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DATABASE MANAGEMENT SYSTEM
COURSE BASED PROJECT

B.TECH. II YEAR I SEMESTER – CSE

TITLE OF THE PROJECT : BILLING SYSTEM

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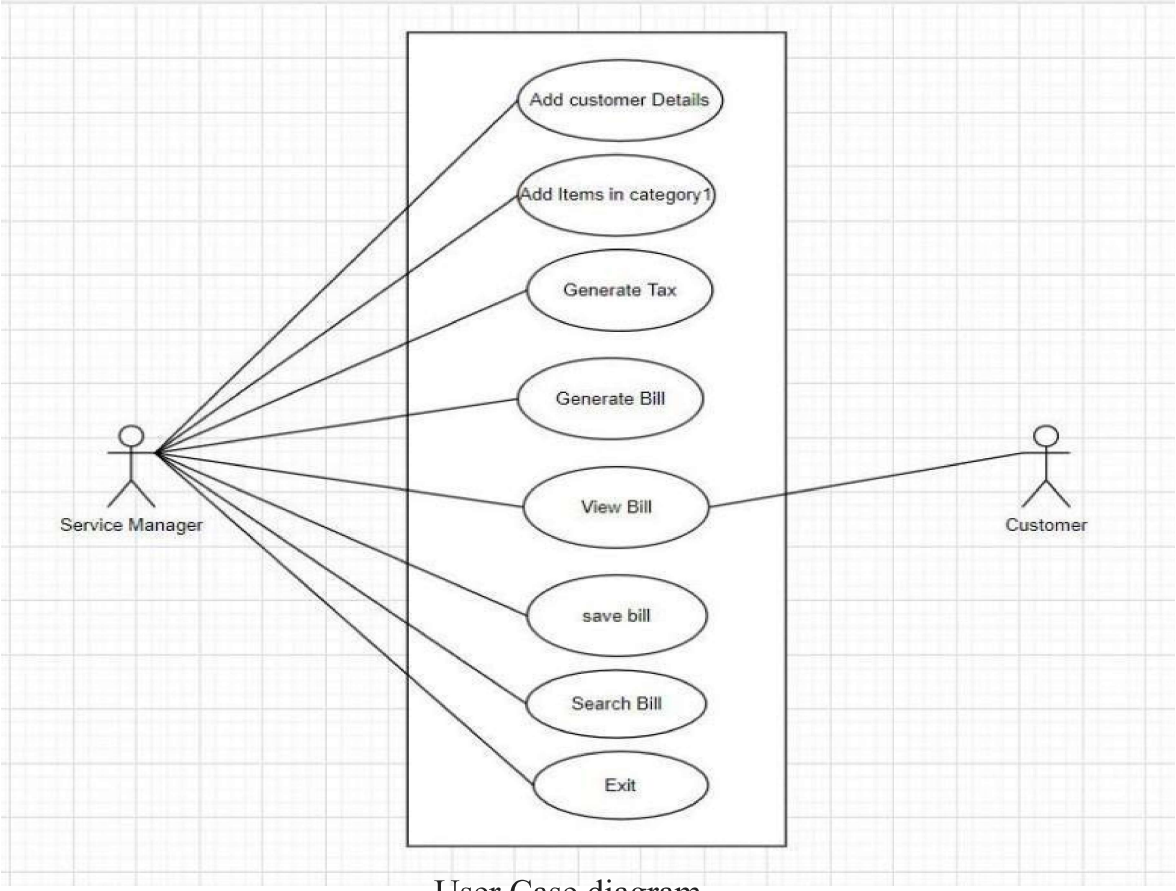
TABLE OF CONTENTS

Abstract

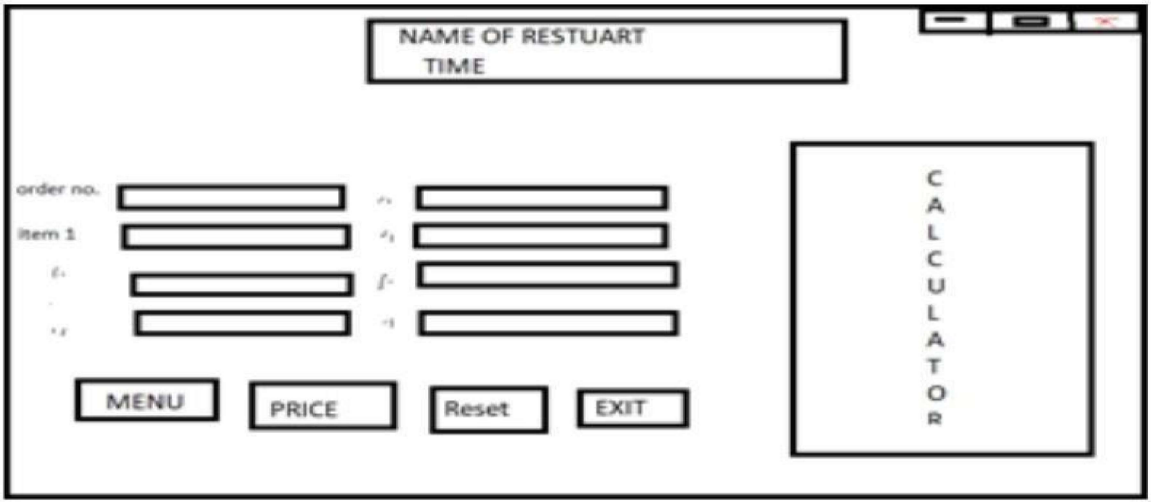
Billing Software Using Python is a process to combine planning to make our day-to-day management activities. It is mainly developed to keep in mind the billing system for the customers who went to restaurants with family & friends. The Billing Software owners are required with some of the billing systems through which they can give the bill to the customers or even calculate the total amount. They can also store order details in their database.



