THE HINDU SENIOR SECONDARY SCHOOL

TRIPLICANE, CHENNAI – 600005

COMPUTER SCIENCE PROJECT
2022 – 2023

NAME:

ROLL NO:

TOPIC: BANKING SYSTEM USING PYTHON AND MySQL CONNECTIVITY

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BONAFIDE CERTIFICATE

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Dated_____________ Signature of the teacher

(P.G.T in Computer Science)

School Seal

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Dated______________ Signature of External Examiner

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GOODWILL PHARMACY

-FOR QUALITY MEDICINAL DRUGS

Introduction:

This is a Medicine Billing Application by using Python-MYSQL to make this project. We have used Python Module Tkinter to Create GUI and MYSQL Connector to Connect to MYSQL Database. Here Python-Tkinter Works as a front-end and MySQL works as a back-end.

Abstract:

1. With some Alterations in the code, it can also be used in Hospitals to record Incoming and Outgoing Patients.
2. It can be used in Pharmacies to check the availability of drugs and check the retails of the day. It will help you keep track of the cash flow in your business.
3. It Gets the input medicine name from the Customer, generates a bill, and saves a copy in MYSQL DATABASE.

Objectives:

1. To Establish a Connection between MYSQL and Python.
2. To prepare GUI for Billing Application
3. To Code for the following functions:-
    i. DISPLAYING older bills from Database
    ii. ADDING new bills to Database
    iii. MODIFY the existing bill from Database
    iv. DELETING an Item from the Bill
    v. DELETING an Entire Bill from Database

Front-End: PYTHON

We have used Python Tkinter Module to create GUI & Python has a lot of GUI frameworks, but Tkinter is the only framework that's built into the Python standard library. Tkinter has several strengths.

It's cross-platform, so the same code works on Windows, macOS, and Linux. Visual elements are rendered using native operating system elements, so applications built with Tkinter look like they belong on the platform where they're run.

Tkinter is lightweight and relatively painless to use compared to other frameworks. This makes it a compelling choice for building GUI applications in Python, especially for applications where a modern sheen is unnecessary, and the top priority is to build something functional and cross-platform quickly.

Back-End: MYSQL

It is open source, Non pirated, reliable, compatible with all major hosting providers, cost-effective, and easy to manage. Many organizations are leveraging the data security and strong transactional support offered by MySQL to secure online transactions and enhance customer interactions.

The primary factor differentiating relational databases from other digital storage lies in how data is organized at a high level. Databases like MySQL contain records in multiple, separate, and highly codified tables, as opposed to a single all-encompassing repository, or collections of semi- or unstructured documents.

This allows RDBMSs to better optimize actions like data retrieval, updating information, or more complex actions like aggregations. A logical model is defined over all of the contents of the database, describing for example the values allowed in individual columns, characteristics of tables and views, or how indices from two tables are related.

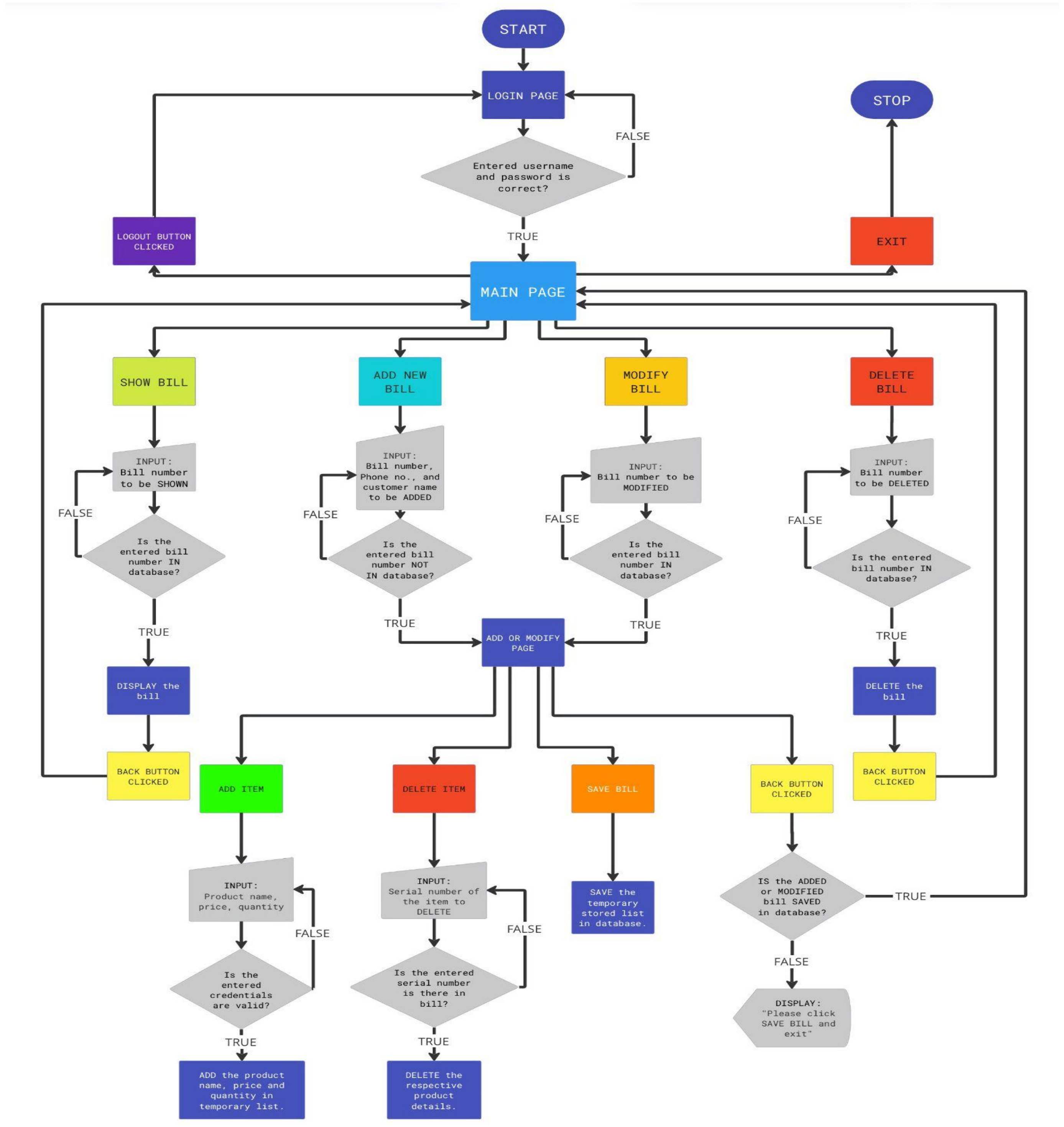
HARDWARE REQUIREMENT:

- CPU compatible with your OS(Arm 64-bit, x86 64-bit, etc. Preferably quad-core processor).
- Minimum of 4GB of RAM. (8GB is recommended).
- Minimum of 16GB of free storage.

SOFTWARE REQUIREMENTS:

- OS such as Linux, MacOS, Windows, etc.
- Python 3.7 version or above.
- Python modules such as ‘Tkinter’ and ‘MySQL connector’ which must be installed using a command prompt(on Windows OS) or terminal(on Linux and MacOS).
- MySQL database version 5.6, 5.7, 8.0, or greater.

Flow chart:


START
LOGIN PAGE
FALSE
Entered username and password is correct?
TRUE
STOP
LOGOUT BUTTON CLICKED
EXIT
MAIN PAGE
SHOW BILL
ADD NEW BILL
MODIFY BILL
DELETE BILL
INPUT: Bill number to be SHOWN
INPUT: Bill number, Phone no., and customer name to be ADDED
INPUT: Bill number to be MODIFIED
INPUT: Bill number to be DELETED
FALSE
FALSE
FALSE
FALSE
Is the entered bill number IN database?
Is the entered bill number NOT IN database?
Is the entered bill number IN database?
Is the entered bill number IN database?
TRUE
TRUE
TRUE
TRUE
ADD OR MODIFY PAGE
DISPLAY the bill
DELETE the bill
BACK BUTTON CLICKED
ADD ITEM
DELETE ITEM
SAVE BILL
BACK BUTTON CLICKED
BACK BUTTON CLICKED
INPUT: Product name, price, quantity
INPUT: Serial number of the item to DELETE
SAVE the temporary stored list in database.
IS the ADDED or MODIFIED bill SAVED in database?
TRUE
FALSE
FALSE
FALSE
Is the entered credentials are valid?
Is the entered serial number is there in bill?
DISPLAY: "Please click SAVE BILL and exit"
TRUE
TRUE
ADD the product name, price and quantity in temporary list.
DELETE the respective product details.

