

**THE HINDU SENIOR SECONDARY SCHOOL
TRIPLICANE, CHENNAI – 600005**



**COMPUTER SCIENCE PROJECT
2022–2023**

**TOPIC: PHARMACY BILLING APP USING PYTHON
AND MySQL CONNECTIVITY**

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BONAFIDE CERTIFICATE

Certified to be the Bonafide for the project work done by
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THE HINDU SENIOR SECONDARY SCHOOL, CHENNAI during the
year 2022-2023.

Dated _____

Signature of the teacher
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Submitted for All India Senior Secondary Practical
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Signature of External Examiner
External Examiner number

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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.

Abstracts:

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 and 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 that's 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.

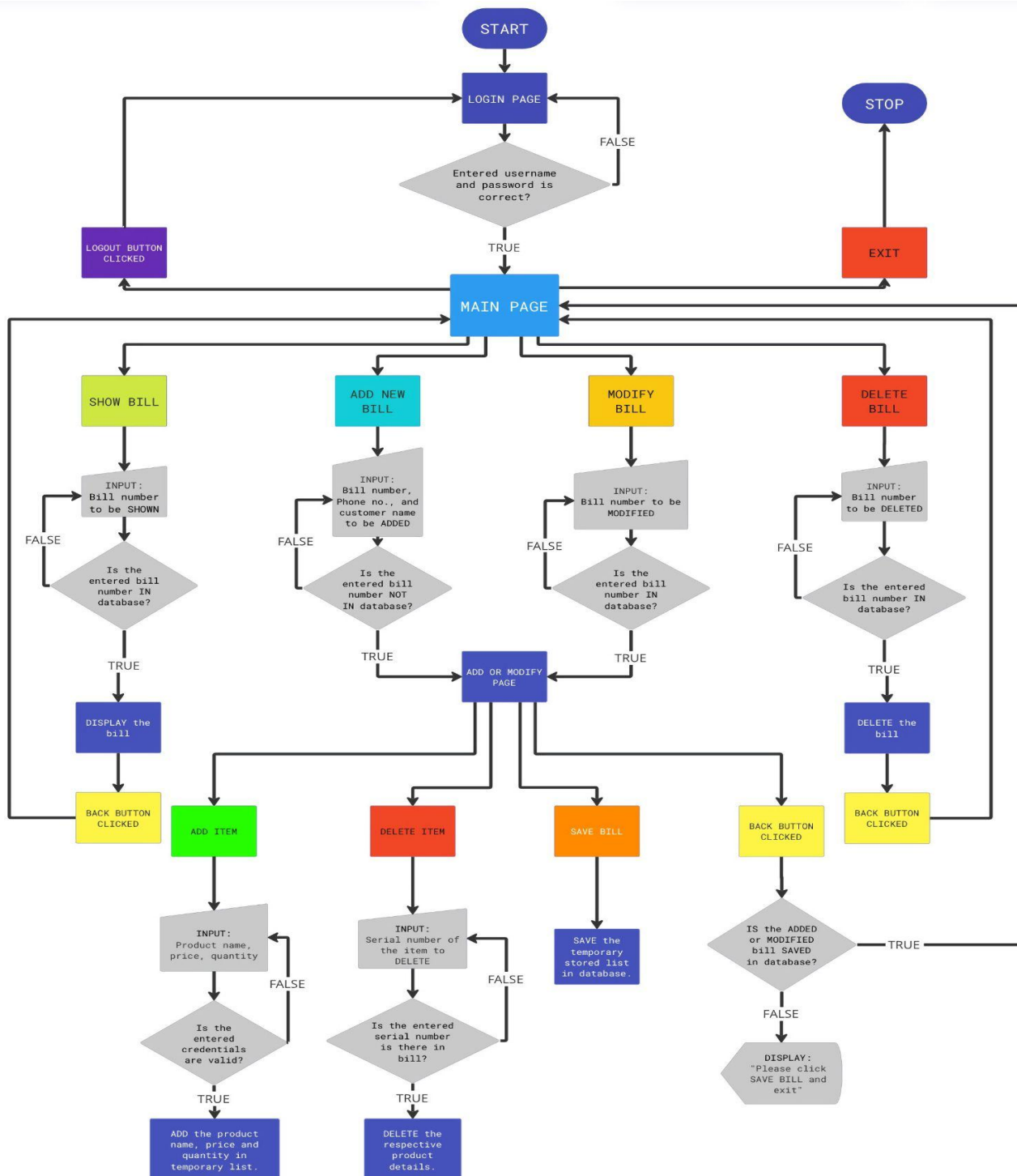
HARDWARE REQUIREMENT:

- **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:



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 entire app by closing all the windows and quitting
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):
```

```
        # saving the username to know who made the 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 separate the output box and all the buttons and labels
```

```
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 credentials
    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]))) * ' '}}}"
```

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