User Case diagram

A billing system can be very useful within a business environment. Instead of making bills manually or to sum up the total manually, it is very much time consuming and also may have some human errors like adding up the wrong total or adding wrong items into the bill. When making a hand written bill the owner and customer both have to repeatedly check the total, items added, etc. It also sometimes results
in a Bad Impression towards the Restaurant from a Customer. Ideally, users should be able to generate bills without any mistakes and quickly, enabling them to fasten or improve their process. To overcome this problem, we have come up with this project, that is, Billing Software Using Python Using Python.

This is a simple GUI based application which is very easy to understand and use. It uses the Tkinter module for the GUI. The user can address the order and view the total receipt of the items which displays receipt number and number of their food/drinks items with the total amount. There's also an extra calculator feature for the users. Here, the total bill of the customer includes tax and service charges too. They can also store order details in their database or print the bill. The design is sosimple that the user won't find any difficulties while working on it. speaks out the entire list that are present in the bill. Manger can able to see current stock and count of ordered items in the past month. He can also able to update the stock.



Expected Billing Software Using Python

1. INTRODUCTION

Billing Software Using Python can be very useful within a business environment. Instead of doing manual work for making up a bill at Restaurant, which gets tiring and time consuming, you can generate a bill including tax and service charges in just a few clicks. When making up a bill manually at a store may contain some human errors like adding wrong items into the bill or summing up their total also may end up wrong, it also sometimes results in a Bad Impression towards the store from a Customer. Ideally, users should be able to generate bills without any mistakes and quickly, enabling them to fasten or improve their process. To overcome this problem, we have come up with this project, that is, Billing Software Using Python.

The Billing Software Using Python is very useful to small business or restaurant or cafe or food truck owners. This helps the owner to fasten the process which is bug free and easy to use. It also has a calculator to ease the use of the user. This project firstly has the item list and then adds up the selected items by customer and sums up the total of all items, adds tax and service charges and displays the total and we are able to print the receipt. To perform any other operation like addition, subtraction, division, multiplication calculator is also available. It speaks about details of the entire list present in the bill. Manger can able to see current stock and count of ordered items in the past month. He can also able to update the stock.

2. MOTIVATION AND TECHNICAL RELEVANCE

The Management industry is enlarging rapidly and business owners are keen to improve every section of their business. Though much attention is paid to digitizing their business and the items, not many business owners realize the importance of applying digital billing software in the restaurant. The customers' experience at your restaurant includes the billing and payment experiences too. Billing software provides some exclusive features that ease up the restaurant services. It upgrades the billing process and uplifts the customers' experience. It enables customers to pay bills more easily. The software can generate detailed bills that eliminate the need to calculate bills separately when the guests wish to know the total GST amount.

Apart from billing, the software enables you to organize a number of processes at the restaurant. It makes your system more effective and helps you provide faster and easy services to the customers. So many times, customers leave unhappy due to improper billing. When the crowd is vast in the restaurant, it might take you some time to generate manual bills that may leave your customers unsatisfied. This is where the automated billing system can be used. It generates digital bills automatically and allows customers to make quick payments. And to store order details in their database

3. PROPOSED SYSTEM

Since many Grocery or café owners make bills for their customers manually with a pen paper. This sometimes results in an error of total or wrong items added or some items missing in bill or extra items added.
This may end up by building up a bad impression of customers towards the Café or store. So, to overcome this problem we've come up with this helpful project named Billing Software Using Python. We all love going to cafes or restaurants but when it takes time for them to make a bill or if they Make wrong bill then it's time consuming. And also to store the data in a database. So, to avoid all such chaos our project will help in All possible terms. Manger can able to see current stock and count of ordered items in the past month. He can also able to update the stock.

4. SOFTWARE REQUIREMENTS AND SPECIFICATIONS

Here we are including the software and hardware used for developing the project and implementing the project

A. Software Requirements

1. Python 3.9
2. IDLE
3. DBSQlite Browser
4. Any Operating System

B. Hardware Requirements

1. 2 GB RAM or above
2. Intel i3 Processor or above

4.1 Python

Python is a high-level , general-purpose programming language . Its design philosophy emphasizes code readability with the use of significant indentation . Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small-and large-scale projects.

Python is dynamically-typed and garbage-collected . It supports multiple programming paradigms , including structured (particularly procedural), object-oriented and functional programming . It is often described as a "batteries included" language due to its comprehensive standard library .

Python Features:

1. Easy to learn
2. Easy to maintain
3. Easy to read
4. A broad standard library
5. Extendable and portable

Use Python for…

1. Web development
2. GUI development
3. Software development
4. Data Science
5. System Administration

4.1.1 Tkinter

Tkinter is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

Creating a GUI application using Tkinter is an easy task. Allyou need to do is perform the following steps −

- Import the Tkinter module.
- Create the GUI application main window.
- Add one or more of the above-mentioned widgets to the GUI application.
- Enter the main event loop to take action against each event triggered by the user.

4.1.2 Geometry Management

All Tkinter widgets have access to specific geometry management methods, which have the purpose of organizing widgets throughout the parent widget area. Tkinter exposes the following geometry manager classes: pack, grid, and place.

- The pack() Method − This geometry manager organizeswidgets in blocks before placing them in the parent widget.
- The grid() Method − This geometry manager organizeswidgets in a table-like structure in the parent widget.

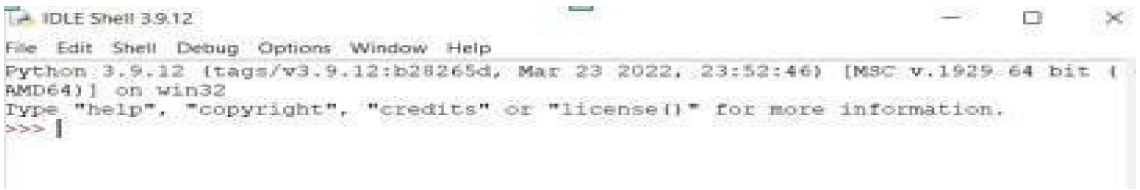
4.1.3 Tkinter Widgets

Tkinter provides various controls, such as buttons, labels and text boxes used in a GUI application. These controls are commonly called widgets. There are 5 important widgets in Tkinter. We present these widgets as well as a brief description in the following table −

SI No.	Operator & Description
1	**Button** The Button widget is used to display buttons in your application.
2	**Checkbutton** The Checkbutton widget is used to display a number of options as checkboxes. The user can select multiple optionsat a time.
3	**Entry** The Entry widget is used to display a single-line text field for accepting values from a user.
4	**Frame** The Frame widget is used as a container widget to organizeother widgets.
5	**Label** The Label widget is used to provide a single-line caption forother widgets. It can also contain images.