SOURCE CODE:

1. GUI and Python :

```
# importing all the required packages
from tkinter import *
from tkinter import messagebox, ttk
from database import *

# colors
black = "#000000"
white = "#FFFFFF"
red = "#FF0000"
green = "#00FF00"
blue = "#0066FF"
yellow = "#FFFF00"
cyan = "#00FFFF"
purple = "#A64DFF"
orange = "#FF8533"

# preping a window
root = Tk()
root.title("BILLING APP")
root.configure(background = black)

# setting an icon for the app
```

```
icon_image = PhotoImage(file = r"pharmacy icon.png")
root.tk.call('wm', 'iconphoto', root._w, icon_image)

# clearing all the widgets from the page to make room for the next page
def clear_page():
    for widget in root.grid_slaves():
        widget.destroy()



# command for the exit button
def exit():
    global exit_window
    exit_window = Tk()
    exit_window.title("EXIT")
    exit_label = Label(exit_window, text = "DO YOU WANT TO EXIT?")
    exit_label.grid(row = 0, column = 0, padx = 2, pady = 2, columnspan = 2)
    yes_button = Button(exit_window, text = "YES", borderwidth = 2, command = lambda :
destroy_app(1))
    yes_button.grid(row = 1, column = 0, padx = 2, pady = 2)
    no_button = Button(exit_window, text = "NO", background = black, foreground = white,
borderwidth = 2, command = lambda : destroy_app(0))
    no_button.grid(row = 1, column = 1, padx = 2, pady = 2)
# this function destroys the eintire app by closing the all the windows and quiting
def destroy_app(a):
    global root
    if a == 1:
        root.destroy()
        exit_window.destroy()
        quit()
    else:
        exit_window.destroy()



# destroying all the widgets in the left side frame
def clear_left_frame():
    for widgets in left_side_frame.winfo_children():
        widgets.destroy()


# we set the output_box state to disabled so that the user can't change anything in the output box
# It is only used to see the output bill
# changing the state from disabled to normal so that the system can edit the content in the output box
def clear_a_line_in_text_box(line):
    output_box.config(state = NORMAL)
    output_box.delete(float(line), float(line + 1))
    output_box.config(state = DISABLED)


def clear_the_entire_text_box():
    output_box.config(state = NORMAL)
    output_box.delete(1.0, END)
    output_box.config(state = DISABLED)


def clear_entire_text_box_from_start_line(line):
    output_box.config(state = NORMAL)
    output_box.delete(float(line), END)
    output_box.config(state = DISABLED)


def display_in_output_box(string, position = -1):
    output_box.config(state = NORMAL)
    output_box.insert(f"end {position} chars", string)
    output_box.config(state = DISABLED)


def get_entire_text_box():
    return output_box.get(1.0, END)


# login gui for the user with login button.
def login_gui():
    # entry boxes for username and password and passing the parameters to the button
function
    # this is for clearing the page when the login button is pressed
    try:
        clear_page()
    except:
        pass
    username_name_label = Label(root, text = "Username:", foreground = white, background =
black)
    username_name_label.grid(row = 0, column = 0, padx = 4, pady = 4, sticky = EW)


    global username_name_entry
    username_name_entry = Entry(root)
    username_name_entry.grid(row = 0, column = 1, padx = 4, pady = 4)


    password_label = Label(root, text = "Password:", foreground = white, background = black)
    password_label.grid(row = 1, column = 0, padx = 4, pady = 4, sticky = EW)


    global password_entry
    password_entry = Entry(root, show = "*")
    password_entry.grid(row = 1, column = 1, padx = 4, pady = 4)


    login_button = Button(root, text = "LOGIN", foreground = black, background = green
,command = lambda : login_button_func(username_name_entry.get(), password_entry.get()))
    login_button.grid(row = 3, column = 1, padx = 4, pady = 4, sticky = E)


# login code to execute to authenticate the username  and the password entered by the user
def login_button_func(username_input, password_input):


    if authentication(username_input, password_input):
        # savind the username to know who made pa bill
        global username
        username = username_name_entry.get()


        # wiping the entire page and changing the gui to the mainpage
        clear_page()


        # creating two frames to sperate the output box and all the buttons and lables
        global left_side_frame
        global right_side_frame


        left_side_frame = Frame(root, background = black)
        right_side_frame = Frame(root, background = black)
        left_side_frame.grid(row=0, column=0)
        right_side_frame.grid(row=0, column=1)
        main_page()
    else:
        # error pop up,clear the entry widgets ask the user to re-enter all the creadentials
        messagebox.showerror("ACCESS DENIED!!","Wrong username or password entered!")
        password_entry.delete(0, END)
        username_name_entry.delete(0, END)

# creating main page where user can access all the commands like "new bill"
def main_page():

    clear_left_frame()
    # clear_the_entire_text_box()

    # getting data of main_bill from database.
    global database_bill_no
    database_bill_no = get_bill_no()

    global extra_bill_no
    extra_bill_no = [num for num in range(1, 10001) if num not in database_bill_no]

    global main_bill_raw
    main_bill_raw = get_main_bill()

    # LEFT FRAME
    home_label = Label(left_side_frame, text = "HOME", width = 30, height = 5, background =
black, foreground = orange, font = (100))
```

```
    home_label.grid(row = 0, column = 0 , padx = 10 , pady = 20, sticky = EW)

    show_bill_button = Button(left_side_frame, text = "SHOW A BILL", width = 25, background
= green, foreground = black, command = lambda : show_bill_page())
    show_bill_button.grid(row = 1, column = 0, padx = 10, pady = 20)

    add_bill_button = Button(left_side_frame, text = "ADD A NEW BILL" , width = 25,
background = cyan, foreground = black, command = lambda : add_bill_page())
    add_bill_button.grid(row = 2, column = 0, padx = 10, pady = 20)

    modify_bill_button = Button(left_side_frame, text = "MODIFY A BILL", width = 25,
background = orange, foreground = black, command = lambda : modify_bill_page())
    modify_bill_button.grid(row = 3, column = 0, padx = 10, pady = 20)

    delete_bill_button = Button(left_side_frame, text = "DELETE A BILL", width = 25,
background = red, foreground = black, command = lambda : delete_bill_page())
    delete_bill_button.grid(row = 4, column = 0, padx = 10, pady = 20)

    exit_button = Button(left_side_frame, text = "EXIT", background = red , foreground = black,
command = lambda : exit())
    exit_button.grid(row = 5, column = 0, sticky = W, padx = 10, pady = 20)

    log_out_button = Button(left_side_frame, text = "LOGOUT", background = purple,
foreground = black, command = lambda : login_gui())
    log_out_button.grid(row = 5, column = 0, sticky = E, padx = 10, pady = 20)

    # RIGHT FRAME
    global output_box
    output_box = Text(right_side_frame, width = 95, height = 30, background = white,
foreground = black, state = DISABLED)
    output_box.grid(column = 0, row = 0, padx = 5, pady = 5)

    # show the main bill in the output box
    text = """+-------------+--------------------------+-----------------+--------------+-----------------+
| BILL NUMBER | CUSTOMER NAME             | PHONE NO.       | TOTAL        | BILLER
NAME      |
+-------------+--------------------------+-----------------+--------------+-----------------+\n"""

    for items in main_bill_raw:
        text += f"| {items[0]}{((11 - len(str(items[0]))) * ' ')} "
        text += f"| {items[1]}{((25 - len(str(items[1]))) * ' ')} "
        text += f"| {items[2]}{((15 - len(str(items[2]))) * ' ')} "
        text += f"| {items[3]}{((12 - len(str(items[3]))) * ' ')} "
        text += f"| {items[4]}{((15 - len(str(items[4]))) * ' ')} "
        text += "|\n|-------------+--------------------------+-----------------+-------------+-----------------|\n"
    text = text[0:len(text)-95]
    text += "+-------------+--------------------------+-----------------+--------------+-----------------+"

    display_in_output_box(text)

# this page is to show the desired bill entered by the user
def show_bill_page():
    # destroying all widgets in left frame to make room for new widgets
    clear_left_frame()
    show_bill_page_label = Label(left_side_frame, text = "SHOW BILL", background = black,
foreground = orange, font = (100))
    show_bill_page_label.grid(row = 0, column = 0, columnspan = 3, padx = 10, pady = 20,
sticky = N)

    input_label = Label(left_side_frame, text = "Enter the bill number to display", background =
black, foreground = white)
    input_label.grid(row = 1, column = 1, padx = 5, pady = 15, sticky = EW)

    global select_number
    select_number = StringVar()
    input_bill_no = ttk.Combobox(left_side_frame, textvariable = select_number, values =
database_bill_no, state = "readonly")
    input_bill_no.grid(row = 2,column=1, padx = 5, pady = 15, sticky = EW)

    display_button = Button(left_side_frame,text = "DISPLAY BILL",background = green
,foreground = black, command = lambda : show_bill_in_text_box())
    display_button.grid(row = 3,column = 1, padx = 5, pady = 11, sticky = EW)

    print_button = Button(left_side_frame, text = "PRINT BILL", background = blue, foreground
= black, command = lambda : print_bill())
    print_button.grid(row = 4, column = 1, padx = 5, pady = 15 ,sticky = EW)

    exit_button = Button(left_side_frame, text = "EXIT", background = red , foreground = black,
command = lambda : exit())
    exit_button.grid(row = 4, column = 0, padx = 5, pady = 15, sticky = W)

    back_button = Button(left_side_frame, text = "BACK", background = purple, foreground =
black, command = lambda : main_page())
    back_button.grid(row = 4, column = 2, padx = 5, pady = 15, sticky = E)
```

```
# validates whether the given bill is there in the database and the entered bill is an integer
def show_bill_in_text_box():
    try:
        global display_bill_no
        display_bill_no = int(select_number.get())

        global display_bill
        display_bill = get_customer_bill(display_bill_no)

        details = get_customer_name_and_phone_number(display_bill_no)

        # SHOWING THE BILL
        text = f"CUSTOMER NAME : {details[1]}\nPHONE NUMBER : {details[2]}\nBILL
NUMBER : {display_bill_no}\nBILLER NAME : {details[4]}\n\n"
        text += """+------+-------------------------------------+--------+-----+-----------+
| S.NO | PRODUCT NAME                        | PRICE  | QTY | TOTAL     |
+------+-------------------------------------+--------+-----+-----------+\n"""

        grand_tot = 0
        for i in range(len(display_bill)):

            text += f"| {i + 1}.{((3 - len(str(i + 1))) * ' ')} "
            text += f"| {display_bill[i][0]}{((35 - len(str(display_bill[i][0]))) * ' ')} "
            text += f"| {display_bill[i][1]}{((6 - len(str(display_bill[i][1]))) * ' ')} "
            text += f"| {display_bill[i][2]}{((3 - len(str(display_bill[i][2]))) * ' ')} "
            text += f"| {display_bill[i][3]}{((9 - len(str(display_bill[i][3]))) * ' ')} "
            text += "|\n|------+------------------------------------+--------+-----+-----------|\n"
            grand_tot += display_bill[i][3]

        text = text[0:len(text)-75]
        text += f"""\n+------+------------------------------------+--------+-----+-----------+
|                                               GRAND TOTAL : {grand_tot}{((10 - len(str(grand_tot))) * ' ')}|
+---------------------------------------------------------------------+"""

        # making room for the desired output
        clear_the_entire_text_box()
        # displaying the bill in the output box
        display_in_output_box(text)
    except:
        pass

def print_bill():
    file = open(f"BILL {display_bill_no}", "w")
    # pharmacy name
    # file.write(f"")
    file.write(get_entire_text_box())
    file.close()




def add_bill_page():

    # destroying all the widgets in the left side frame
    clear_left_frame()

    # displaying all the widgets for getting customer name, phone number, bill number
    add_bill_page_label = Label(left_side_frame, text = "ADD A NEW BILL", background =
black, foreground = orange, font = (100))
    add_bill_page_label.grid(row = 0, column = 0, columnspan = 2, padx = 10, pady = 20,
sticky = N)

    label_customer_name = Label(left_side_frame, text = "Customer Name:", foreground =
white, background = black)
    label_customer_name.grid(row = 1, column = 0, padx = 10, pady = 20, sticky = NS)

    global customer_name_entry
    customer_name_entry = Entry(left_side_frame)
    customer_name_entry.grid(row = 1, column = 1, padx = 10, pady = 20)

    label_phone_number = Label(left_side_frame, text = "Phone Number:", foreground = white,
background = black)
    label_phone_number.grid(row = 2, column = 0, padx = 10, pady = 20, sticky = NS)

    global phone_number_entry
    phone_number_entry = Entry(left_side_frame)
    phone_number_entry.grid(row = 2, column = 1, padx = 10, pady = 20)

    create_new_bill_button = Button(left_side_frame, text = "CREATE NEW BILL", background
= green, foreground = black, command = lambda : add_validation())
    create_new_bill_button.grid(row = 4, column = 0, columnspan = 2, padx = 10, pady = 20)
    exit_button = Button(left_side_frame, text = "EXIT", background = red , foreground = black,
command = lambda : exit())
    exit_button.grid(row = 5, column = 0, sticky = W, padx = 10, pady = 20)

    back_button = Button(left_side_frame, text = "BACK", background = purple, foreground =
black, command = lambda : main_page())
    back_button.grid(row = 5, column = 1, sticky = E, padx = 10, pady = 20)



def add_validation():

    # this function is to validate whether the given credentials are correct
    global customer_name
    global phone_number
    global bill_number

    customer_name = customer_name_entry.get().lstrip().rstrip()
    phone_number = phone_number_entry.get().lstrip().rstrip()
    bill_number = extra_bill_no.pop(0)

    message = ""

    # making sure the given credentials are of correct length and data type
    if str(bill_number).isnumeric() == False or bill_number in database_bill_no or
len(customer_name) > 15 or len(str(bill_number)) > 10 or len(phone_number) > 15 or
customer_name == "" or phone_number == "":

        if bill_number in database_bill_no:
            message += "#  Bill no. already exist!\n"
        if len(customer_name) > 15:
            message += "#  Customer name has greater than 15 characters!\n"
        if len(str(bill_number)) > 10:
            message += "#  Bill no. has greater than 10 characters!\n"
        if len(phone_number) > 15:
            message += "#  Phone no. has greater than 15 characters!"

        # informing user about the invalid input given
        messagebox.showwarning(title = "INVALID INPUTS!!", message = message)

    else:
        # next operation page
        customer_name = customer_name.title()
        add_modify_operation_page("add")



# this page is used by both add and modify section of code
# with few alteration we can change the code by passing different parameter
def add_modify_operation_page(add_or_modify):

    # cleaning the left frame to add new widgets and clearing the right output textbox to
