



# Grocery Shop BILLING SYSTEM



DINAJPUR  
POLYTECHNIC INSTITUTE

COMPUTER SCIENCE  
& TECHNOLOGY

5th Semester Project (2022–2023)

# Dinajpur Polytechnic Institute, Dinajpur

Department of Computer Science & Technology



## PROJECT WORKBOOK

Project Name : Grocery Shop Billing System

Semester: A. 1<sup>st</sup> & 2<sup>nd</sup> Computer

Academic Year: 2022-23

| Roll No. | Name of Student        | Semester / group / shift           |
|----------|------------------------|------------------------------------|
| 702866   | MD.RAFSAN ZANI RIZON   | 5 <sup>th</sup> /A/2 <sup>nd</sup> |
| 702893   | SARDER RAZWAN AHAMMAD  | 5 <sup>th</sup> /A/2 <sup>nd</sup> |
| 702876   | MD.AJJUL ISLAM         | 5 <sup>th</sup> /A/2 <sup>nd</sup> |
| 702884   | TABASSUM MASHIYAT ETU  | 5 <sup>th</sup> /A/2 <sup>nd</sup> |
| 702875   | MD.MEHEDI HASAN MASUD  | 5 <sup>th</sup> /A/2 <sup>nd</sup> |
| 702865   | MD.SOHRAB HOSSEN SOHAG | 5 <sup>th</sup> /A/2 <sup>nd</sup> |

|  |               |                                    |                                         |  |
|--|---------------|------------------------------------|-----------------------------------------|--|
|  | <b>702869</b> | <b>MD.NAHID HASAN<br/>MIZAN</b>    | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>718953</b> | <b>MD.MAHINUR RAHMAN<br/>MILON</b> | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>732296</b> | <b>TOWFIK ISLAM<br/>PRAMANIK</b>   | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702870</b> | <b>MD.MAHAFUG ALAM<br/>BADHON</b>  | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702871</b> | <b>MD.ARFATUJJAMAN</b>             | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702880</b> | <b>MD.MIRAJUL ISLAM</b>            | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702891</b> | <b>MD.NAFIS HUDA SANZID</b>        | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702898</b> | <b>JEHAT ISLAM MAHIM</b>           | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702899</b> | <b>BISNU CHANDRO ROY</b>           | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702909</b> | <b>SIDDIKUR RAHMAN<br/>RIYAD</b>   | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702913</b> | <b>MD.JONI ISLAM</b>               | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702764</b> | <b>ASIF BABU</b>                   | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>700590</b> | <b>MD.SAJJATUL ISLAM</b>           | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702773</b> | <b>ATIQUZZAMAN</b>                 | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702796</b> | <b>MOST.HENA AKTER LITI</b>        | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702803</b> | <b>SURAIYA JANNAT</b>              | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702798</b> | <b>MAISHA AL SAMIHA</b>            | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702755</b> | <b>MD.MARUF ISLAM<br/>MAHIR</b>    | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702805</b> | <b>MD. MEHEDI HASAN</b>            | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |

|  |               |                                      |                                         |  |
|--|---------------|--------------------------------------|-----------------------------------------|--|
|  | <b>700686</b> | <b>MD.MUJAKKIR HOSSAIN<br/>RIFAT</b> | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702778</b> | <b>MD.AL MUNTASIR</b>                | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702783</b> | <b>MOST.RABIA AIREEN</b>             | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702759</b> | <b>SHARMIN AKTER</b>                 | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702770</b> | <b>LAILA AKTER LABONI</b>            | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702874</b> | <b>MILAD HASAN</b>                   | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702768</b> | <b>ATIKA RAHMAN TULY</b>             | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702804</b> | <b>MD NUR NEWAS</b>                  | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702777</b> | <b>SOHEL MAHAMUD</b>                 | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702809</b> | <b>FARIHA TABASSUM<br/>SHEFA</b>     | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>602731</b> | <b>MD.MINHAJUL ISLAM<br/>MIM</b>     | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>602760</b> | <b>ARFIKA KHATUN</b>                 | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>702776</b> | <b>SIDRATUL MUNTAHA</b>              | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |
|  | <b>700807</b> | <b>IRIN PARVIN</b>                   | <b>5<sup>th</sup>/A/2<sup>nd</sup></b>  |  |
|  | <b>702809</b> | <b>FARIHA TABASSUM</b>               | <b>5<sup>th</sup> /A/1<sup>st</sup></b> |  |

## Table of Content

| Sr. No. | Description                     | Page No. |
|---------|---------------------------------|----------|
| 1       | Project Approval Certificate    | i        |
| 2       | Declaration                     | ii       |
| 3       | Acknowledgement                 | iii      |
| 4       | Abstract                        | iv       |
| 5       | Table of Contents               | v        |
| 6       | List of Figures                 | vi       |
| 7       | List of Tables                  | vii      |
| 8       | Chapter 1: Introduction         | 10       |
| 9       | Inventory Management            | 11       |
| 10      | Real-time Billing               | 13       |
| 11      | Invoice Generation              | 14       |
| 12      | Excel & PDF Export              | 15       |
| 13      | Backup and Restore              | 16       |
| 14      | Customizable Tax Rules          | 16       |
| 15      | Technology Stack (Explained)    | 17       |
| 16      | Why Flutter?                    | 17       |
| 17      | Section 2: Installation & Setup | 17       |
| 18      | Section 3: User Manual          | 22       |
| 19      | Section 4: Developer Guide      | 27       |
| 20      | Section 5: Business & Marketing | 32       |
| 21      | Project Summary                 | 37       |
| 22      | Thank You                       | 44       |

# **PROJECT APPROVAL CERTIFICATE**

## **(STAGE-I)**

The project report entitled

"....."

Submitted by

**MD.RAFSAN ZANI**

**(Team Leader Of This Project)**

This is to certify that the project report titled "*Billable: Professional Billing Solution*" is hereby approved for the partial fulfillment of the requirements of Dinajpur Polytechnic Institute. Asset, for the award of the Diploma in Engineering in **Computer Science & Engineering** during the academic year **2022-2023**.

