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BSCS – C204 7OOP

Finals Task 4. Python and Tkinter GUI program

Problem:

Finals Lab Task 4. Python GUI using TKINTER

Note: Write your code following OOP code construct, you may use the attached simpleCalc.py program as guide.

Instructions: READ AND UNDERSTAND THE PROBLEM FIRST BEFORE DOING THE ACTUAL PROGRAM.

1. Design the form below
2. Problem Statement: The cost of a long Distance call is based on the destination, the time of day the call was made, as well as the distance of the call. The rates as as follows:

DAYTIME CALLS		NIGHTIME CALLS	
1. American Region	P 50 every 3 minutes	1. American Region	P 45 every 3 minutes
2. Asian Region	P 30 every 2 minutes	2. Asian Region	P 27 every 2 minutes
3. African Region	P 40 every 3 minutes	3. African Region	P 36 every 3 minutes
4. European Region	P 35 every 2 minutes	4. European Region	P 30 every 2 minutes

3. Make a program that will Allow the user to **Select Destination Code (between 1 – 4)** using ComboBox widget, A Time Code using radio buttons, And the Duration Of The Call in minutes and output the **TOTAL CHARGE**. – Validate user inputs by using **TRY EXCEPT block – Only numeric values are accepted.**

4. **Compute Button** should compute for the **TOTAL CHARGE**.

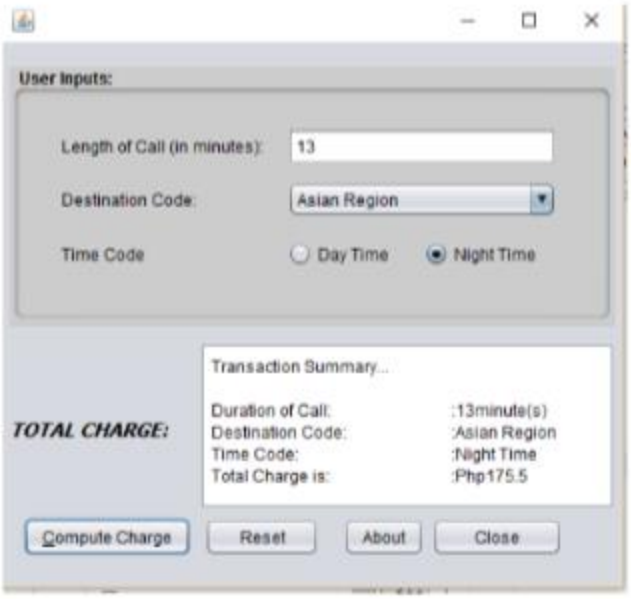
   4.1 Computations should be based on the table rates shown above. (The total charge is based on **Length of Calls**, **Destination Code** and **Time Code**)

   4.2. You may use the get () method of the comboBox to capture the selected option in your comboBox

5. **Reset Button** should clear the Radio Button Selection and the Text field entries should be cleared as well

6. **About button** should display a dialog with the message: "Hello I'm your Name"

7. See sample output below:



Rubrics: Form Design and Layout : 10 points
Program Correctness : 40 points (Reset – 5 pts., About – 5 pts. , Compute – 30 pts.)

Source Code:

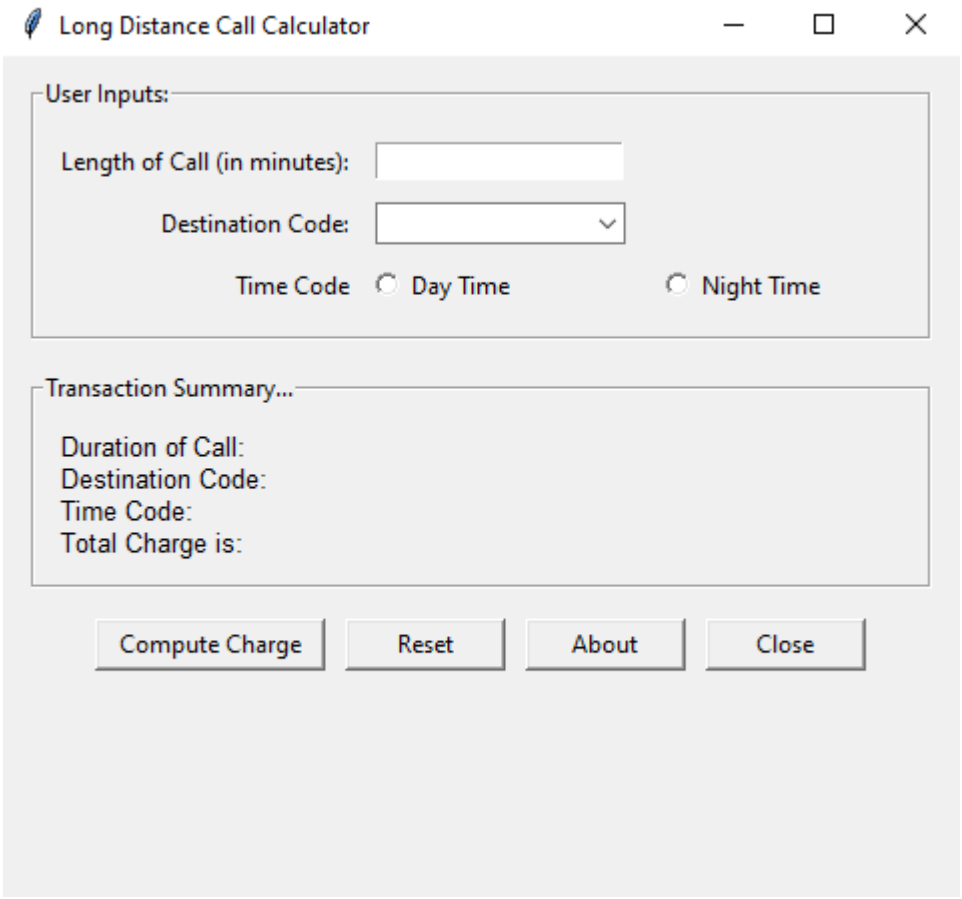
```
import tkinter as tk
from tkinter import messagebox, ttk


class CallRateCalculator:
    RATES = {
        "American Region": {"Daytime": 50, "Nighttime": 45},
        "Asian Region": {"Daytime": 30, "Nighttime": 27},
        "African Region": {"Daytime": 40, "Nighttime": 36},
        "European Region": {"Daytime": 35, "Nighttime": 30},
    }

    @staticmethod
    def compute(duration, destination, time_code):
        div = 3 if time_code == "Daytime" else 2
        return (duration / div) *
CallRateCalculator.RATES[destination][time_code]


class LongDistanceCallCalculator(tk.Tk):
    def __init__(self):
        super().__init__()
        self.title("Long Distance Call Calculator")
```

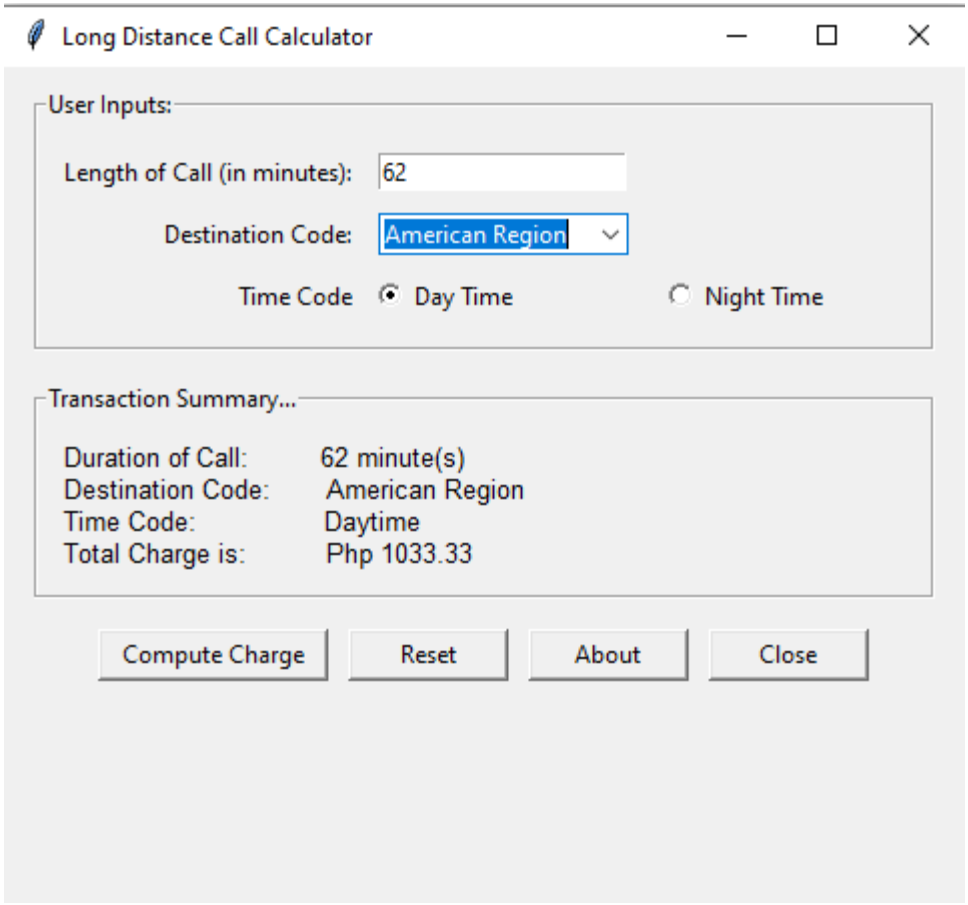
```
        self.geometry("480x420")
        self.time_var = tk.IntVar()

        frame = tk.LabelFrame(self, text="User Inputs:", padx=10, pady=10)
        frame.pack(padx=15, pady=10, fill="x")

        tk.Label(frame, text="Length of Call (in minutes):").grid(row=0,
column=0, sticky="e", pady=5)
        self.duration_entry = tk.Entry(frame, width=20)
        self.duration_entry.grid(row=0, column=1, pady=5, padx=10)

        tk.Label(frame, text="Destination Code:").grid(row=1, column=0,
sticky="e", pady=5)
        self.destination_combo = ttk.Combobox(
            frame, values=list(CallRateCalculator.RATES.keys()), width=17
        )
        self.destination_combo.grid(row=1, column=1, pady=5, padx=10)

        tk.Label(frame, text="Time Code").grid(row=2, column=0, sticky="e",
pady=5)
        tk.Radiobutton(frame, text="Day Time", variable=self.time_var,
value=1).grid(row=2, column=1, sticky="w", padx=5)
        tk.Radiobutton(frame, text="Night Time", variable=self.time_var,
value=2).grid(row=2, column=2, sticky="w", padx=5)

        summary_frame = tk.LabelFrame(self, text="Transaction Summary...",
padx=10, pady=10)
        summary_frame.pack(padx=15, pady=5, fill="both")

        self.summary_text = tk.Label(
            summary_frame,
            justify="left",
            anchor="nw",
            font=("Arial", 10),
            text=(
                "Duration of Call: \n"
                "Destination Code: \n"
                "Time Code: \n"
                "Total Charge is: "
            )
        )
        self.summary_text.pack(anchor="w")

        btn_frame = tk.Frame(self)
        btn_frame.pack(pady=10)
```

