assigned specific permissions to ensure secure and controlled access to financial data. A structured workflow is followed where invoices are created, validated, processed, and tracked until payment completion. Secure authentication mechanisms are implemented to verify users and protect sensitive financial information. The system also supports controlled user access to prevent unauthorized modifications to transactions and records.

[4] Dashboard Visualization and Financial Insights

To improve usability, the system includes an interactive dashboard that provides a clear overview of financial activities. The dashboard displays key metrics such as total revenue, total expenses, pending payments, completed transactions, and overall balance. These insights help users quickly understand their financial status. Real-time notifications are integrated to keep users informed about important updates such as invoice generation, payment confirmations, and due date reminders. This reduces communication gaps and ensures timely financial actions. A monitoring module allows administrators or users to analyze financial performance and identify trends such as monthly income patterns, expense distribution, and overdue payments.

IV. SYSTEM ARCHITECTURE

The proposed system follows a multi-tier client-server architecture designed for efficient financial management and billing operations. The architecture consists of three main layers: (1) the web-based user interface, which acts as the presentation layer for invoice creation, expense tracking, and financial visualization; (2) the backend application server, (3) the database layer, which securely stores financial records, user data, invoices, and transaction details. Communication between the client and server is carried out using RESTful APIs with secure protocols, ensuring reliable and efficient data exchange. The workflow begins when a user performs an action such as creating an invoice or recording an expense through the interface. The backend server processes the request, validates the data, and stores it in the database. Based on system logic, financial records are updated, and relevant calculations such as totals, taxes, and



balances are performed automatically. The system implements a structured financial workflow, where each transaction progresses through stages such as creation, validation, processing, and completion (e.g., invoice generation to payment settlement). Role-based access control ensures that only authorized users can view or modify sensitive financial data. Real-time notifications are generated to inform users about payment updates, due reminders, and transaction confirmations. The architecture also supports multi-user functionality, allowing multiple users to manage financial data while maintaining proper access control and data consistency. For scalability and deployment, the backend can be containerized and hosted on cloud infrastructure, enabling the system to handle increasing volumes of transactions efficiently. The modular design ensures maintainability, flexibility, and adaptability to different business requirements.

V. RESULTS AND DISCUSSION

The system provides a centralized dashboard that allows users to monitor key financial metrics such as revenue, expenses, profit, and pending payments in real time. It enables efficient management of invoices, customers, vendors, and transactions through a well-structured interface. Additionally, the system offers visual insights and summaries of business performance, helping users make informed financial decisions and maintain better control over their operations.

