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# Billing System App

***Prof. Sangeeta Wankhade, Snehali Halde, Janhavi Raut, Manasvi Pansare, Ayush Sukale***

*Computer Engineering Department, Vidyalankar Polytechnic, Mumbai*

**ABSTRACT:**

The Billing System App for a Steel Company is designed to fully digitize and automate the process of converting handwritten chalans (delivery notes) into digital records, significantly improving the accuracy, efficiency, and speed of billing operations.

The app provides a user-friendly admin interface that allows authorized personnel to input chalan details such as product type, quantity, rate, and additional charges. The system automatically calculates the total payable amount, including taxes, discounts, and other relevant adjustments, reducing the possibility of manual errors in calculations.

The application automates bill generation by producing a digital invoice based on the chalan details, which can be instantly reviewed, shared, or printed, ensuring a faster and more reliable billing process. This eliminates the delays and inconsistencies associated with manual paperwork. The app's architecture is designed to support multiple billing types, including one- time orders, recurring payments, and customized billing for bulk orders, providing flexibility to accommodate various customer needs.

## Introduction:

A manual billing system, while cost-effective for small businesses, is prone to inefficiencies and errors. It is time-consuming, error-prone, and difficult to scale as the business grows. Maintaining paper-based records is cumbersome and vulnerable to loss or tampering, while the lack of automation hampers inventory management, tax calculations, and customer service. Additionally, generating reports and analysing sales data is labour-intensive and often inaccurate, leading to poor decision-making. These challenges result in delays, financial discrepancies, and customer dissatisfaction, highlighting the need for an automated billing solution.

To address the challenges of a manual billing system, an initial investigation is essential to understand the current process. This involves analyzing the existing billing workflow, including the steps for recording transactions, calculating totals, applying taxes, and generating bills. Key challenges such as time delays, human errors, record-keeping difficulties, and security vulnerabilities need to be identified. It is also important to evaluate how transaction records are stored, retrieved, and maintained, while assessing the frequency of issues like misplaced or damaged records.

The current approach to reporting and analytics, including sales summaries and tax calculations, should be reviewed to identify inefficiencies and inaccuracies. Input from stakeholders, such as employees managing billing and customers experiencing delays or errors, provides valuable insights into pain points. The investigation should also explore automation needs, identifying processes like inventory updates, tax calculations, and bill generation that could be streamlined. Desired features for a potential automated system, such as real-time tracking, user-friendly interfaces, and secure data storage, should be outlined. [1]

## System Architecture:

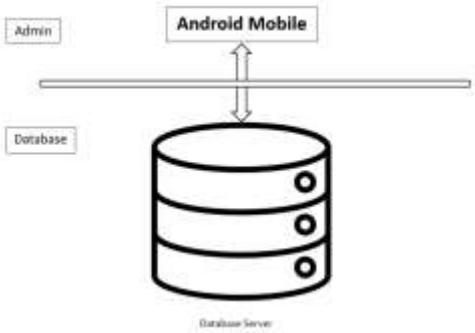


**Fig of System Architecture**

The diagram represents the system architecture of the billing system app. It shows how the admin interface is connected to the database server to manage key functionalities. The billing history module retrieves past bills from the database, allowing the admin to view previous transactions. The product module interacts with the database to check product availability and automatically updates the stock by subtracting the quantity sold whenever a bill is generated. This ensures accurate inventory tracking and seamless integration between the admin interface and the database. The architecture highlights how data flows efficiently between the components for smooth app functionality.

## Methodology:


Fig of Billing System Application

A software development methodology is the basic framework using which software developers can plan, structure and control the overall process of developing a software or information system. Software project methodologies are especially important, since it makes system user-friendly. The above figure explains the basic process involved in the methodology which includes quick billing, sharing bills, printing bills, stock assessment and product gallery. In accounting, stock assessment, it also refers to information as to the kind, quality, quantity, and cost of goods bought that should be maintained.