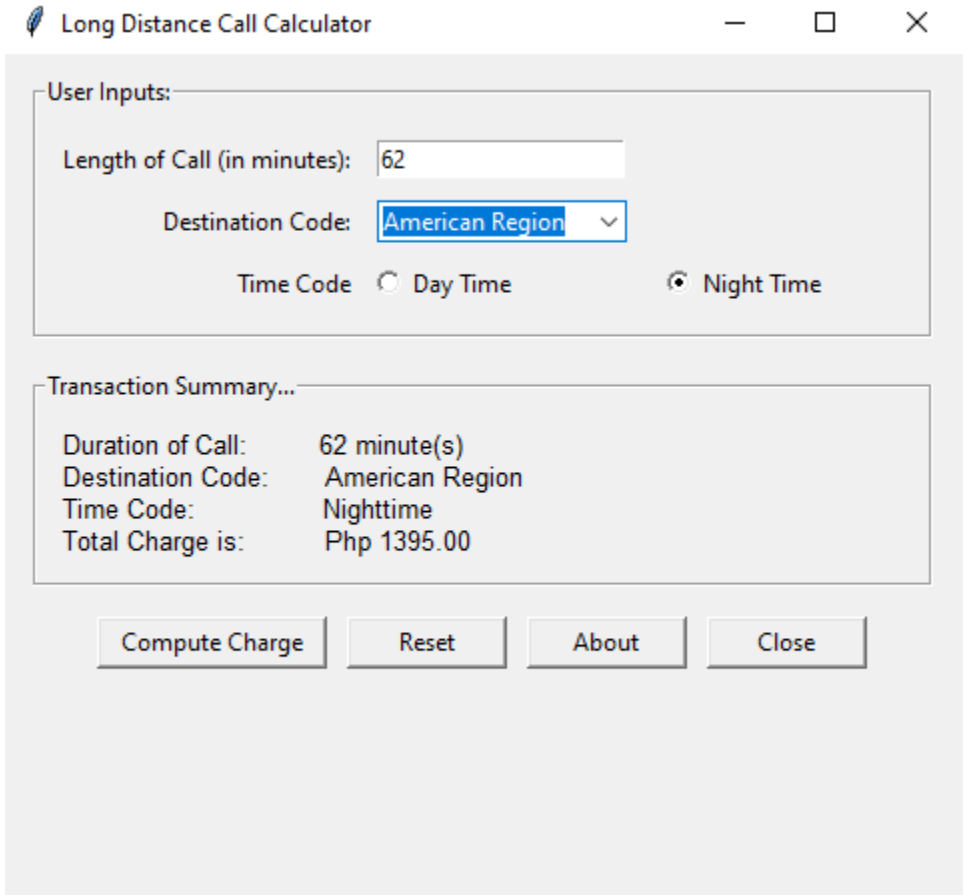
```
        tk.Button(btn_frame, text="Compute Charge", width=15,
command=self.compute).grid(row=0, column=0, padx=5)
        tk.Button(btn_frame, text="Reset", width=10,
command=self.reset).grid(row=0, column=1, padx=5)
        tk.Button(btn_frame, text="About", width=10, command=lambda:
messagebox.showinfo("About", "Long Distance Call Calculator")).grid(row=0,
column=2, padx=5)
        tk.Button(btn_frame, text="Close", width=10,
command=self.quit).grid(row=0, column=3, padx=5)

    def compute(self):
        try:
            duration = int(self.duration_entry.get())
            destination = self.destination_combo.get()
            time_code = "Daytime" if self.time_var.get() == 1 else "Nighttime"

            if not destination or self.time_var.get() == 0:
                messagebox.showerror("Error", "Please complete all fields.")
                return

            total = CallRateCalculator.compute(duration, destination, time_code)

            self.summary_text.config(text=
                f"Duration of Call:         {duration} minute(s)\n"
                f"Destination Code:       {destination}\n"
                f"Time Code:                {time_code}\n"
                f"Total Charge is:          Php {total:.2f}"
            )

        except ValueError:
            messagebox.showerror("Invalid Input", "Enter a valid number.")

    def reset(self):
        self.duration_entry.delete(0, tk.END)
        self.destination_combo.set("")
        self.time_var.set(0)
        self.summary_text.config(text=
            "Duration of Call:\n"
            "Destination Code:\n"
            "Time Code:\n"
            "Total Charge is:"
        )

if __name__ == "__main__":
```