4.2 IDLE

IDLE (short for Integrated Development and Learning Environment) is an integrated development environment for Python, which has been bundled with the default implementation of the language. It is packaged as an optional part of the Python packaging with many Linux distributions. It is completely written in Python and the Tkinter GUI toolkit (wrapper functions for Tcl /Tk). IDLE is intended to be a simple IDE and suitable for beginners, especially in an educational environment. To that end, it is cross-platform and avoids feature clutter.



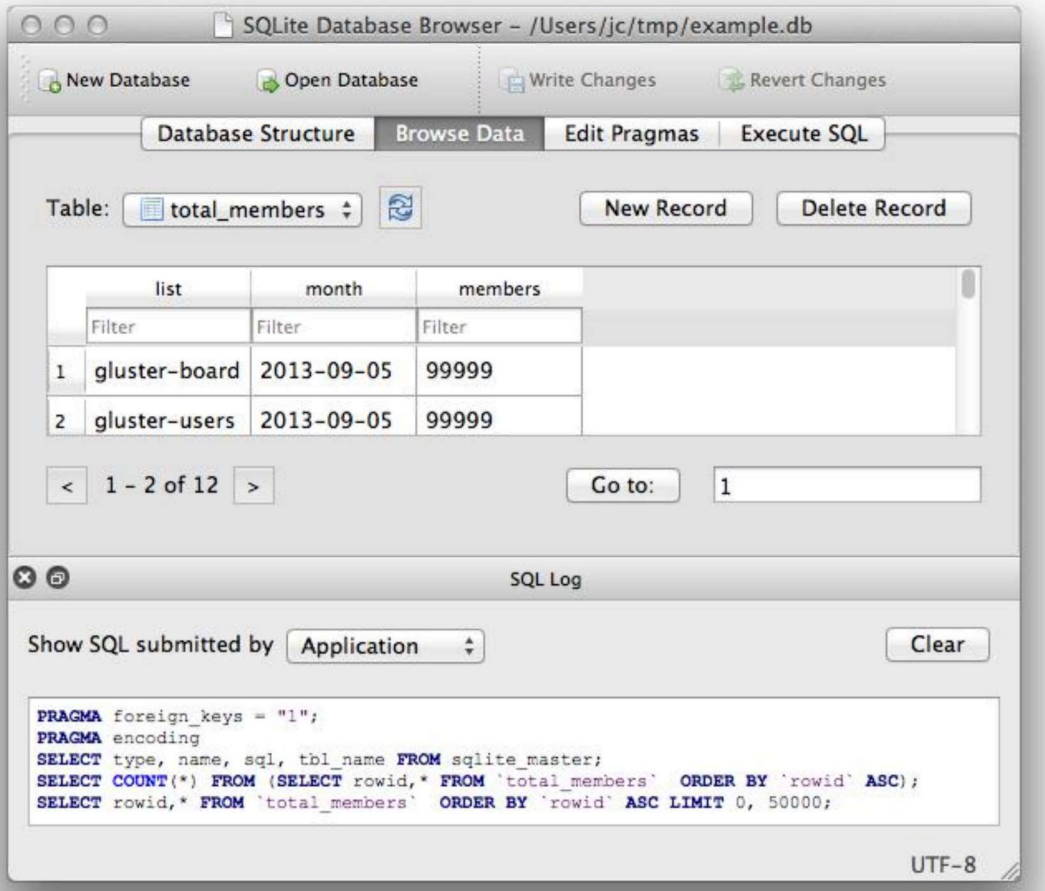
IDLE

4.3 Pyttsx3

pyttsx3 is a text-to-speech conversion library in Python. Unlike alternative libraries, it works offline and is compatible with both Python 2 and 3.

It has two default voices male voice is index 0 and the female voice is index 1. Currently we are using female voice

4.4 DBSQlite Browser



DB Browser

DB Browser for SQLite (DB4S) is a high quality, visual, open source tool to create, design, and edit database files compatible with SQLite.

