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C203

7OOP

FINALS TASK 5. Designing a Tkinter Window and adding events

PART 1. Grading PROGRAM

1. Design the window below.

2. The program should allow the user to input Prelim, Midterm, Pre Finals and Final Grade (Compute GPA by adding the Prelim, Midterms, (50% of Pre-Finals and 50% of the Final Grade) then divide by 3) 3. The user should be able to select which equivalent grade to view using Combo Box: (Letter Grade or NUMERIC GRADE)

4. Compute Button should compute the GPA and display the appropriate grade equivalent and other info in a Textarea (Text) as shown in the sample output

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

6. The About button should display a dialog with the message: “Hello I’m your Name”

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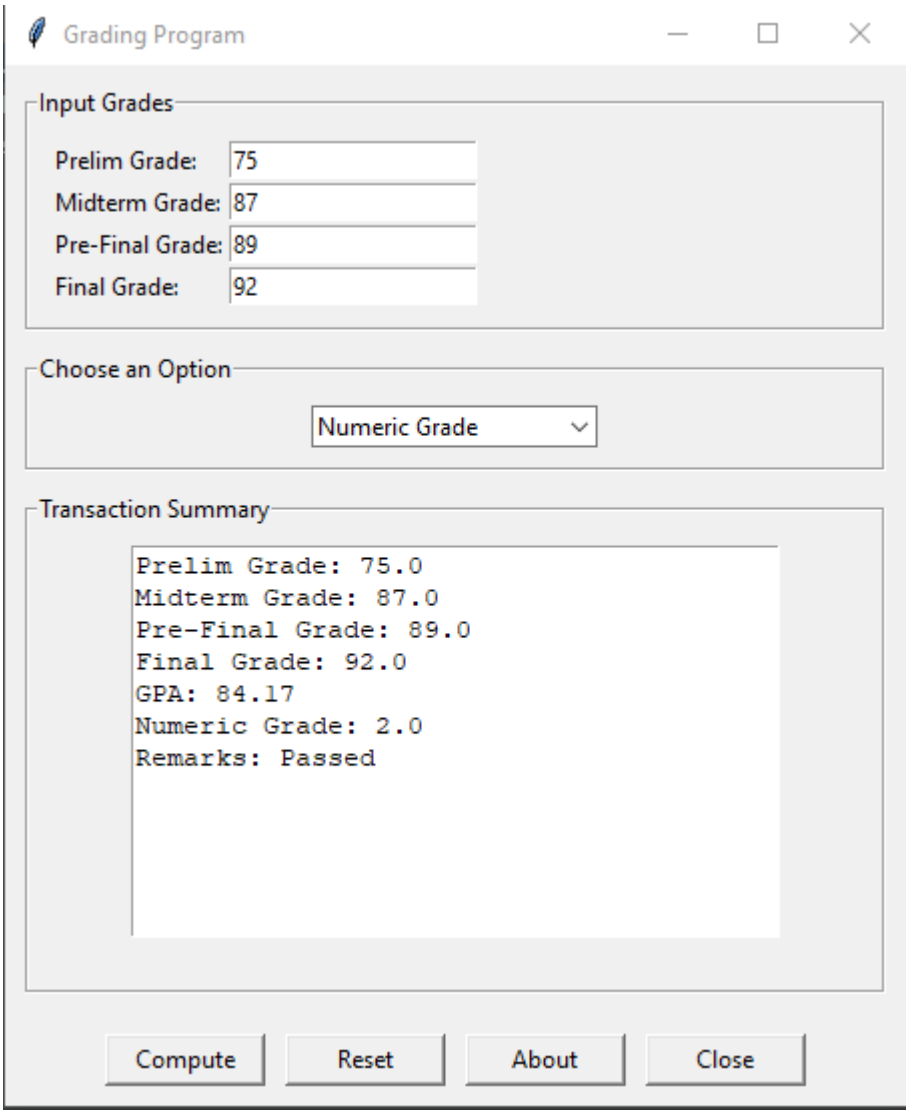