    # display the bill items and list them
    clear_left_frame()
    clear_the_entire_text_box()

    # widgets for left frame
    add_bill_page_label = Label(left_side_frame, text = "ADD A NEW BILL", background =
black, foreground = orange, font = (100))
    add_bill_page_label.grid(row = 0, column = 0, columnspan = 2, padx = 10, pady = 15,
sticky = N)

    label_product_name = Label(left_side_frame, text = "Product name:", foreground = white,
background = black)
    label_product_name.grid(row = 1, column = 0, padx = 10 , pady = 15)

    global entry_product_name
    entry_product_name = Entry(left_side_frame)
    entry_product_name.grid(row = 1, column = 1, padx = 10 , pady = 15)

    label_product_price = Label(left_side_frame, text = "Product Price:", foreground = white,
background = black)
    label_product_price.grid(row = 2, column = 0, padx = 10 , pady = 15)

    global entry_product_price
    entry_product_price = Entry(left_side_frame)
    entry_product_price.grid(row = 2, column = 1, padx = 10 , pady = 15)

    label_product_quantity = Label(left_side_frame, text = "Quantity:", foreground = white,
background = black)
    label_product_quantity.grid(row = 3, column = 0, padx = 10 , pady = 15)

    global entry_product_quantity
    entry_product_quantity = Entry(left_side_frame)
    entry_product_quantity.grid(row = 3, column = 1, padx = 10 , pady = 15)
    add_product_button = Button(left_side_frame, text = "ADD PRODUCT", foreground =
black, background = green, command = lambda : add_product_function_validation())
    add_product_button.grid(row = 4, column = 0, columnspan = 2, sticky = EW, padx = 10 ,
pady = 15)

    delete_product_label = Label(left_side_frame, text = "Enter the S.No to remove :",
foreground = white, background = black)
    delete_product_label.grid(row = 5, column = 0, columnspan = 2, sticky = W, padx = 10 ,
pady = 15)

    global delete_product_entry
    delete_product_entry = Entry(left_side_frame, width = 10)
    delete_product_entry.grid(row = 5, column = 0, columnspan = 2, sticky = E, padx = 10 ,
pady = 15)

    delete_product_button = Button(left_side_frame, text = "DELETE PRODUCT", foreground
= black, background = cyan, command = lambda :
delete_an_item(delete_product_entry.get()))
    delete_product_button.grid(row = 6, column = 0, columnspan = 2, sticky = EW, padx = 10 ,
pady = 15)

    save_button = Button(left_side_frame, text = "SAVE BILL", width = 5, foreground = black,
background = orange, command = lambda : save_bill_database())
    save_button.grid(row = 7, column = 0, columnspan = 2, padx = 10, pady = 15, sticky = EW)

    exit_button = Button(left_side_frame, text = "EXIT", background = red , foreground = black,
command = lambda : exit())
    exit_button.grid(row = 8, column = 0, padx = 10, pady = 15, sticky = W)
    back_button = Button(left_side_frame, text = "BACK", background = purple, foreground = 
black, command = lambda : back_button_validation())
    back_button.grid(row = 8, column = 1, padx = 10, pady = 15, sticky = E)



    # preparing for the output box
    global text
    text = """+------+------------------------------------+--------+-----+-----------+
| S.NO | PRODUCT NAME                        | PRICE  | QTY | TOTAL     |
+------+------------------------------------+--------+-----+-----------+\n"""

    global serial_no
    global grand_total
    global products
    global price
    global quantity
    global total
    serial_no, grand_total, products, price, quantity, total = 0, 0, [], [], [], []

    # by passing different parameter we can choose between modify and add functions
    if add_or_modify == "modify":

        customer_bill = get_customer_bill(bill_number)
        for i in range(len(customer_bill)):

            text += f"| {i + 1}.{((3 - len(str(i + 1))) * ' ')} "
            text += f"| {customer_bill[i][0]}{((35 - len(str(customer_bill[i][0]))) * ' ')} "
            text += f"| {customer_bill[i][1]}{((6 - len(str(customer_bill[i][1]))) * ' ')} "
            text += f"| {customer_bill[i][2]}{((3 - len(str(customer_bill[i][2]))) * ' ')} "
            text += f"| {customer_bill[i][3]}{((9 - len(str(customer_bill[i][3]))) * ' ')} "
            text += "|\n|------+------------------------------------+--------+-----+-----------|\n"

            serial_no += 1
            grand_total += customer_bill[i][1] * customer_bill[i][2]
            products.append(customer_bill[i][0])
            price.append(customer_bill[i][1])
            quantity.append(customer_bill[i][2])
            total.append(customer_bill[i][3])

        text = text[0:len(text)-74]

    text += f"""+------+------------------------------------+--------+-----+-----------+
|                                    GRAND TOTAL : {grand_total}{((10 - len(str(grand_total))) * ' ')}|
+---------------------------------------------------------------------+"""

    display_in_output_box(text)

    # this remainds the user to save the bill before leaving to home page
    # there is a function in save_bill command to implement.
    global remind_save_bill
    remind_save_bill = False


# validates whether the entered credentials is valid
def add_product_function_validation():
    global product_name
    global product_price
    global product_quantity

    product_name = entry_product_name.get().lstrip().rstrip().title()
    product_price = entry_product_price.get().lstrip().rstrip()
    product_quantity = entry_product_quantity.get().lstrip().rstrip()

    global grand
    grand = True

    text = ""
    if len(str(serial_no)) > 4 or len(product_name) > 35 or product_price.isnumeric() == False or
len(str(product_price)) > 6 or product_quantity.isnumeric() == False or
len(str(product_quantity)) > 3 or (int(grand_total) + (int(product_price) *
(int(product_quantity)))) > 9999999999:
        if len(str(serial_no)) > 4:
            text += "#  Only 9999 products can be stored in a bill.\n"

        if len(product_name) > 35:
            text += f"#  Reduce the name of product by {len(product_name) - 35} characters.\n"

        if product_price.isnumeric() == False:
            text += "#  Price cannot take alphabets of any special characters.\n"
            grand = False
        else:
            product_price = int(product_price)
        if len(str(product_price)) > 6:
            text += "#  Price can take value upto 9,99,999.\n"

        if product_quantity.isnumeric() == False:
            text += "#  Price cannot take alphabets of any special characters.\n"
            grand = False
        else:
            product_quantity = int(product_quantity)

        if len(str(product_quantity)) > 3:
            text += "#  Price can take value upto 999.\n"

        if grand_total + (product_price * product_quantity) > 9999999999:
            text += "#  Grand total cannot take value greater than 999,99,99,999. Click save bill
and make a new bill.\n"

        # informing the user about the error
        messagebox.showerror("ERROR", text)
    else:
        add_product_function()# checking whether the given bill no is there in database



def add_product_function():

    global serial_no, grand_total, product_quantity, product_price

    # type casting the required variables
```

```
product_quantity = int(product_quantity)
product_price = int(product_price)

# adding all the necessary details to the list
products.append(product_name)
price.append(product_price)
quantity.append(product_quantity)
total_price = product_price * product_quantity
total.append(total_price)

serial_no += 1
grand_total += total_price

# clearing the required lines to accommodate for the added item
if serial_no > 2:

    clear_a_line_in_text_box(serial_no * 2 + 1)
    clear_a_line_in_text_box(serial_no * 2 + 1)
    clear_a_line_in_text_box(serial_no * 2 + 1)
else:
    clear_a_line_in_text_box(serial_no + 3)
    clear_a_line_in_text_box(serial_no + 3)
    clear_a_line_in_text_box(serial_no + 3)

# making text for displaying output
text = ""
```

```
    if serial_no > 1:

        text += "\n|------+-------------------------------------+--------+-----+-----------|"

    text += f"\n| {serial_no}.{((3 - len(str(serial_no))) * ' ')} "
    text += f"| {product_name}{((35 - len(str(product_name))) * ' ')} "
    text += f"| {product_price}{((6 - len(str(product_price))) * ' ')} "
    text += f"| {product_quantity}{((3 - len(str(product_quantity))) * ' ')} "
    text += f"| {total_price}{((9 - len(str(total_price))) * ' ')} |"

    display_in_output_box(text)

    text = f"""\n+------+-------------------------------------+--------+-----+-----------+
|                                               GRAND TOTAL : {grand_total}{((10 - len(str(grand_total))) * ' ')}|
+-----------------------------------------------------------------------+"""

    display_in_output_box(text)

    # changing the value to true to remind the user to save bill
    global remind_save_bill
    remind_save_bill = True

    entry_product_name.delete(0, END)
    entry_product_price.delete(0, END)
    entry_product_quantity.delete(0, END)
```

```
def delete_an_item(s_number):

    global serial_no
    global grand_total

    try:
        # making the entered number positive even if the entered number is negative
        s_number = int(s_number).__abs__()
        if s_number <= serial_no:

            # clearing the line according to the serial no entered by the user
            if s_number < 2 :
                clear_entire_text_box_from_start_line(3 + s_number)
            else:
                clear_entire_text_box_from_start_line((s_number * 2) + 2)

            # deleting the items from the lists
            del products[s_number - 1]
            del price[s_number - 1]
            del quantity[s_number - 1]
            grand_total -= total[s_number - 1]
            del total[s_number - 1]
            serial_no -= 1

            # preparing new test for output
            text = "\n"
            try:
                for i in range(s_number - 1, len(products)):
                    text += f"| {i + 1}.{((3 - len(str(i + 1))) * ' ')} "
                    text += f"| {products[i]}{((35 - len(str(products[i]))) * ' ')} "
                    text += f"| {price[i]}{((6 - len(str(price[i]))) * ' ')} "
                    text += f"| {quantity[i]}{((3 - len(str(quantity[i]))) * ' ')} "
                    text += f"| {total[i]}{((9 - len(str(total[i]))) * ' ')} "
                    text += "|\n|------+-----------------------------------+--------+-----+-----------|\n"

            except:
                pass
            text += f"""|                                   GRAND TOTAL : {grand_total}{((10 -
len(str(grand_total))) * ' ')}|
+------+-----------------------------------+--------+-----+-----------+"""

            display_in_output_box(text)

            global remind_save_bill
            remind_save_bill = True
        else:
            messagebox.showerror("ERROR", "ENTERED NUMBER EXCEEDS SERIAL
NUMBER")
            delete_product_entry.delete(0, END)

    except:
        messagebox.showerror("ERROR", "CANNOT FIND THE SERIAL NUMBER TO
DELETE")
        delete_product_entry.delete(0, END)
    delete_product_entry.delete(0, END)
```

```
# validate for back button
def back_button_validation():

    global remind_save_bill

    if remind_save_bill:
        messagebox.showwarning("WARNING", "BILL IS NOT SAVED IN THE
DATABASE!\nCLICK 'SAVE BILL' TO SAVE")
    else:
        main_page()

def save_bill_database():

    global database_bill_no

    if bill_number not in database_bill_no:

        create_a_new_bill(bill_number, customer_name, phone_number, grand_total, username)
        database_bill_no = get_bill_no()
    else:
        delete_records(bill_number)

    save_bill(bill_number, products, price, quantity, total, grand_total)

    global remind_save_bill
    remind_save_bill = False
```

```
def modify_bill_page():

    # clearing left frame for new widgets
    clear_left_frame()

    modify_bill_page_label = Label(left_side_frame, text = "MODIFY BILL", background =
black, foreground = orange, font = (100))
    modify_bill_page_label.grid(row = 0, column = 0, columnspan = 3, padx = 10, pady = 20,
sticky = N)

    modify_input_label = Label(left_side_frame, text = "Select the bill number to
modify",background = black, foreground = white)
    modify_input_label.grid(row = 1,column = 1, padx = 5,pady = 15, sticky = EW)

    global modify_number
    modify_number = StringVar()
    modify_input_bill_no = ttk.Combobox(left_side_frame, textvariable = modify_number,
values = database_bill_no, state = "readonly")
    modify_input_bill_no.grid(row = 2,column = 1, padx = 5,pady = 15, sticky = EW)

    modify_button = Button(left_side_frame,text = "MODIFY BILL",background = orange
,foreground = black, command = lambda : modify_bill_validation())
    modify_button.grid(row = 3,column = 1, padx = 5,pady = 15, sticky = EW)

    exit_button = Button(left_side_frame, text = "EXIT", background = red , foreground = black,
command = lambda : exit())
    exit_button.grid(row = 4, column = 0, padx = 5, pady = 15, sticky = W)
    back_button = Button(left_side_frame, text = "BACK", background = purple, foreground = 
black, command = lambda : main_page())
    back_button.grid(row = 4, column = 2, padx = 5, pady = 15, sticky = E)



# validation for modify page
def modify_bill_validation():

    try:
        modify_bill_number = int(modify_number.get())

        global bill_number
        bill_number = modify_bill_number
        add_modify_operation_page("modify")

    except:
        pass



def delete_bill_page():
    # clearing left frame for new widgets
    clear_left_frame()

    delete_bill_page_label = Label(left_side_frame, text = "DELETE BILL", background = black, 
foreground = orange, font = (100))
    delete_bill_page_label.grid(row = 0, column = 0, columnspan = 3, padx = 10, pady = 20, 
sticky = N)
```

```
    del_input_label = Label(left_side_frame, text = "Select the bill number to
delete",background = black, foreground = white)
    del_input_label.grid(row = 1, column = 1, padx = 5,pady = 15, sticky = EW)


    global delete_number
    delete_number = StringVar()
    del_input_bill_no = ttk.Combobox(left_side_frame, textvariable = delete_number, values =
database_bill_no, state = "readonly")
    del_input_bill_no.grid(row = 2, column = 1, padx = 5,pady = 15, sticky = EW)


    delete_button = Button(left_side_frame,text = "DELETE BILL",background = cyan
,foreground = black, command = lambda : delete_bill_validation())
    delete_button.grid(row = 3,column = 1, padx = 5,pady = 15, sticky = EW)


    exit_button = Button(left_side_frame, text = "EXIT", background = red , foreground = black,
command = lambda : exit())
    exit_button.grid(row = 4, column = 0, padx = 5, pady = 15, sticky = W)


    back_button = Button(left_side_frame, text = "BACK", background = purple, foreground =
black, command = lambda : main_page())
    back_button.grid(row = 4, column = 2, padx = 5, pady = 15, sticky = E)



def delete_bill_validation():


    try:
        delete_bill_number = int(delete_number.get())
        delete_customer_bill(delete_bill_number)
        # clearing the output box for main page
        clear_the_entire_text_box()
        main_page()

    except:
        pass



login_gui()
root.mainloop()
```

