Software Requirements Specification

for

BILLING 360

Version 1.00

Prepared by

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Course: CS253

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
v1.00	Abhishek Khandelwal Ansh Agarwal Dhruv Gupta Kundan Kumar Nipun Nohria Pallav Goyal Poojal Katiyar Pragati Agrawal Saagar K V Venkatesh Akula	First version of the requirement document	26/01/2024

1. Introduction

1.1 Product Scope

Billing is an essential and important aspect of business. When we talk of retailers or owners of microenterprises (for example, vendors at the Old Shopping Complex, IITK), we often notice that vendors face several challenges that truly hinder them from performing up to the mark. Many vendors still use paper for billing and accounting. For credit management, registers are kept to note down all transactions and the amount owed. Signatures are the means of authentication. It is not surprising that errors often occur. Some errors might even lead customers to lose trust. The loss of bills and registers is also very problematic. In addition, vendors face problems keeping track of their inventory. Long-standing stock going unnoticed and becoming unfit for sale is a common occurrence. Items with an expiry date are not handled as wisely as they should be. Vendors are also unable to maximize their profits due to a lack of insight into their sales. We intend to build a software for such people who desire to maximize their gains through optimization of their business processes.

Billing 360 is an easy-to-use software that serves various purposes, like billing, inventory management, credit and debt management, and report generation. The user can easily generate bills and invoices with automatic tax and discount computations. The software automatically updates the inventory based on the items entered in the bill. The user can also update his inventory manually when necessary. The user can view transaction history. The user can maintain a credit log. This credit log will be familiar to the user because it is very similar to his register. However, his credit log is now stored on the cloud safely. The customer receives a notification each time a change is made to his credit log, thus maintaining authenticity and friendly relations between the user and his customers. The user can also make note of the amount he owes to various suppliers. The software also generates reports from time to time to help the user comprehend his sales pattern.

1.2 Intended Audience and Document Overview

Intended Audience

The intended audience for this document includes stakeholders involved in the development process (developers and project managers), testers as well as the target users of the finished product.

- Software developers (the group members) use this document as a guide during their development process to ensure that the software being developed meets all the necessary requirements. It also helps find a suitable architectural pattern and plan their development process accordingly.

  System developers can go through the Product Overview (2.1) section to get an overall idea about the product and then proceed with the following sections:

- ❖ Product Functionality (2.2) and Functional Requirements (3.2)
- ❖ Design and Implementation Constraints (2.3)
- ❖ Assumptions and dependencies (2.4)
- ❖ External Interface Requirements (3.1)
- ❖ Use Case Models(3.3)
- ❖ Other Non-functional Requirements (4)

Jargons and abbreviations in the document can be understood by referring to section (1.3). Appendix A (data dictionary) can serve as a quick reference table during the development process.

- Project managers (the instructor and the teaching assistant) can use this document to oversee the planning, performance, and execution of the software development process.

  For project managers, the most relevant sections include:
  - ❖ Product Overview (2.1)
  - ❖ Product Functionality (2.2)
  - ❖ Other Non-functional Requirements (4)
  - ❖ Group log (Appendix B)

- End users (retailers and vendors owning microenterprises) can use this document to check whether all the requirements they need are listed out, in a verifiable manner. They can get an idea of the user interface the software would offer as well as a detailed picture of each use case.This helps them confirm if this is what they exactly want. After the software has been developed, clients can verify whether all requirements have been satisfied or not.

  The relevant sections include:
  - ❖ Product Scope (1.1)
  - ❖ Overall Description (2)
  - ❖ External Interface Requirements(3.1)
  - ❖ Use case models (3.3)
  - ❖ Other Non-functional requirements (4)

- Testers and Approvers (the instructor, the teaching assistant, the beta-testing team and the development team) can test the designed software to point out vulnerabilities in the software and give their feedback on the functionality by referring to the expectations presented in this document. They can perform checks on each use case, with reference to section 3.3.They can verify other non-functional requirements, for example, whether the software has the required performance or not.

  For testers, the most relevant sections include:
  - ❖ Product Functionality (2.2)
  - ❖ Design and implementation constraints (2.3)
  - ❖ Use case models (3.3)
  - ❖ Other Non-functional requirements (4)

Document Overview

- Section 1: This section presents the product scope and provides essential background details such as document conventions and abbreviations that would be useful in reading the document. While familiar readers may choose to skip this section, it serves as a valuable reference point to clarify any ambiguities throughout the document.

- Section 2: This section presents a concise yet comprehensive high-level picture of the software, outlining its core functionalities, key assumptions, and dependencies. A reader is encouraged to read this part, as it provides a good basis for deeper understanding in subsequent sections.

- Section 3: This section contains detailed information about the software and explains the functions in detail using multiple diagrams. This is essential for end-users as well as developers. It will serve as a guide in the development process for developers and an instruction manual for end-users.

- Section 4: This section provides an insight into the non-functional requirements that shall be met by the software. This section holds particular importance for developers, guiding their implementation choices to ensure the system meets all performance, usability, and other critical non-functional criteria.

- Section 5: This section includes the appendices for the aid of the reader of this document.

1.3 Definitions, Acronyms, and Abbreviations

Definitions

Term	Definitions
Vendor/ Merchant/ User/ Shopkeeper	Retailer/ owner of a microenterprise
Stock	Current quantity of a particular item available in store
Supplier	The merchants with whom our user deals
System	Software Backend
Administration	Development team
Store/Firm/Shop	Our client's microenterprise
Batches	The batch of an item refers to all the available units of that item with a particular expiry date.

Acronyms and Abbreviations

Term	Acronyms and Abbreviations
OTP	One Time Password
GST	Goods and Services Tax
TLS	Transport Layer Security
ID	Identity
FAQs	Frequently Asked Questions

1.4 Document Conventions

Formatting Conventions:

- Arial font size 11 is used throughout the document for text.
- Arial font sizes of 14 and 18 are used for Subheadings and headings, respectively.
- The headings and subheadings of all sections are written in bold.
- Underline has been used for headings within subsections.
- Bullet point ordering has been used as a listing typesetting tool.

Naming Conventions:

- Admin: Administrator who gives technological and product support to the user
- Customer: Customer of our client