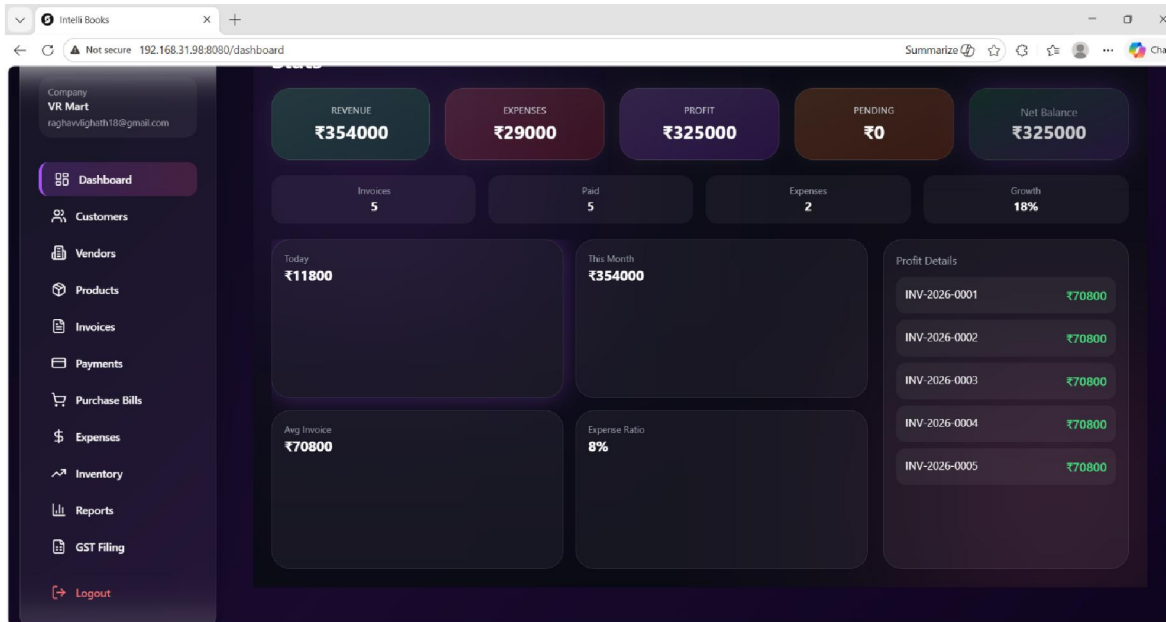
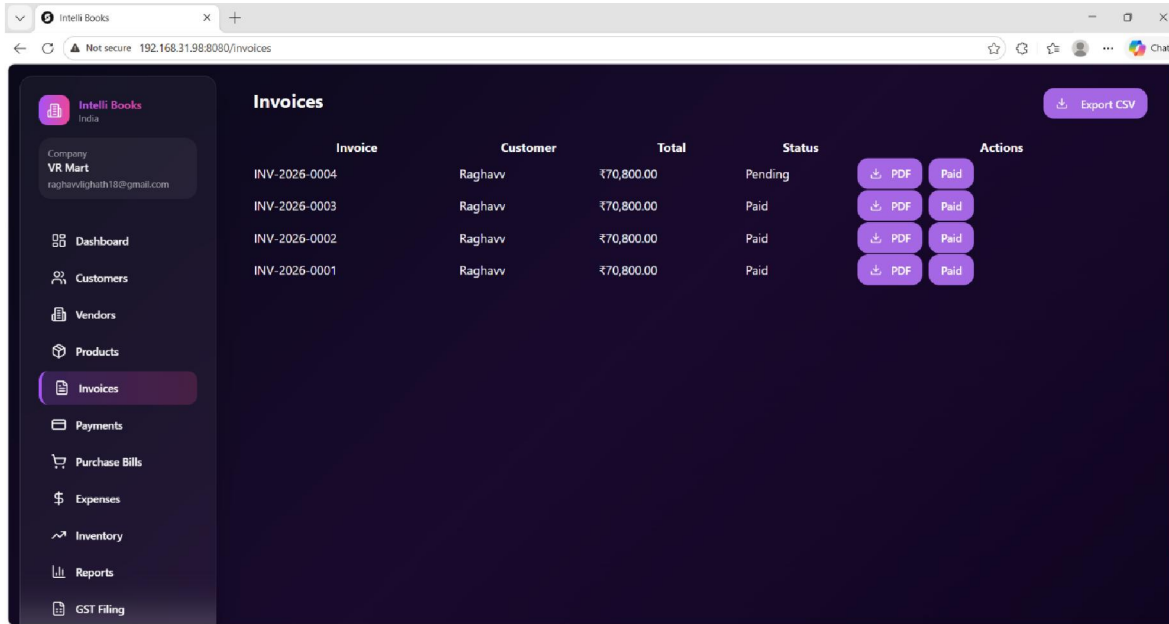