```

```
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()
```

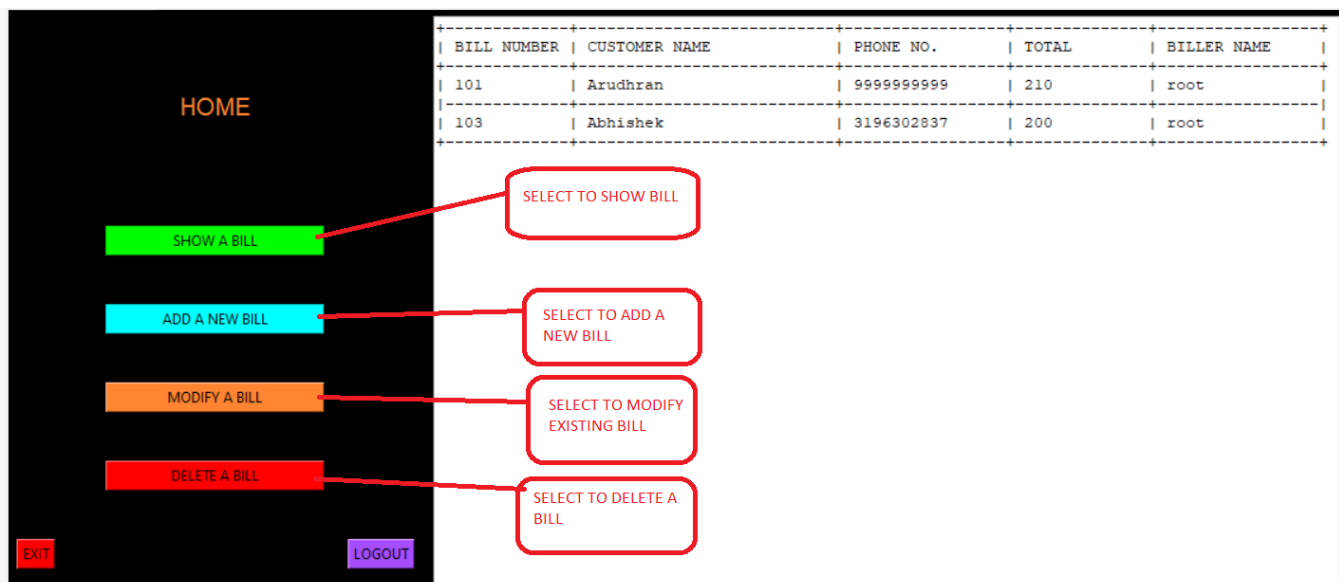
```
def delete_records(bill_no):
    mysql_cursor.execute(f"DELETE FROM bill_{bill_no}")
    mysql_con.commit()
```

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**



iii) To Show bills:

GOODWILL PHARMACY

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

Enter the bill number to display

101
103

SELECT THE BILL NUMBER YOU WANT TO SEE

EXIT PRINT BILL BACK

iv) a) To Add a new bill:

BILLING APP

BILL NUMBER	CUSTOMER NAME	PHONE NO.	TOTAL	BILLER NAME
101	Arudhran	7449213141	9999999999	arudhran
102	Rakesh	1234456789	12000	arudhran
103	Abhishek	3196302837	94862	arudhran

ADD A NEW BILL

Customer Name:

Phone Number:

Bill Number:

ENTER THE CUSTOMER NAME

ENTER THE PHONE NO

ENTER THE BILL NUMBER

CREATE NEW BILL

EXIT BACK

b) Add the product details:

BILLING APP

ADD A NEW BILL

Product name:

Product Price:

Quantity:

ADD PRODUCT

Enter the S.No to remove:

DELETE PRODUCT

SAVE BILL

EXIT **BACK**

S.NO	PRODUCT NAME	PRICE	QTY	TOTAL
GRAND TOTAL : 0				

ENTER THE PRODUCT NAME

ENTER THE PRICE OF THE PRODUCT

ENTER THE QUANTITY OF THE PRODUCT

ENTER THE SERIAL NO OF PRODUCT YOU NEED TO REMOVE

v) To Modify the Bill:

GOODWILL PHARMACY

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

Enter the bill number to modify

EXIT **BACK**

SELECT THE BILL NUMBER YOU WANT TO MODIFY

vi) To delete the bill:

GOODWILL PHARMACY

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

Enter the bill number to delete

101
103

EXIT BACK

SELECT THE BILL NUMBER YOU WANT TO DELETE

DATABASE OUTPUT SCREENSHOTS:

```
mysql> use billing_app;
Database changed
mysql> show tables;
+-----+
| Tables_in_billing_app |
+-----+
| bill_101               |
| bill_102               |
| bill_103               |
| bill_104               |
| main_bill              |
+-----+
5 rows in set (0.00 sec)
```

```
mysql> select * from bill_104;
```

```
+-----+-----+-----+-----+
| item_name | price | quantity | total |
+-----+-----+-----+-----+
| Shampoo  | 2     | 20       | 40    |
| Soap     | 45    | 2        | 90    |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> select * from bill_103;
```

```
+-----+-----+-----+-----+
| item_name | price | quantity | total |
+-----+-----+-----+-----+
| Potato    | 20    | 5        | 100   |
| Tomato    | 20    | 5        | 100   |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> select * from bill_102;
```

```
+-----+-----+-----+-----+
| item_name | price | quantity | total |
+-----+-----+-----+-----+
| Soup      | 20    | 2        | 40    |
| Rice      | 60    | 2        | 120   |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

```
mysql> select * from bill_101;
```

```
+-----+-----+-----+-----+
| item_name | price | quantity | total |
+-----+-----+-----+-----+
| Maggi     | 85    | 2        | 170   |
| Brush     | 20    | 2        | 40    |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

BIBLIOGRAPHY:

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

CONCLUSION:

We would like to take this opportunity to thank our teachers for their guidance and letting us accomplish this foot. We also learned the values that other members taught us in this process. Thank you!!

Thank You!