1.5 References and Acknowledgments

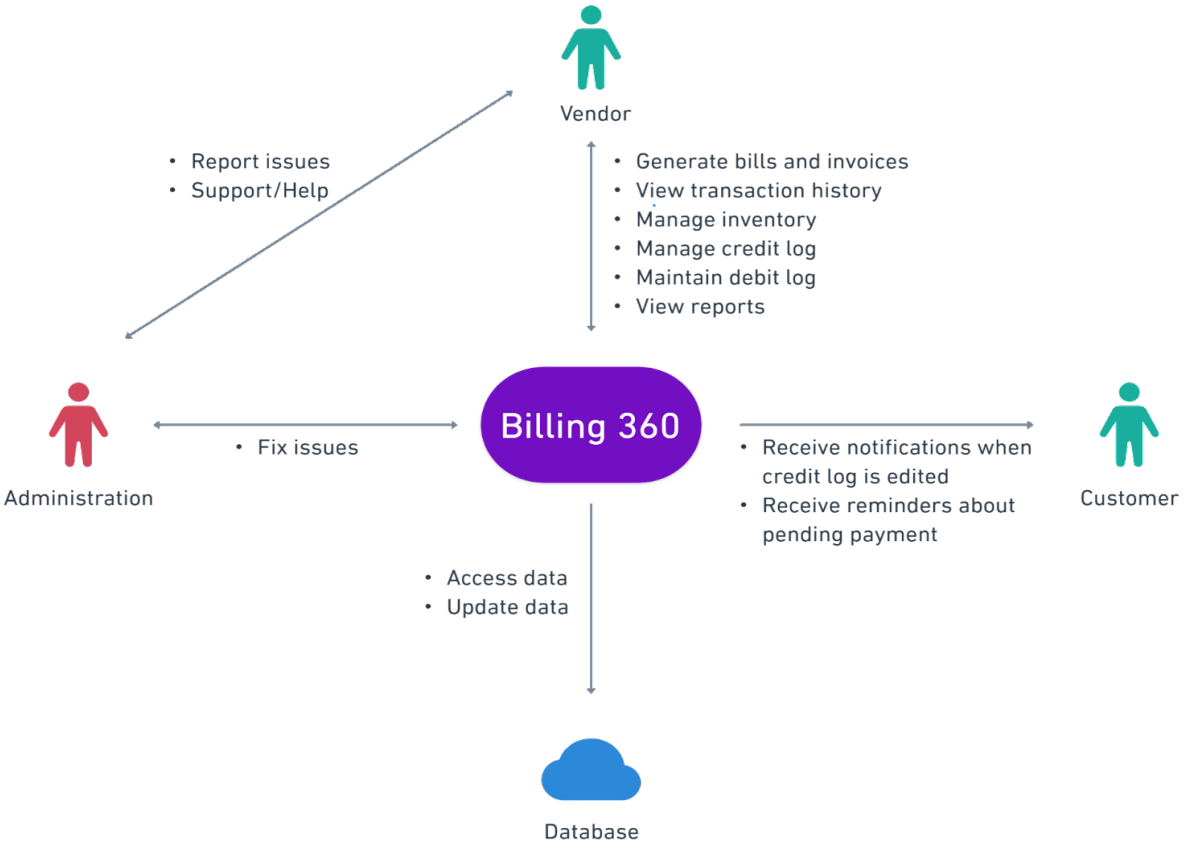
- Canva: Visual Suite for Everyone
- https://online.visual-paradigm.com/
- https://www.logoai.com/logo-maker
- https://whimsical.com/first-NiaTJASoVUJACvcUdaEXT3

2. Overall Description

2.1 Product Overview

Billing 360 can be described as an excellent solution for a vendor wanting to digitize various processes in his day-to-day business using very simple software that can be easily operated by him. A vendor can generate bills that are properly formatted to please his customers. He can add items to his bill using a simple search. His inventory is kept up-to-date without much effort. The customers who owe him money are properly listed. Both the customer and the vendor receive timely reminders about the pending payment. The vendor can also keep track of the money he owes to his suppliers. The vendor can analyze his sales by viewing the reports generated by the software. These reports specify information that will be useful for the vendor to make the right decisions to boost his sales and satisfy customer needs.

2.1.1 Illustrative diagram



2.2 Product Functionality

The product should have the following functionality for the user:

- Creating an account should be through user's email ID (or phone number) and password.
- The dashboard should display the user's daily sales, daily profit, the total number of customers visited in a day, and the last day's sales.
- The user shall be able to add/delete items in the invoice by simply searching the item names in the invoice section. The product shall allow the user to apply discounts on certain items, calculate and apply tax, and store the data, which would then be reflected in the invoice.
- The product shall maintain the inventory and update it after every purchase. When the expiry date of an item is near, or the quantity of the item is below a particular limit, the user should be notified. The user shall be able to update the inventory by adding an item, deleting an item, and can view the item list in the inventory section by simply searching the item names or using filters like expiry date or category.
- The product shall maintain statistics about the most frequently bought items and average sales per day. The product is expected to show a graphical representation of the profits and the sales of the user.
- The user should be able to maintain a credit system for his customers that allows him to maintain the details of the customer (name, phone number, date, bill no., amount), update them, set reminders, and view them at convenience. The product should notify the customer whenever their credit details are updated.
- The user should be able to maintain a debit log that allows the user to add the details of the supplier and the amount of debt, update, and view the details.
- The product should contain a section for FAQs where the user can see how to use the product or find answers to the queries that he might face while using the product.
- In case a user faces an issue, he should be able to report it to the development team using the "Contact Us" option.

2.3 Design and Implementation Constraints

- There must be a cap on the maximum number of users to prevent potential software glitches or system freezes.
- The user interface is in the English language as of now.
- The length of the search string in the inventory must be less than 40 characters.

2.4 Assumptions and Dependencies

- The user will have a stable internet connection while using the software.
- For a particular item, the batch with the earliest expiry date should be kept for sale. Once that batch gets finished or expires, the batch with the next expiry date is brought for sale.
- It is assumed that a particular account will be used by a single person at a time (the shop would have a single counter).