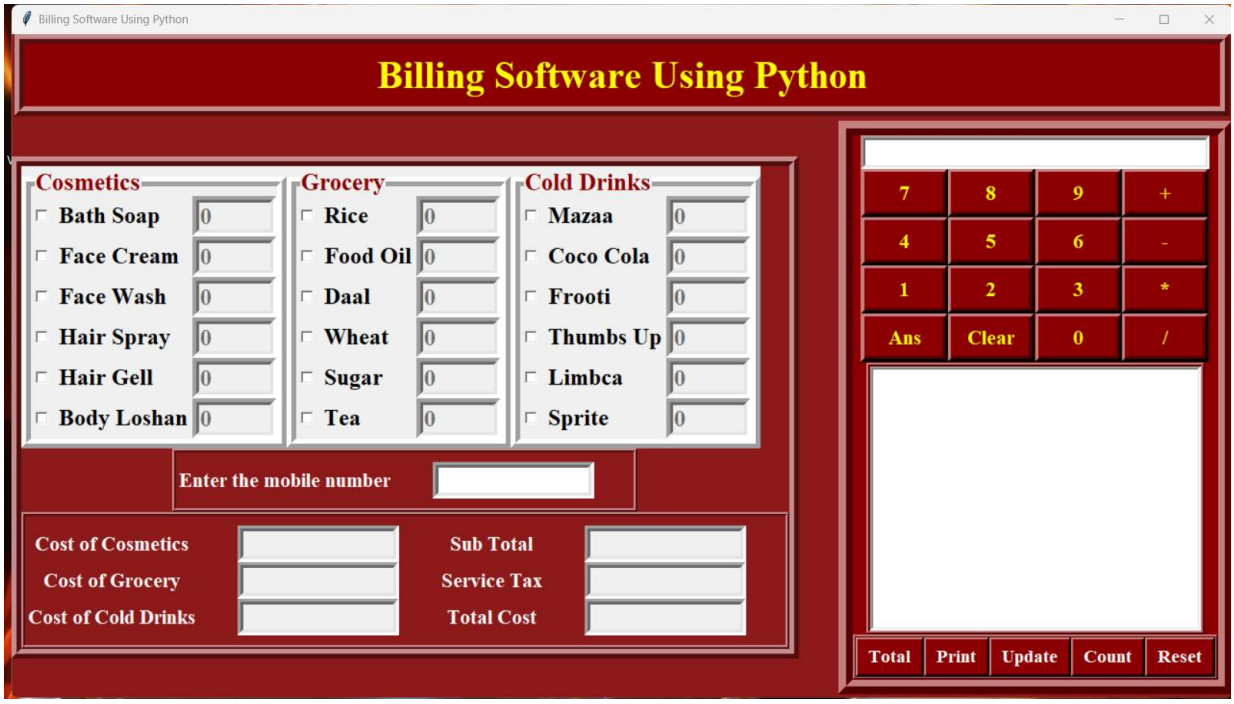
Since we are using sqlite3 as our database we need DB browser for displaying data in the database. DB4S is for users and developers who want to create, search, and edit databases. DB4S uses a familiar spreadsheet-like interface, and complicated SQL commands do not have to be learned.

5) Software Implementation:

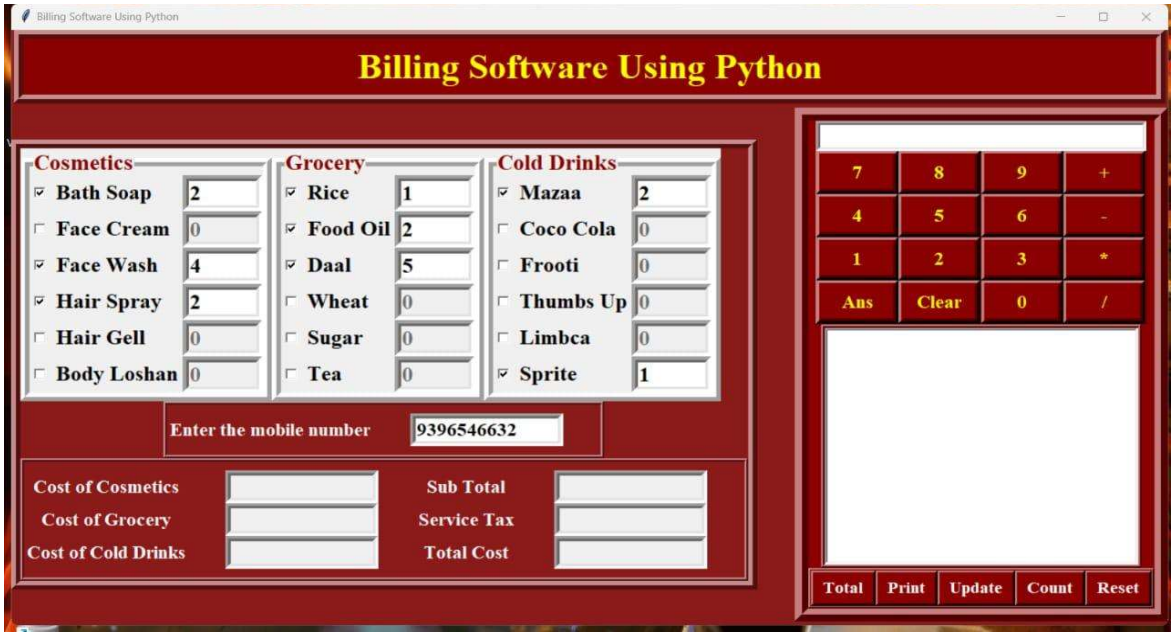
Billing Software is developed using Python. While using this billing software, you can easily calculate the total bill of the customer. Moreover, the total bill is calculated including service charges and state tax. All you need to do is just fill up the blank boxes with item quantities and click on the total button. The program will display your total bill. This system can be used in grocery stores, cafes and food trucks for calculating bills in a short period of time and it's not time consuming. It's easy to operate and understand by users. There are no error and warning contents in the project. The design is so simple that users won't find it difficult to use and navigate.

To ease the use of the user, we even have a calculator added to our system which performs all basic operations like Addition, Subtraction, Division and Multiplication. We'll display the item list, Order no., Total and Reset. We assure that the project is bug free and easy to use. Since the program is for restaurants or providing services. It will add services chargesand state taxes respectively. We can see the preview of the receipt before printing. We are then able to print the receipt. And also the manager can store the details of the order for future references. At last it speaks about details of the entire list present in the bill. Manger can able to see current stock and count of ordered items in the past month. He can also able to update the stock.