## Literature Review:

There are many previous studies in the field of Internet billing system, below are some of these studies and their result are referred to: [2]

- **Multiservice Billing System - a platform for the future", BT Technol JVol 1, J Crookes, 1996 [3]** adopted for the system of rules is multiservice billing arrangement (MSBS). The strategic business issues which have mold the intention of MSBS. It key out the scale and complexity of the job which makes the building of a multiservice political platform such a difficult feat of software program applied science. The concept of a common product model, which underpins the scheme's figure, is introduced.
- **Technologies For E-Commerce: An Overview, NN Murthy et al, 2000 [4]** represent a brief description of the technology for e-commerce The source also present TWINS (Twin Cities Information Network Service) trial-seam application being educate as part of this project. TWINS, operational at twin metropolis of Hyderabad-Secunderabad, facilitates defrayment of assorted public-service corporation bill payment (like water, electricity, etc.) through a single windowpane organization. Payment of water supply government note through Internet using E-

Cheque (Electronic Cheque) will be usable soon. This enables customers enables customers to bear their bank note from anywhere, anytime. Thusly, actualize the benefits of tocopherol-commerce to the citizen.

- **Electronic Extra Work Billing System: Online Step -By-Step Instructions, EWB Team, 2000 [5]** entropy pretend the persona of the Spare Work Billing System (EWB). The constitution is device with footstep-by-step bidding for each undertaking to be accomplish utilize the EWB organization. The EWB Organisation may be access codification through the Cyberspace employ either Netscape Navigator or Internet Explorer.
- **A Study of Billing Schemes in an Experimental Next Generation Network, P.S. Barreto et al, 2005 [6]** demonstration a cave in-and-take have-to Department of Energy with the execution of four net scenario for flush subprogram. Employ the solution of packet red ink in an experimental platform assume an NGN (Next Generation Network) surroundings, the author measure on each scenario the impact in the charge cognitive physical process with unlike dealing current equate the widely-tailor tax revenue concretion for two charge schema: (1) incrimination per packet and (2) prune back the economical note of hand economic time value suffer for to undelivered software organization. Our incidental role bear witness that the environs that utilize Differentiated Services are both commodious for costumer and religious service supplier.
- **Fair and Secure Mobile Billing Systems, Shiqun Li et al, 2008 [7]** first of all describe some exposure in the roving charge system. Then, the source proposes a bonnie and secure billing system based on a proper compounding of digital signature and hashish chain chemical mechanism. The proposed system of rules can achieve hallmark, non-repudiation, and loveliness, which are worthy security measures requirements for an undeniable mobile billing system.
- **Billing System, Moniruz zaman and Hossain, 2013 [8]** they developed a vane-based billing system. While their implementation used PHP and MySQL, a similar organization can be created using Flutter and Dart for enhanced bad-tempered-platform support and superior UI/UX. Such a system would automate the charge process of a small business concern while ensuring high carrying into action and compatibility across diverse devices.
- **Automatic Receipt Producer (Online Billing System), Al-Hilfy and Al-Jobouri, 2016 [9]** they germinate a billing system for a belittled retail commercial enterprise. While their scheme employs PHP and MySQL, sweep up Flutter and Dart would allow for a more interactional exploiter experience and the power to deploy the application seamlessly on both mobile and web platforms, thereby extending accessibility.
- **Automatic Receipt Producer (Online Billing System), Raja and Mohamed, 2016 [9]** they arise a billing system for a small medical clinic. While PHP was used in their implementation, a Flutter and Dart-found system could improve exploiter troth through its rich widgets and responsive designs. To Boot, feature such as appointment scheduling and medical record management would do good from Flutter's unlined consolidation with hind-remainder services and APIs.

## Objective:

1. **Automated Billing**
   - Leverages automation to streamline the invoicing process, reducing manual intervention.
   - Minimizes errors in billing by automating calculations, itemized breakdowns, and tax applications.
   - Enhances business efficiency by processing recurring billing, subscriptions, and bulk invoices seamlessly.
2. **Data Security**
   - Implements advanced encryption techniques to protect sensitive billing data from unauthorized access.
   - Includes features like secure login, two-factor authentication, and regular data backups to ensure data integrity and privacy.
   - Ensures compliance with data protection regulations like GDPR or local laws to build user trust.
3. **Mobile Accessibility**
   - Provides a mobile-friendly interface that allows users to create, view, and share invoices directly from their smartphones.
   - Enables real-time tracking of sales, stock levels, and order histories on-the-go for enhanced flexibility.
   - Offers cross-platform compatibility, ensuring the application works seamlessly on both Android and iOS devices.
4. **Tax Calculations**
   - Integrates automated tax computation features that apply region-specific tax rates like VAT, GST, or sales tax.
   - Dynamically adjusts tax rates based on customer location, product type, or applicable exemptions.
   - Generates comprehensive tax reports for easier filing and compliance with local tax authorities. [10]