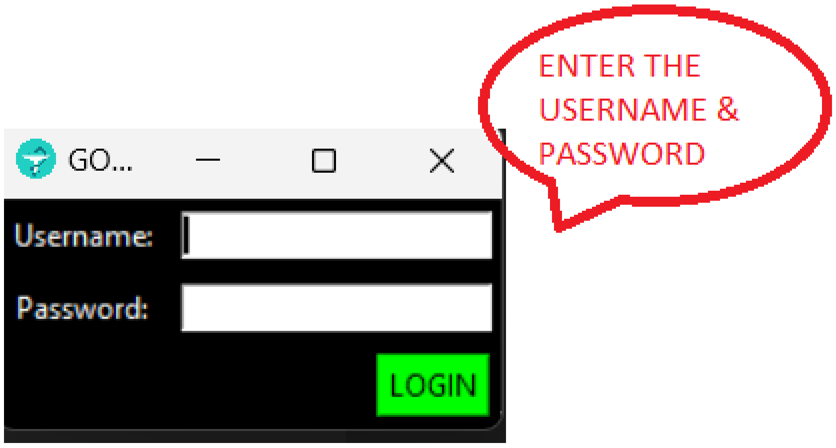
2. DATABASE (MYSQL):

```
import mysql.connector


#authentication for the billing person
def authentication(username, password):
    try:
        global mysql_con
        mysql_con = mysql.connector.connect(host = "localhost", user = username, password = 
password, db = "billing_app")


        global mysql_cursor
        mysql_cursor = mysql_con.cursor()
        return True


    except:
        return False


def get_bill_no():
    mysql_cursor.execute("SELECT bill_no FROM main_bill")
    tmp_list = []


    for number in mysql_cursor.fetchall():
        tmp_list.append(number[0])


    return tmp_list
```

