COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS,
UNIVERSITI TEKNOLOGI MARA,
MERBOK, KEDAH

DIPLOMA IN LIBRARY INFORMATICS (CDIM144)

PROGRAMMING FOR LIBRARIES (IML207)

"COURIER SYSTEM: PARCEL BILL"

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SUBMISSION DATE:

WEEK 12

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1.0 INTRODUCTION OF COURIER SYSTEM

The Courier Parcel Bill System is a software solution designed to streamline and automate the process of calculating charges for courier services. In order for courier businesses to run their businesses successfully and keep their users satisfied in the fast-paced world of today, accurate and efficient billing systems are essential.

1.1 PROBLEM STATEMENT

Manual and prone to error parcel bill calculation methods are a major source of operational inefficiencies, billing disparities, and disgruntled customers in the current courier industry. When a courier parcel bill calculation system isn't automated, the following happens:

- **Inaccuracies and Disputes**: Determining shipping costs by hand raises the possibility of errors, which in turn causes billing disputes and erodes customer confidence and satisfaction.

- **Lack of Adaptability**: Without a centralized system, courier companies struggle to adapt to dynamic market conditions, and evolving customer demands, limiting their ability to stay competitive in the industry.

1.2 OBJECTIVE

- **Automation:** Streamline and automate the complex process of calculating courier parcel bills to reduce manual errors and enhance operational efficiency.

- **Adaptability:** Provide a flexible and customizable system that adapts to various pricing structures, and shipping options, meeting the diverse needs of courier companies.