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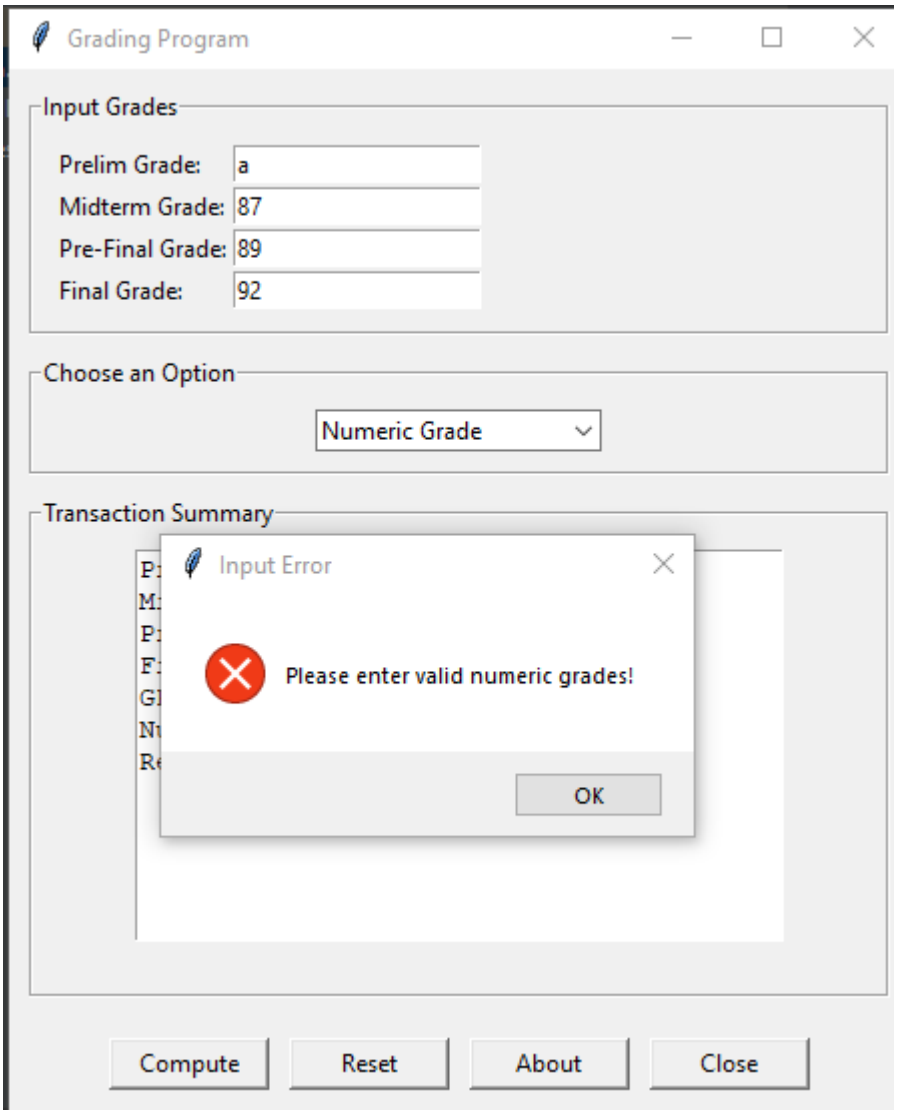

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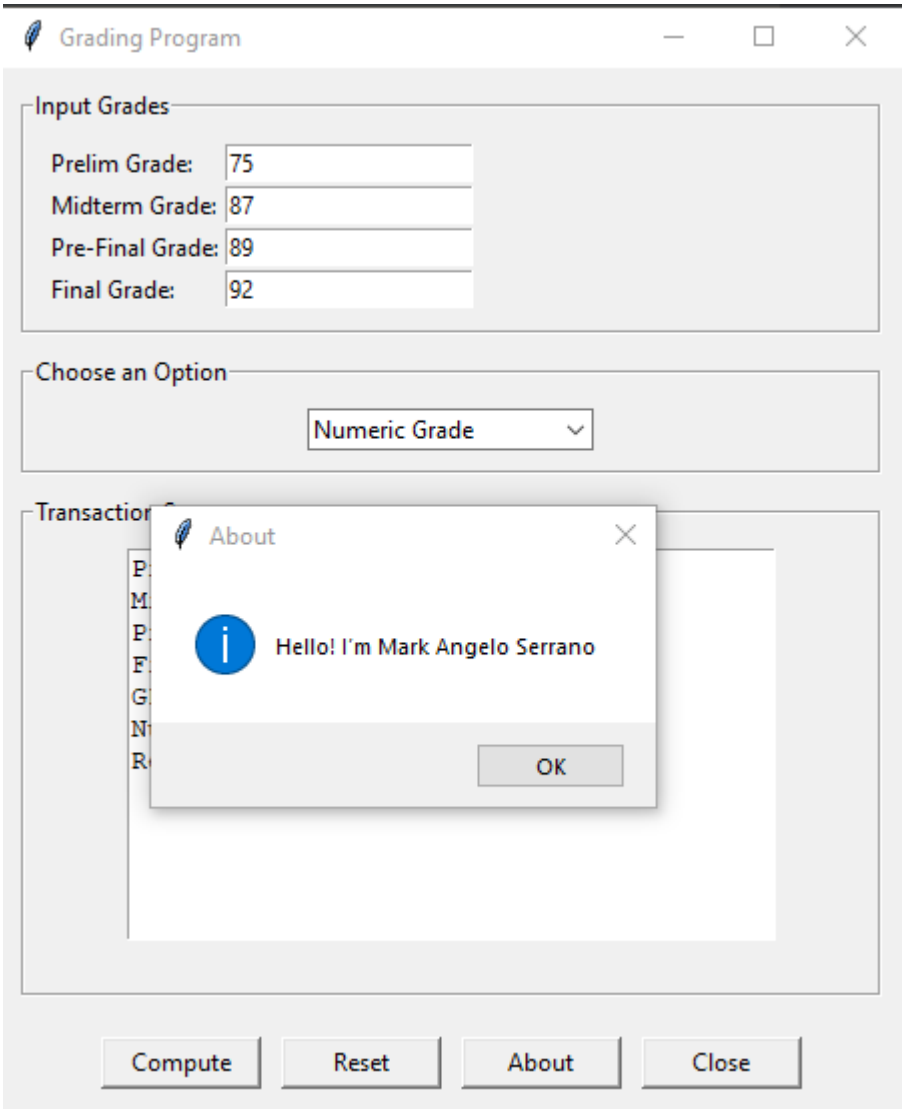