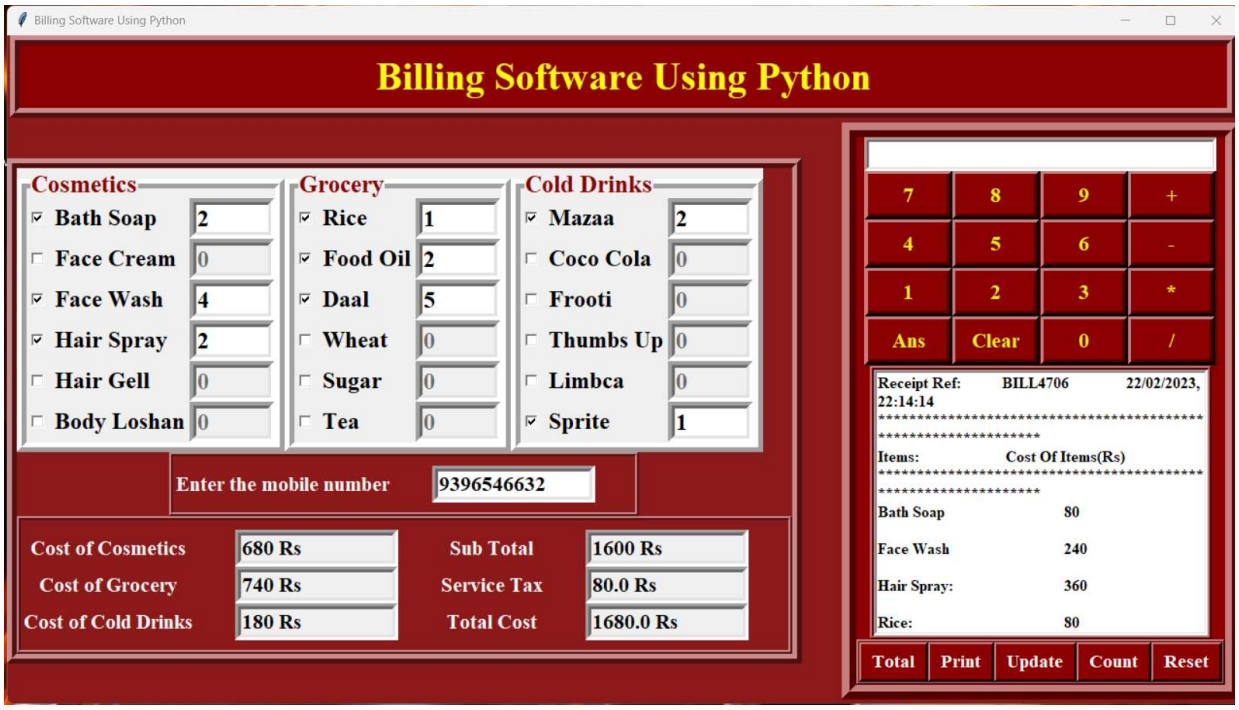
1)The following windows will be opened when we run our program.



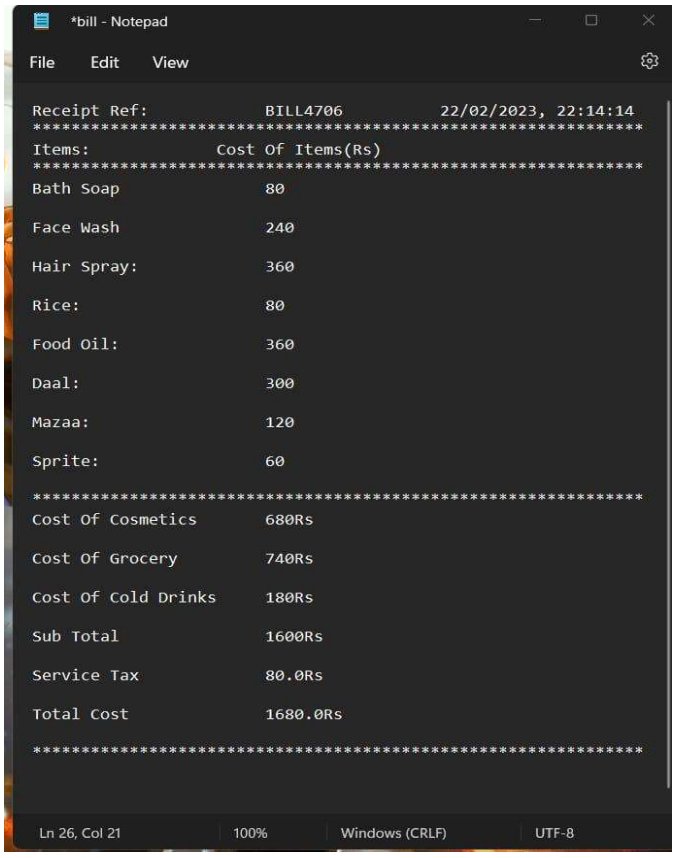
2) To enter the quantity of the items which are to be sold first select the item, it shows tick mark now enter the quantity Do same for all the quantities to be sold then press total button.



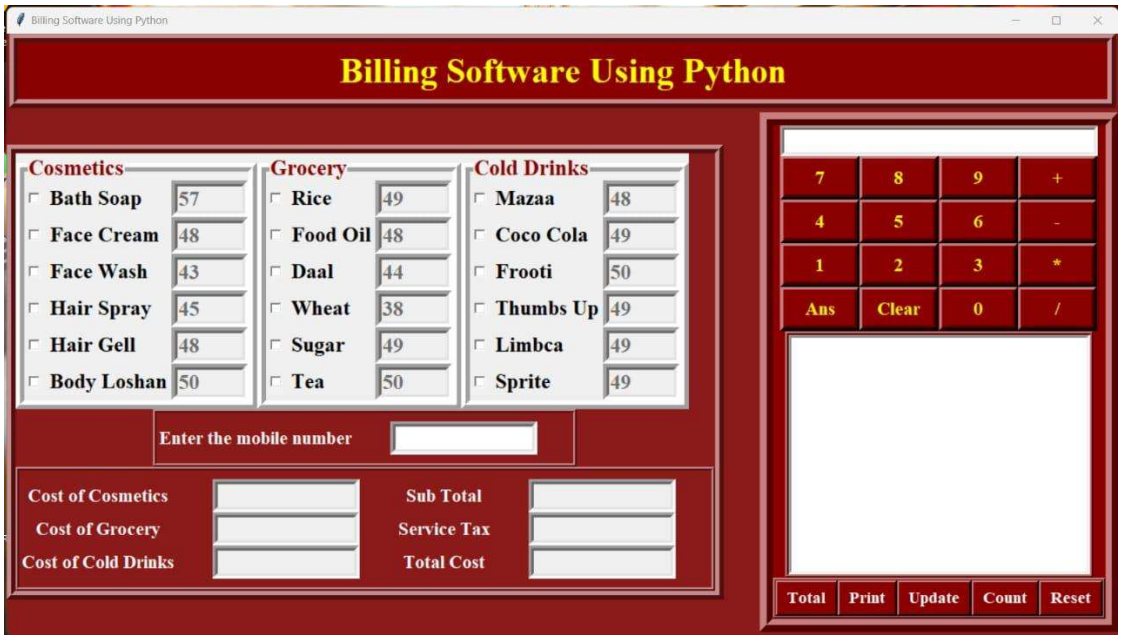
3) If we press total button it will calculates the sum and total bill and displays in the screen and also says it loud in the speaker.