2.0 FLOW CHART

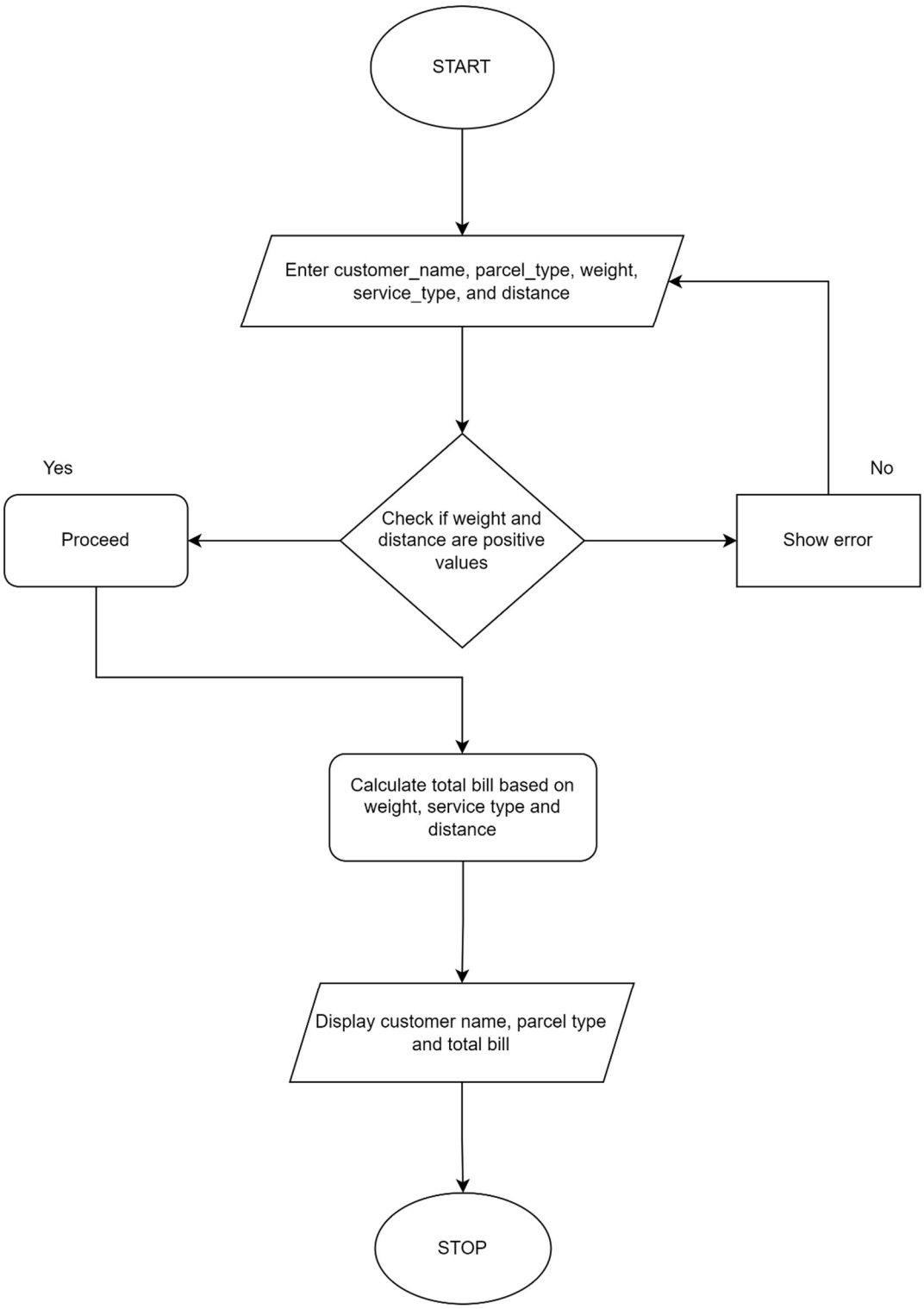
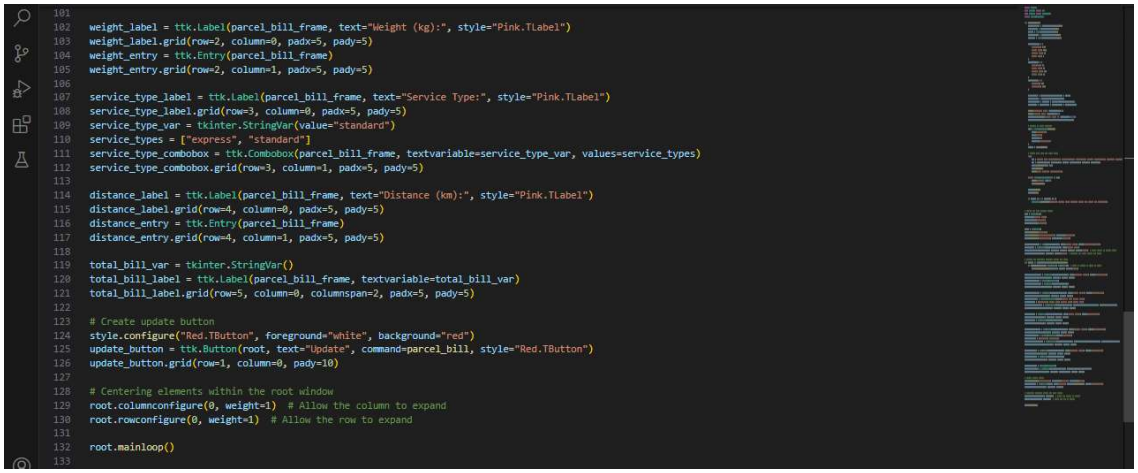