**Internal Guide**

**Project Co-ordinator**

**H.O.D.**

**Remark of Project Stage-I by External Examiner:**

---

---

**Name & Sign of External Examiner**

# **PROJECT APPROVAL CERTIFICATE**

## **(STAGE-II)**

The project report entitled

“

”

Submitted by

**MD.RAFSAN ZANI**

**(Team Leader Of This Project)**

This is to certify that the project report titled "*Billable: Professional Billing Solution*" is hereby approved for the partial fulfillment of the requirements of Dinajpur Polytechnic Institute. Asset, for the award of the Diploma in Engineering in **Computer Science & Technology** during the academic year **2022-2023**.

**Internal Guide**

**Project Co-ordinator**

**H.O.D.**

**mark of Project Stage-I by External Examiner:**

---

---

**Name & Sign of External Examiner**

**Date:**

# **Dinajpur Polytechnic Institute, Dinajpur**

Department of Computer Science & Technology

## **UNDERTAKING BY STUDENTS**

We,

- 1. MD. RAFSAN ZANI**
- 2. RAZWAN AHAMMAD**
- 3. ATIKA RAHMAN TULY**
- 4. MD NUR NEWAS**

the students of Diploma in Computer Science & Technology, hereby assure that we will follow all the rules and regulations related to project work and activities for our project entitled "**Billable: Professional Billing Solution**".

We assure that the project work will be fully designed and developed by us, and every part of the project will be original work and will not be copied or purchased from any source.

| <b>Sr. No.</b> | <b>Name of Student</b>         | <b>Roll</b>   | <b>Signatures</b> |
|----------------|--------------------------------|---------------|-------------------|
| <b>1</b>       | <b>MD.RAFSAN ZANI RIZON</b>    | <b>702866</b> | <b>Rafsan</b>     |
| <b>2</b>       | <b>SARDER RAZWAN AHAMMAD</b>   | <b>702893</b> | <b>Razwan</b>     |
| <b>3</b>       | <b>MD.AIJUL ISLAM</b>          | <b>702876</b> | <b>Ajijul</b>     |
| <b>4</b>       | <b>TABASSUM MASHIYAT ETU</b>   | <b>702884</b> | <b>Etu</b>        |
| <b>5</b>       | <b>MD.MEHEDI HASAN MASUD</b>   | <b>702875</b> | <b>Masud</b>      |
| <b>6</b>       | <b>MD.SOHRAF HOSSEN SOHAG</b>  | <b>702865</b> | <b>Sohraf</b>     |
| <b>7</b>       | <b>MD.NAHID HASAN MIZAN</b>    | <b>702869</b> | <b>Mizan</b>      |
| <b>8</b>       | <b>MD.MAHINUR RAHMAN MILON</b> | <b>718953</b> | <b>Milon</b>      |

|    |                           |        |             |
|----|---------------------------|--------|-------------|
| 9  | TOWFIK ISLAM PRAMANIK     | 732296 | Towfik      |
| 10 | MD.MAHAFUG ALAM BADHON    | 702870 | Badhon      |
| 11 | MD.ARFAJJAMAN             | 702871 | Arafat      |
| 12 | MD.MIRAJUL ISLAM          | 702880 | Miraj       |
| 13 | MD.NAFIS HUDA SANZID      | 702891 | Nafis       |
| 14 | JEHAT ISLAM MAHIM         | 702898 | Jehat       |
| 15 | BISNU CHANDRO ROY         | 702899 | Bisnu       |
| 16 | SIDDIKUR RAHMAN RIYAD     | 702909 | Riyad       |
| 17 | MD.JONI ISLAM             | 702913 | Joni        |
| 18 | ASIF BABU                 | 702764 | Asif        |
| 19 | MD.SAJJATUL ISLAM         | 700590 | Sajjatul    |
| 20 | ATIQUZZAMAN               | 702773 | Atiquzzaman |
| 21 | MOST.HENA AKTER LITI      | 702796 | Hena        |
| 22 | SURAIYA JANNAT            | 702803 | Suraiya     |
| 23 | MAISHA AL SAMIHA          | 702798 | Maisha      |
| 24 | MD.MARUF ISLAM MAHIR      | 702755 | Mahir       |
| 25 | MD. MEHEDI HASAN          | 702805 | Mehedi      |
| 26 | MD.MUJAKKIR HOSSAIN RIFAT | 700686 | Rifat       |
| 27 | MD.AL MUNTASIR            | 702778 | Muntasir    |
| 28 | MOST.RABIA AIREEN         | 702783 | Rabia       |
| 29 | SHARMIN AKTER             | 702759 | Sharmin     |
| 30 | LAILA AKTER LABONI        | 702770 | Laboni      |
| 31 | MILAD HASAN               | 702874 | Milad       |
| 32 | ATIKA RAHMAN TULY         | 702768 | Tuly        |
| 33 | MD NUR NEWAS              | 702804 | Newas       |
|    | SOHEL MAHAMUD             | 702777 | Sohel       |
|    | FARIHA TABASSUM SHEFA     | 702809 | Shefa       |
|    | MD.MINHAJUL ISLAM MIM     | 602731 | Mim         |
|    | ARFIKA KHATUN             | 602760 | Arfika      |
|    | SIDRATUL MUNTAHA          | 702776 | Muntaha     |
|    | IRIN PARVIN               | 700807 | Irin        |
|    | FARIHA TABASSUM           | 702809 | Fariha      |

Date:

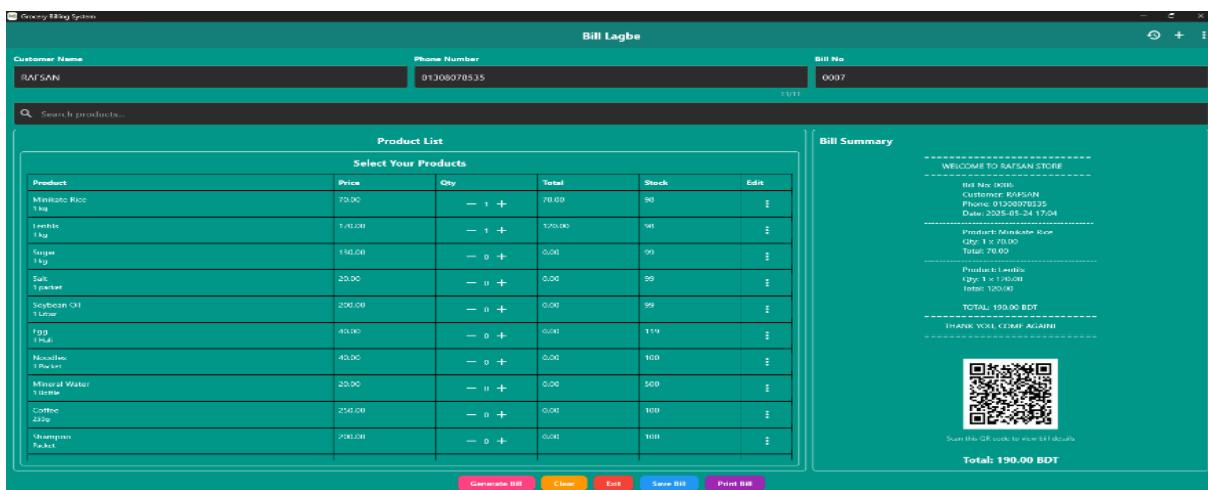
# Introduction

In today's fast-paced digital world, efficient billing and invoice management have become essential for businesses of all sizes. Traditional manual billing methods are often time-consuming, prone to errors, and inefficient in handling large volumes of transactions. To address these challenges, we have developed "**Billable: Professional Billing Solution**", a smart and user-friendly desktop application that simplifies the entire billing process.

The main objective of this project is to automate the billing system for small and medium businesses, enabling them to generate, store, and manage invoices easily and accurately. This solution is built using Flutter for cross-platform flexibility and offers essential features such as customer data management, product listing, tax calculations, and printable bill generation.

This application aims to minimize human error, save time, and maintain digital records for better accountability. With a clean, intuitive UI and powerful features, **Billable** provides a professional experience both for business owners and their customers.

By integrating essential functionalities such as data validation, secure storage, and real-time calculation, this system stands as a modern alternative to outdated manual billing practices. Ultimately, the goal of this project is to offer a digital solution that enhances efficiency, accuracy, and professionalism in business transactions.



# Inventory Management

The **Inventory Management** module in *BillLagbe* is designed to give shop owners complete control over their products. It is built to be fast, offline-capable, and user-friendly—even for people with little technical experience.

## ◆ Core Functionalities

### 1.Add Products

- Easily add new products with full details.
- Fields include:
  - Product Name
  - Product Category (optional)
  - Unit Type (e.g., kg, litre, piece)
  - Unit Price
  - Initial Quantity in Stock
  - Supplier Info (optional)
  - Expiry Date (for perishable goods, optional)
  - Barcode/QR Code (optional)
- Auto-generate product ID or allow custom input.

### 2.Edit Products

- Modify any product detail (name, price, quantity, etc.).
- Track changes with a version or update history log (optional).
- Easily update pricing or switch suppliers.

### 3.Delete Products

- Remove items from inventory with a confirmation prompt to prevent accidental deletion.
- Option to archive instead of delete for record-keeping.

### 4.Stock Monitoring

- Automatically calculates current stock based on sales and restocks.
- Color-coded indicators:
  -  In Stock
  -  Low Stock

-  Out of Stock
- Option to set **stock alert thresholds**.

## 5. Units & Measurement Support

- Supports multiple units:
  - **Weight-based:** kg, g
  - **Volume-based:** litre, ml
  - **Piece-based:** piece, dozen, packet, etc.
- Custom unit creation support (e.g., "sack", "box", "roll").

## 6. Search and Filter

- Smart search by product name, category, barcode, or unit.
- Filter by stock level, category, or price range.

## 7. Category Management

- Organize inventory into categories (e.g., Groceries, Electronics, Medicines).
- Helps in filtering and report generation.

## 8. Import/Export Inventory

- Import product list from Excel/CSV for quick setup.
- Export inventory for backup, reports, or sharing.

## 9. Barcode and QR Code Integration

- Generate barcodes or QR codes for each product.
- Scan codes to add products to bill or update inventory quickly.

## 10. Inventory History / Logs

Track product changes: stock in/out, edits, and deletions.

Useful for audits or identifying errors.

## 11. Multi-Store Support (*Optional Advanced Feature*)

\* Maintain separate inventory for different branches/stores.

\* Centralized view for admin.

| Product List              |        |       |        |       |      |
|---------------------------|--------|-------|--------|-------|------|
| Select Your Products      |        |       |        |       |      |
| Product                   | Price  | Qty   | Total  | Stock | Edit |
| Minikate Rice<br>1 kg     | 70.00  | - 2 + | 140.00 | 98    | ⋮    |
| Lentils<br>1 kg           | 120.00 | - 1 + | 120.00 | 99    | ⋮    |
| Sugar<br>1 kg             | 130.00 | - 0 + | 0.00   | 100   | ⋮    |
| Salt<br>1 packet          | 20.00  | - 0 + | 0.00   | 100   | ⋮    |
| Soybean Oil<br>1 Litter   | 200.00 | - 0 + | 0.00   | 100   | ⋮    |
| Egg<br>1 Hali             | 40.00  | - 0 + | 0.00   | 120   | ⋮    |
| Noodles<br>1 Packet       | 40.00  | - 0 + | 0.00   | 100   | ⋮    |
| Mineral Water<br>1 Bottle | 20.00  | - 0 + | 0.00   | 500   | ⋮    |
| Coffee<br>250g            | 250.00 | - 0 + | 0.00   | 100   | ⋮    |
| Shampoo<br>Packet         | 200.00 | - 0 + | 0.00   | 100   | ⋮    |

## Real-time Billing

The real-time billing module ensures smooth and efficient customer checkouts with live updates and calculations.