Figure 1 : Home Page

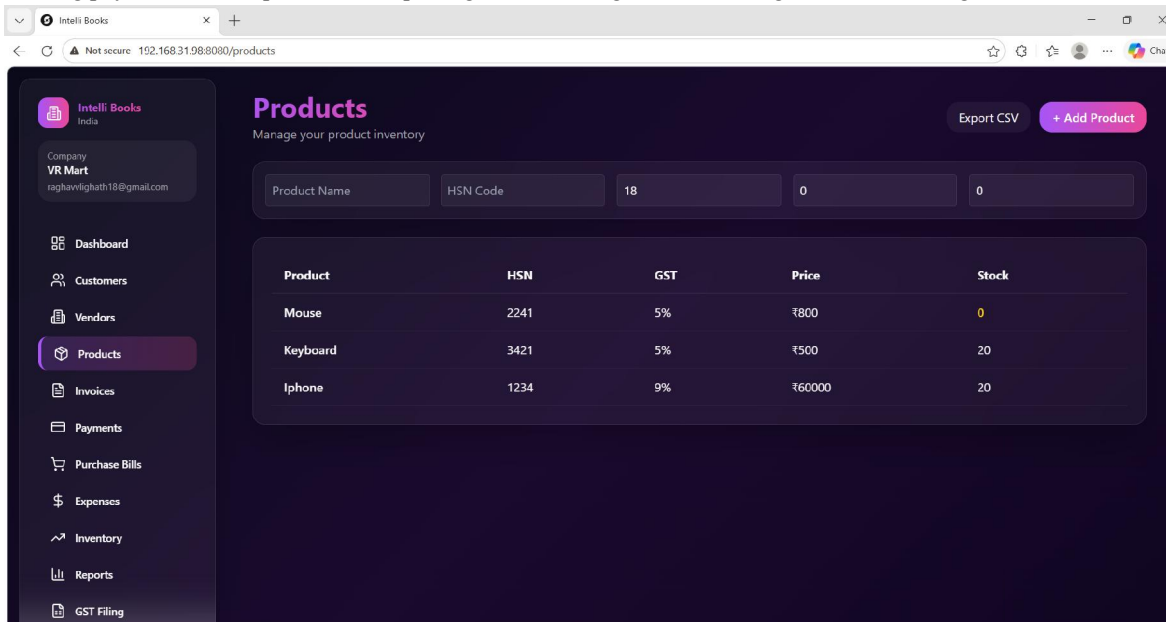




The screenshot shows the 'Invoices' page of the Intelli Books application. It features a sidebar with navigation options like Dashboard, Customers, Vendors, Products, Invoices (selected), Payments, Purchase Bills, Expenses, Inventory, Reports, and GST Filing. The main content area displays a table of invoices with columns for Invoice ID, Customer, Total, Status, and Actions. An 'Export CSV' button is visible in the top right corner.

Invoice	Customer	Total	Status	Actions
INV-2026-0004	Raghavv	₹70,800.00	Pending	PDF, Paid
INV-2026-0003	Raghavv	₹70,800.00	Paid	PDF, Paid
INV-2026-0002	Raghavv	₹70,800.00	Paid	PDF, Paid
INV-2026-0001	Raghavv	₹70,800.00	Paid	PDF, Paid

The system provides an invoice management interface that allows users to create, view, and track all invoices in a structured format. It displays key details such as invoice ID, customer name, total amount, and payment status, enabling easy monitoring of financial transactions. Additionally, users can perform actions like downloading invoices as PDF, marking payments as completed, and exporting data, ensuring efficient billing and record management.




The screenshot shows the 'Products' page of the Intelli Books application. It features a sidebar with navigation options similar to the Invoices page. The main content area displays a form to add a new product and a table of existing products. The table includes columns for Product, HSN, GST, Price, and Stock. An 'Export CSV' button and a '+ Add Product' button are visible in the top right corner.

Product	HSN	GST	Price	Stock
Mouse	2241	5%	₹800	0
Keyboard	3421	5%	₹500	20
Iphone	1234	9%	₹60000	20

The system provides a product management module that allows users to add, view, and manage inventory details efficiently. It includes essential information such as product name, HSN code, GST percentage, price, and available