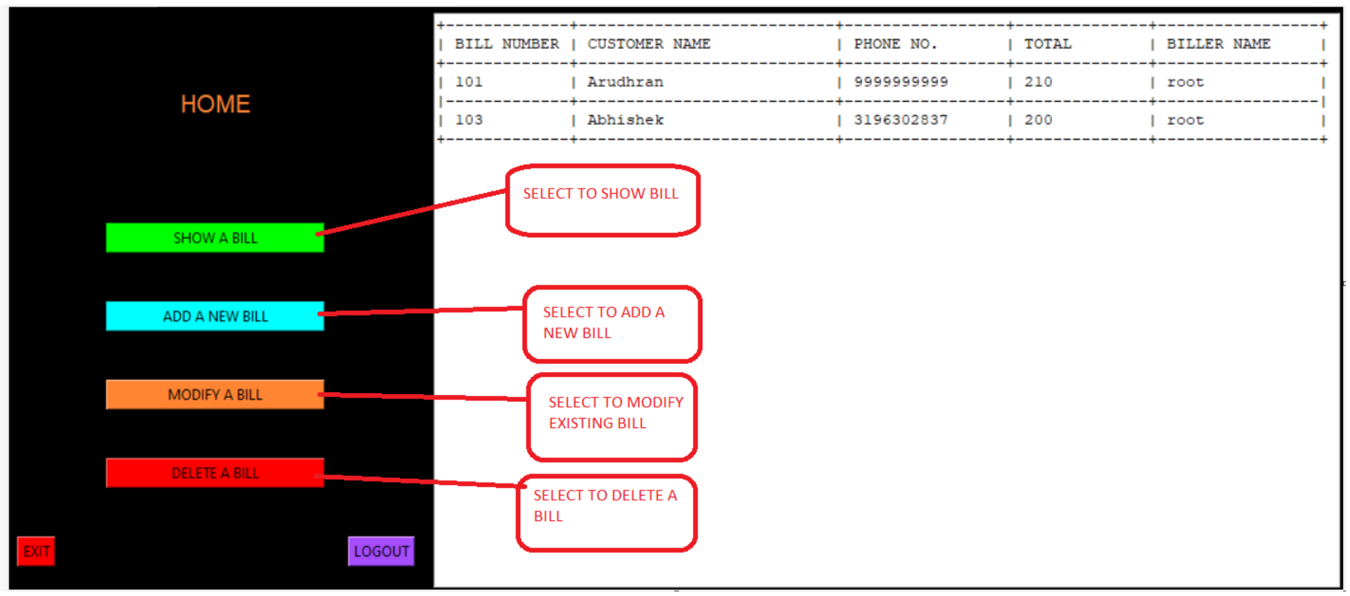
```
def get_main_bill():
    mysql_cursor.execute("SELECT * FROM main_bill")
    return mysql_cursor.fetchall()

def create_a_new_bill(bill_no, customer, phone, total, biller):
    mysql_cursor.execute(f"CREATE TABLE bill_{bill_no}(item_name varchar(35), price int,
quantity int, total int)")
    mysql_con.commit()


    mysql_cursor.execute(f"INSERT INTO main_bill VALUES({bill_no}, '{customer}', '{phone}',
'{total}', '{biller}')")
    mysql_con.commit()

def get_customer_bill(bill_no):
    mysql_cursor.execute(f"SELECT * FROM bill_{bill_no}")
    return mysql_cursor.fetchall()

def get_customer_name_and_phone_number(bill_no):
    mysql_cursor.execute(f"SELECT * FROM main_bill where bill_no = {bill_no}")
    return mysql_cursor.fetchall()[0]

def delete_customer_bill(bill_no):
    mysql_cursor.execute(f"DROP TABLE bill_{bill_no}")
    mysql_cursor.execute(f"DELETE FROM main_bill where bill_no = {bill_no}")
    mysql_con.commit()

def save_bill(bill_no, products, price, quantity, total, grand_total):
    for i in range(len(products)):
        mysql_cursor.execute(f"INSERT INTO bill_{bill_no} VALUES('{products[i]}', {price[i]},
{quantity[i]}, {total[i]})")
        mysql_con.commit()

    mysql_cursor.execute(f"UPDATE main_bill SET total = {grand_total} WHERE bill_no =
{bill_no}")
    mysql_con.commit()

def delete_records(bill_no):
    mysql_cursor.execute(f"DELETE FROM bill_{bill_no}")
    mysql_con.commit()
```