- **Product Selection:** Quickly add products to the bill using search, dropdowns, or barcode/QR scan.
- **Auto Bill Number:** Each new bill is auto-generated with a unique serial number and timestamp.
- **Price Calculations:**

- o Quantity × Unit Price = Subtotal per item
- o Overall subtotal, discount, tax, and total calculated live

**• Discount Options:**

- Percentage-based or fixed discount
- Apply per item or on the full bill

**• Tax Inclusion:**

- o Selectable/customizable tax rates (e.g., VAT, GST)

**• Payment Handling:**

- o Multiple payment modes: Cash, Mobile Payment, Digital Wallet
- o Option to record paid vs due amount

**Fast Billing Mode:**

- Keyboard shortcuts for power users
- One-click bill print or save



# Invoice Generation

Create beautiful, professional, and localized invoices.

## Printable Format:

- Thermal and A4 printer support
- Invoice includes logo, shop details, and customer info

## QR Code Integration:

- QR code encodes bill number and essential details
- Customers can scan to save or verify the bill

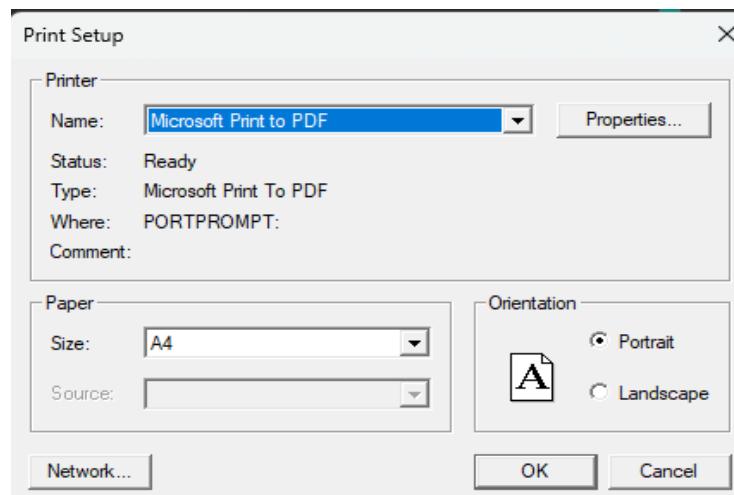
## Multi-language Support:

- Invoice texts are generated in the local language (e.g., Bangla)
- Optional dual-language (English + Local) layout

## Customizable Layout:

- Business name, address, footer notes editable
- Option to include return/exchange policy

○



# Excel & PDF Export

Export and manage sales data with ease.

## One-Click Export:

- Export daily, weekly, monthly, or custom date range reports

## Formats Supported:

- PDF (for printing or sharing)
- Excel (for bookkeeping or further analysis)

## Data Included:

- Bill number, product names, quantities, unit prices, tax, total, payment method

## Sorting & Filtering:

- Filter exports by product, date, category, customer, or payment type

The screenshot displays a bill summary on the left and its corresponding Excel export on the right.

**Bill #0001**

WELCOME TO RAFSAN STORE

Bill No: 0001  
Customer: rafsan  
Phone: 01308078535  
Date: 2025-05-31 02:38

Product: Minikate Rice  
Qty: 2 x 70.00  
Total: 140.00

Product: Lentils  
Qty: 1 x 120.00  
Total: 120.00

TOTAL: 260.00 BDT

THANK YOU, COME AGAIN!

**Close    Copy    Export to Excel**

**Excel Export Data:**

|    | A                                                         | B        | C | D            | E             | F |
|----|-----------------------------------------------------------|----------|---|--------------|---------------|---|
| 1  | RAFSAN STORE                                              |          |   |              |               |   |
| 2  | Address: Your Store Address                               |          |   |              |               |   |
| 3  | Phone: +8801308078535   Email: rafsananzinon539@gmail.com |          |   |              |               |   |
| 4  | INVOICE                                                   |          |   |              |               |   |
| 5  | Bill No:                                                  | 0001     |   | Date:        | 2025-05-29    |   |
| 6  | Customer:                                                 | rafsan   |   | Phone:       | 01322656552   |   |
| 7  |                                                           |          |   |              |               |   |
| 8  | 1                                                         | Minikate | 1 | 70.00        | 70.00         |   |
| 9  | 2                                                         | Lentils  | 1 | 120.00       | 120.00        |   |
| 10 | 3                                                         | Sugar    | 1 | 130.00       | 130.00        |   |
| 11 |                                                           |          |   | Subtotal:    | 320.00        |   |
| 12 |                                                           |          |   | Tax (0%):    | 0.00          |   |
| 13 |                                                           |          |   | Discount:    | 0.00          |   |
| 14 |                                                           |          |   | <b>TOTAL</b> | <b>320.00</b> |   |
| 15 | Terms & Conditions:                                       |          |   |              |               |   |
| 16 | 1. Goods once sold will not be taken back.                |          |   |              |               |   |
| 17 | 2. Please check your items at the time of purchase.       |          |   |              |               |   |
| 18 | THANK YOU FOR YOUR BUSINESS!                              |          |   |              |               |   |

# **Backup and Restore**

Keep your business data safe and recoverable.