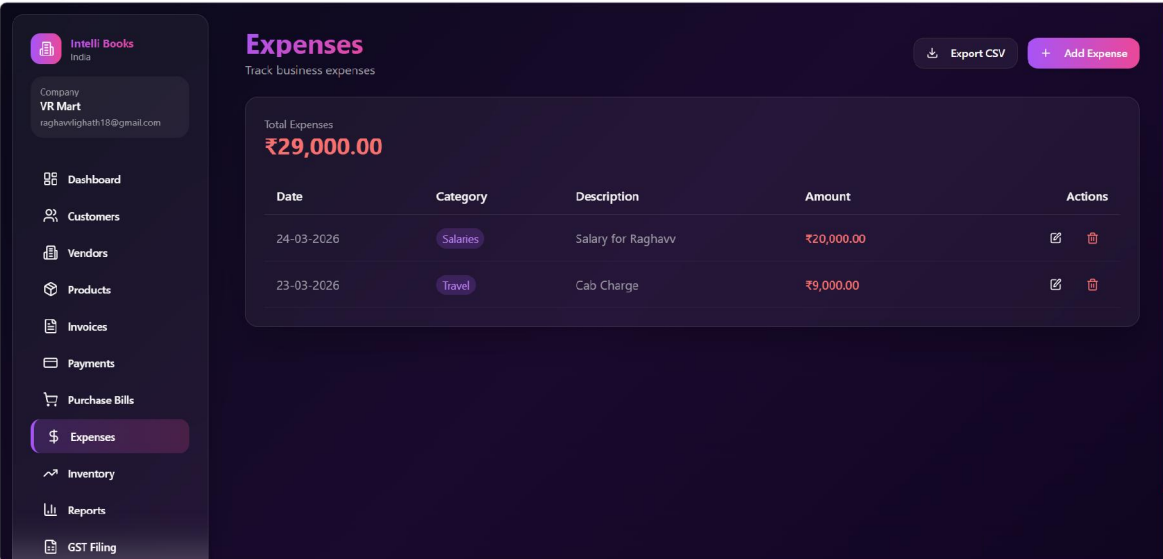


stock, enabling accurate tracking of goods. Additionally, users can update inventory, add new products, and export product data, ensuring organized inventory management and seamless integration with billing and invoicing processes.



Bill	Vendor	Date	Subtotal	CGST	SGST	IGST	UGST	Total	Status	Action
BILL-2026-0005	Viswesh	24-03-2026	₹60,000.00	₹5,400.00	₹5,400.00	₹0.00	₹0.00	₹70,800.00	Paid	Download
BILL-2026-0004	Viswesh	24-03-2026	₹1,20,000.00	₹10,800.00	₹10,800.00	₹0.00	₹0.00	₹1,41,600.00	Paid	Download
BILL-2026-0003	Viswesh	23-03-2026	₹2,500.00	₹225.00	₹225.00	₹0.00	₹0.00	₹2,950.00	Paid	Download
BILL-2026-0002	Viswesh	23-03-2026	₹5,000.00	₹450.00	₹450.00	₹0.00	₹0.00	₹5,900.00	Paid	Download
BILL-2026-0002	Viswesh	23-03-2026	₹5,000.00	₹450.00	₹450.00	₹0.00	₹0.00	₹5,900.00	Paid	Download
BILL-2026-0002	Viswesh	23-03-2026	₹5,000.00	₹450.00	₹450.00	₹0.00	₹0.00	₹5,900.00	Paid	Download
BILL-2026-0002	Viswesh	23-03-2026	₹5,000.00	₹450.00	₹450.00	₹0.00	₹0.00	₹5,900.00	Paid	Download
BILL-2026-0002	Viswesh	23-03-2026	₹5,000.00	₹450.00	₹450.00	₹0.00	₹0.00	₹5,900.00	Paid	Download
BILL-2026-0001	Viswesh	10-03-2026	₹60,000.00	₹5,400.00	₹5,400.00	₹0.00	₹0.00	₹70,800.00	Paid	Download

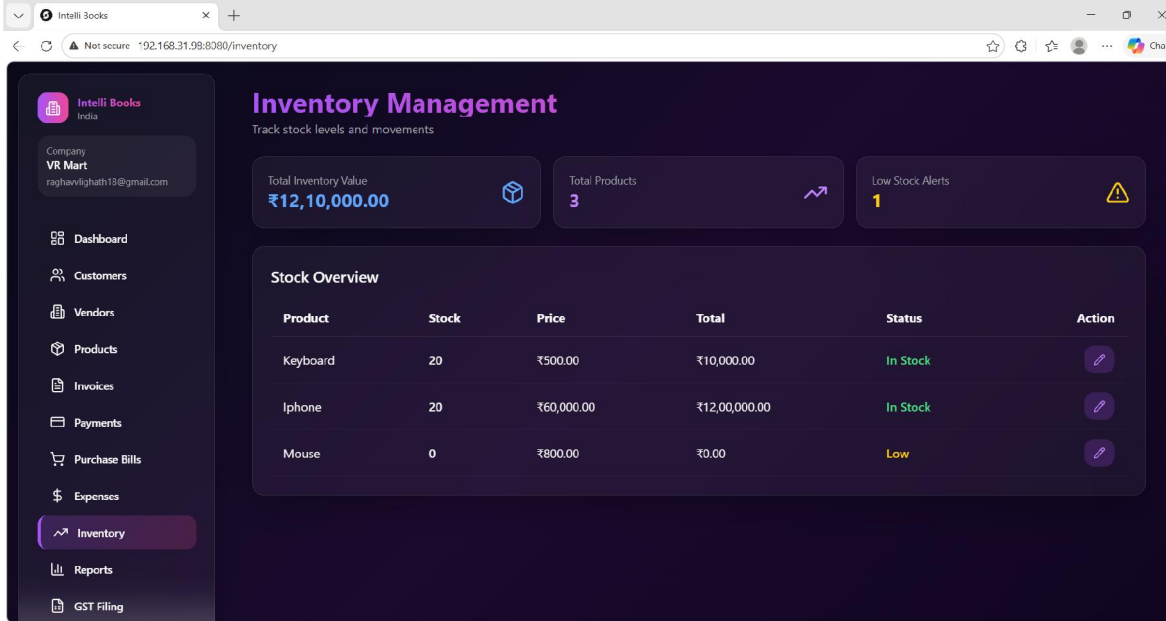
The system provides a purchase bill management module that allows users to track vendor transactions and manage expenses efficiently. It displays detailed information such as bill ID, vendor name, date, subtotal, GST breakdown (CGST, SGST, IGST), total amount, and payment status, ensuring accurate financial recording. Additionally, users can create new bills, monitor payment status, and download records, enabling better expense tracking and streamlined financial management.