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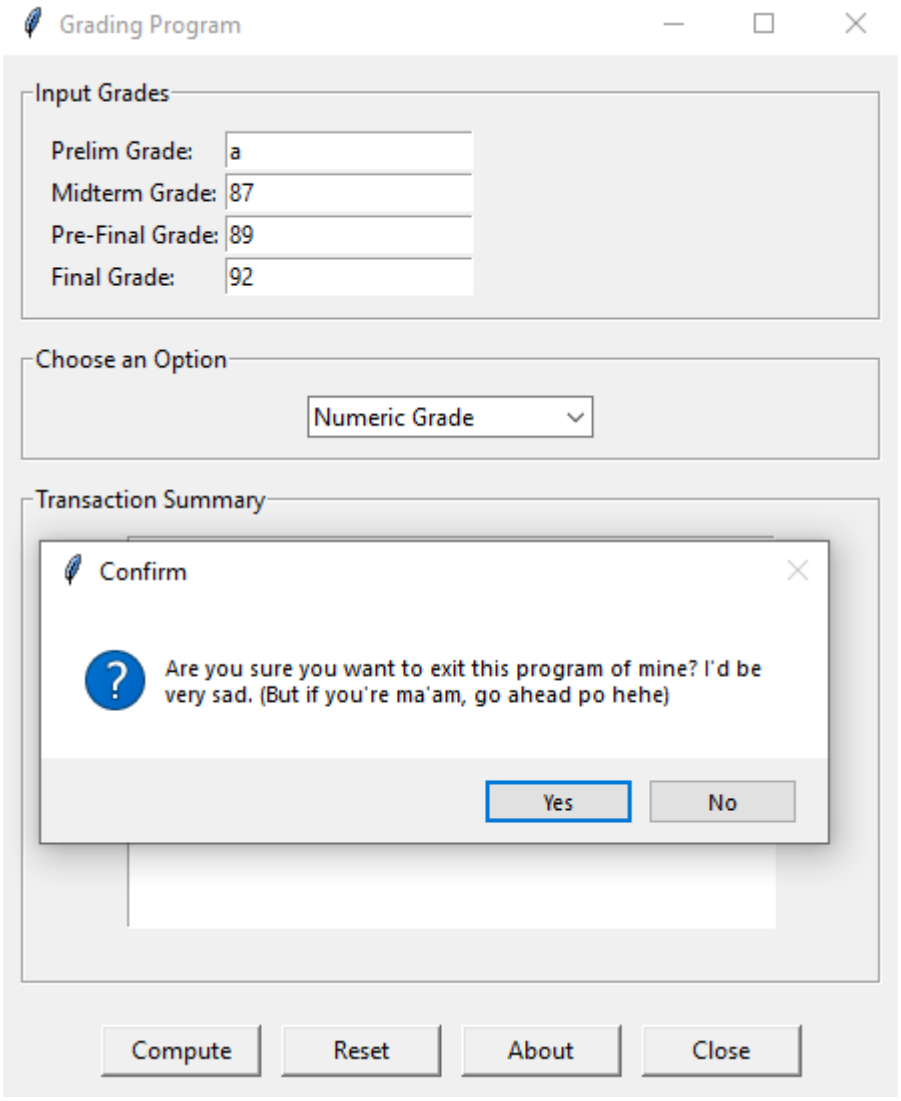