OUTPUT SCREENSHOTS:

i) Enter the Username and Password

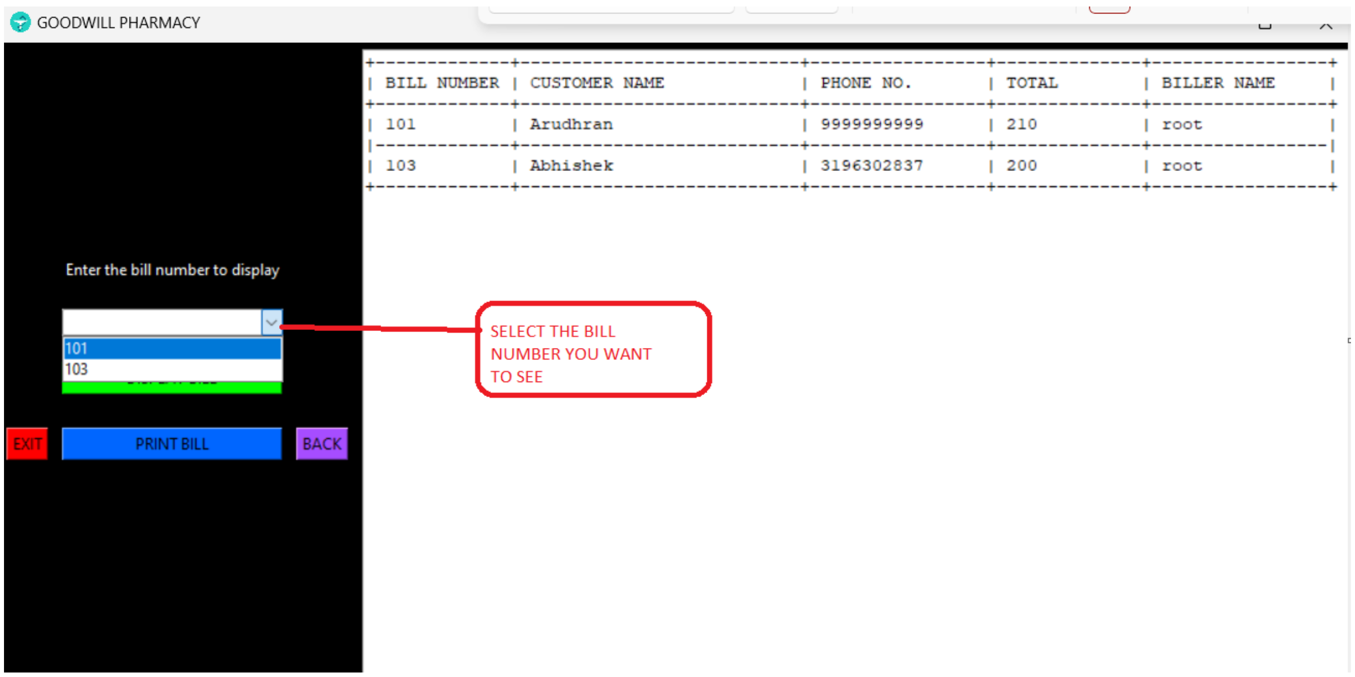


ii) The window here, is used to access the bill, i.e To DELETE, ADD, SHOW & MODIFY



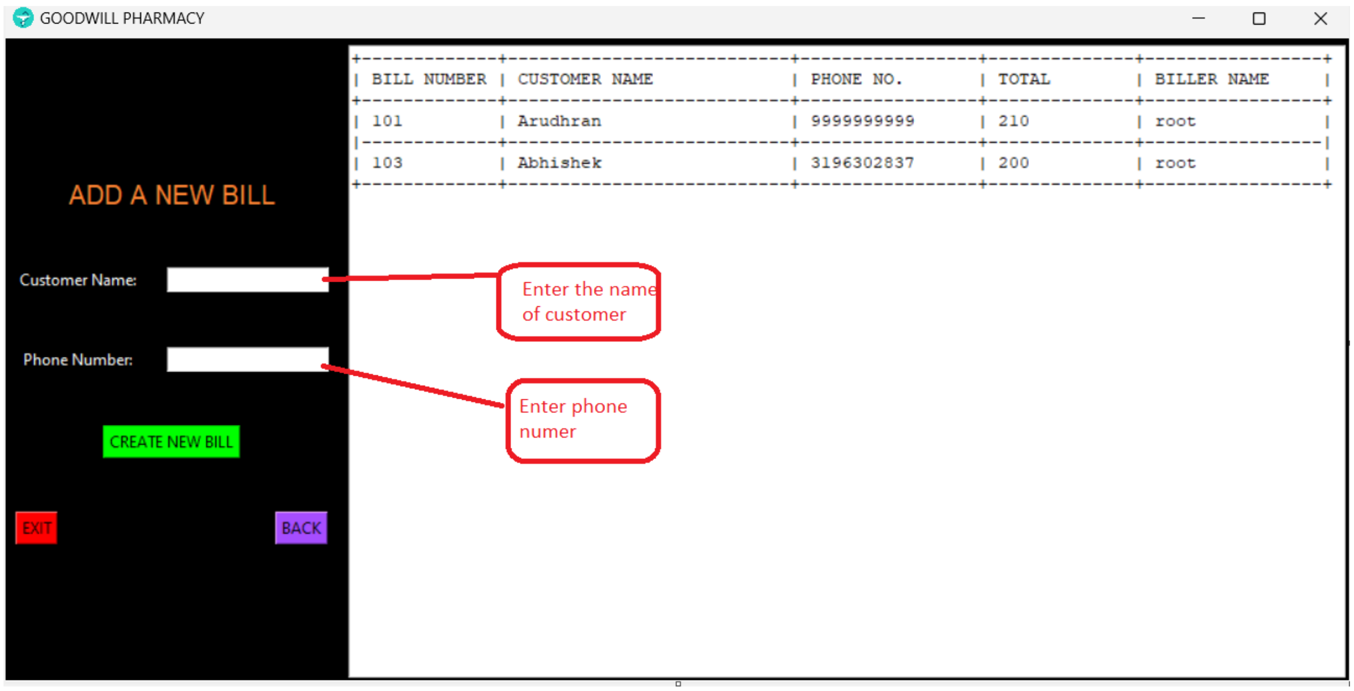
```
+-------------+-----------------------------------+-------------------+--------------------+------------------+
| BILL NUMBER | CUSTOMER NAME                     | PHONE NO.         | TOTAL              | BILLER NAME      |
+-------------+-----------------------------------+-------------------+--------------------+------------------+
| 101         | Arudhran                          | 9999999999        | 210                | root             |
|-------------+-----------------------------------+-------------------+--------------------+------------------|
| 103         | Abhishek                          | 3196302837        | 200                | root             |
+-------------+-----------------------------------+-------------------+--------------------+------------------+
```

iii) To Show bills:


GOODWILL PHARMACY
Enter the bill number to display
101
103
EXIT
PRINT BILL
BACK
SELECT THE BILL NUMBER YOU WANT TO SEE