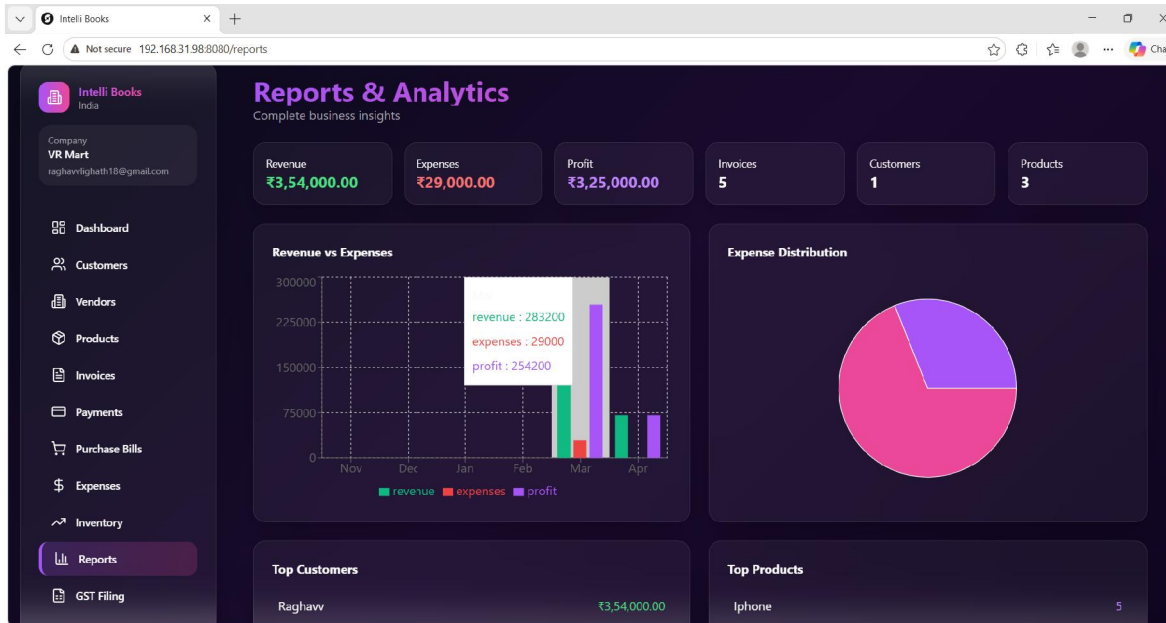
Date	Category	Description	Amount	Actions
24-03-2026	Salaries	Salary for Raghav	₹20,000.00	Edit Delete
23-03-2026	Travel	Cab Charge	₹9,000.00	Edit Delete