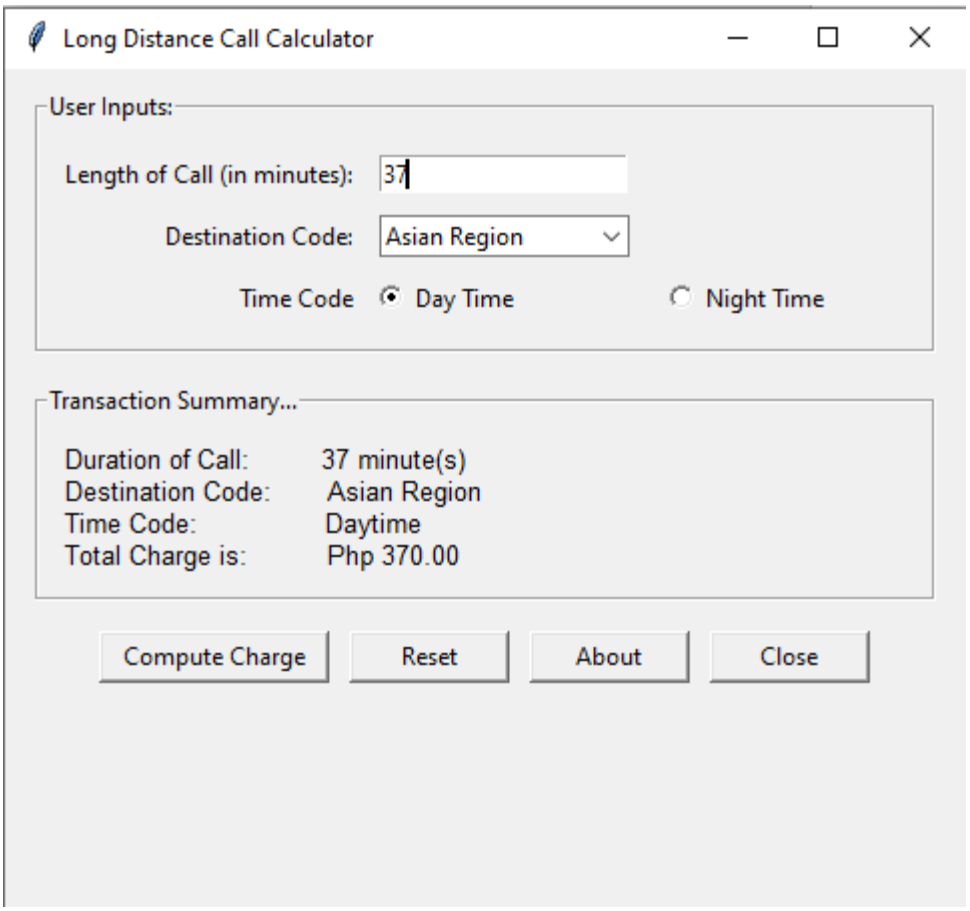
```
    LongDistanceCallCalculator().mainloop()
```