## **Local Backup:**

- Store backup files in your system directory
- Auto backup frequency: Daily, Weekly, Manual

## **External Drive Support:**

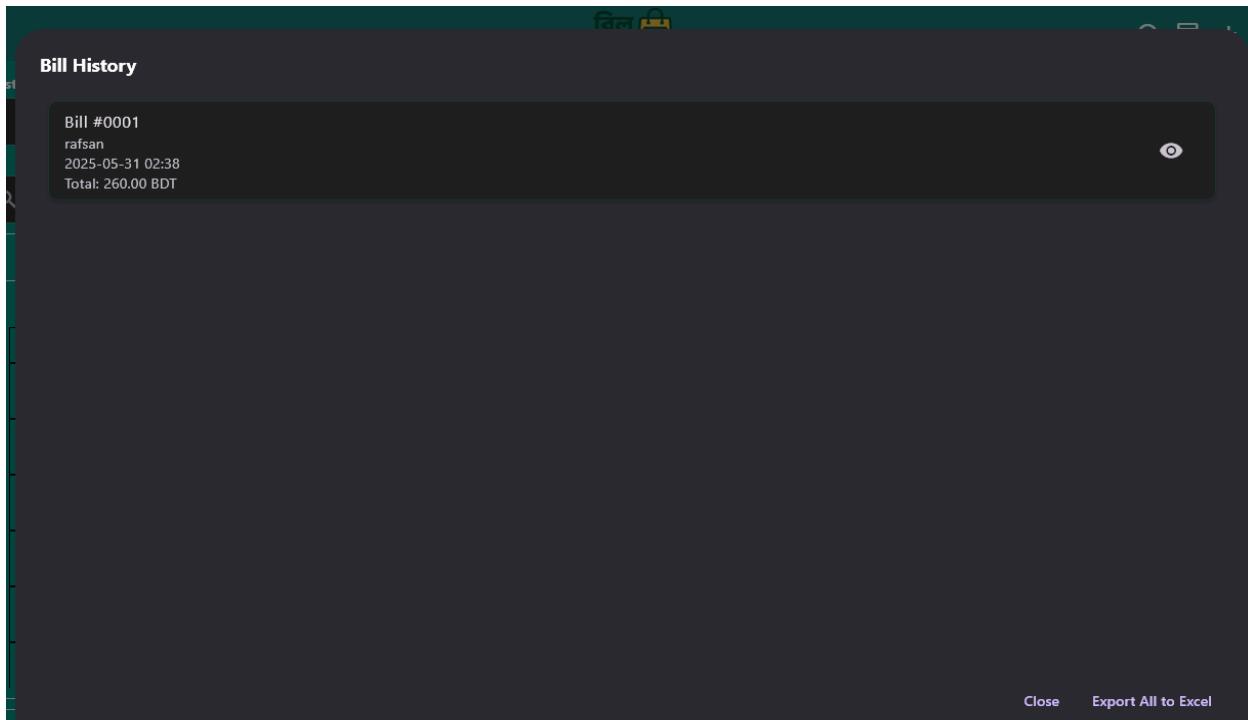
- Save backups to USB drives or external disks

## **Restore Option:**

- Simple interface to load previous data when needed

## **Data Safety:**

- Data is encrypted and stored securely to prevent corruption or unauthorized access



# Customizable Tax Rules

Designed to support South Asian tax systems.

## Flexible Configuration:

- Enable/disable VAT or GST per item or bill-wide
- Add different tax categories (e.g., 5%, 7.5%, 15%)

## Region-specific Settings:

- Adjust rules as per country: Bangladesh VAT, Indian GST, etc.

## Dynamic Calculation:

- Auto calculation of tax based on set rates
- Integrated into total billing seamlessly

## Reports with Tax Breakdown:

- Export sales tax summary for filing or audit

---

## Technology Stack (Explained)

**Flutter:** Cross-platform UI framework ideal for responsive, high-performance desktop apps

**Dart:** Clean, modern programming language optimized for Flutter

**SQLite:** Lightweight, fast, and fully offline-capable local database

**Provider:** A state management solution that keeps UI and data in sync without unnecessary rebuilds

---

## Why Flutter?

**Cross-platform Deployment:** Build once, run on Windows, Android, and Linux

**High Performance:** Optimized UI rendering with smooth animations and minimal lag

**Cost-Effective Maintenance:** Single codebase reduces development time and errors

**Scalability:** Easy to add new features like barcode scanners, cloud sync, or mobile companion apps

---

## Chapter Roadmap (Book Structure)

This guide is divided into **five comprehensive chapters**, helping both beginners and advanced users get the most out of *BillLagbe*:

### **Chapter 1: Getting Started**

System requirements

Installing BillLagbe on Windows and Linux

First-time setup (store info, tax config)

Overview of user interface and menus

### **Chapter 2: Mastering Inventory Management**

Adding/editing/deleting products

Using categories and units

Import/export via Excel

Stock tracking and alerts

## **Chapter 3: Real-time Billing & Invoicing**

- Creating and customizing bills
- Adding discounts, taxes, and payments
- Printing and saving invoices
- Invoice settings and multi-language setup

## **Chapter 4: Reporting & Backup**

- Daily/monthly sales analysis
- Exporting to Excel and PDF
- Backup strategies and restore guides
- Tax report generation

## **Chapter 5: Advanced Settings & Customization**

- User roles and permissions
- Theme and branding customization
- Local tax configurations
- Preparing the app for commercialization

## **Section 2: Installation & Setup**

### **System Requirements**

#### **Hardware Requirements**

| <b>Requirement Level</b> | <b>Processor</b> | <b>RAM</b> | <b>Storage</b> |
|--------------------------|------------------|------------|----------------|
| <b>Minimum</b>           | Dual-core        | 4GB        | 1GB free space |
| <b>Recommended</b>       | Quad-core        | 8GB        | SSD preferred  |

- **Display:** Minimum 1280x720 resolution (higher recommended for desktop UI)

**Peripherals:** Printer (for invoices), Barcode scanner (optional)

#### ◆ **Software Requirements**

Windows 10 or 11 (64-bit)

.NET Runtime (auto-installed if needed)

Admin privileges (for system-wide installation)

Flutter SDK (for Android build only)

Android SDK (for mobile deployment, optional)



## Step-by-Step Installation Guide



## Windows Desktop Installation

### Download Installer

- Visit the official [BillLagbe Website] or GitHub repository.
- Download the latest version of BillLagbe\_Setup.exe.