Figure 1 Parcel bill Flowchart

3.0 SNAPSHOT OF CODE

```python
import tkinter
from tkinter import ttk
from tkinter import messagebox
import mysql.connector

def parcel_bill():
    customer_name = customer_name_var.get()
    parcel_type = parcel_type_var.get()
    weight = float(weight_entry.get())
    service_type = service_type_var.get()
    distance = float(distance_entry.get())

    weight_per_kg = {
        "envelope": 0.1,
        "small box": 0.5,
        "medium box": 1,
        "large box": 2
    }
    price_per_kg = {
        "envelope": 5,
        "small box": 8,
        "medium box": 12,
        "large box": 15
    }
    service_cost = {
        "express": 10,
        "standard": 4.50
    }

    weight_cost = price_per_kg[parcel_type] * weight
    service_cost = service_cost[service_type]
    distance_cost = distance * weight_per_kg[parcel_type]
    total_bill = weight_cost + service_cost + distance_cost

    print(f"Customer Name: {customer_name}")
    print(f"Parcel Type: {parcel_type}")
    total_bill_var.set(f"Total Bill: RM {total_bill:.2f}")
    total_bill_label.config(textvariable=total_bill_var)

    # Connect to MySQL database
    mydb = mysql.connector.connect(
        host="localhost",
        user="root",
        password="",
        database="parcel_bill"
    )
    cursor = mydb.cursor()

    # Insert data into the MySQL table
    try:
        sql = "INSERT INTO `courier_info` (customer_name, parcel_type, weight, service_type, distance, total_bill) VALUES (%s, %s, %s, %s, %s, %s)"
        val = (customer_name, parcel_type, weight, service_type, distance, total_bill)
        cursor.execute(sql, val)
        mydb.commit()
        print("Data inserted successfully")

    except mysql.connector.Error as err:
        print(f"Error: {err}")
        mydb.rollback()

    cursor.close()
    mydb.close()

    if weight <= 0 or distance <= 0:
        messagebox.showerror("Error", "Please enter positive values for weight and distance.")

# Create the main Tkinter window
root = tkinter.Tk()
root.title("Parcel Bill")
root.geometry("300x400")
root.config(bg="#b9d8e4")

style = ttk.Style()
style.theme_use("default")
style.configure("Pink.TLabelframe", background="#f6cab7")
style.configure("Pink.TLabel", background="#f6cab7")

parcel_bill_frame = ttk.LabelFrame(root, text="Parcel Bill", style="Pink.TLabelframe")
title_label = ttk.Label(parcel_bill_frame, text="Parcel Bill")
parcel_bill_frame.grid(row=0, column=0, padx=20, pady=10, sticky="nsew")  # Added sticky to expand frame
title_label.grid(row=0, column=0, sticky="nsew")  # Position the label within the frame

# Spacing and centering elements within the frame
for widget in parcel_bill_frame.winfo_children():
    if isinstance(widget, (ttk.Label, ttk.Entry)):  # Check if widget is Label or Entry
        widget.grid_configure(padx=20, pady=5, sticky="nsew")

customer_name_label = ttk.Label(parcel_bill_frame, text="Customer Name:", style="Pink.TLabel")
customer_name_label.grid(row=0, column=0, padx=5, pady=5)
customer_name_var = tkinter.StringVar()
customer_name_entry = ttk.Entry(parcel_bill_frame)
customer_name_entry.grid(row=0, column=1, padx=5, pady=5)

parcel_type_label = ttk.Label(parcel_bill_frame, text="Parcel Type:", style="Pink.TLabel")
parcel_type_label.grid(row=1, column=0, padx=5, pady=5)
parcel_type_var = tkinter.StringVar(value="choose your parcel type")
parcel_types = ["envelope", "small box", "medium box", "large box"]
parcel_type_combobox = ttk.Combobox(parcel_bill_frame, textvariable=parcel_type_var, values=parcel_types)
parcel_type_combobox.grid(row=1, column=1, padx=5, pady=5)
```



```
101
102  weight_label = ttk.Label(parcel_bill_frame, text="Weight (kg):", style="Pink.TLabel")
103  weight_label.grid(row=2, column=0, padx=5, pady=5)
104  weight_entry = ttk.Entry(parcel_bill_frame)
105  weight_entry.grid(row=2, column=1, padx=5, pady=5)
106
107  service_type_label = ttk.Label(parcel_bill_frame, text="Service Type:", style="Pink.TLabel")
108  service_type_label.grid(row=3, column=0, padx=5, pady=5)
109  service_type_var = tkinter.StringVar(value="standard")
110  service_types = ["express", "standard"]
111  service_type_combobox = ttk.Combobox(parcel_bill_frame, textvariable=service_type_var, values=service_types)
112  service_type_combobox.grid(row=3, column=1, padx=5, pady=5)
113
114  distance_label = ttk.Label(parcel_bill_frame, text="Distance (km):", style="Pink.TLabel")
115  distance_label.grid(row=4, column=0, padx=5, pady=5)
116  distance_entry = ttk.Entry(parcel_bill_frame)
117  distance_entry.grid(row=4, column=1, padx=5, pady=5)
118
119  total_bill_var = tkinter.StringVar()
120  total_bill_label = ttk.Label(parcel_bill_frame, textvariable=total_bill_var)
121  total_bill_label.grid(row=5, column=0, columnspan=2, padx=5, pady=5)
122
123  # Create update button
124  style.configure("Red.TButton", foreground="white", background="red")
125  update_button = ttk.Button(root, text="Update", command=parcel_bill, style="Red.TButton")
126  update_button.grid(row=1, column=0, pady=10)
127
128  # Centering elements within the root window
129  root.columnconfigure(0, weight=1)  # Allow the column to expand
130  root.rowconfigure(0, weight=1)  # Allow the row to expand
131
132  root.mainloop()
133
```