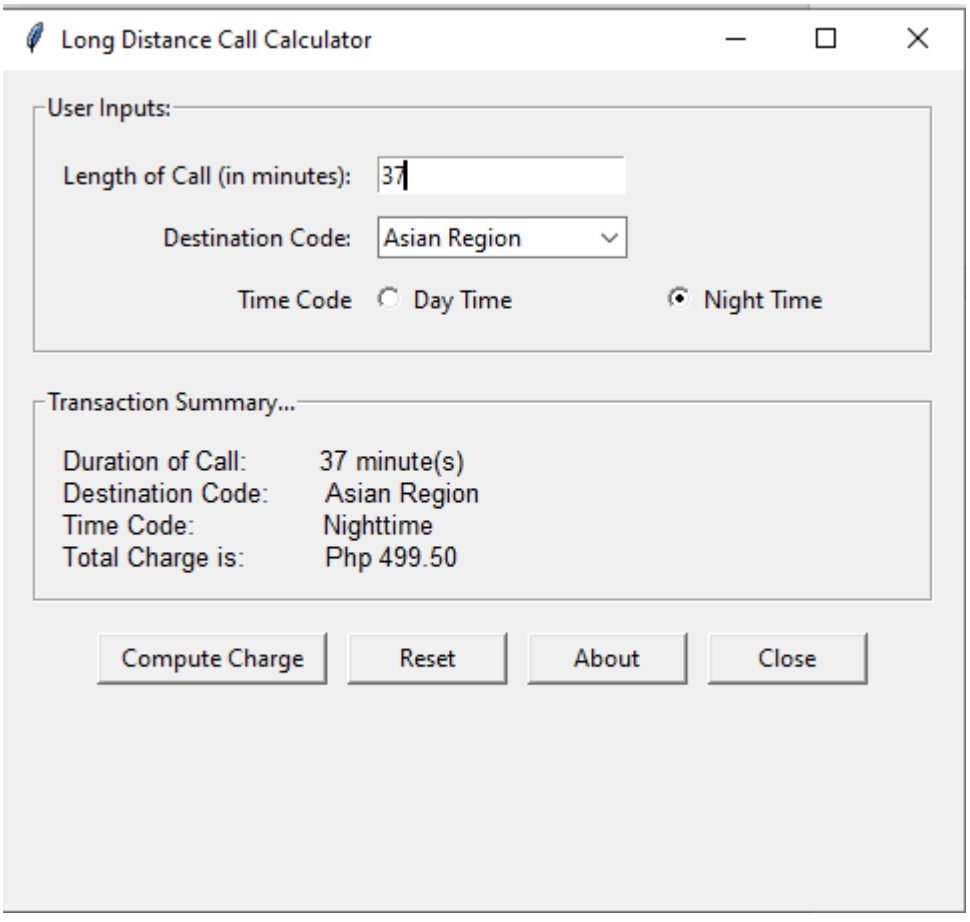
Sample Output:

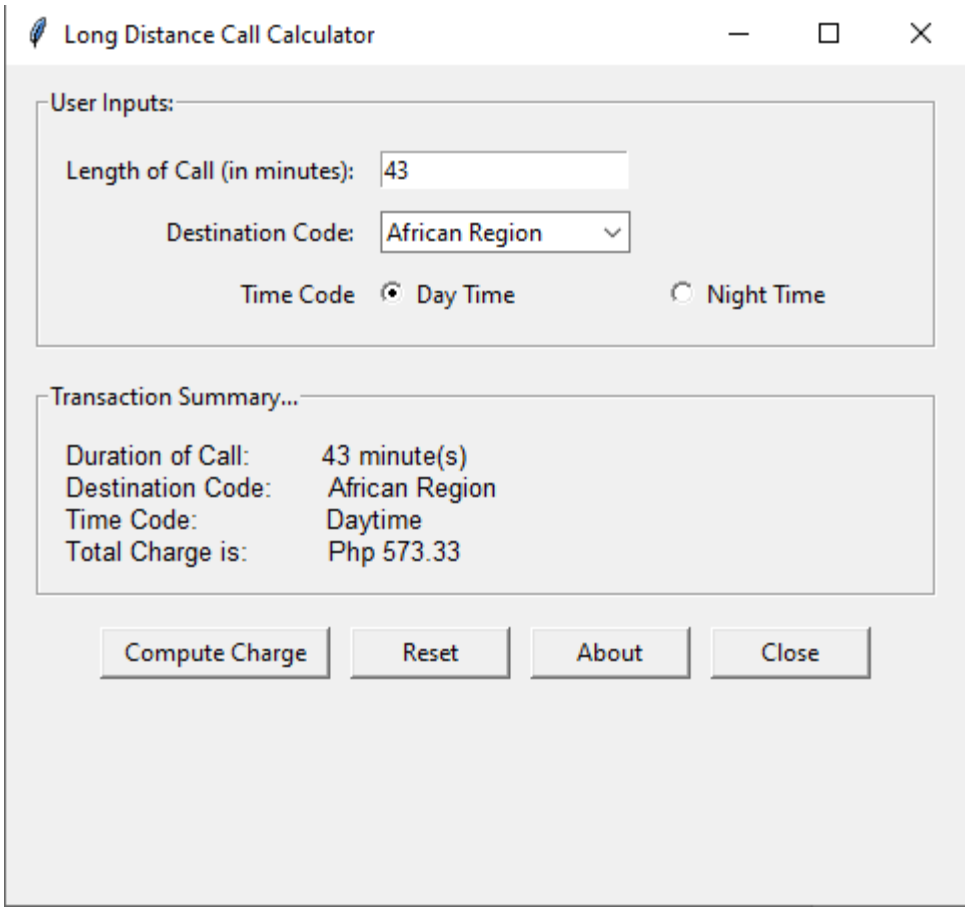


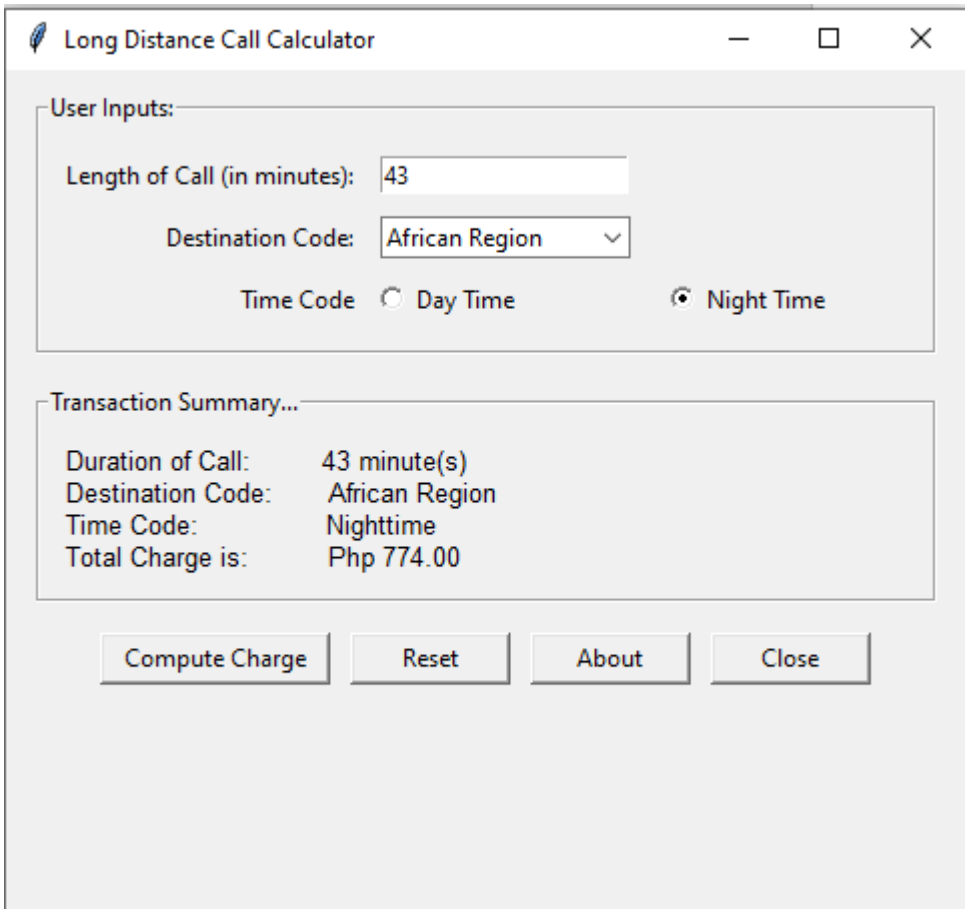

Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
62
Destination Code:
American Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
62 minute(s)
Destination Code:
American Region
Time Code:
Daytime
Total Charge is:
Php 1033.33
Compute Charge
Reset
About
Close