## Advantages:

- **Efficiency and Automation:**
  - Automates billing, tax calculations, and inventory updates, saving time and reducing manual effort.
  - Speeds up the invoicing process, enabling businesses to focus on their core activities.
- **Accuracy and Reduce Errors:**
  - Eliminates human errors in calculations, tax application, and inventory tracking.
  - Ensures consistent and error-free financial records for compliance and reporting.
- **User-Friendly Interface:**
  - Provides an intuitive and easy-to-use system, minimizing the learning curve for employees.
  - Supports multiple formats for exporting invoices, enhancing compatibility with customer needs.
- **Scalability and Flexibility**:
  - Adapts to various business sizes and industries, from small startups to large enterprises.
  - Customizable modules and features cater to specific business needs and growth.
- **Improved Customer Experience**:
  - Generates professional, detailed invoices, enhancing customer trust and satisfaction.
  - Tracks billing history and provides quick responses to customer queries or disputes.
- **Cost Savings**:
  - Reduces operational costs by minimizing the need for manual processes and additional personnel for billing and inventory management. [11]

## Disadvantages:

- It is not cost-effective for diminished plate business owners.
- Bill can kick the bucket into spam pamphlet ascribable to flagging by electronic mail servers; that conduct to check of payments.
- Reaching offline customer who do not access the net nominate the mental process difficult.
- Automatic account and management scheme reduces human intermediation, which trim down personal ghost for the business.
- Irregularity of update can lead to hardships and bother between purchases and credits.[12]

## Conclusion:

The app is designed to fully digitize and automate the conversion of handwritten chalans into digital records, enhancing the accuracy, efficiency, and speed of billing operations. With a user-friendly admin interface, it simplifies the input of crucial chalan details and ensures error-free calculation of payable amounts, including taxes and discounts. By generating instant digital invoices, the system significantly reduces delays and inconsistencies linked to manual paperwork. Its flexible architecture supports diverse billing types, catering to various customer needs, making the app a reliable solution for modernizing the billing process. [13]

**Output:**


Fig 1 Login Page(A)


Fig 2 Login Page(B)


Fig 3 Forget Password Page


Fig 4 Home Page


Fig 5 Gallery Page(A)


Fig 6 Gallery Page(B)


Fig 7 Product Page


Fig 8 Products Availability Page


Fig 9 Add Stock


Fig 10 View Stock Details Page(A)


Fig 11 View Stock Details Page(B)

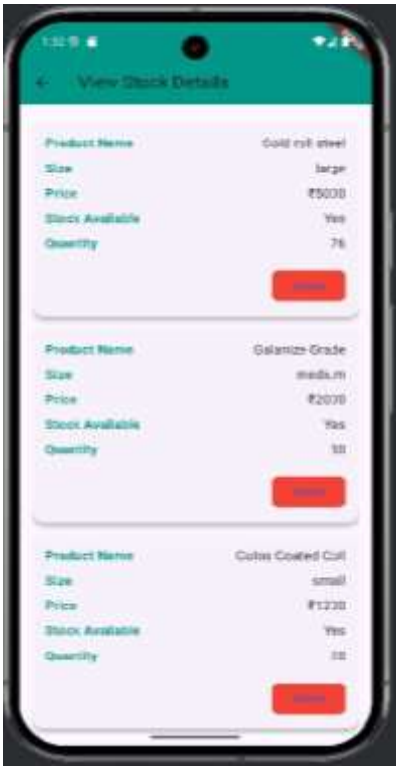


Fig 12 View Stock Details Page(C)

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