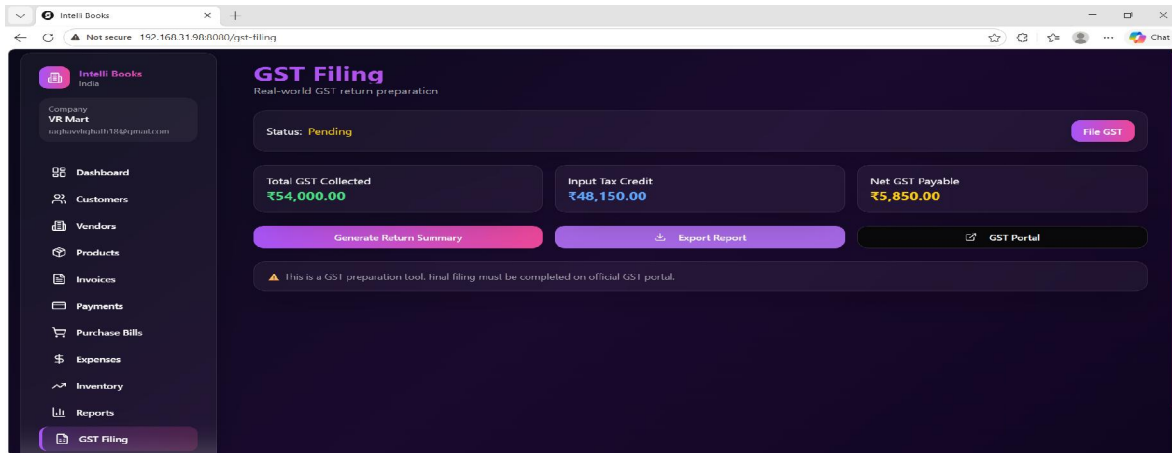


The system provides an expense management module that allows users to record, categorize, and track business expenses efficiently. It displays details such as date, category, description, and amount, along with a summary of total expenses for better financial visibility. Additionally, users can add, edit, delete, and export expense records.



The system provides an inventory management module that enables users to monitor stock levels and product availability in real time. It displays key details such as total inventory value, number of products, stock quantity, pricing, and status indicators like in-stock or low-stock alerts. Additionally, users can track stock movements and update inventory records, ensuring efficient stock control, preventing shortages, and supporting smooth business operations.





The system provides a GST filing module that helps users prepare and manage tax-related information efficiently. It displays key details such as total GST collected, input tax credit, and net GST payable, enabling accurate tax calculations. Additionally, users can generate return summaries, export reports, and access the GST portal for final filing, ensuring compliance and simplifying the tax management process.

REFERENCES

- [1] R. Elmasri and S. B. Navathe, "Fundamentals of Database Systems," 7th ed., Pearson, 2016.
- [2] J. W. Satzinger, R. B. Jackson, and S. D. Burd, "Systems Analysis and Design in a Changing World," 7th ed., Cengage Learning, 2015.
- [3] Government of India, "Goods and Services Tax (GST) Portal," [Online]. Available: <https://www.gst.gov.in>
- [4] Supabase Inc., "Supabase Documentation – Open Source Firebase Alternative," [Online]. Available: <https://supabase.com/docs>
- [5] Meta (Facebook), "React – A JavaScript Library for Building User Interfaces," [Online]. Available: <https://react.dev>
- [6] Tailwind Labs, "Tailwind CSS Documentation," [Online]. Available: <https://tailwindcss.com/docs>
- [7] Microsoft, "TypeScript Documentation," [Online]. Available: <https://www.typescriptlang.org/docs>
- [8] PostgreSQL Global Development Group, "PostgreSQL Documentation," [Online]. Available: <https://www.postgresql.org/docs>
- [9] Stripe Inc., "Online Payment Processing API Documentation," [Online]. Available: <https://stripe.com/docs/42>
- [10] Investopedia, "Accounting Basics and Financial Management Concepts," [Online]. Available: <https://www.investopedia.com/accounting>
- [11] A. K. Gupta and R. Sharma, "A Study on Cloud-Based Accounting Systems," International Journal of Computer Applications, vol. 180, no. 25, pp. 10–15, 2018.
- [12] S. Kumar and P. Singh, "GST Enabled Billing System for Small Businesses," International Journal of Engineering Research & Technology (IJERT), vol. 9, no. 6, pp. 45–50, 2020.
- [13] M. Patel, "E-Invoice Management Systems and Digital Accounting," International Journal of Advanced Research in Computer Science, vol. 11, no. 3, pp. 22–28, 2020.