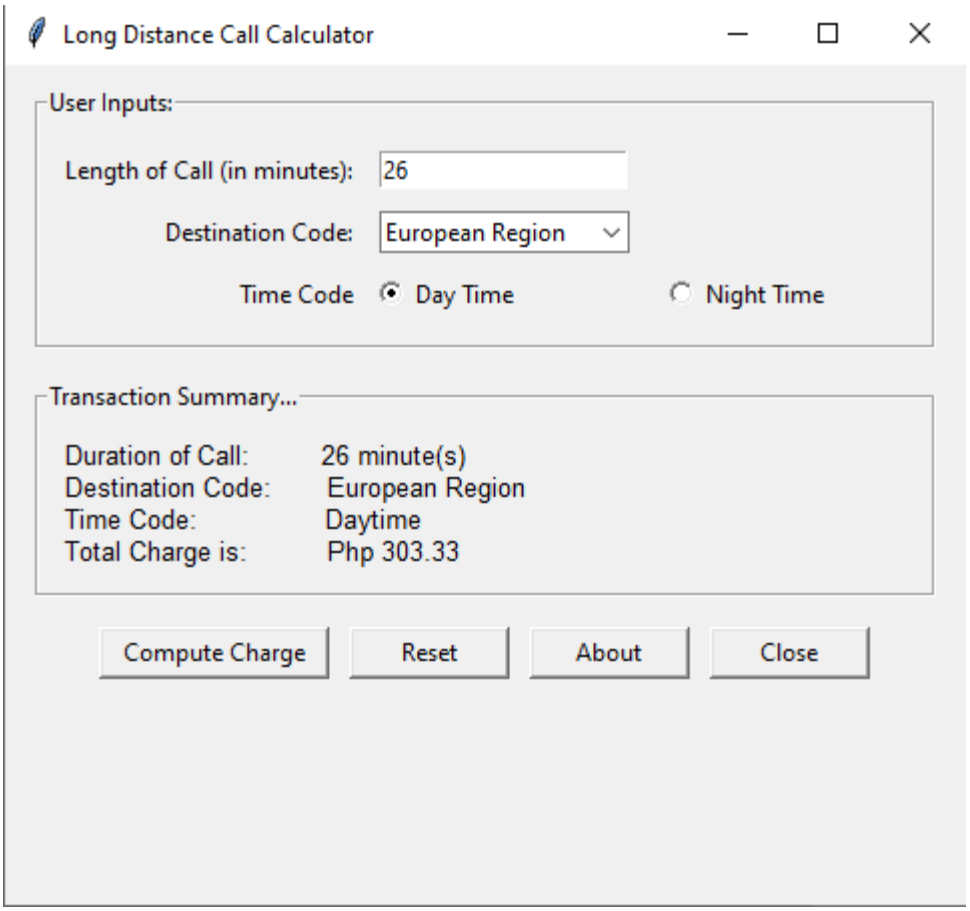

Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
62
Destination Code:
American Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
62 minute(s)
Destination Code:
American Region
Time Code:
Nighttime
Total Charge is:
Php 1395.00
Compute Charge
Reset
About
Close

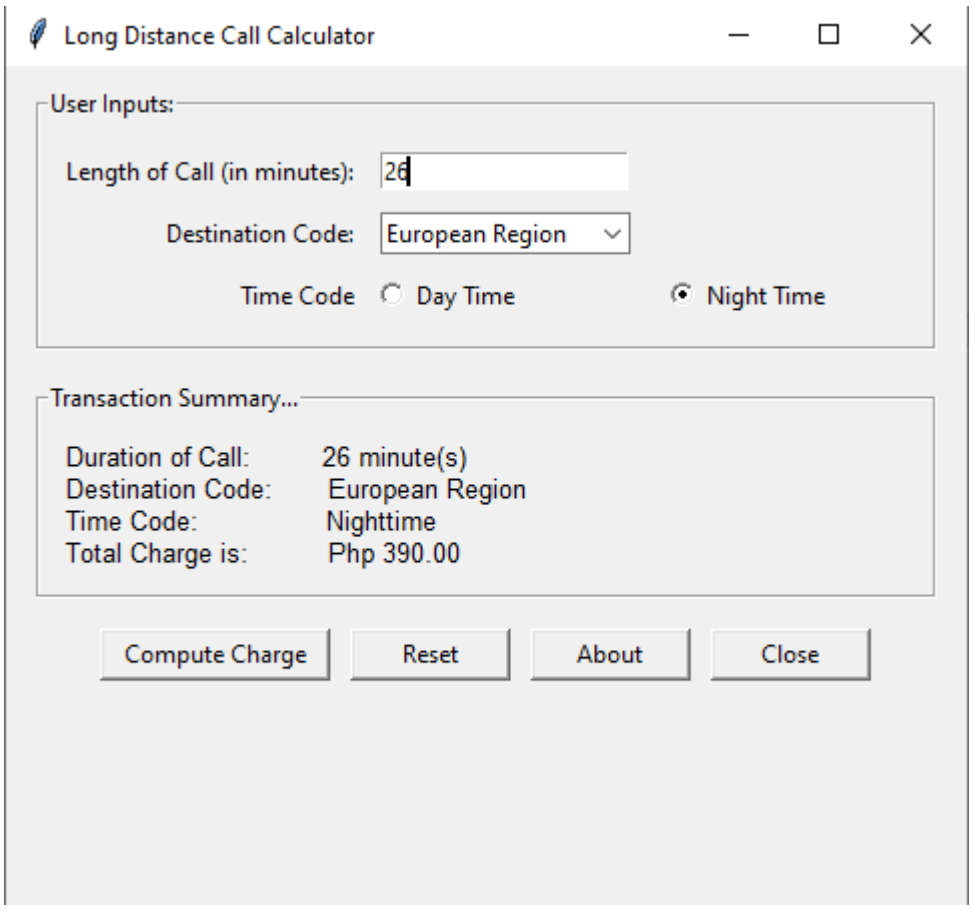

Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
37
Destination Code:
Asian Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
37 minute(s)
Destination Code:
Asian Region
Time Code:
Daytime
Total Charge is:
Php 370.00
Compute Charge
Reset
About
Close