### Run Installer

- Right-click BillLagbe\_Setup.exe and select “Run as Administrator”.

- Follow the setup wizard: choose your desired installation folder, and accept terms.

## Installation Process

- Installer will place the app in your selected directory (usually C:\Program Files\BillLagbe\)
- Required dependencies like .NET or Visual C++ will be installed automatically if missing.

## Launch the App

- Locate the app via Desktop Shortcut or Start Menu.
  - On first launch, you will be guided through **initial configuration**.
- 



## Mobile Deployment (Optional)

If you wish to deploy BillLagbe on Android (for mobile shop owners or field use):

### Build APK using Flutter:

Open terminal in your project directory.

Run:

```
bash  
Copy Edit  
flutter build apk
```

Find the APK in:

```
swift  
Copy Edit  
build/app/outputs/flutter-apk/app-release.apk
```

### Distribute:

Transfer the .apk to Android devices manually.

Or upload to **Google Play Console** (requires signed APK & Play Store account).

---

## **First-Time Configuration Guide**

Once the app is launched:

Navigate to:

**Settings > Initial Setup**

### **Business Profile Setup**

- Store Name (e.g., Rahim Store)
- Address, Phone, and Email
- Upload Logo (visible on invoices)
- Choose local language (Bangla/English)

### **Billing Preferences**

- Set tax percentage (e.g., 5% VAT)
- Enable or disable rounding logic
- Define default discount settings (flat or percentage)

### **Inventory Initialization**

- Go to **Inventory > Add Product**
- Add categories (e.g., Beverages, Electronics)
- Fill in:
  - Product Name
  - Unit (e.g., kg, litre, pcs)
  - Quantity
  - Unit Price
  - Stock Status

---

## **! Troubleshooting Guide**

## Issue 1: App Not Launching

**Check Windows Defender:** It might block the app on first use.

**Antivirus:** Whitelist the BillLagbe installation folder.

**.NET Runtime:** Ensure it's installed; if not, install from the [Microsoft .NET site](#).

## Issue 2: Products Not Saving

**Permission Issue:** Confirm write access to the app directory.

**Fix:** Right-click the app → **Run as Administrator**

**Disk Write Errors:** Avoid installing in protected folders like Program Files if issues persist. Use C :\BillLagbe instead.

---

### Pro Tips for Smooth Operation

#### **Backup Weekly:**

Go to **Settings > Backup > Create Backup**

Save .db or .json files to external drives or cloud.

#### **Printer Setup:**

Use **58mm or 80mm thermal printers**. Configure invoice size from **Settings > Print Preferences**.

#### **Use Export Regularly:**

Export sales reports every week to Excel or PDF for analysis or recordkeeping.



### **Data Protection:**

Enable password lock from settings to secure access on shared PCs.



## **Section 3: User Manual**

### **BillLagbe: Professional Billing Solution**

This section serves as your complete guide to navigating and using the BillLagbe application. From billing to inventory management and data backup, everything you need is covered here.



### **User Interface Overview**

The application is divided into several main sections, each designed to simplify specific tasks:

#### **◆ Dashboard**

View daily/weekly/monthly sales summary

Track number of bills generated

Highlight top-selling products

Monitor low-stock alerts

#### **◆ Inventory**

Add, edit, delete, or search for products

View current stock levels

Update prices, units (kg, litre, pcs), and product category

Stock status is color-coded (e.g., red = low, green = in stock)

#### ◆ **Billing**

Core section for generating customer invoices

Add products to cart

Apply discounts and taxes automatically

Generate printable PDF invoices instantly

#### ◆ **Settings**

Configure:

- Store details (name, address, logo)
- Tax percentage (e.g., VAT, GST)
- Invoice rounding rules
- Default printer
- Language preferences

#### ◆ **Backup**

•

Secure your data using local backups

Restore from previous backup if needed

Encrypt backups for additional safety (optional)



### **How to Create a Bill**

Follow these steps to create and print a customer bill:

**Go to the Billing tab** from the main menu.

### **Enter Customer Details:**

- If it's a new customer: type name and phone number
- If existing: select from dropdown or auto-suggest

### **Click Add Product:**

- Search by product name or ID
- Select the correct product and input quantity

### **Review Bill Preview:**

- Product list updates automatically
- Tax, discount, and total are calculated in real-time

### **Click Generate Bill:**

- PDF/Excel invoice will be created instantly
- Option to print or share directly from the app

 Tip: You can customize invoice layout from Settings > Print Preferences

---

## **Inventory Management**

Managing your product stock is easy and efficient with BillLagbe.

### **Search Products:**

- Use full or partial product names, IDs, or categories

### **Add New Product:**

- Navigate to Inventory > Add Product
- Input name, price, unit, initial quantity, and category

### **Edit Product:**

- Click on any product row and select Edit

- Update price, quantity, or unit as needed

### **Delete Product:**

- Select a product and click Delete (confirmation required)

### **Update Quantity:**

- Modify quantity directly from the product table
- Useful for restocking or correcting inventory

### **Low Stock Alerts:**

- Products with quantity below threshold are highlighted (e.g., red background)
- 

## **Advanced Features**

### **Printing Setup**

BillLagbe supports both:

- Standard A4 Printers (laser, inkjet)
- Thermal POS Printers (58mm, 80mm roll)

To set up printer:

- Go to Settings > Print
- Choose your default printer
- Select paper size and margin if needed

### **Excel Export**

Export sales data easily for financial tracking or reporting.

Navigate to Billing History

Select your preferred date range (e.g., 01 May to 30 May)

**Click Export to Excel**

The generated file will include:

- Bill number
- Date and time
- List of items
- Quantity and price
- Subtotal, discount, tax, total
- Customer details

 Files are saved in the **Exports** folder inside the app directory by default.