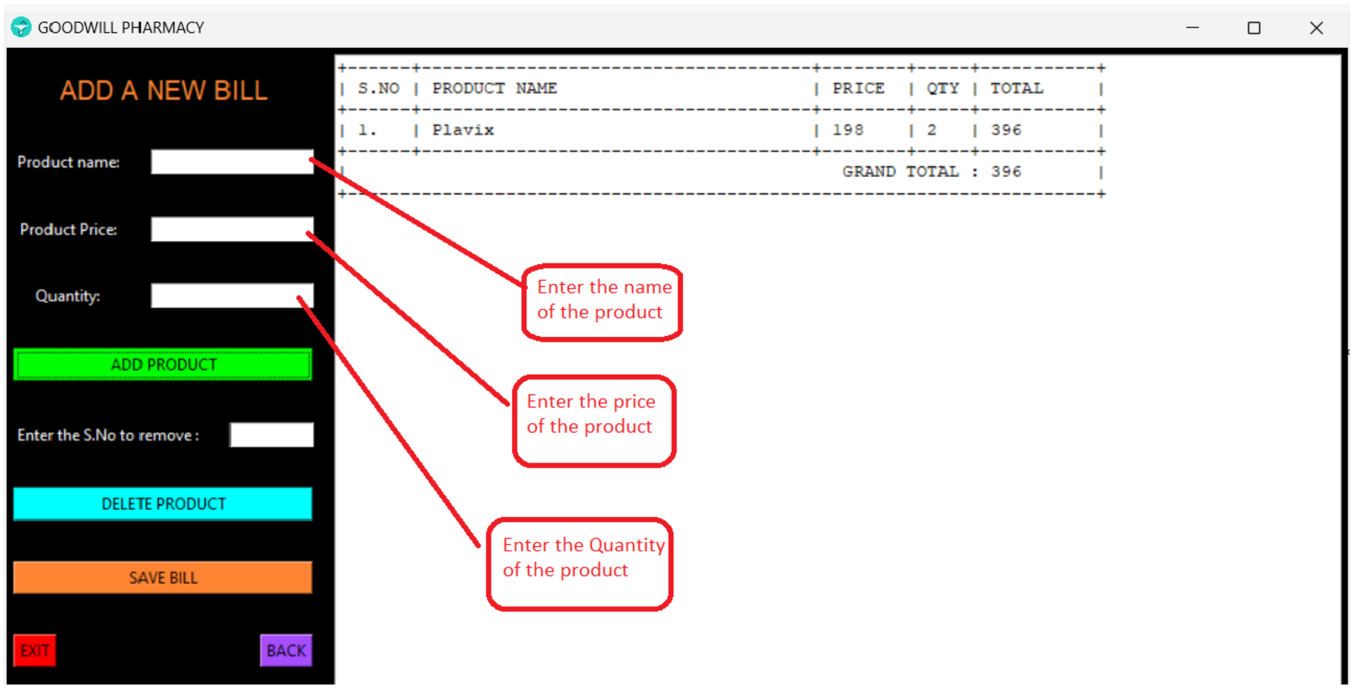
```
+--------------+----------------------------+-----------------+--------------+------------------+
| BILL NUMBER  | CUSTOMER NAME              | PHONE NO.       | TOTAL        | BILLER NAME      |
+--------------+----------------------------+-----------------+--------------+------------------+
| 101          | Arudhran                   | 9999999999      | 210          | root             |
|--------------+----------------------------+-----------------+--------------+------------------|
| 103          | Abhishek                   | 3196302837      | 200          | root             |
+--------------+----------------------------+-----------------+--------------+------------------+
```

iv) a) To Add a new bill:



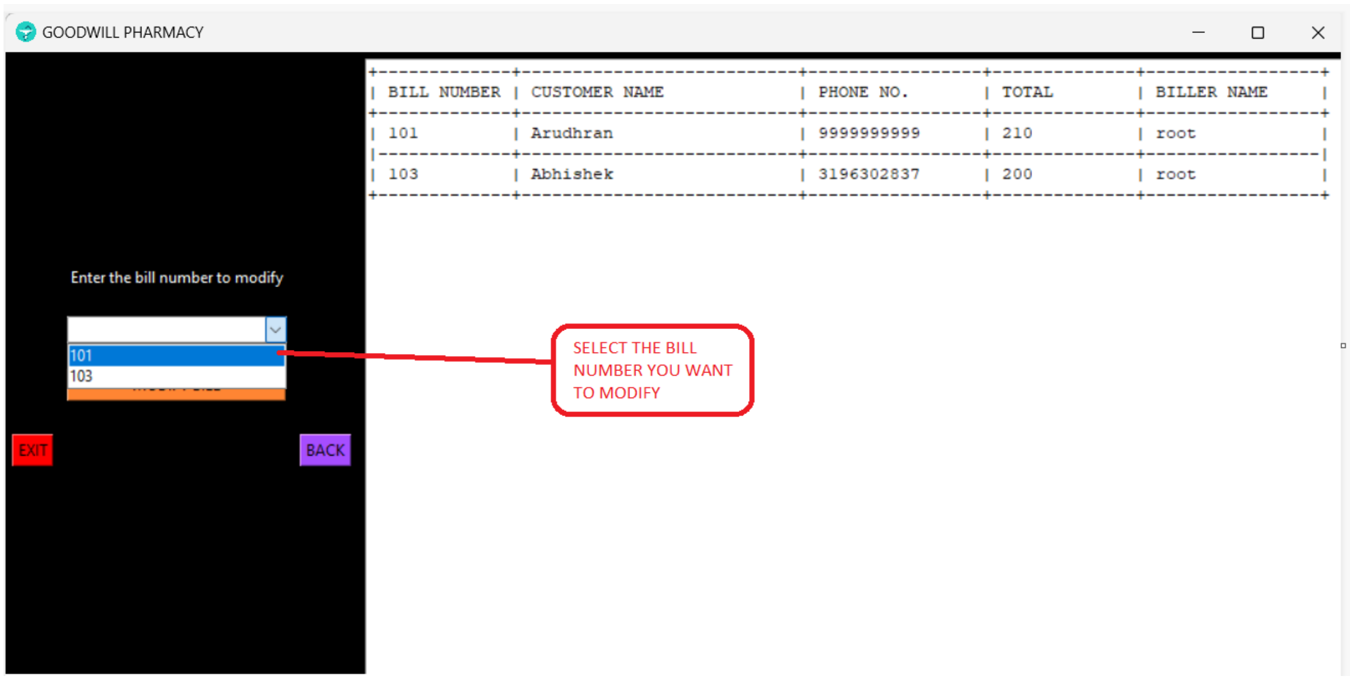
```
+--------------+----------------------------+-----------------+--------------+------------------+
| BILL NUMBER  | CUSTOMER NAME              | PHONE NO.       | TOTAL        | BILLER NAME      |
+--------------+----------------------------+-----------------+--------------+------------------+
| 101          | Arudhran                   | 9999999999      | 210          | root             |
|--------------+----------------------------+-----------------+--------------+------------------|
| 103          | Abhishek                   | 3196302837      | 200          | root             |
+--------------+----------------------------+-----------------+--------------+------------------+
```

b) Add the product details:


GOODWILL PHARMACY
ADD A NEW BILL
Product name:
Product Price:
Quantity:
ADD PRODUCT
Enter the S.No to remove :
DELETE PRODUCT
SAVE BILL
EXIT
BACK
Enter the name of the product
Enter the price of the product
Enter the Quantity of the product

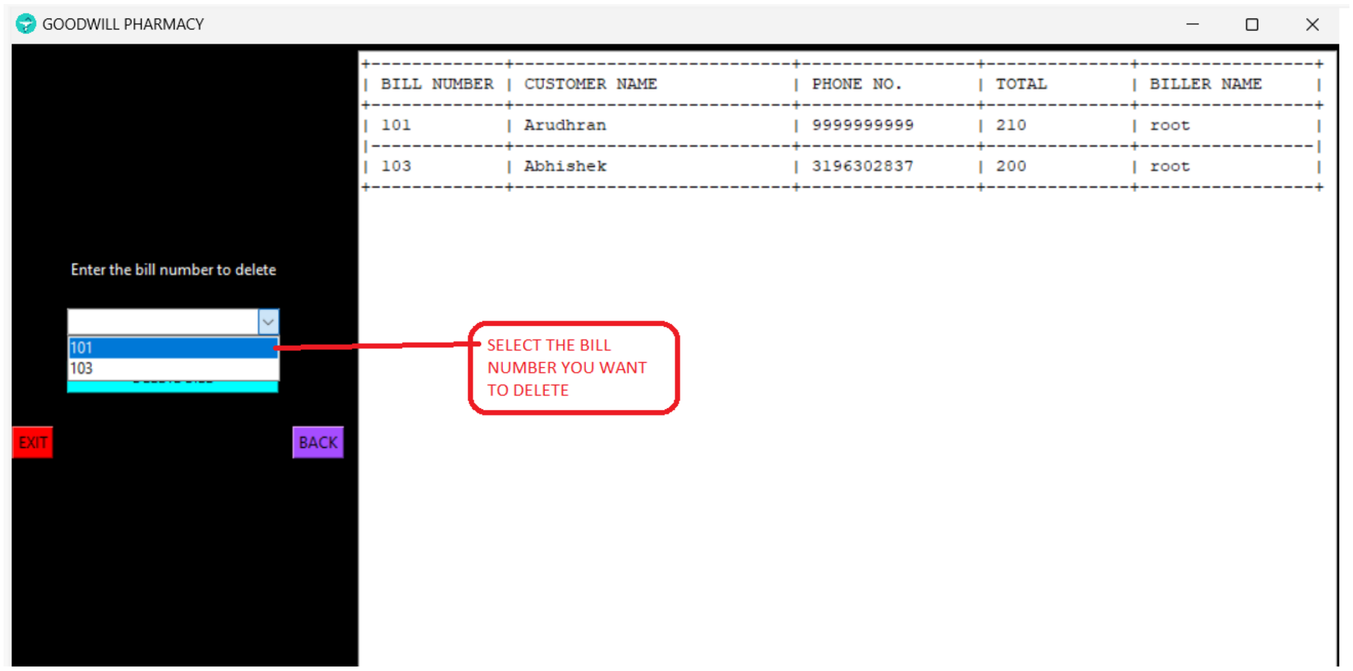
```
+------+---------------------------------------+---------+-----+-----------+
| S.NO | PRODUCT NAME                          | PRICE   | QTY | TOTAL     |
+------+---------------------------------------+---------+-----+-----------+
| 1.   | Plavix                                | 198     | 2   | 396       |
+------+---------------------------------------+---------+-----+-----------+
|                                                    GRAND TOTAL : 396     |
+--------------------------------------------------------------------------+
```

v) To Modify the Bill:


GOODWILL PHARMACY
Enter the bill number to modify
101
103
EXIT
BACK
SELECT THE BILL NUMBER YOU WANT TO MODIFY

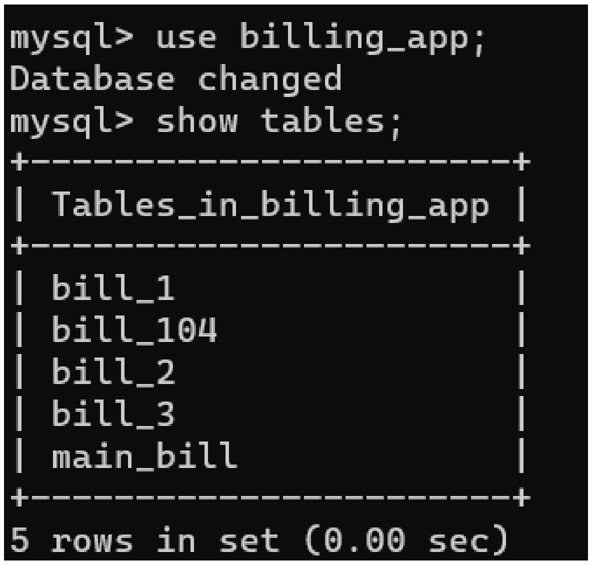
```
+-------------+----------------------------------+--------------+--------------+-----------------+
| BILL NUMBER | CUSTOMER NAME                    | PHONE NO.    | TOTAL        | BILLER NAME     |
+-------------+----------------------------------+--------------+--------------+-----------------+
| 101         | Arudhran                         | 9999999999   | 210          | root            |
|-------------+----------------------------------+--------------+--------------+-----------------|
| 103         | Abhishek                         | 3196302837   | 200          | root            |
+-------------+----------------------------------+--------------+--------------+-----------------+
```

vi) To delete the bill:

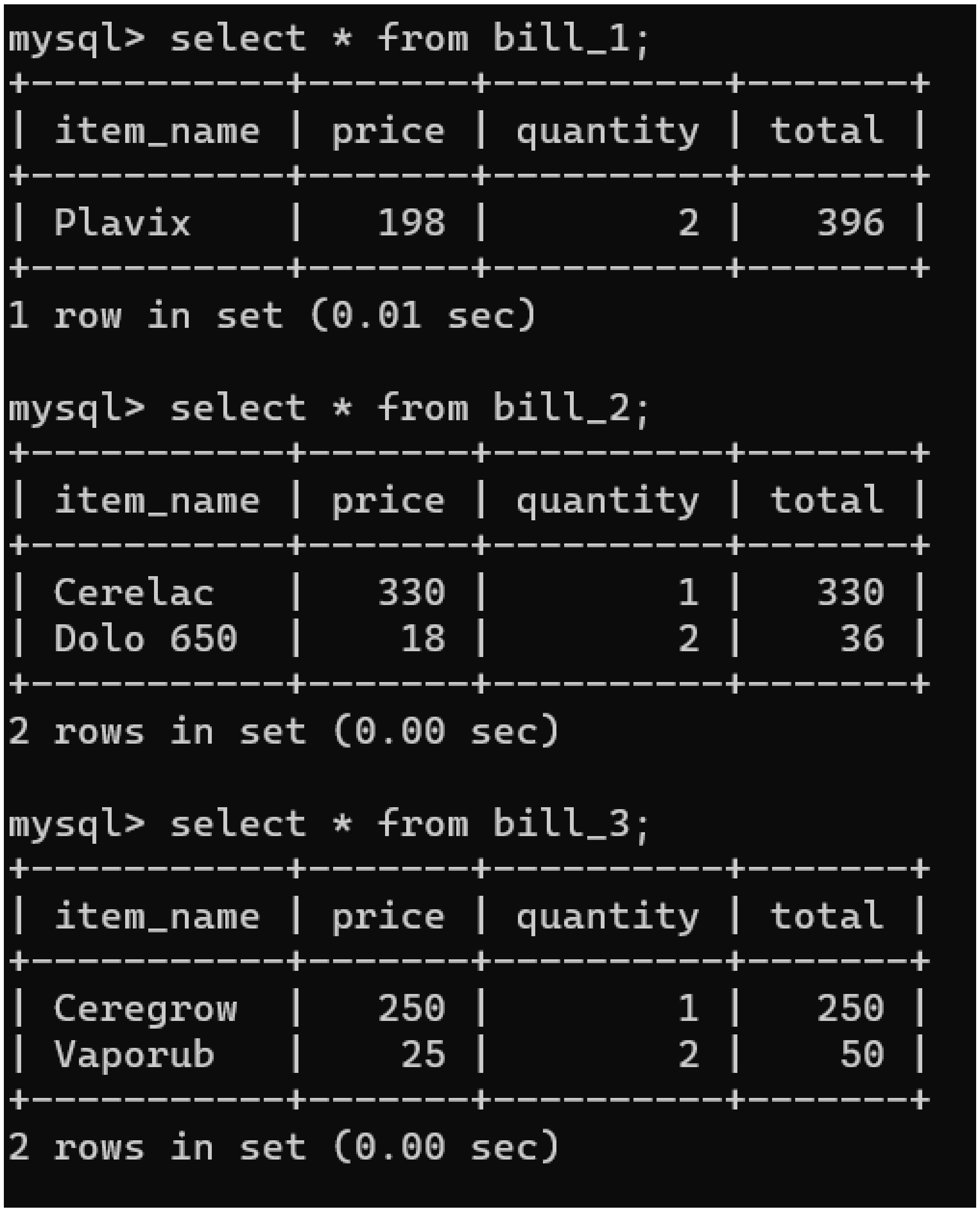

GOODWILL PHARMACY
Enter the bill number to delete
101
103
SELECT THE BILL NUMBER YOU WANT TO DELETE
EXIT
BACK

```
+--------------+------------------------------+-------------+---------------+-----------------+
| BILL NUMBER  | CUSTOMER NAME                | PHONE NO.   | TOTAL         | BILLER NAME     |
+--------------+------------------------------+-------------+---------------+-----------------+
| 101          | Arudhran                     | 9999999999  | 210           | root            |
|--------------+------------------------------+-------------+---------------+-----------------|
| 103          | Abhishek                     | 3196302837  | 200           | root            |
+--------------+------------------------------+-------------+---------------+-----------------+
```

DATABASE OUTPUT SCREENSHOTS:



```
mysql> use billing_app;
Database changed
mysql> show tables;
+-----------------------+
| Tables_in_billing_app |
+-----------------------+
| bill_1                |
| bill_104              |
| bill_2                |
| bill_3                |
| main_bill             |
+-----------------------+
5 rows in set (0.00 sec)
```



```
mysql> select * from bill_1;
+-----------+-------+----------+-------+
| item_name | price | quantity | total |
+-----------+-------+----------+-------+
| Plavix    |   198 |        2 |   396 |
+-----------+-------+----------+-------+
1 row in set (0.01 sec)

mysql> select * from bill_2;
+-----------+-------+----------+-------+
| item_name | price | quantity | total |
+-----------+-------+----------+-------+
| Cerelac   |   330 |        1 |   330 |
| Dolo 650  |    18 |        2 |    36 |
+-----------+-------+----------+-------+
2 rows in set (0.00 sec)

mysql> select * from bill_3;
+-----------+-------+----------+-------+
| item_name | price | quantity | total |
+-----------+-------+----------+-------+
| Ceregrow  |   250 |        1 |   250 |
| Vaporub   |    25 |        2 |    50 |
+-----------+-------+----------+-------+
2 rows in set (0.00 sec)
```

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- John Elder - (codemy.com)
- W3 Schools - (w3schools.com)
- Stack Overflow - (stackoverflow.com)
- Geeks For Geeks - (geeksforgeeks.org)

CONCLUSION:

The success of your revenue business relies on having the right billing system. A system meets your unique requirements and simplifies the complexities inherent to recurring revenue business models. This Pharmacy Billing System gives a User, complete Billing Management and gives a nice User Experience.

Thank You!