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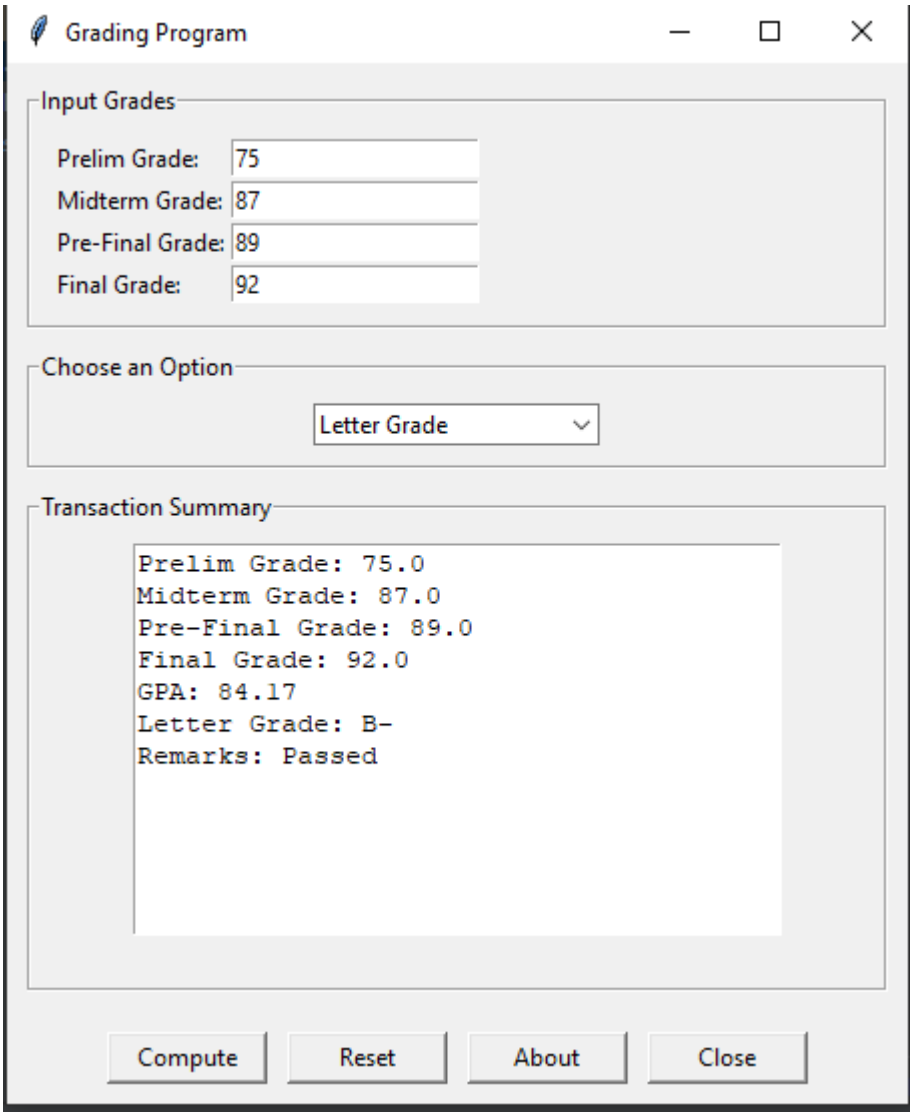

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```
import tkinter as tk
from tkinter import ttk, messagebox

class GradingApp:
    def __init__(self, root):
        self.root = root
        self.root.title("Grading Program")
        self.root.geometry("450x520")

        frame_input = tk.LabelFrame(root, text="Input Grades", padx=10,
pady=10)
        frame_input.pack(fill="x", padx=10, pady=10)

        tk.Label(frame_input, text="Prelim Grade:").grid(row=0, column=0,
sticky="w")
        self.entry_prelim = tk.Entry(frame_input)
        self.entry_prelim.grid(row=0, column=1)

        tk.Label(frame_input, text="Midterm Grade:").grid(row=1, column=0,
sticky="w")
        self.entry_midterm = tk.Entry(frame_input)
        self.entry_midterm.grid(row=1, column=1)

        tk.Label(frame_input, text="Pre-Final Grade:").grid(row=2, column=0,
sticky="w")
        self.entry_prefinal = tk.Entry(frame_input)
        self.entry_prefinal.grid(row=2, column=1)