3. Specific Requirements

3.1 External Interface Requirements

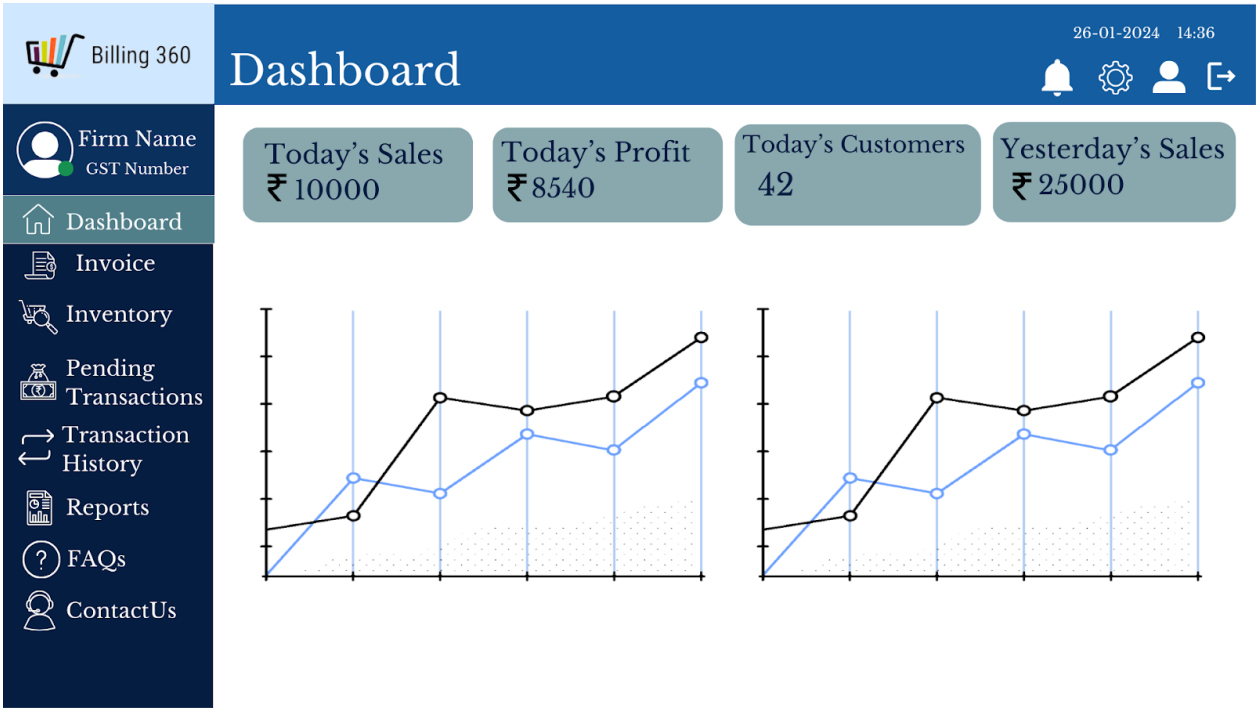
3.1.1 User Interfaces

1. **Sign In/Sign Up Page**

The login window prompts users to enter their email or phone number along with their password. After inputting these details into the designated text fields, users can click the "Sign In" option at the bottom to access their account. In case a user forgets their password, they can utilize the "Forgot Password?" option for recovery via OTP verification.

For new users, selecting the "Sign Up" option opens a window where they can establish a new account and set a password. The creation of a new account necessitates the completion of various credentials, including the owner's name, store/firm name, Registered GST Number, email, and phone number. Following this, OTP verification for both email and phone number is conducted. Subsequently, users can create a password adhering to predefined rules and confirm it.

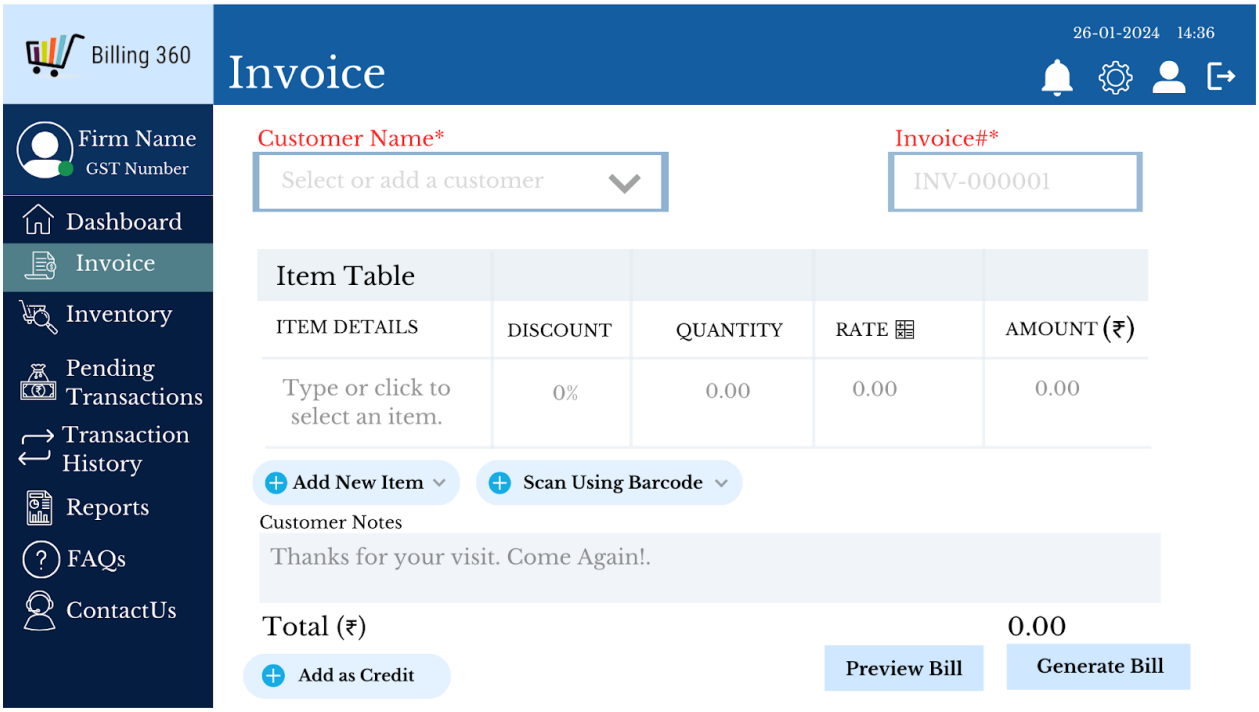
2. Dashboard



Upon successfully signing into their account, users will be directed to the Dashboard. The dashboard features a left pane that houses various options, such as Invoice generation, Inventory management, Report generation, Pending Transactions, etc. This left pane remains visible on every page of the website, facilitating easy navigation between different sections.

The dashboard provides an overview of key metrics, including daily sales, the number of customers served, and the quantity of products sold. Additionally, it presents graphical representations of sales and profits over the past 7 days, offering a visual snapshot of recent business performance. In the top right corner of the dashboard, users can find options to access their profile, view notifications, manage settings, and log out, providing convenient access to important functionalities and account-related actions.