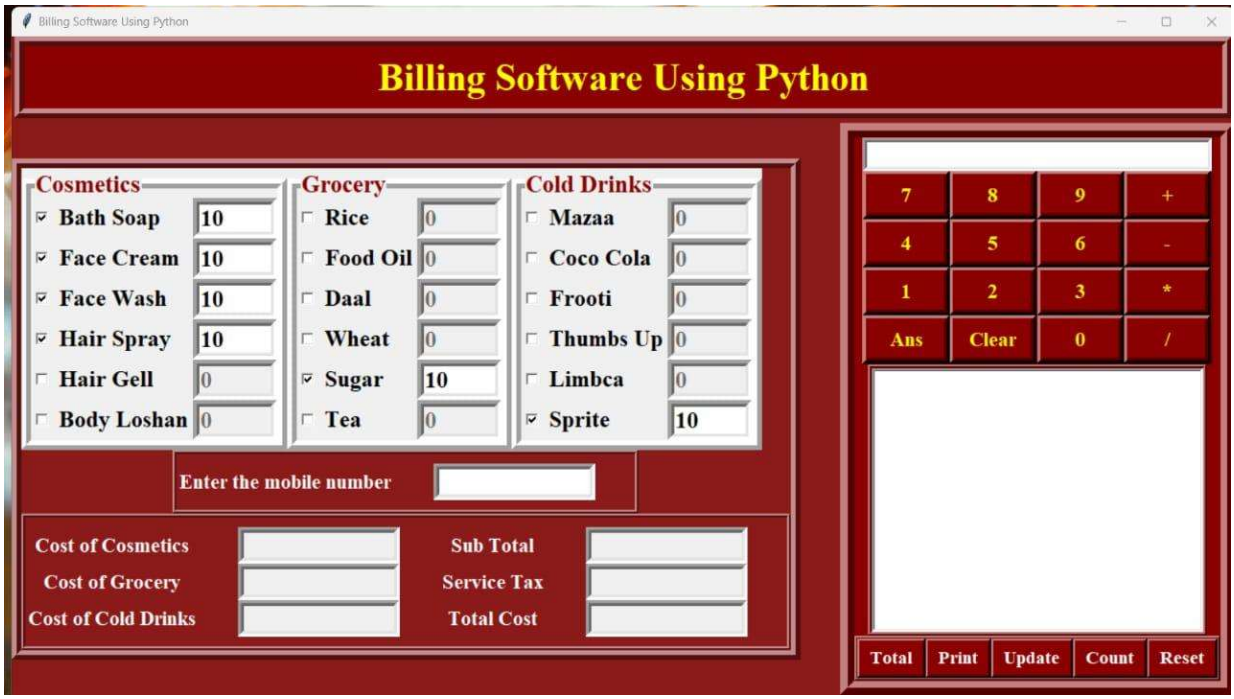
4) When we press print button we get a bill of the following and the stock details will be stored and updated in database



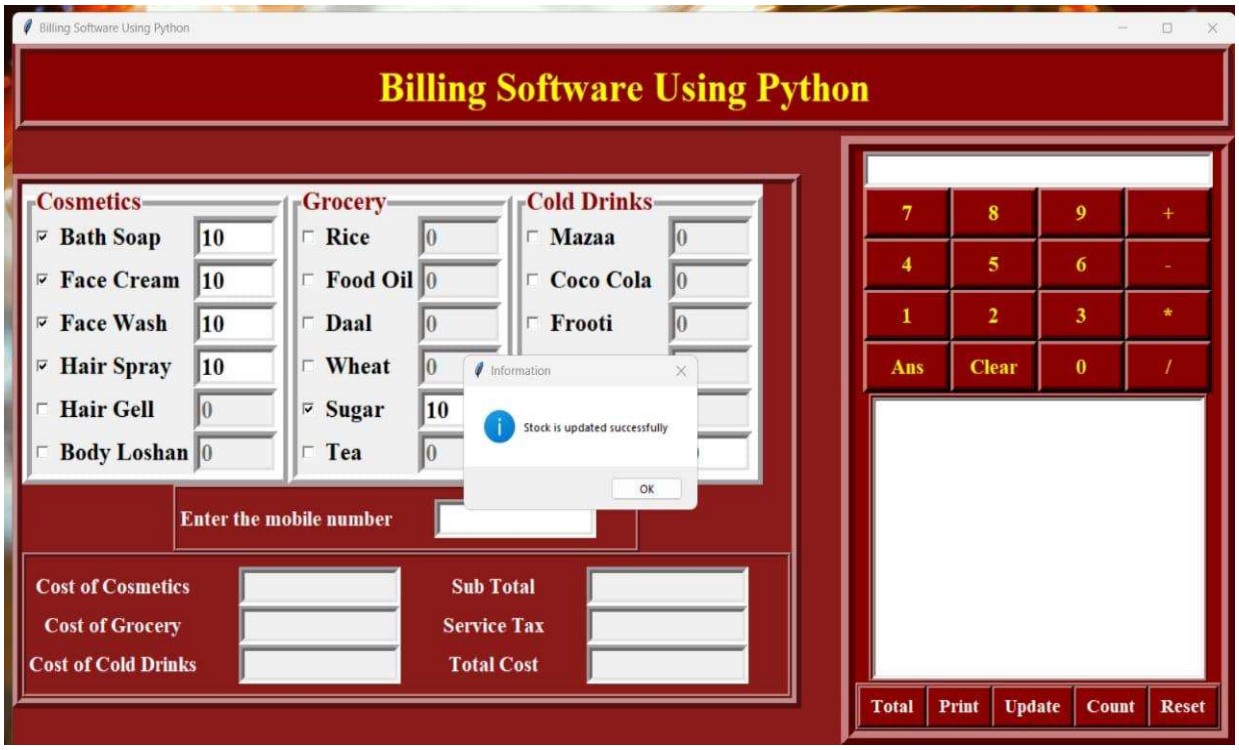
5) When we press update button without entering any quantity it shows the stock that is available