---

## **Security and Data Protection**

All data is stored **locally** using **SQLite** (fast and secure)

Backups can be:

- Plain .db file
- Encrypted backup (if enabled in settings)

No internet connection is required, ensuring full offline access

---

## **Backup & Restore Guide**

To prevent data loss, always maintain a weekly backup.

### **Export Backup**

Go to Settings > Backup

Click “**Export Backup**”

Save the .db file to:

- USB drive

- External hard disk
- Cloud drive (e.g., Google Drive, OneDrive)

## **Restore Backup**

Go to Settings > Backup

Click “Import Backup”

Browse and select the saved .db file

App will prompt confirmation before restoring

 **Warning:** Restoring will overwrite existing data. Backup current database before restoring another version.

---

## **Tips for Smooth Use**

-  Always run the app as Administrator to avoid permission issues.
-  Enable password protection if using the app on shared computers.
-  Use A4 printing for official receipts or POS paper for quick customer bills.
-  Use filters in Billing History to analyze sales trends.
-  Schedule regular backups (set a reminder every Sunday).

## Section 4: Developer Guide

### **BillLagbe: Professional Billing Solution**

This guide is aimed at developers who wish to extend, debug, or contribute to the BillLagbe project. It outlines the core architecture, class structure, function responsibilities, optional integrations, and advanced features like multi-user support.

---

### Architecture Overview

The project follows the **MVC (Model-View-Controller)** pattern, separating business logic, UI components, and data models for clean and scalable development.

### Project Directory Structure

```
bash
Copy Edit
/lib
|
└── main.dart          # App entry point
└── models/             # Data classes (Product,
    └── Bill, Customer)
└── screens/            # UI layouts (HomePage,
    └── BillingPage, etc.)
└── services/           # Core logic (Database,
    └── Export, Printing)
└── providers/          # State management using
    └── Provider
└── widgets/             # Reusable UI components
└── utils/               # Helpers and constants
```

---

### Key Models

Defined in /models directory.

 **Product**

```
dart
Copy Edit
class Product {
String name;
String unit; // e.g., kg, pcs
double price;
int stock;
String category;
}
```

 **BillRecord**

```
dart
Copy Edit
class BillRecord {
String bill No;
DateTime dateTime;
List<Product> items;
double total;
double discount;
String paymentMethod;
}
```

 **Customer**

```
dart
Copy Edit
class Customer {
String name;
String phone;
String address;
}
```

---

## Important Functions

### **generate Bill ()**

Captures form data (selected products, totals, customer)

Inserts a new bill into the SQLite database

Calls `exportToExcel ()` and `printInvoice ()` if configured

### **exportToExcel ()**

Uses `excel` package (`excel: ^2.0.0`)

Converts a SQL query result into a formatted Excel sheet

Automatically saves to `Exports` directory

### **printInvoice ()**

Uses `printing` and `pdf` packages

Generates a PDF invoice

Includes:

- Company info
- Customer info
- Product list
- QR Code (optional, for future scan/read apps)

---

## Adding Payment Integration

Integrating payment gateways is optional but enhances business automation.

### **SSLCommerz (for Bangladesh)**

1.Add HTTP API functions under  
`/services/payment_service.dart`

2. Use http or dio package to call SSLCommerz endpoints

3. Add a dropdown to BillingPage to select:

- o Cash
- o bKash/Nagad
- o Card (via SSLCommerz)

## Stripe (Global)

1. Use stripe\_payment or flutter\_stripe

2. Add card input form in screens/payment\_screen.dart

3. Create backend (Firebase Functions or Node.js) for secure key handling

---

## 👤 Multi-User Support (Optional)

BillLagbe can be extended to support admin and cashier roles.

### Database Table

Create a new table users:

```
Sql  
Copy Edit  
CREATE TABLE users (  
id INTEGER PRIMARY KEY AUTOINCREMENT,  
username TEXT,  
password TEXT,  
role TEXT -- e.g., admin, staff  
) ;
```

### Login Flow

1. Create a login screen

2. Use SQLite query to verify credentials
  3. Store current user in Provider
  4. Restrict access to settings/backup screens based on `user.role`
- 

## Debugging Tips

### UI & State Debugging

Use Flutter DevTools:

- Inspect widget tree
- Check Provider state
- View performance stats

### Database Debugging

Open your SQLite .db file using [DB Browser for SQLite](#)

Useful for:

- Checking malformed entries
- Verifying schema structure
- Manually adding test data

### Unit Testing (Recommended)

Add test files under /test/ directory.

Example:

```
dart
Copy Edit
test('Product price calculation', () {
final product = Product(name: 'Apple', price: 50,
stock: 10, unit: 'kg', category: 'Fruit');
```

```
expect (product.price * product.stock, 500);  
});
```

---



## Performance Tips

Avoid rebuilding widgets unnecessarily (use Consumer or Selector)

Optimize product search using indexed lists or maps

For large exports, use `compute()` for background processing

---



## Security Considerations

Always hash stored passwords (e.g., using `crypto` package)

Encrypt backups with optional passphrase

Log user actions if multi-user is enabled (audit logs)



## Section 5: Business & Marketing

### BillLagbe: Professional Billing Solution

This section provides a strategic roadmap for monetizing, marketing, supporting, and expanding the BillLagbe platform. It includes commercial models, promotion tactics, support plans, and future growth ideas.