        tk.Label(frame_input, text="Final Grade:").grid(row=3, column=0,
sticky="w")
        self.entry_final = tk.Entry(frame_input)
        self.entry_final.grid(row=3, column=1)

        frame_option = tk.LabelFrame(root, text="Choose an Option", padx=10,
pady=10)
        frame_option.pack(fill="x", padx=10)

        self.combo option = ttk.Combobox(frame option, values=["Letter
Grade", "Numeric Grade"], state= "readonly")
        self.combo_option.set("Letter Grade")
        self.combo_option.pack()

        frame_output = tk.LabelFrame(root, text="Transaction Summary",
padx=10, pady=10)
        frame_output.pack(fill="both", expand=True, padx=10, pady=10)

        self.text_output = tk.Text(frame_output, height=12, width=40)
        self.text_output.pack()

        frame_buttons = tk.Frame(root)
        frame_buttons.pack(pady=10)

        tk.Button(frame_buttons, text="Compute", width=10,
command=self.compute).grid(row=0, column=0, padx=5)
        tk.Button(frame_buttons, text="Reset", width=10,
command=self.reset).grid(row=0, column=1, padx=5)
```

```
        tk.Button(frame_buttons, text="About", width=10,
command=self.about).grid(row=0, column=2, padx=5)
        tk.Button(frame_buttons, text="Close", width=10,
command=self.close).grid(row=0, column=3, padx=5)

    def get_letter_grade(self, gpa):
        if 96 <= gpa <= 100:
            return "A"
        elif 93 <= gpa <= 95:
            return "A-"
        elif 88 <= gpa <= 92:
            return "B"
        elif 83 <= gpa <= 87:
            return "B-"
        elif 78 <= gpa <= 82:
            return "C"
        elif 76 <= gpa <= 77:
            return "D"
        elif gpa == 75:
            return "E"
        elif 65 <= gpa <= 74:
            return "F"
        else:
            return "N/A"

    def get_numeric_grade(self, gpa):
        if 97 <= gpa <= 100:
            return 1.00
        elif 94 <= gpa <= 96:
            return 1.25
        elif 90 <= gpa <= 93:
            return 1.50
        elif 87 <= gpa <= 89:
            return 1.75
        elif 84 <= gpa <= 86:
            return 2.00
        elif 81 <= gpa <= 83:
            return 2.25
        elif 78 <= gpa <= 80:
            return 2.50
        elif 76 <= gpa <= 77:
            return 2.75
        elif gpa == 75:
            return 3.00
        elif 65 <= gpa <= 74:
            return 5.00
        else:
            return "N/A"

    def compute(self):
        try:
            prelim = float(self.entry_prelim.get())
            midterm = float(self.entry_midterm.get())
            prefinal = float(self.entry_prefinal.get())
            final = float(self.entry_final.get())
        except:
```

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```
            messagebox.showerror("Input Error", "Please enter valid numeric
grades!")
            return

        gpa = (prelim + midterm + 0.5*prefinal + 0.5*final) / 3

        option = self.combo_option.get()
        if option == "Letter Grade":
            grade = self.get_letter_grade(gpa)
        else:
            grade = self.get_numeric_grade(gpa)

        remarks = "Passed" if gpa >= 75 else "Failed"

        self.text_output.delete("1.0", tk.END)
        self.text_output.insert(tk.END, f"Prelim Grade: {prelim}\n")
        self.text_output.insert(tk.END, f"Midterm Grade: {midterm}\n")
        self.text_output.insert(tk.END, f"Pre-Final Grade: {prefinal}\n")
        self.text_output.insert(tk.END, f"Final Grade: {final}\n")
        self.text_output.insert(tk.END, f"GPA: {gpa:.2f}\n")
        self.text_output.insert(tk.END, f"{option}: {grade}\n")
        self.text_output.insert(tk.END, f"Remarks: {remarks}\n")

    def reset(self):
        self.entry_prelim.delete(0, tk.END)
        self.entry_midterm.delete(0, tk.END)
        self.entry_prefinal.delete(0, tk.END)
        self.entry_final.delete(0, tk.END)
        self.combo_option.set("Letter Grade")
        self.text_output.delete("1.0", tk.END)

    def about(self):
        messagebox.showinfo("About", "Hello! I’m Mark Angelo Serrano")

    def close(self):
        if messagebox.askyesno("Confirm", "Are you sure you want to exit this
program of mine? I'd be very sad. (But if you're ma'am, go ahead po hehe)"):
            self.root.destroy()

if __name__ == "__main__":
    root = tk.Tk()
    app = GradingApp(root)
    root.mainloop()
```