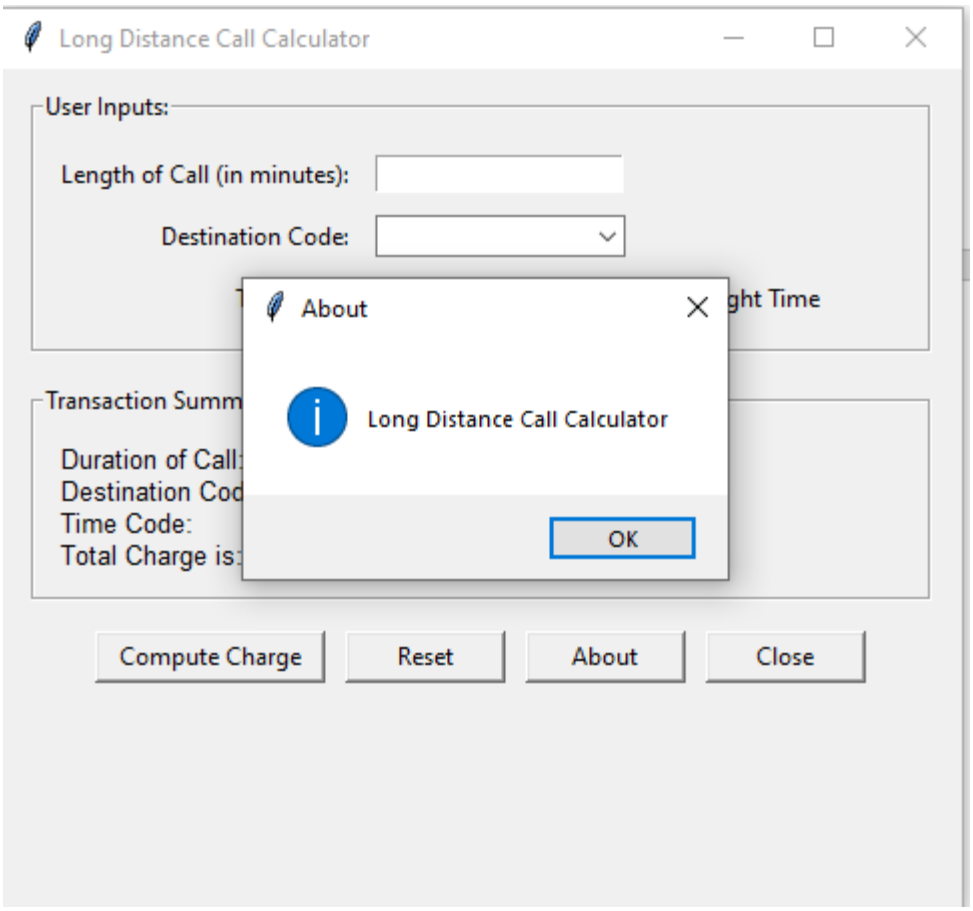

Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
37
Destination Code:
Asian Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
37 minute(s)
Destination Code:
Asian Region
Time Code:
Nighttime
Total Charge is:
Php 499.50
Compute Charge
Reset
About
Close


Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
43
Destination Code:
African Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
43 minute(s)
Destination Code:
African Region
Time Code:
Daytime
Total Charge is:
Php 573.33
Compute Charge
Reset
About
Close


Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
43
Destination Code:
African Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
43 minute(s)
Destination Code:
African Region
Time Code:
Nighttime
Total Charge is:
Php 774.00
Compute Charge
Reset
About
Close


Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
26
Destination Code:
European Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
26 minute(s)
Destination Code:
European Region
Time Code:
Daytime
Total Charge is:
Php 303.33
Compute Charge
Reset
About
Close


Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
26
Destination Code:
European Region
Time Code
Day Time
Night Time
Transaction Summary...
Duration of Call:
26 minute(s)
Destination Code:
European Region
Time Code:
Nighttime
Total Charge is:
Php 390.00
Compute Charge
Reset
About
Close


Long Distance Call Calculator
User Inputs:
Length of Call (in minutes):
Destination Code:
ght Time
About
Long Distance Call Calculator
OK
Transaction Summ
Duration of Call:
Destination Cod
Time Code:
Total Charge is:
Compute Charge
Reset
About
Close