

1. Create a form using the following widgets for your domain. Label, Entry, Button, RadioButton, OptionMenu, Checkbutton, message box
2. Apply regular expression to validate the input of all widgets. Reuse your code from P6: Implement 're' module
3. Make a simple calculation related to your domain. E.g. Age from DOB, Amount to be paid, Year of experience from date of joining, etc.
4. Display all widget inputs that are received from the user.

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In [ ]: import tkinter as tk
from tkinter import messagebox
from tkinter import *
import re

def calculate_fee():
    vehicle_type = vehicle_type_var.get()
    duration = duration_entry.get()

    if not re.match(r"^\d+$", duration):
        messagebox.showerror("Error", "Invalid duration. Please enter a valid number")
        return

    duration = int(duration)
    rate_per_hour = 5

    if vehicle_type == "Car":
        parking_fee = duration * rate_per_hour
    elif vehicle_type == "Motorcycle":
        parking_fee = duration * rate_per_hour * 0.75
    else:
        messagebox.showerror("Error", "Invalid vehicle type.")
        return

    num_of_vehicles = int(operation_var.get())

    if Checkbutton1.get() == 1:
        parking_fee -= 5

    vip_discount = 5 if Checkbutton1.get() == 1 else 0

    parking_fee_per_vehicle = (parking_fee - vip_discount)

    total_parking_fee = parking_fee_per_vehicle * num_of_vehicles

    result_text = f"Vehicle Type: {vehicle_type_var.get()}\n" \
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        f"Full Name: {name_entry.get()}\n" \
        f"Home Address: {home_address_entry.get()}\n" \
        f"Mobile Number: {phone_entry.get()}\n" \
        f"Year of Vehicle: {year_label_entry.get()}\n" \
        f"Color of Vehicle: {color_label_entry.get()}\n" \
        f"Registration Number: {reg_label_entry.get()}\n" \
        f"Number of Vehicles: {num_of_vehicles}\n" \
        f"VIP Member: {'Yes' if Checkbutton1.get() == 1 else 'No'}\n" \
        f"Duration: {duration} hours\n" \
        f"Parking Fee per Vehicle: ${parking_fee - vip_discount}\n" \
        f"Total Parking Fee: ${total_parking_fee}"

    messagebox.showinfo("Parking Fee Calculation Result", result_text)

root = tk.Tk()
root.title("Vehicle Parking Management")
root.geometry('766x784')

label = Label(
    text="Vehicle Parking Management System",
    foreground="black",
    width=30,
    height=3,
    font=("Georgia", 25)
)
label.pack()

name_label = tk.Label(
    text="Enter Your Full Name")
name_label.pack()
name_entry = tk.Entry(root)
name_entry.pack()
home_address = tk.Label(
    text="Enter Your Home Address")
home_address.pack()
home_address_entry = tk.Entry(root)
home_address_entry.pack()
phone_label = tk.Label(
    text="Enter Your Mobile Number:")
phone_label.pack()
phone_entry = tk.Entry(root)
phone_entry.pack()
vehicle_type_label = tk.Label(root, text="Select Vehicle Type:")
vehicle_type_label.pack()
vehicle_type_var = tk.StringVar()
vehicle_type_var.set("Car")
car_radio = tk.Radiobutton(root, text="Car", variable=vehicle_type_var, value="Car")
motorcycle_radio = tk.Radiobutton(root, text="Motorcycle", variable=vehicle_type_var, value="Motorcycle")
car_radio.pack()
motorcycle_radio.pack()
year_label = tk.Label(
    text="Year of Vehicle:")
year_label.pack()

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year_label_entry = tk.Entry(root)
year_label_entry.pack()
color_label = tk.Label(
    text="Color of Vehicle:")
color_label.pack()
color_label_entry = tk.Entry(root)
color_label_entry.pack()
reg_label = tk.Label(
    text="Vehicle Registration Number:")
reg_label.pack()
reg_label_entry = tk.Entry(root)
reg_label_entry.pack()

numofvehs_label = tk.Label(
    text="Number of Vehicles to Park:",
    height=2)
numofvehs_label.pack()
operation_var = IntVar()
operation_var.set('1')
operation_menu = OptionMenu(root, operation_var, '1', '2', '3', '4')
operation_menu.pack()

Checkbutton1 = IntVar()
Checkbutton2 = IntVar()

ismember_label = tk.Label(
    text="Are you a member?")
ismember_label.pack()

Button1 = Checkbutton(root, text = "VIP Member",
    variable = Checkbutton1,
    onvalue = 1,
    offvalue = 0,
    height = 1,
    width = 10)

Button2 = Checkbutton(root, text = "Not a VIP Member",
    variable = Checkbutton2,
    onvalue = 1,
    offvalue = 0,
    height = 1,
    width = 15)

Button1.pack()
Button2.pack()

duration_label = tk.Label(root, text="Enter Duration (hours):")
duration_label.pack()
duration_entry = tk.Entry(root)
duration_entry.pack()

calculate_button = tk.Button(root, text="Calculate Fee", background="red", foreground="black")
calculate_button.pack()
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result_label = tk.Label(root, text="")
result_label.pack()

def validate_name():
    full_name = name_entry.get()
    if not re.match(r"^[A-Za-z\s]+$", full_name):
        messagebox.showerror("Error", "Invalid full name. Please enter alphabetic c

def validate_mobile_number():
    mobile_number = phone_entry.get()
    if not re.match(r"^\d{10}$", mobile_number):
        messagebox.showerror("Error", "Invalid mobile number. Please enter exactly

def validate_vehicle_year():
    vehicle_year = year_label_entry.get()
    if not re.match(r"^\d{4}$", vehicle_year):
        messagebox.showerror("Error", "Invalid vehicle year. Please enter exactly 4

reg_label_entry.insert(0, "Eg: KA74M1100")

name_entry.bind("<FocusOut>", lambda event: validate_name())
phone_entry.bind("<FocusOut>", lambda event: validate_mobile_number())
year_label_entry.bind("<FocusOut>", lambda event: validate_vehicle_year())

root.mainloop()
```