3. Invoice

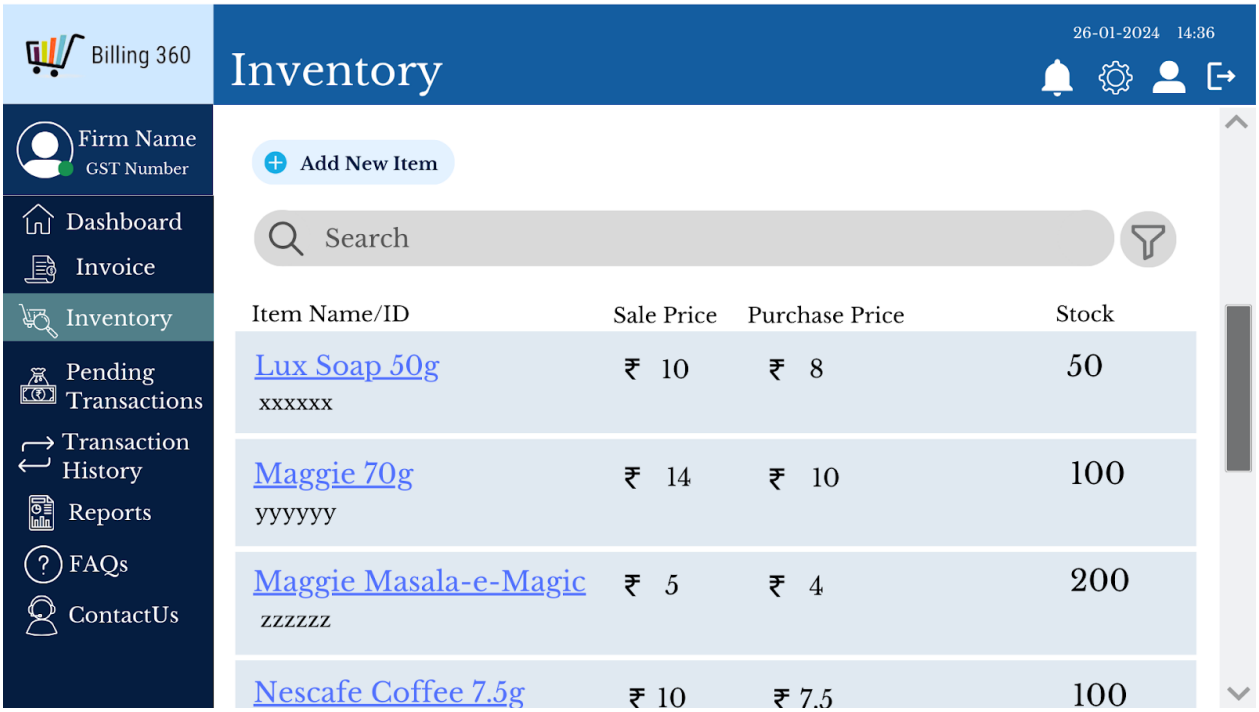


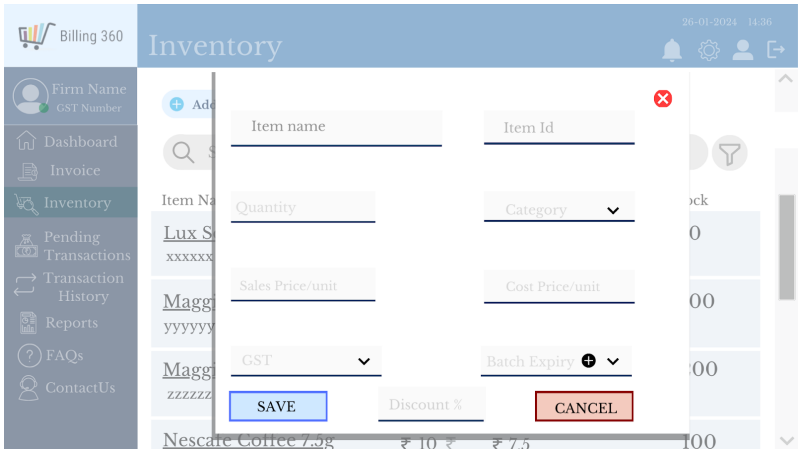
This page serves as the platform for creating invoices. The user begins by entering the customer's name in the designated text box. An automatically generated text box displays the invoice number. Users have the flexibility to manually input items, specifying the quantity for each item.

Additionally, there is a "Customer Notes" text box for adding personalized notes to the customer. At the bottom left, a button labeled "Add as Credit" enables users to incorporate the bill into the customer's record within the Credit section (found in Pending Transactions). It's important to note that, for the initial credit transaction with a customer, a new customer profile must be established in the records prior to generating the bill.

Once all items are added, users can click the "Preview Bill" option to review the invoice before finalizing it. The "Generate Bill" option allows users to print the bill once satisfied with the details.

4. Inventory

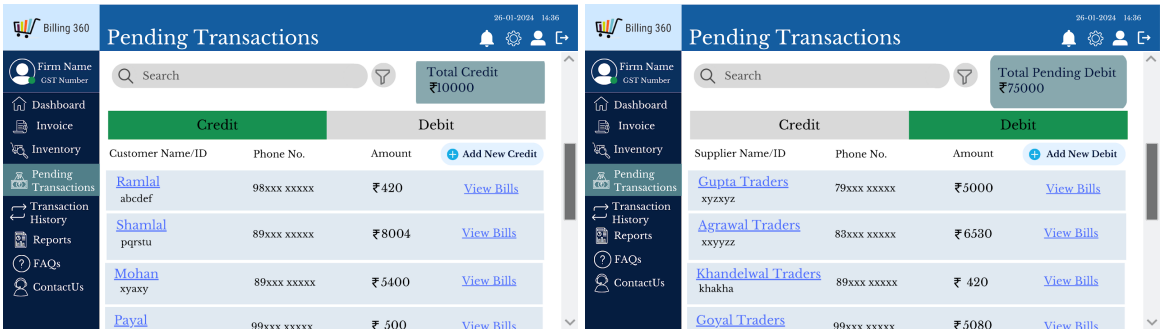




This page shows a detailed inventory of all items sold by the user. The list provides key information for each item, including its Name, Item ID, Purchase Price, Sale Price, and current stock levels. To add a new item, users can click on the "Add new item" button, which opens a pop-up window. Users can input the necessary details in this window to include the new item in the inventory.

Moreover, each item in the inventory serves as a link to its individual profile. By clicking on an item, a pop-up appears where they have the flexibility to edit various fields related to that specific item and save the changes. The user can also add a new batch (based on the Expiry date) and delete the item from the inventory by clicking on its profile link. There is a search bar to search any item by its name and a filter to apply to the list of items.

5. **Pending Transactions**



This page exhibits all outstanding transactions (both credits and debits) for the user, organized into two tabs—one for credits and another for debits. In the credit section, users can view a list of customers with pending payments, including their contact details and associated invoices/bills. Likewise, the debit section presents a compilation of suppliers awaiting payment.
For user convenience, an "Add" button is available, allowing users to manually include customers or vendors in these lists as needed.

3.1.2 Hardware Interfaces

- To utilize the “Scan using barcode” option to add the items to the invoice/bill, the user would need a barcode scanner.
- A thermal printer is required to print the invoice/bill in physical format.

3.1.3 Software Interfaces

- The user does not need any special software. Only a web browser and a stable internet connection are needed.

3.2 Functional Requirements

3.2.1 F1: Sign in/ Sign up:

- The user should be able to sign in through his email ID (or phone number) and password if he is already a member.
- A new user should be able to sign up by creating his account through filling required details (which include his name, firm's name, phone number, email ID, registered GST number) and setting a valid password.
- There should be an option of *‘Forgot Password?’* in case the user forgets the password. Authentication shall be carried out through OTP verification on the email the user had provided earlier.

This allows only the authenticated user to log-in. Using the user's email ID/phone number for login makes the process easier and clearer for the user. During sign-up, the firm name and the GST number are asked for, so that these details automatically appear on each generated bill, without requiring the user to fill them each time.

3.2.2 F2: Dashboard:

- The dashboard shall display the firm name and the GST number.
- The dashboard shall provide the user with the details of his daily sales, daily profit, number of customers visited in a day (customer count), and the previous day's sales.
- The dashboard should show the graphical plot of profits earned per day over a week and total sales per day over a week.
- The dashboard shall provide the user with various options like invoices, inventory, pending transactions, transaction history, FAQs, and contact us.
- The dashboard should have a notifications section where the user can see the system's notifications.
- The dashboard shall also have the settings option (where the user can change his email and name or update his other details) and the log-out option.

  This helps the user to have all important options right on the dashboard, making it simple to use. Graphs and statistics that give the user a proper analysis of his products sold and the profits he earned per day over a week shall be present on the dashboard to help the user continuously monitor his sales and gain important insights.