Figure 2 snapshot of code

4.0 SNAPSHOT OF GUI

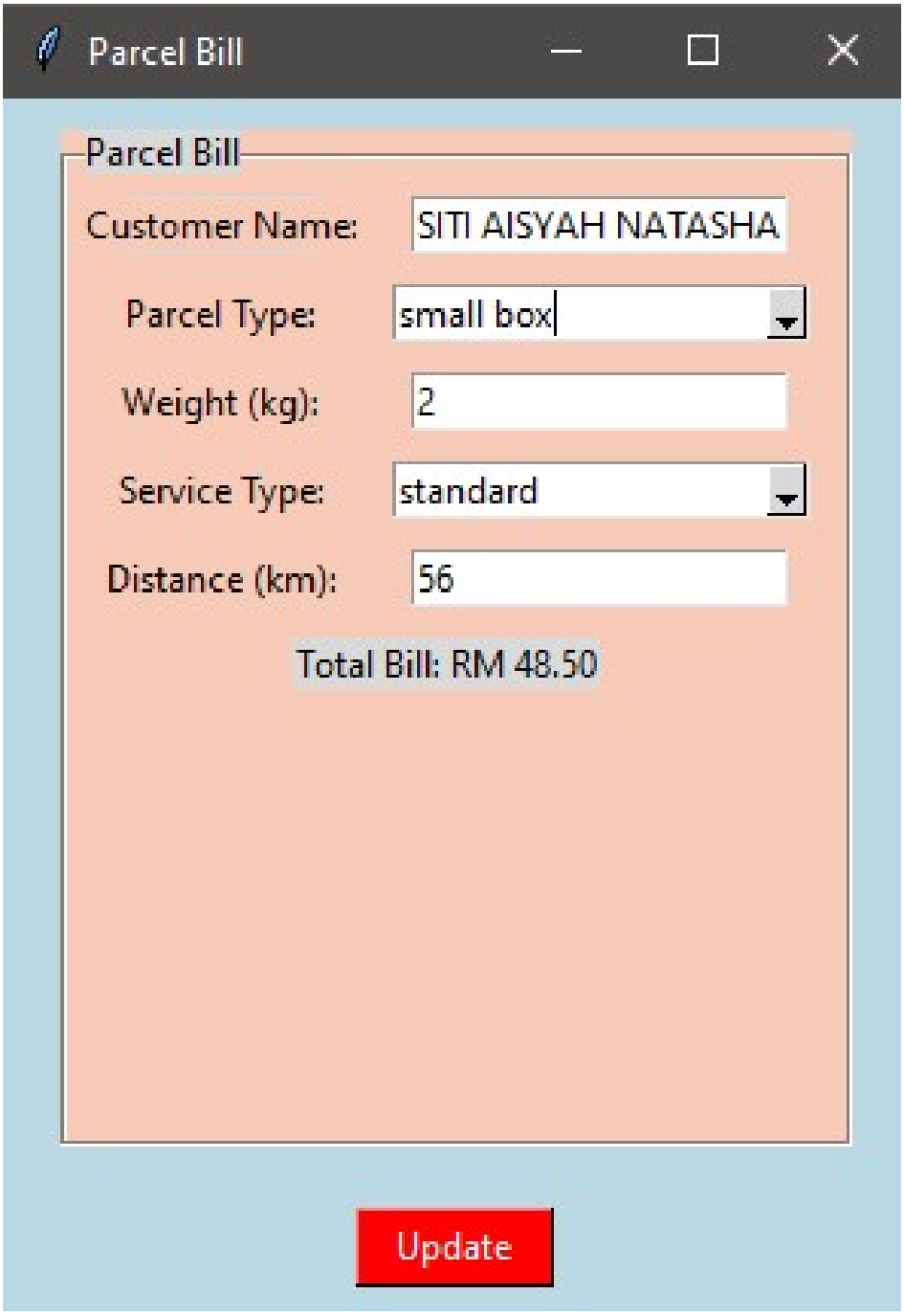


Figure 3 snapshot of GUI

5.0 SNAPSHOT OF DATABASE