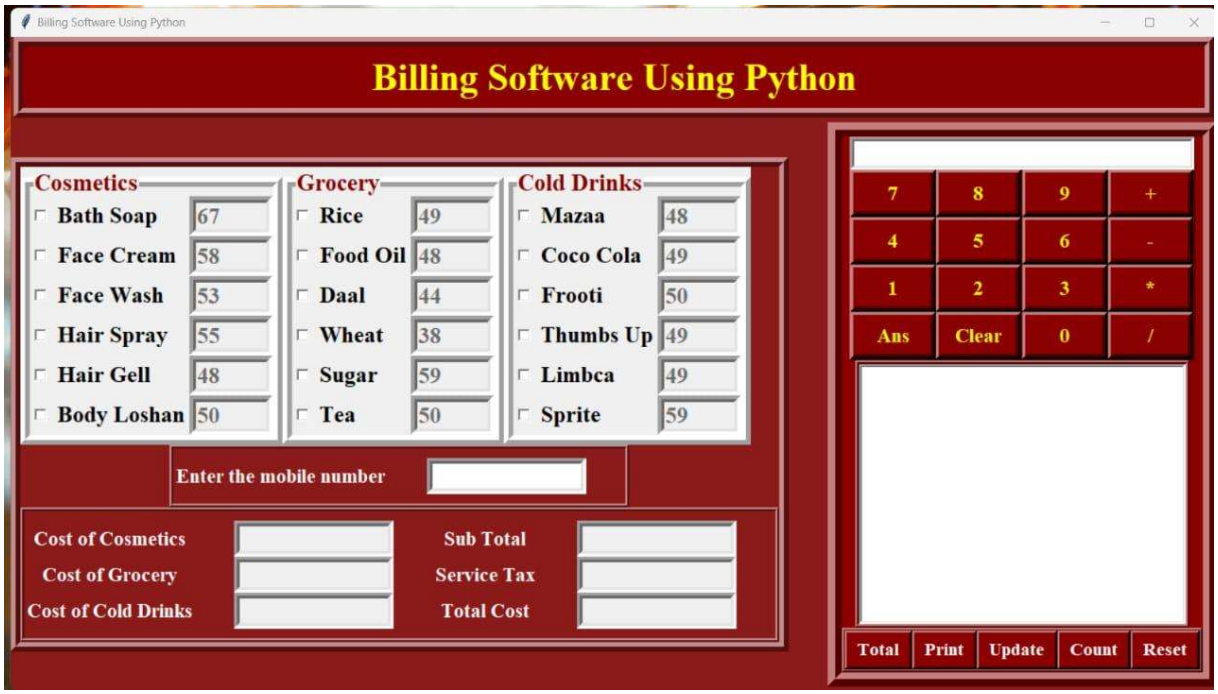
6)If we want to add the stock enter the quantity of the items which are going to be added and press update button.