3.2.3 F3: Invoice:

- The system shall allow the user to customize an invoice with details like the name of the customer and customer notes. He shall also be able to add items and specify quantity (using a search with the name of the item), and apply discounts(if any).
- If the selected quantity of an item is greater than the quantity available in inventory(including all batches), the system shall generate an error message saying that the required quantity is greater than that available in inventory.
- The software shall automatically calculate the total amount based on the quantity of each item and after applying tax and discount (if any).
- The system should provide an option to add as a credit (either totally or partially), in case the customer wants to pay later. This option shall automatically update the credit log.
- The software shall allow the user to preview and generate the bill.

This allows the user to perform all billing-related tasks in real-time. The inventory and credit log shall be automatically updated upon generating a bill. Thus, it relieves the user of all complications involved in manually maintaining an inventory and credit log.

3.2.4 F4: Inventory:

- This page shall show the list of items, search bar, filter button, and “Add New Item” options.
- For a particular item the following columns should be shown: Item Name/ID, Sale Price, Purchase Price, Stock.
- The system should allow the user to perform the following functions:
    1. Click on the search bar and search items by name/ID.
    2. Click the filter option and apply filter(s) on the results of the search bar.
    3. Click on the “Add New Item” option to add new items to the inventory. (Adding a new item should require filling in the following fields: Item Name/ ID, Quantity, Sales Price per unit, GST, Category, Cost Price per unit, and Batch Expiry.)
    4. Click on the item name to view the item profile, which should include all the above item details, batches, and their expiry. Options to edit or delete the item should also be available here.

This way of implementing the inventory helps the user quickly search for an item. With the edit option, the user can easily update his inventory manually whenever he wishes to do so, for example, when a new batch of an item arrives or when the sales price/quantity of an item has to be changed. This also provides the user a seamless way of maintaining batches along with their expiry dates, which the system shall use to give the user timely reminders.

3.2.5 F5: Pending Transactions:

The user shall be able to view the total credit amount and total debit amount.

This section can be further divided into two main features: Credit and Debit.

A. <u>CREDIT</u>

- The page shall show the list of customers with pending credit along with search and filter options.
- For a particular customer, the list shall show the name/ID, phone number, email and total credit.
- The user shall be able to perform the following functions:
    1. Using the search bar, he can search for a particular customer by Name/ID or Phone Number, or email.
    2. He can use the filter option to narrow down the results of the search option.
    3. He can use the “Add New Customer” option to add a new customer's record manually. (While adding a new customer, the following details are to be filled: Name, Phone Number, email and amount. A notification containing these details shall be sent to the customer for authentication).
    4. He can select the edit option to view/edit the credit log of a specific customer. In the edit page, the user should be able to perform the following operations:
        - Delete the particular credit log.
        - View the history of transactions of that customer.

- Change the phone number or email or pending amount for a customer.
- Set reminders.

B. DEBIT

- The system shall show the list of suppliers with pending debit along with search, filter, and add supplier.
- When viewing the debit log, the user shall be able to perform the following functions:
    1. Use the search bar to search for a particular supplier by Name/ID or Phone Number.
    2. Click on the filter button and narrow down the results of the search button..
    3. Select the 'Add Supplier' option to add the record of a new supplier. While adding a new supplier, the following details are to be filled: Name, Phone Number, and Amount.
    4. Select the edit option to view/edit the debit log of a specific supplier. In the edit page, the user should be able to perform the following operations:
        - Delete a particular debit log.
        - Change the phone number or total amount for that supplier.
        - View the history of that supplier's transactions.

This would enable the user to replace his physical register (which is unsafe, less authentic and error-prone) with this new feature (which is safe, authentic and error-free). Adding on the benefits, the user as well as his customer shall get notifications about pending payments in the credit log.

3.2.6 F6: Frequently Asked Questions:

- This feature of the software shall provide answers to the user's various questions and doubts that may arise while using the software.
- It shall serve as a quick reference guide to the user for using the software.

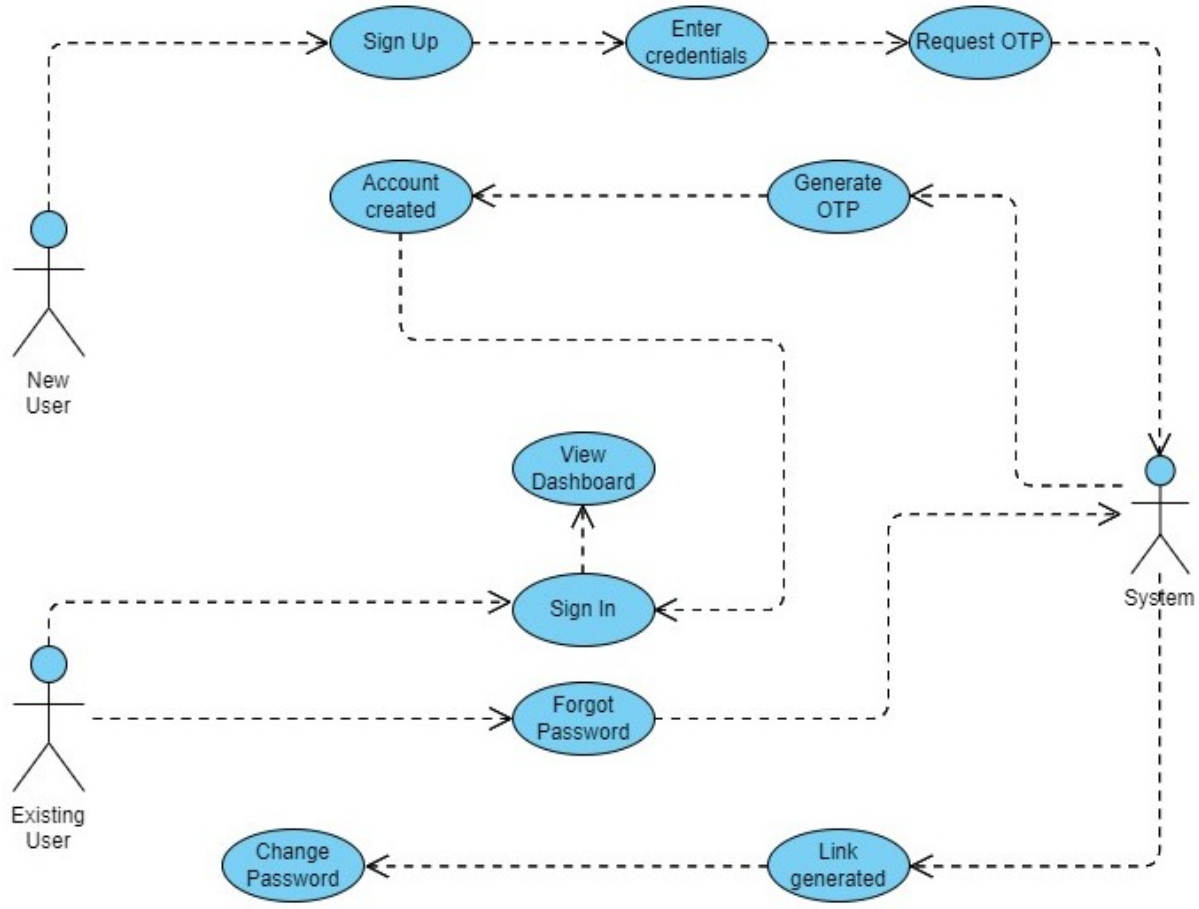
  This feature is to help the user in finding quick answers upon encountering a problem.