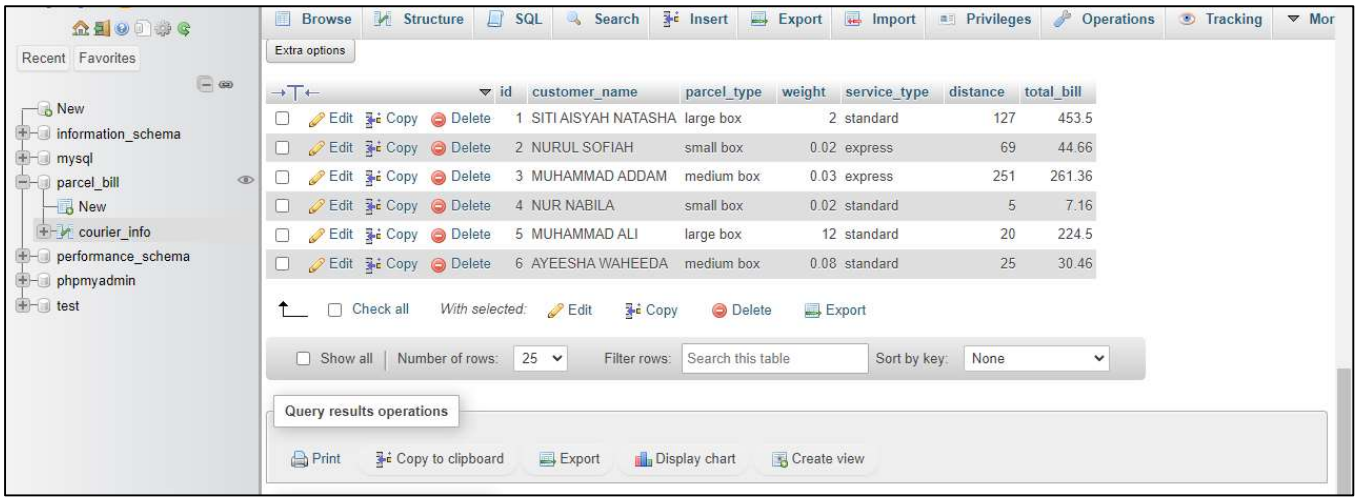


Figure 4.0 snapshot of database

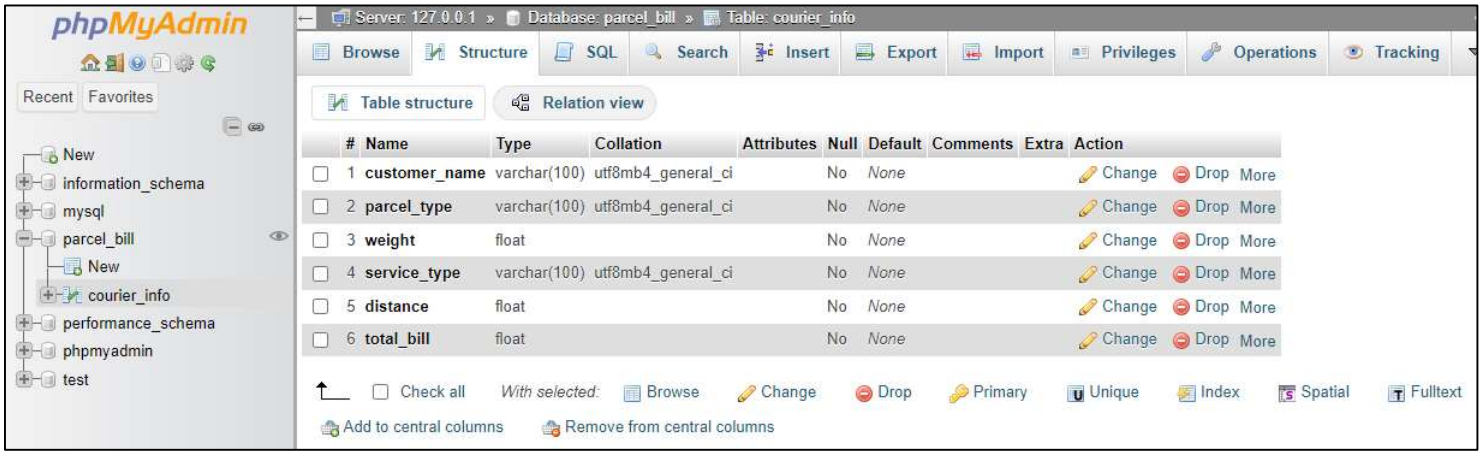


Figure 4.1 snapshot of database