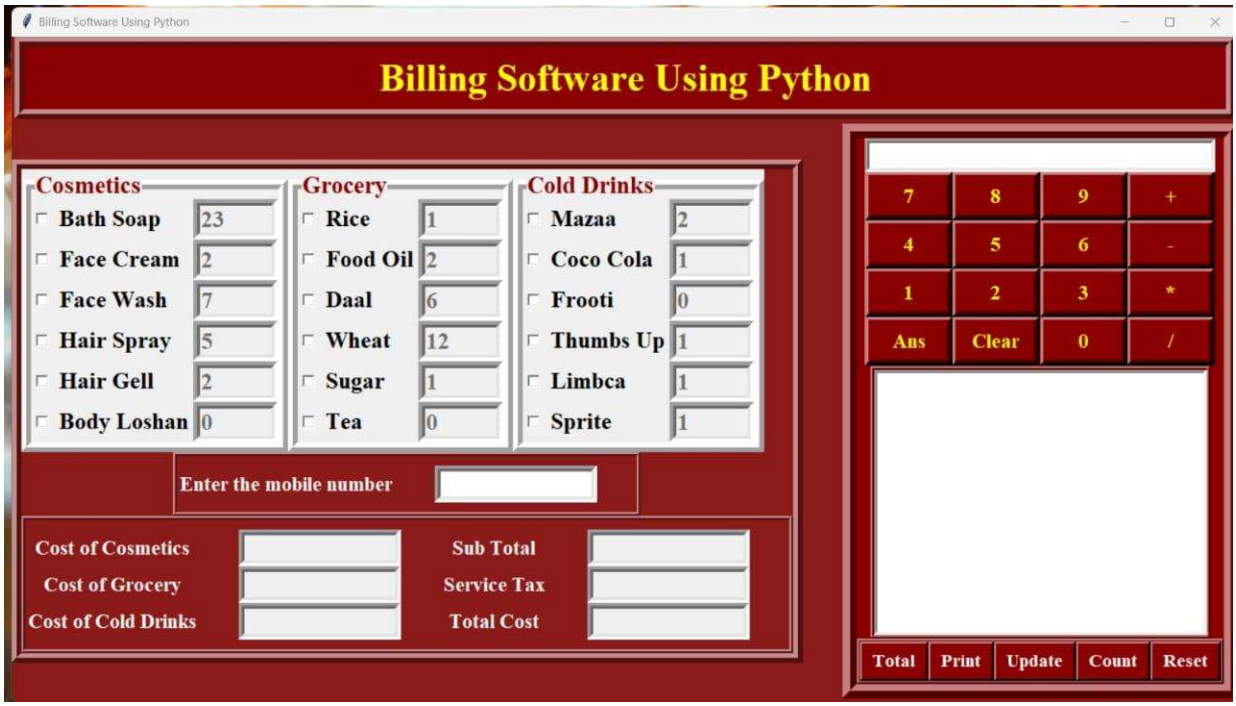
7)Stocks are updated successfully



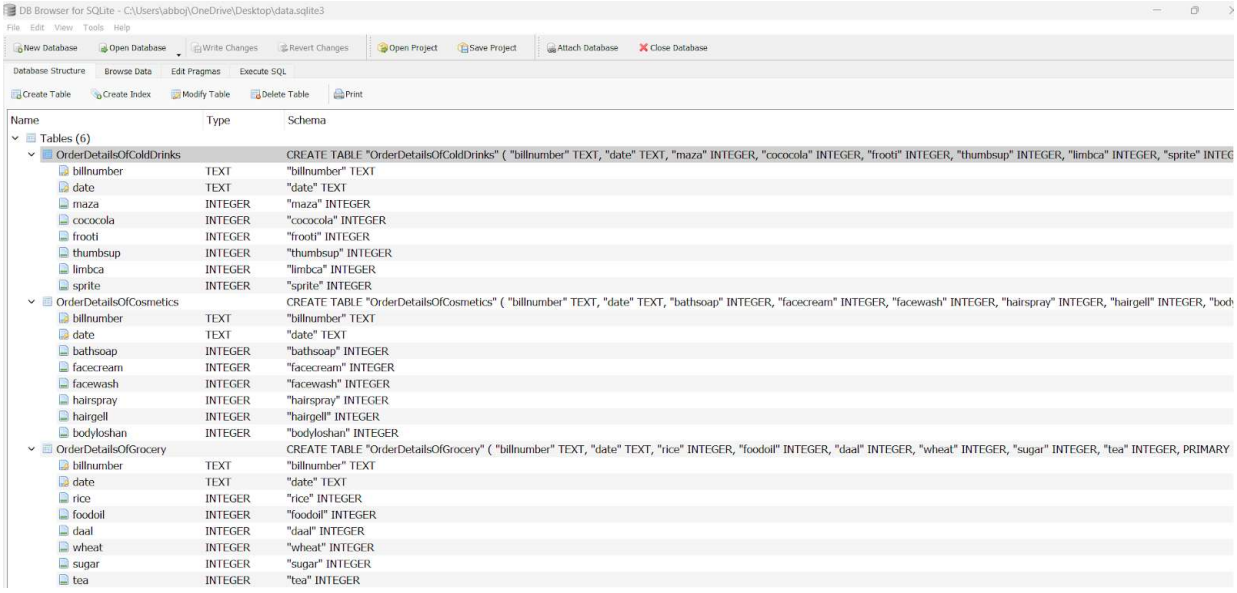
8)Displaying total quantity of stock available after updating.



9) Displaying the items sold in last month.



10) Schema of the tables OrderDetailsofColdDrinks, OrderDetailsofCosmetics OrderDetailsofGrocery. Quantities of the items sold for each transaction is recorded in these tables.



11) Schema of the tables Stock Details and data. In Stock details table we have price and stock quantity for each item and in data table we store bill number, phnno, date and cost of all subcategories and total cost with tax.

StockDetails		CREATE TABLE "StockDetails" ("id" INTEGER, "item" TEXT NOT NULL, "price" INTEGER, "stock" INTEGER, PRIMARY KEY("id" AUTOINCREMENT))
id	INTEGER	"id" INTEGER
item	TEXT	"item" TEXT NOT NULL
price	INTEGER	"price" INTEGER
stock	INTEGER	"stock" INTEGER
data		CREATE TABLE "data" ("billnumber" TEXT, "date" TEXT, "priceofCosmetics" INTEGER, "priceofGrocery" INTEGER, "priceofColddrinks" INTEGER, "subtotalofItems" INTEGER, "servicetaxvarofitem
billnumber	TEXT	"billnumber" TEXT
date	TEXT	"date" TEXT
priceofCosmetics	INTEGER	"priceofCosmetics" INTEGER
priceofGrocery	INTEGER	"priceofGrocery" INTEGER
priceofColddrinks	INTEGER	"priceofColddrinks" INTEGER
subtotalofItems	INTEGER	"subtotalofItems" INTEGER
servicetaxvarofitems	INTEGER	"servicetaxvarofitems" INTEGER
Total	INTEGER	"Total" INTEGER
phnno	TEXT	"phnno" TEXT
sqlite_sequence		CREATE TABLE sqlite_sequence(name,seq)

7. Future Works

1. Printing the bill directly.
2. Addition of more objects based on requirements.
3. Addition of Payment Gateway.
4. Storing Transaction (Order) details in blockchain.
5. Addition of ChatBot for Displaying cost of different dishes.

8. Conclusion

The urge for digital Billing Software Using Pythons is increasing day by date. Billing System Using Python is a perfect solution for this. Through this the ease of access and flexibility of the day-to-day work in the restaurant is made simpler. The features such as bill number, CGST and SGST make this software user-friendly. Both the management side and worker side can manage the data easily using such a system. It speaks about the details present in the bill. Manger can able to see current stock and count of ordered items in the past month. He can also able to update the stock. Both the management side and worker side can manage the data easily using such a system. We are able to print bills and also save data in the in a blockchain in near future.