3.2.7 F7: Contact Us:

- In case the user faces any issue, he should be able to contact the developing team using this feature.
- If the user wants any information about the software/development team, he should be able to use this feature to reach out.

3.3 Use Case Model

3.3.1 Use Case #1: (Authentication)



Author – Saagar K V, Venkatesh Akula

Purpose – To authenticate valid users.

Requirements Traceability – An authenticated user account on the software.

Priority - High.

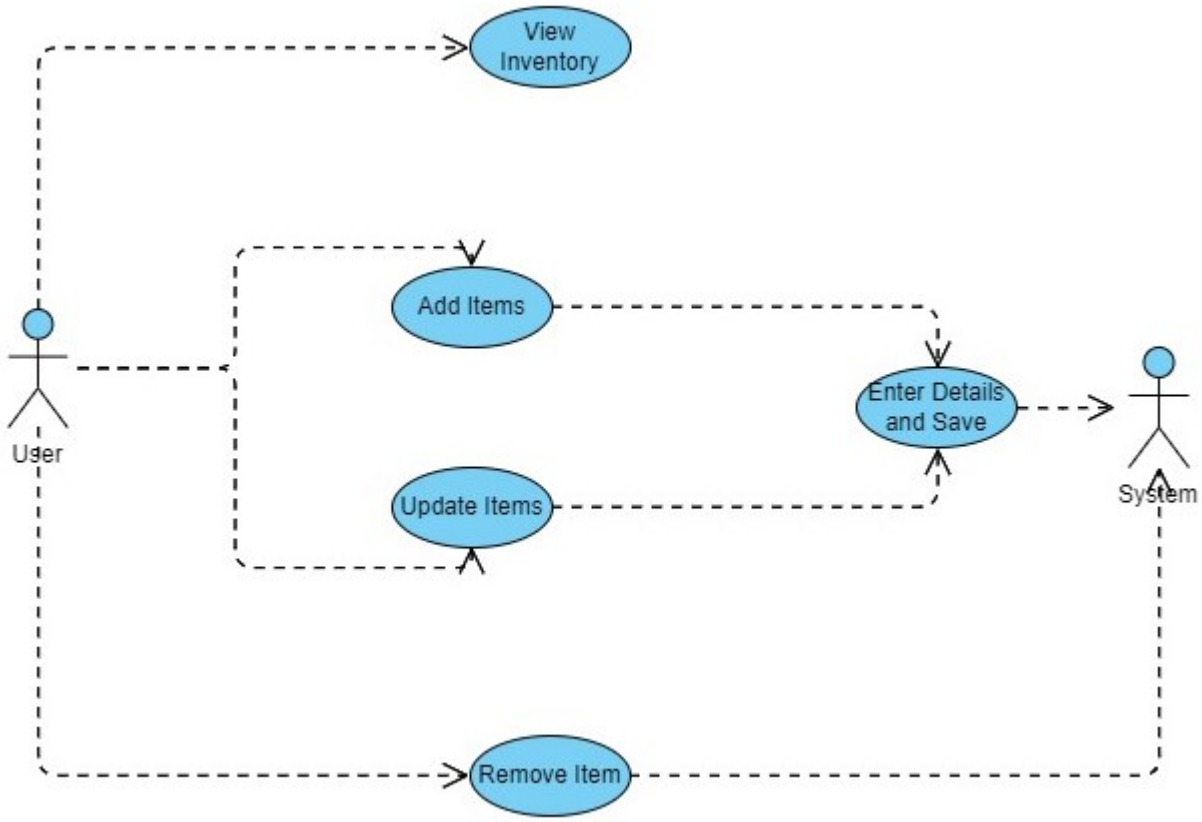
Preconditions – Valid email ID of shopkeeper (user).

Postconditions – The user is logged in and is able to view the dashboard and use the software.

Actors – Humans(shopkeepers), system.

Exceptions – Entered Email ID/phone number should be valid. OTP must be verified within stipulated time.

3.3.2 Use Case #2: (Inventory)



Author – Dhruv Gupta, Pragati Agrawal

Purpose – To ensure efficient tracking and control of product stocks for seamless billing operations.

Requirements Traceability – Edit and view inventory.

Priority – High.

Preconditions – The user must be authenticated and have the necessary access privileges to manage inventory.

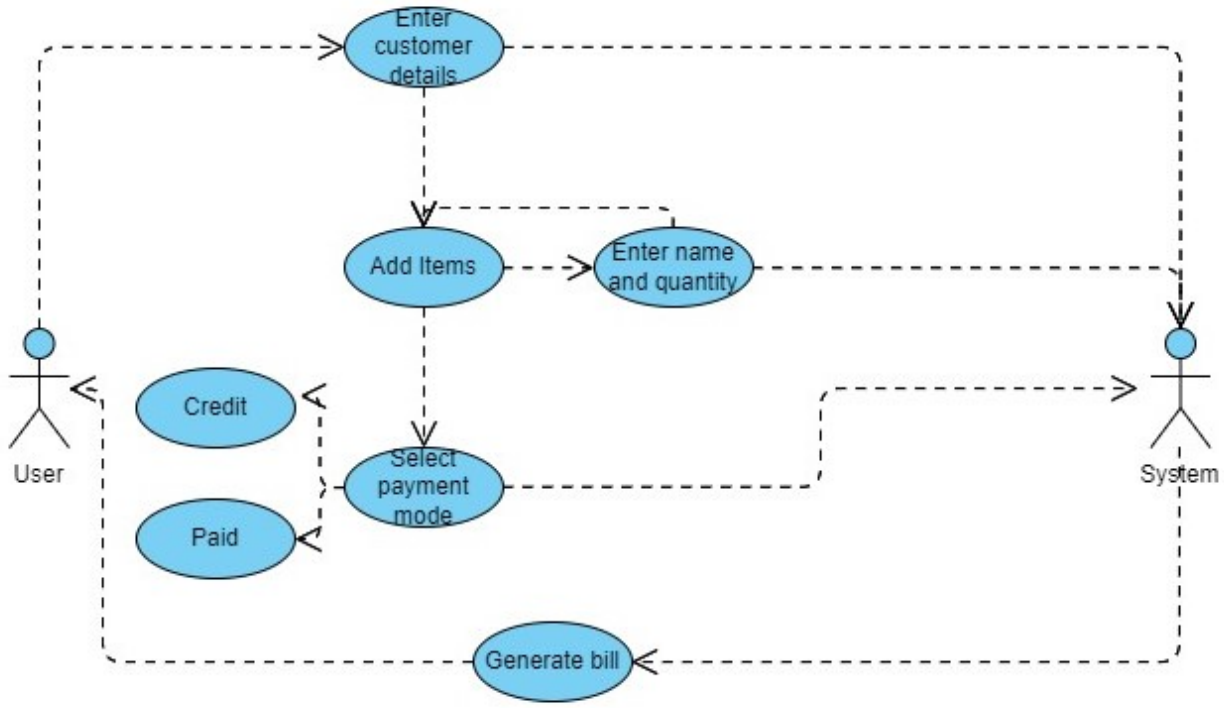
Postconditions – The inventory is successfully updated in the system database.