---



## Product Commercialization

You can monetize BillLagbe in the following ways:

## 1. One-Time License

**Price Range:** BDT 1000 – 2000 (lifetime access)

**Ideal For:** Shopkeepers who prefer a one-time investment

### **What's Included:**

- Full desktop access
- All features unlocked
- Basic support (email or Telegram)
- Free bug fixes for 6 months

## 2. Monthly Subscription

**Price:** BDT 100/month

**Ideal For:** Businesses that want:

- Continuous updates
- Future features (cloud sync, analytics)
- Dedicated support

### **Billing Options:**

- bKash, Nagad, Rocket
- Manual invoicing or automated via Stripe

---

## Target Customers

### **Primary Market Segments:**

 Grocery shops, corner stores

 Pharmacies and medicine counters

 Courier agents and delivery centers

 Stationery & bookshops

 Tailor shops and boutique houses

 Small repair shops

### Pain Points Solved:

Manual bill writing

Inventory mismanagement

Invoice formatting issues

Tax/VAT calculation errors

---

### Promotion Ideas

#### 1. Facebook Ads (Meta Boost)

Target: Business owners, shop managers, store cashiers

Region: Dhaka, Chattogram, Sylhet, Rajshahi, Rangpur

Language: Bangla ad copies with clear visuals

#### 2. YouTube Tutorial Series

Walkthroughs in Bengali (title: “BillLagbe দিয়ে বিলিং শিখুন”)

Showcase:

- How to create a bill
- Inventory setup
- Printing to A4/POS

#### 3. Free Trial Offer

Duration: 7 Days

Features: Full access with watermark on invoice

Convert trial to full with one-click payment

#### 4. Offline Outreach

Partner with computer shops

Provide demo via pendrive or install on test PCs

Offer commission for resellers

---

### Support & Community Building

#### Build a User Community

Create a Facebook Group or Telegram Channel

- Share tips, updates, FAQ
- Accept feature requests
- Allow users to help each other

#### Support Channels

Email support (support@billlagbe.com)

Chatbot (planned via Telegram or Messenger)

Regular updates via GitHub or website

#### Feedback Loop

Add a "Send Feedback" button in-app

Use collected feedback to prioritize updates

---

## Future Development Ideas

### Cloud Sync

Sync data using **Firebase Firestore** or **Supabase**

Login-based data access from multiple devices

Enable online dashboards for remote store owners

### Bengali Language Support

Make the entire UI bilingual (Bangla + English)

Translate invoice headers and labels

Use Bangla font for invoices

### Analytics Dashboard

Monthly and daily sales chart (bar/pie/line)

Top 5 products, customer retention metrics

Exportable summary reports (PDF/Excel)

### POS Hardware Integration

Support for thermal receipt printers via USB

Integrate barcode scanner input

Include compact "retail mode" layout

---

## Revenue Expansion Opportunities

### Hardware + Software Combo

Pre-install BillLagbe on mini-PC or desktop

Bundle with:

- POS printer
- Barcode scanner
- Customer display

## Pricing Example:

BillLagbe Full Setup + Printer + Mini-PC = BDT 12,000

### Tech Shop Partnerships

Partner with local PC & printer resellers

Give them a commission per license sold

Provide marketing materials for display



### Freelance/Agency Use Case

Let IT students or agencies install BillLagbe for local clients

Offer “BillLagbe Reseller Certificate”



### Appendices



### Glossary

| Term    | Description                              |
|---------|------------------------------------------|
| VAT     | Value Added Tax, a percentage-based tax  |
| QR Code | 2D barcode used for digital info sharing |

| Term | Description                               |
|------|-------------------------------------------|
| SKU  | Stock Keeping Unit (unique product ID)    |
| DB   | Short for database                        |
| UI   | User Interface (screen layout/appearance) |



## Keyboard Shortcuts

| Shortcut | Action                  |
|----------|-------------------------|
| Ctrl + N | Create new bill         |
| Ctrl + S | Save current bill       |
| Ctrl + P | Print invoice           |
| Ctrl + B | Backup database         |
| Ctrl + F | Search product/customer |



## Sample Invoice Templates

**Template 1:** Clean white A4 retail format

**Template 2:** POS receipt layout (thermal printer)

**Template 3:** Pharmacy invoice with batch/expiry info

Each template is customizable under Settings > Invoice Layout.

## Project Summary

**Project Title:** BillLagbe: Professional Billing Solution

**Technology Used:** Flutter (Dart), SQLite, PDF & Excel Export, POS Printing

**Platform:** Windows Desktop (Optional Android Support)

**Developed By:** MD. RAFSAN ZANI

**Institute:** Dinajpur Polytechnic Institute

**Session:** 2022–2023

**Department:** Computer Science & Technology

### Overview

BillLagbe is a professional, user-friendly desktop application developed to streamline the billing process for small and medium-sized businesses. This system allows users to manage inventory, generate invoices, track customer data, and back up sales records—all from a single platform.

### Objective

The primary objective of this project is to replace manual billing practices with a digital, accurate, and efficient system. It aims to simplify the workflow of local businesses by providing tools to create bills, store product data, and print invoices using A4 or POS printers.

### Key Features

Inventory management with product search and stock tracking

Customer data entry with phone and address

Bill creation with automatic total, discount, VAT calculation

PDF and Excel export of bills

Backup & restore functionality

Printer setup for A4 and POS

Local database (SQLite) with optional encrypted backup

(Optional) Android support via `flutter build apk`

## System Architecture

The app follows the **MVC (Model-View-Controller)** architecture:

`models/` – Contains Product, Bill, and Customer data classes

`screens/` – User interfaces (Dashboard, Billing, Inventory, etc.)

`services/` – Handles database, PDF, Excel export, and backup logic

## Security

All data is stored securely in a local SQLite database

Weekly backup feature recommended

Encrypted backups can be enabled for extra protection

## Business Potential

BillLagbe can be commercialized through:

One-time purchase (BDT 1000–2000)

Monthly subscription (BDT 100/month with updates)

Bundled with POS printer for local shop integration

## Future Scope

Cloud sync via Firebase/Supabase

Bengali language support for UI and invoices

Daily/monthly analytics dashboard

Multi-user access with role-based login

---

## Conclusion

BillLagbe is not just a software project—it's a practical solution designed to meet real-life business needs. With proper marketing and future enhancements, it has strong potential to become a trusted digital billing companion for Bangladeshi retail stores.

Thank You