Actors – Humans (Shopkeepers), System.

Exceptions – Numerical values like Cost Price, Selling Price, Tax, and Discount should be positive.

Includes- Use case#1

3.3.3 Use Case #3: (Bill)



Author – Abhishek Khandelwal, Kundan Kumar

Purpose – Systematically create a detailed and accurate bill based on the items and quantities selected during a transaction on the app.

Requirements Traceability – Billing

Priority - High.

Preconditions – Enough quantity of items should be present in the inventory. Users should be authenticated.

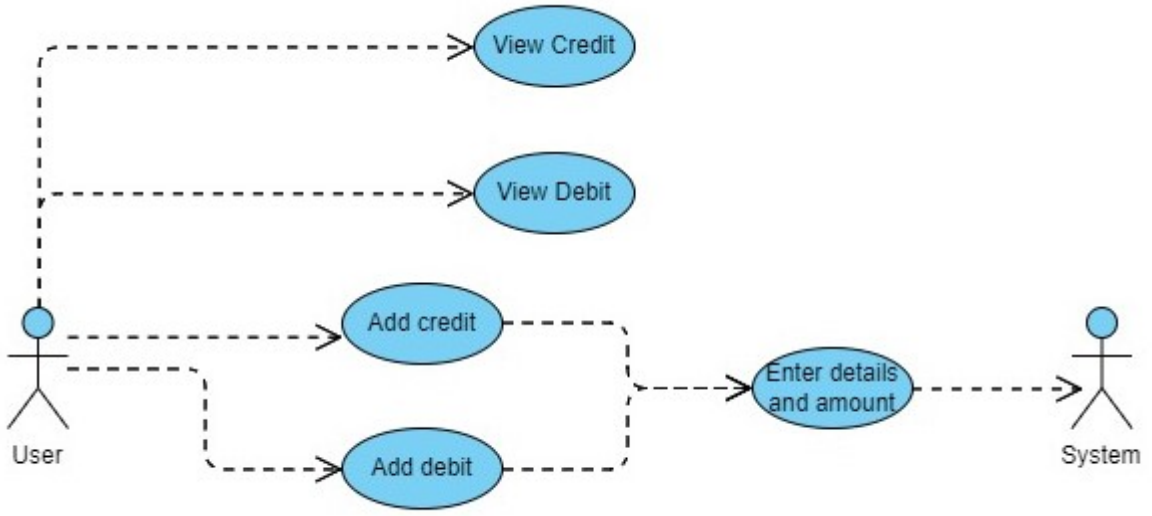
Postconditions – The corresponding reduction should be made in the inventory. Bill should be successfully generated and if the mode of payment is credit then the credit log should be updated.

Actors – User, System, Database.

Exceptions – Numerical values like selling price, tax, discount, number of items should be positive, and the number of items added should not exceed the number of items present. Discounts should not exceed the total selling price.

Includes – Use case#1, Use case#2, Usecase#4

3.3.4 Use Case #4: (Pending Transactions)



Author – Poojal Katiyar, Pallav Goyal

Purpose – To help users effortlessly monitor, manage, and stay informed about pending transactions.

Requirements Traceability – Maintain Credit/ Debit register, Reminders, Edit/Update Register

Priority - High.

Preconditions -The user should be authenticated.

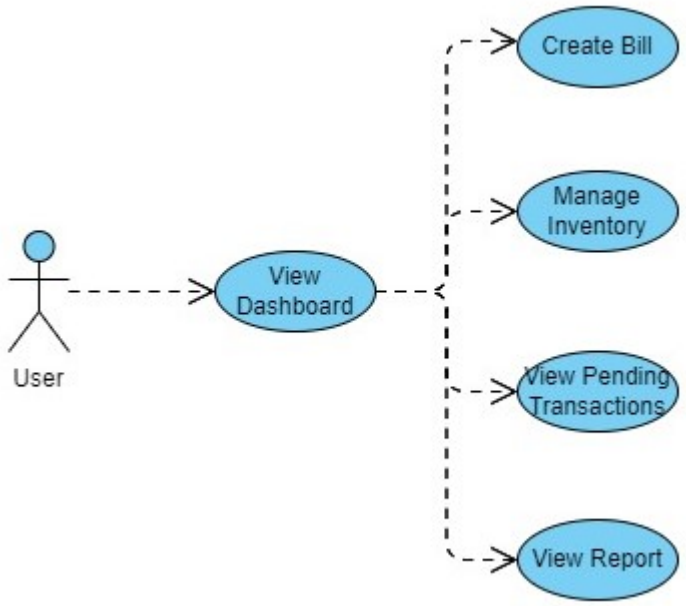
Postconditions – Corresponding changes should be made in the Credit/Debit log and notification about the same should be sent to the customer.

Actors – User, System, Database

Exceptions – The amount entered should be positive. Customer details and due date should be valid.

Includes – Use case#1

3.3.5 Use Case #5: (Dashboard).



Author – Ansh Agarwal, Nipun Nohria

Purpose – To provide an interface to the users where they can access all the major features and additional options.

Requirements Traceability – Linking to all major features

Priority - High.

Preconditions – The user has logged in the software.

Postconditions – Users are able to access various desired options on the dashboard

Actors – Humans (Shopkeepers).

Exceptions – None.

Includes – Use case#1

4. Other Non-functional Requirements

4.1 Performance Requirements

1) The search operation used while adding items to a bill should not take more than 0.5 seconds. This is because the user must generate the bill as quickly as possible for the waiting customer. The same holds for searching customers in the credit log and searching suppliers in the debit log.
2) The software should allow no less than 10000 entries in the inventory. This is to ensure that the user can maintain all distinct items in his inventory for easy management.
3) The software should allow no less than 10000 entries in the credit and debit log each. For a retailer or owner of a microenterprise, the number of customers with pending payments and the number of suppliers is not expected to exceed 10000 each.
4) History until at least 3 years ago should be available for generated bills and reports, and until at least 5 years ago for credit and debit logs. Bills older than 3 years are not expected to be useful (however, the user should be able to download and store important bills manually). Reports older than 3 years may not be good for comparison due to the dynamic situation of a businessman's world. Credits and debits might remain pending for long. However, 5 years is a reasonable upper bound.

4.2 Safety and Security Requirements

- The software authenticates the user during login using a strong password. A strong password would require at least 14 characters, with a combination of uppercase letters, lowercase letters, numbers, and symbols. There is a provision to set a new password in case the user forgets the password. In such a case, authentication is via OTP (One Time Password) sent to the user's registered email. The OTP shall be valid for 5 minutes. A similar procedure is followed for password reset.
  Passwords are stored securely by hashing so that even the administration can only verify if the password is correct without discovering the password.
  However, it is the responsibility of the user to keep the password secret. It is also his responsibility to see that the OTP verification process for his account is not misused by anyone.
- All connections to the server should use Transport Layer Security (TLS 1.2/1.3) encryption. All transaction data should be encrypted properly. The data at rest in the cloud should also be protected using advanced encryption techniques.
- Frequent backups should be made so that when some issue occurs, the user can get back his data as it was in the near past.
- The administration should delete all data related to a user upon the user's request or after 6 months after a user terminates his account.
- The administration shall not disclose any user data to anyone else unless there is a situation when it is legally bound to do so.

4.3 Software Quality Attributes

4.3.1 Ease of use and learning:

Users shall be able to learn and operate the software within two hours of training (or ten help screens). The frequency of errors committed by the user shall go below 1 in 100 within two days of use. With the software, particularly aimed at retailers, who generally do not have much technical exposure, this attribute holds great importance.

We plan to achieve this by using a very simple and elegant user interface with only basic options. There shall be no cluttering of information anywhere.

4.3.2 Maintainability:

The software shall be designed in an organized manner so that new features can be added or modifications can be done very easily. It shall not take more than two working days to make a small modification to an existing feature or to add a minor feature.

We plan to achieve this by keeping the various components of the software well separated. All code shall be properly commented on for easy readability. We plan to follow pair programming to increase efficiency and reduce errors.

4.3.3 Reliability:

The software should be architected to handle high concurrent user traffic, ensuring consistent and reliable access even during peak periods. It should seamlessly accommodate an average user load of 20,000 to 50,000 requests per day, guaranteeing responsiveness and minimal downtime for the user's critical financial operations.

4.3.4 Portability:

Being a web-based app, the software is easily accessible from any device with browser support. The website frontend is designed using React JS, making it a responsive and progressive web app, which ensures that the application can run on different platforms.

Appendix A – Data Dictionary

Authentication

Variable Name	Variable Type	Description	Example
Customer's Name	string	Name of the customer	Abhishek
Password	string	Password set by the customer to access our software	abc123
Phone number	string	Phone number of the customer	9999999999
OTP	positive integer	OTP sent by the software for verification of email	123456
Firm Name	string	Name of the firm/store	ABC General Store
GST Number	string	GST Number of the user (shopkeeper)	22AAAAA0000A1Z5
Email ID	string	Email entered by the customer	abc@gmail.com

Dashboard

Variable Name	Variable Type	Description	Example
Today's Sales	positive real number	Daily Sales of the user	10000
Today's Profit	positive real number	Daily Profit of the user	8540.78
Yesterday's sales	positive real number	Last day's sales of the user	25000
Today's Customers	positive integer	Number of customers served in a day	42

Firm Name	string	Name of the firm/store	ABC General Store
GST Number	string	GST Number of the user (shopkeeper)	22AAAAA0000A1Z5
Date	date	Today's Date	26-01-2024
Time	time	Current time in 24 hour format	14:36

Invoice

Variable Name	Variable Type	Description	Example
Rate	positive real number	The cost per item	100
Amount	positive real number	The total cost calculated by multiplying the unit rate of a product by its corresponding quantity	239
Discount	positive real number	Discount applied to an item	20
Invoice No.	string	A unique number assigned to each invoice for reference and tracking	58AAA00
Total	positive real number	The total cost of all items after applying taxes and Discount	1250
Customer Notes	string	Any supplementary information or comment relevant to the invoice	Thanks for visiting. Have a nice day.
Customer Name	string	Name of the Customer	Abcd Roy
Quantity	positive integer	Number of a particular item purchased	5
Issue Date	date	The date on which invoice is generated.	26-01-2024

Credit / Debit log

Variable Name	Variable Type	Description	Example
Customer name	string	Name of the Customer	Ramlal
Customer id	string	References the user associated with the transaction.	abcxyz
Date	date	Date the transaction was initiated.	26/01/2024
Amount (₹)	Positive real number	Transaction amount.	1729
Supplier name	string	Name of the Vendor	Gupta Traders
Supplier id	string	References the supplier associated with the transaction	qwerty
Phone Number	string	Phone number of customer/supplier	9999999999
Total Credit (₹)	Positive real number	total of all credit transactions of the user	10000
Total Debit (₹)	Positive real number	total of all debit transactions of user	10000

Inventory

Variable	Variable Type	Description	Example
Item name	string	The name of an item which uniquely defines it	Lux Soap 50g
Item ID	string	Unique ID of an item	123abc
Sale Price (₹)	Positive real number	The price (per piece) at which the user sells the item	50
Purchase Price (₹)	Positive real number	The price (per piece) at which the user had bought the item	35

Stock	Positive integer	The quantity (number of pieces) of an item	253
Category	string	The broader category to which the item belongs	Cosmetics
Batch expiry	date	The date on which the items of a particular batch expire	25/01/2026
Company	string	The supplier from whom the user bought the item	Goyal Traders
Discount (%)	Percentage	The discount which the user may want to apply when the item is bought	5

Transaction History

Variable Name	Variable Type	Description	Example
Invoice Number	string	A unique number assigned to each invoice for reference and tracking	58AAA00
Customer Name	string	Name of the Customer	Abhishek
Amount (₹)	Positive real number	Invoice amount	1729.45
Date	date	The date of invoice generation	15/01/2024
Time	time	The time of invoice generation on that day	16:34:20
Payment Status	string	Payment status for the invoice: partially or fully paid	Paid
View Bill	string	link to view that invoice	-

FAQs (Frequently Asked Questions)

Variable Name	Type	Description
Question	string	Any frequently asked question along with the question numbering
Answer	string	Answer to that question

Contact Us

Variable Name	Type	Description	Example
Phone Number	string	Contact number of the developers/receptionist	9999999999
email ID	string	email id of the developing team	xyz@gmail.com

Appendix B - Group Log

Since the beginning of the project, our entire team has been very enthusiastic. We have formed a Whatsapp group for effective communication.

Date	Timing	Duration	Agenda
05/01/24	12 pm-2 pm	2hr	● Brainstormed various ideas for the project and filtered 3-4 ideas out of them.
08/01/24	9 am - 10 am	1hr	● Discussed feasibility and explored pros and cons of each filtered idea and finalized filtering to 2 ideas for further consideration.
09/01/24	10 am - 12 pm	2hr	● Finalized our idea and decided to go with a multipurpose Billing software targeted mainly for microenterprises. ● Explored and discussed various features for the billing software.
11/01/24	10 am -11 am 12 pm - 2 pm	3hr	● Decided project name ● Discussed and explored the feasibility of various features for the Billing software. ● Divided the task of detailed research on various functionalities provided by the software among 5 teams of 2 members
14/01/24	4 pm - 7 pm	3hr	● Discussed the ideas presented by each team and refined them. ● Discussed about various sub-headings of SRS. ● Divided the work of making SRS among 4 teams.
18/01/24	11 pm - 12 am	1hr	● Engaged in an introductory meeting with the TA. ● Discussed various technical doubts related to our software. ● Clarified doubts regarding the Software Requirements Specification (SRS)
21/01/24	6 pm - 8:30 pm	2.5hr	● Reviewed the work assigned by the 4 teams formed earlier. ● Resolved the irregularities present among the 4 teams.
25/01/24	9 am - 11 am, 5 pm - 7:30 pm 11 pm - 12 am	5.5hr	● Reviewed the SRS after compiling the parts made by each team. ● Synchronised the SRS as there were some irregularities.
26/01/24	7 pm - 8 pm	1hr	● Finalised SRS